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PSYCHOLOGICAL PRINCIPLES

BY

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PREFACE

THERE are certain obvious defects in this book due to the circumstances of its composition. The author trusts that a brief account of those circumstances may therefore be at least condoned.

Just forty years ago, that is in 1878—when I began lecturing on Psychology—the plan of the book was laid down. As the lectures proceeded, abstracts of some of them were privately printed for discussion at a Moral Sciences Club, in which some other Cambridge books also took their rise. The first two of these abstracts, written in 1880, were afterwards reproduced without revision in the American *Journal of Speculative Philosophy* for 1882–3, one corresponding to the present chapter ii, and the other, entitled "Objects and their Interaction," to parts of the present chapters iv–vii. A third on Space and Time written in 1881, was rejected by the late G. Croom Robertson the editor of *Mind*, as too difficult and revolutionary for publication as it stood. But afterwards he accepted and published what were to have been the two opening chapters of a book bearing the same title as this. Other chapters were to follow, but circumstances diverted them elsewhere. In 1884 Croom Robertson who had engaged some years previously to write the article "Psychology" for the ninth edition of the *Encyclopaedia Britannica*, was prevented by failing health from proceeding further with it. Professor Sully, who was next appealed to, having declined the task, the editor of the *Encyclopaedia*, at that time T. Spencer Baynes, chancing to have made my acquaintance, offered it to me. I rashly sacrificed my book to the offer and so, as it has turned out, destroyed one of the dreams of my life.

The article was begun late in 1884 and completed in 1885; then, in 1902, a supplementary article was prepared for the tenth edition of the *Encyclopaedia*; and finally, in 1908, these

with omissions and additions were hastily amalgamated into the new article of the present or eleventh edition. For here again circumstances were untoward. I had at first declined to undertake this, pointing out the advisability of an entirely new article, which at the time I was not disposed to attempt, and recommending a younger man well fitted to take my place. Some two years later, however, the obdurate editor with many compliments begged me to reconsider my decision, but telling me plainly that—in default of a revised article from me—he meant just to reprint the old ones as they were. Finding that his threat could be legally upheld, I yielded to his importunity. Thus the final article like the first one was done in a hurry.

The article of the ninth edition, published by A. and C. Black, was procurable separately. What circulation it had in this form I have never been able to ascertain; but once it was out of print and copies fetched a fancy price. With the tenth edition, published by the *Times*, apparently this separate issue ceased. Since then requests for a reprint or an expansion have been many and continuous both from publishers and booksellers as well as from private people. In view of this demand I stipulated, before at last undertaking the final revision mentioned above, that I should be at liberty to use the articles as the basis for a new book. This permission was readily granted by the proprietors of the copyright; but on the understanding that the book should be about a third longer and not sold below a certain price.

Up to 1894 I had continued working systematically at psychology as far as new duties allowed. A paper in *Mind*, N.S. vols. ii.–iii. (1893–4), entitled "Assimilation and Association," was one of these essays: portions of this were incorporated in the article as it appeared in 1911 as well as portions of papers hitherto unpublished. But in 1894 I became engrossed in other subjects and the idea of an entirely new book on psychology was thenceforth abandoned. Accordingly in the spring of 1913, when arrangements for this book were made, my intention was to meet the general wish for a reissue of the *Encyclopaedia* article and at the same time to satisfy the demands of the proprietors by enlarging it from material already more or less in shape[1]. On the prescribed scale some three-quarters of the article were

[1] The first chapter, for example, had previously served as opening article in the *British Journal of Psychology*, i. (1904).

expanded within about a year, bringing the book down to the end of chapter xi. Owing to the exigencies of space, the sections of the article dealing with experience at the self-conscious and social level had been unduly compressed. Hence the remaining chapters (xii–xviii), forming almost a third of the book, are, with the exception of a few pages, entirely new; and the last two were no part of the original plan. On the other hand the concluding sections of the article—on the Relation of Body and Mind and on Comparative Psychology—which first appeared in the supplement—are now omitted: perhaps I may have an opportunity of dealing with these topics by and by.

* * * * * * * *

"A belated patchwork, mostly of antiquated rags"—such, then, is the sort of censorious criticism the author may expect to hear and must endeavour to anticipate.

From the charge of putting forth 'a belated book' I am at any rate partly absolved by the general demand that has long existed and still exists. Moreover I have done my best in the text and still more in notes to place a studious reader *au courant* with the psychological literature of the present day. But there is a psychology which arrogates to itself the title of 'new[1].' New it undoubtedly is, and there are signs that in its present form it will not long survive. In any case it is not psychology—save in so far as it occasionally furnishes the psychologist with material of some value. As a *method* in the hands of psychologists it has done some good: as a pretended *science* in the hands of tyros whose psychological training has not even begun, it has done infinite harm. This book, however, is not so antiquated as to ignore altogether the character and claims of this 'modern' psychology, as the reader may see.

As to the lack of originality which this charge may covertly imply—perhaps the inaccessibility of a long article in a vast work of general reference will make this charge seem more plausible than it is. For much of this article, I am proud to say, has become the common property of students to whom the original is unknown. *À propos* of this I may be pardoned for referring to the concluding words of a too laudatory review by the late

[1] Concerning this I may perhaps here refer to my "'Modern' Psychology: a Reflexion," *Mind*, N.S. ii. (1893), pp. 54 ff.

Alexander Bain—all the more generous as on several points the views put forward by me differed widely from his own[1].

Finally, as to the charge of 'patchwork'—this, I have admitted and lament; but the patches are my own and the plan is, I hope, uniform. I have done my best to weld the old and the new together, and I confess that what distress me most are not the 'patches' but the 'holes.' In any case a book on psychological principles—that is, one aiming to be 'explanatory'—must differ from one concerned chiefly in being 'descriptive.' I never contemplated more than an exposition of psychology *as a whole*: merely subsidiary details, however interesting, were beyond my purview[2]. But in writing the later chapters I have become painfully aware of more serious gaps. Unfortunately the earlier chapters were by that time printed off. Of course it would have been better at the outset to have scrapped the whole, as was my original intention, but in 1913 my day was too far spent for that.

* * * * * * * *

An author may be expected to acknowledge his obligations.

Psychology was not taught in Cambridge in my day, and what I owe to others I owe entirely to previous writers and to my pupils. Among the former, besides our English psychologists, I may mention Herbart and some of the Herbartians, Lotze, Wundt, Brentano and his Austrian connexions.

In the actual preparation of the book, I am indebted to friends, too numerous to mention, for their help on special points; but three, who patiently waded through all the galley-slips, furnishing me with detailed and valuable comments—to say nothing of 'counsels of perfection' beyond my reach—I

[1] Cf. "Mr James Ward's *Psychology*," *Mind*, xi. (1886), p. 477.

[2] Chapter ix, it must be allowed, hardly conforms to the rule. The substance of it appeared first in the supplementary or tenth edition of the *Encyclopaedia*. The purpose of that edition was to bring the articles of the ninth 'up to date'; and as the supplementary article "Psychology" began by stating that "psychology since 1885 had entered upon an experimental stage," the experimental work 'relating to memory and association' was selected as 'probably the most important' and a brief account inserted later on 'by way of illustrating the so-called new psychology.' And after all it bears on some problems—the so-called 'regressive' and 'mediate' forms of association, for example, among others—that are of fundamental importance. Hence it was retained; but if there is one chapter more than another in the book that may be 'skipped,' it is this.

must name: they were Mr H. Barker of the University of Edinburgh, Professor G. F. Stout of the University of St Andrews—former students of my own—and Dr G. Dawes Hicks, Professor at University College, London. I shall always feel deeply grateful to them for services that I can never repay.

I have also to thank Mr A. R. Waller, the Secretary of the Press Syndicate, and the officials of the Press itself for their kindly cooperation and long forbearance.

JAMES WARD.

TRINITY COLLEGE,
CAMBRIDGE.
July, 1918.

P.S. The suddenness of the call for a new edition prevents me from attempting any improvement in this book beyond that of correcting a few misprints which have been noted and making several verbal emendations.

J. W.

November, 1919.

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CHAPTER I

THE DEFINITION OF PSYCHOLOGY

Aristotle's Psychology of the living organism

§ 1. Everybody can tell in a general way what psychology is about: in fact there is perhaps no science the subject-matter of which can be more clearly and promptly set forth in popular language and for practical purposes. For the student of history or of biography, for the physician or the educationist, it is enough to know that psychology will furnish him with a description of normal mental processes—perceiving, believing, reasoning, striving, &c.—and of their normal development, a description incomplete, no doubt, but systematic as far as it goes. The moment, however, that we attempt to pass beyond approximate definitions and determine exactly what the term '*mental* process' means or implies, we find ourselves beset with serious difficulties; as the past history of psychology and also its present controversies sufficiently shew. Just for these reasons, then—because a rough and ready characterization of psychology is easy, while any adequate determination of its standpoint and scope would be a tedious and arduous undertaking—this preliminary inquiry is often deliberately ignored even by writers of high repute. And yet the problem is one of central importance, especially for those who have any interest in philosophy. Epistemology and ethics, the theory of knowledge and the theory of conduct, raise questions which depend in large measure for their solution on the conclusions we reach concerning this problem. In the history of British thought, in particular, the influence of the conception of psychology on metaphysical and ethical speculation is unusually striking. We may therefore assume that such introductory discussion is not one that cultured and thoughtful persons will care to leave altogether aside.

We shall perhaps start best by means of a brief historical retrospect. It is by knowledge of others that the child advances to consciousness of itself: it is aware of third persons, even of itself as one of these, before it realises its unique position as first person. And when at length this unique position is first realised it is very apt to be unduly predominant, as we frequently notice in the excessive or morbid so-called *self-consciousness* of youth. A like order and one-sidedness is evident in the growth of psychology: it was first unduly 'objective' and then unduly 'subjective': it is only now beginning to shew signs of maturity in a due balance of the two: the fundamental concept of the first period was *Life*, that of the second, *Mind*, that of the third is *Experience*. To understand this last then we must consider the other two in turn.

An intelligent person beginning to study *de novo* the broad facts which here concern us, unaided and unimpeded by traditional or current theories, would almost certainly not do, what according to Tristram Shandy Locke did, that is, write 'a history book of what passes in his own mind.' He would in all probability fail to distinguish sharply between the facts of mind and the facts of life which he observed on all sides: the close connexion, that is to say, of living mind and living body would conceal their duality. At any rate this was the case with primitive thought, as philology and anthropology amply prove. But it is needless to go back further than Aristotle, whose *De anima* marks the birth of Psychology as a separate science. Let us note then that Aristotle—in sharp contrast to Descartes, whom, rather than Locke, we may regard as inaugurating the second period,—began his study of mind from the side of body. He divided natural bodies into those that have, and those that have not, life. The former in all cases consisted of organs mutually adapted to a specific end: they were, as we now say, organisms or rather potential organisms. The conception of ὄργανον, tool or instrument, was fundamental with Aristotle. It led him to his famous doctrine of the four causes. An axe, for example, was (1) matter, (2) having a particular form, which (3) set in motion by the woodman realised (4) his end, the felling of timber. If we regarded an axe as an organism, we should say that wood-cutting was its soul, the realisation of the meaning of a body of that kind: in a timberless desert it might be called

an axe, but it could never *be* one. Still an axe is not an organism, for it does not possess within itself the cause of its movement and rest; and further, the end it realises is not for itself. But in a living body the soul was at once its formal, moving and final cause: the actualisation of the body's mere potentiality was its soul (ψυχή). The soul however implied a material cause. It must be embodied, just as the body to be anything more than a body in name, a corpse in fact, must be—as the German would say—'besouled' (ἔμψυχον).

Body and soul were then inseparable correlatives, like the matter and form in the concrete whole we call a seal. What its function was to a particular organ—vision to the eye, for example—that the soul was to the organism as a whole: it was 'the cause and principle' of its life[1], "by which is meant," says Grote, "not an independent and pre-existing something that brings the body into existence, but an immanent or indwelling influence which sustains the unity and guides the functions of the organism[2]." Of souls Aristotle recognised an ascending series of kinds, falling into three chief classes—plant-souls, animal-souls, and human souls, each higher kind possessing all the functions of the lower in addition to its own. Now in the case of plants and animals—and of man, so far as he shares their characteristics—these functions could be inferred from the corresponding organs. Thus the souls of plants were nutritive and generative, those of animals were, besides, sensitive, appetitive, and—usually—locomotive. Plants did not need sensation, but all animals had to have the sense of touch (and taste, which is a sort of touch) in order to avoid obstacles and secure their appropriate nutriment. The other senses, however, as means to well-being and not merely to existence, belonged only to particular classes of animals[3].

So far Aristotle's point of view resembles that of modern biologists. His conception of 'soul' has few of its present-day associations, while it is closely related to the physiological conception of function. Like this it implies not only the organism—as vision, *e.g.*, implies the eye—but it implies also the environment, as actual vision implies light. Like this, again, it knows nothing of the dualism of life and mind: mental processes have

[1] *De Anima*, II. iv. §§ 3 ff.
[2] *Aristotle*, p. 460.
[3] *De Anima*, III. xii. § 8.

an organic basis as truly as vegetative, and where they exist they are simply higher functions of the same soul that realises these. But Aristotle differs from most modern biologists[1], first, in making the concept or category of final cause fundamental. "All natural bodies," he says, "are instruments of the soul: and just as it is with the bodies of animals so it is also with those of plants, all being there simply for the sake of the soul." The self-preservation and well-being of the living individual and its kind are the end of all organic processes, that is of all interaction between the organism and its environment. Aristotle differs again from most modern biologists in regarding the soul as the 'primary source of local movement,' that is to say as the directive principle in this interaction[2]. For these reasons it would be inexact—in spite of the resemblance—to describe Aristotle's *De Anima* as biological. For the present we shall do better to call it objective psychology: it contemplates psychical facts inferentially from without, rather than introspectively from within. As a result of this attitude, organic life and psychical life may appear at first to be too much identified. But from the opposite standpoint, the exclusively subjective, to which we must presently turn, perhaps we may find their complete separation to be equally extreme.

When however we reach Aristotle's treatment of the human soul as intellectual, we come upon a certain discontinuity. For Aristotle found no organ of intellect: he even speaks of intellect (*νοῦς*) as 'separate, impassive, and uncompounded [with material conditions][3].' But if intellect have no bodily organ, in what sense is the soul of man the actualisation of his body, and how can Aristotle compare the unity of soul and body in man to that of the wax and the figure impressed upon it, or to that of the axe and the material of which it is made? Before attempting to deal with this difficulty we must take account of two very different senses in which Aristotle speaks of reason or intellect. His doctrine of active intellect (*νοῦς ποιητικός*), the first of these, is rather theological than psychological: it is in the main his philosophical version of the widely held belief of man's participation in the divine. This creative reason comes from without; it is impersonal and immortal; comparable to the sunlight by

[1] The rising school of Neo-vitalists is, however, an exception.

[2] *De Anima*, II. iv. § 6.

[3] *De Anima*, III. v. § 2.

which we see and through which alone things become visible. It is this phase of reason that 'is separate, impassive, and uncompounded.' The receptive or passive reason (*νοῦς παθητικός*) on the other hand is a personal endowment and varies greatly from individual to individual: this 'is perishable and can really think nothing apart from the creative reason[1].' Here at any rate we should find no breach of *psychological* continuity if we were to follow in detail Aristotle's exposition of this individual reason. The popular summary of it is perhaps sufficiently exact: *Nihil est in intellectu quod non prius fuerit in sensu* through sensation, phantasy, memory we advance to recollection, conception, and intellection[2]. The higher processes presuppose the lower, and these—sensation, imagination and memory (or retentiveness)—depend directly on the organism. And but for certain physiological errors into which he fell[3] Aristotle would doubtless have found the connexion between the organism and the soul as intellectual more direct and more definite than he supposed; though, even as it was, he made the intellectual part of soul primarily dependent on the organism. For in man, the active intellect operates only under the stimulus, as it were, of the passive, and this again receives all its material from the senses. In any case it was inevitable that in advancing to these higher functions he should approach nearer to the subjective standpoint. Even with our present knowledge we could learn little more about intellectual processes if we attempted to begin by studying the brain than if we began by studying the heart. There is still however a wide difference between Aristotle's exposition of these processes and the exposition of an introspective psychologist. It is not thinking as a process in the individual mind so much as thought as a universal product that Aristotle mainly considers; but when—upon occasion—the individual,

[1] *De Anima*, III. v. § 2.

[2] No doubt Aristotle would concur in Leibniz's addition of *nisi intellectus ipse*, meaning thereby the universal and creative reason that illumines and interprets the data of experience. But this is a metaphysical tenet which carries us altogether beyond psychological bounds. However by recognising the social environment, as we may see later (cf. ch. xii), it is possible to advance much further than Aristotle did without having recourse to such philosophical speculations.

[3] Unlike Plato, Aristotle held the heart, not the brain, to be the central organ or seat of the soul. The fact that the cerebral hemispheres were insensitive to stimulation confirmed him in this view.

as distinct from the universal, aspect of thought is foremost with him, then biological or physical analogies are apt to obtrude. "The plant assimilates the material in a material manner, sense assimilates the material in an immaterial manner and thought assimilates the immaterial in an immaterial manner[1]." What we miss in Aristotle is a clear recognition of what we now call *consciousness* as the central feature of all psychical facts. Regarding these facts as he did from the outside rather than from within, from the circumference rather than from the centre, he failed to find an adequate unity for the diverse functions which he described; he had to rest content with the biological conception of an organism, into which, however, he infused a strong teleological colouring.

Descartes' Psychology of the thinking mind.

§ 2. When we pass to the psychology of Descartes we are at the opposite extreme. The connexion of body and mind, the corner-stone of Aristotle's construction, was the chief stumbling-block in the way of Descartes' advance, and has remained as a perplexing problem even to our own day. The hazy materialism, into which the Aristotelian psychology had developed in mediaeval times, Descartes banished once for all by the new definitions which he gave of matter and mind. Both were substances and therefore essentially distinct: the essence of matter was extension or the occupation of space, that of mind was consciousness; and between these there was no common term and there was no natural connexion.

Cogito, ergo sum, Descartes began: 'I think, therefore I am.' This was for him the primal certainty, the starting-point alike of his philosophy and of his psychology. "By the word thought (*cogitatio*)," he tells us, "I understand all that which so takes place in us that we of ourselves immediately apperceive it; and that is why, accordingly, not only understanding, willing, imagining, but also sensing (*sentire, sentir*) are here the same thing as thinking (*cogitare, penser*). For if I say, I see or I walk, and therefrom infer that I am; and if I understand by seeing or walking the action of my eyes or my legs, which is the work of

[1] Bäumker, *Des Aristoteles Lehre u.s.w.*, quoted by Wallace, *Aristotle's Psychology*, p. lvi.

the body, the conclusion is not absolutely certain....Whereas if I mean only the action of my consciousness or sensation itself, that conclusion is so absolutely certain as to exclude all doubt, because it is then referred to the mind, which alone has the faculty of being conscious or sensing that I see or walk[1]."

Here then we are unmistakably inside the circle which Aristotle regarded mainly from without, and the central unity which we missed in his exposition is now clearly indicated. Subjective psychology deals with whatever we are *immediately* conscious of as something taking place *within* us: with the biological aspects, the physical occasions, or the epistemological interpretation of this something, it has no concern. All that it essentially implies is a conscious individual (a *res cogitans*) and the various actions and passions of which it is conscious—'its diverse modes of thinking,' or 'the contents of its consciousness,' as some would say. So far from a body being necessary to the existence of a conscious mind, as Aristotle from his objective standpoint assumed—and naturally, for it was with the living body that he began—the distinctness and independence of the two are, Descartes maintained, at once evident so soon as we reflect on the nature of consciousness. We then "perceive clearly that neither extension nor figure nor local motion.....pertains to our nature, and nothing save thought alone: it then becomes plain that I am not the assemblage of members called the human body; I am not a thin and penetrating air diffused through all these members, or wind, or flame, or vapour, or breath; for *the notion we have of our mind precedes that of any corporeal thing*, and is more certain, seeing we still doubt whether there is any body in existence, while we already perceive that we think[2]."

This restriction of psychology to the immediate facts of consciousness as these exist for the conscious subject was a great advance on the confusion of psychology with biology which characterised the Aristotelian and scholastic doctrines. As a result, the science made more progress in two centuries than it had made in twenty centuries before. But as so often

[1] *Principles of Philosophy*, pt. I. § 9. In equating Descartes' *cogitatio* to the modern 'consciousness,' which is on the whole the best rendering, we must not forget the predominantly cognitive implication which it, even more than its present equivalent, always retains.

[2] *Principles*, I. 8, and *Meditation*, II. (Veitch's ed. p. 108)

happens, the reaction—as we have already hinted—was excessive; this we shall see if we examine the Cartesian dualism a little further. Whereas Aristotle on the whole kept to facts, Descartes trusted to analytic distinctions. Aristotle found mind and body invariably connected, and therefore he regarded them as essentially inseparable. Descartes could conceive mind without body and body without mind; therefore he concluded that they were actually independent and could exist apart. But what sort of mind was it that Descartes thus conceived? Broadly speaking it was the human soul of Aristotle less the senses, memory and imagination which—on Aristotle's view—man shared with the lower animals and required as indispensable conditions of his own activity. The thought that essentially belonged to this soul apart from a body excluded everything we now call empirical: hence the dualism of pure thought and experience that reappeared in modern philosophy. This *res cogitans* of Descartes then, as such, could only be occupied with eternal truths or 'innate ideas' and with whatever other ideas it might itself frame from these: 'adventitious ideas' it would not have at all. But even at this point a little reflexion will convince us that such a consciousness as this Cartesian *cogitatio* is not really conceivable. It lacks individuality and it lacks concreteness. For the environment and the intercourse with other selves—on which any consciousness of self depends—are so far wanting. In other words, as yet the conditions of actual experience are incomplete.

Let us now turn for a moment to material substance, the second term in the Cartesian dualism. As sensations were not to be attributed to mind as *res cogitans*, so here sensible qualities are not to be attributed to matter as *res extensa*. Only so far as matter was "the object of speculative geometry" was its nature intelligible, and for this knowledge sensory experience was superfluous; nay, worse—it was misleading. Descartes' *res extensa* was thus even more than his *res cogitans* a merely analytical concept. There the concrete individual *Cogito* was at least a certainty; though one which the bare concept of mind-substance did not explain. But here there is no corresponding certainty and the matter-substance is only differentiated into a plurality of concrete material things by a series of glaring subreptions and incongruities. In both cases the fault lay in

his rationalistic attempt to derive the concrete facts of experience from purely abstract notions. Dynamical concepts, such as those of mass and force, which only experience could warrant, were smuggled without clear definition or derivation into a physics that professed to be 'nothing but geometry.' Yet in spite of these initial defects the impetus that Descartes gave to Natural Philosophy was even greater than that which we have allowed is owed to him by Mental Philosophy; and the achievement here again was due to his famous method. As he cleared the conception of consciousness of hazy materialistic implications so he cleared that of matter of the animism involved in the mediaeval notions of occult qualities such as the natural gravitation of earth, the natural levitation of air, nature's abhorrence of a vacuum, and the like. But the details of his Natural Philosophy do not now concern us: it is enough to recognise that in it mechanical notions were supreme throughout. An organism accordingly was for Descartes simply a mechanism, an integral part of the one vast mechanism called the external world. So far then from connecting biology with psychology, as Aristotle had done, Descartes reduced biology to physics.

And now what of the connexion of body and mind? We note first of all that Descartes inverted the Aristotelian position that intellect presupposes sense[1]: according to him sense presupposed intellect. "I find in myself," he says, "the faculties of imagination and sensation (*sentir*), without which I can indeed clearly and distinctly conceive myself entire, but not reciprocally them without myself, that is to say, without an intelligent substance in which they reside, for...in their formal concept, they involve some sort of intellection[2]." Finding further "not merely that brutes have less reason than man, but that they have none at all[3]," he concluded that they were nothing but automatic machines, entirely comparable—save for their greater complexity—to the contrivances of a skilful clockmaker, needing, as he expressly said, "neither a vegetative soul, nor a sensitive soul[4]." Even the human body, physically regarded, was only such a machine.

[1] So far, that is, as Aristotle did assume it.
[2] *Meditation*, VI., Veitch, p. 157, also p. 152.
[3] *Discourse on Method*, pt. v., Veitch, p. 57.
[4] Cf. *Traité de l'Homme*, Cousin's ed. p. 428.

Nevertheless the relation of man's soul to his body was not comparable to that of a pilot in a seaworthy boat: after all the two become a single substantial unity:—"Me non tantum adesse meo corpori, ut nauta adest navigio, sed illi arctissime esse conjunctum et quasi permixtum, adeo, ut *unum quid* cum illo componam[1]." But how was such substantial unity possible? To answer this question reason was helpless; and even the criterion, on which Descartes' whole method of philosophising was founded, proved at fault. This he frankly owned. "To me it seems impossible," he writes, "that the human mind should, distinctly and at the same time, conceive the distinctness of body and soul and likewise their union; for so to do, it must conceive them as a single thing while yet conceiving them as two, which is self-repugnant[2]." Yet Descartes never denied that the unity was at any rate a fact, however inexplicable, and a fact that rendered human experience possible. Nay, strange to say and in spite of his general rejection of final causes, Descartes concludes his *Meditations* by pointing out—in the style of a Bridgewater treatise—the mutual adaptability of body and mind manifested in our daily experiences. He concludes by laying down the maxim:—"I ought not in the least degree to doubt of the truth of those presentations ['of my body surrounded by many other bodies'], if, after having called together all my senses, my memory, and my understanding for the purpose of examining them, no deliverance is given by any one of these faculties which is repugnant to that of any other[3]." But on the senses exclusively, as Descartes allowed, we depend for the knowledge that material things *actually* exist; and it is equally certain—though this he did not explicitly allow—that but for memory we should be without that knowledge of our own existence, from which he started. Both sensation and memory, however, belong to man only as a rational animal, not to man conceived as *intellectus purus*. In other words, intellect alone is not the source of our real experience. But it is the source of the concepts of *res cogitans* and *res extensa* as disparate and mutually independent substances, the concepts, that is to say, on which the

[1] *Meditation*, VI., Veitch, p. 160. But in view of the importance of this passage it seems worth while to give the original.

[2] Letter to the Princess Elizabeth, June, 1643.

[3] *Meditation*, VI., Veitch, p. 168.

Cartesian dualism is founded. For this dualism, then, our concrete human nature is not merely a glaring exception—since all other spirits are assumed to be incorporeal and all other organisms merely machines;—it is not merely a knot that an omnipotent Deity might tie: it is a veritable *Unding*, a contradiction. Since, however, this human nature is a fact, it suffices —even as a negative instance—to render that dualism untenable, and we only need to begin where Descartes ends to be clear of it. For in the end, as we have just seen, he has to admit that it is not true of human nature, and he fails to find it in human experience. Here, as he points out, our internal sensations make us aware of what we need for the preservation of health, and our external percepts enable us clearly and distinctly to know which among surrounding objects are beneficial and which are hurtful to us in so far as we are composed of body and mind; here memory enables us to connect together the whole course of our waking life; and here judgment enables us to discriminate practically between what is true and what is false, so that "all the doubts of those bygone days are to be rejected as hyperbolical and ridiculous."

Had Descartes started, as he ought to have done, from this experience, and reflected seriously on all that it involved, he might have realised that his notion of mind alone was not adequate to cover it. Beginning with the organism and its environment—Aristotle saw that an informing 'soul' was necessary in order that the organism should actually have life. Descartes, who began with mind, ought in like manner to have seen that objects distinct from it were necessary in order that the conscious subject should actually have experience. But Descartes failed to seize this duality. It is true that he admitted, and admitted in so many words, that in human nature the *res cogitans* is not a *res completa*[1]. But, after all, this admission was made from the biological or psychophysical standpoint, the standpoint of Aristotle, not from the psychological standpoint, to which Descartes had himself attained. He therefore still held fast to his dualism. The immediate objects, even of sensible experience, he maintained were only *modes* of consciousness, changes "that take place in us."

[1] Reply to Arnauld's "Objections to the Meditations," *Philosophical Works*, edited by Haldane and Ross, vol. ii. p. 99.

But how is this position to be made consistent with Descartes' belief that his own body was surrounded by many other bodies, and so forth? Were those presentations of his own body and other bodies but modes of himself as *res cogitans*? If they were not, then his experience was not confined to such modes. If they were, it was so confined and therefore cut off altogether from body as a *res extensa*: the dualism of mind and body is justified indeed, but only at the price of making all experience of the latter impossible, or at least inexplicable. Out of this second *impasse* Descartes only escaped as he escaped from the first—by appealing to the Deity: only the Divine omnipotence could combine body and mind in human nature, and only the Divine veracity could guarantee the reality of the material world in human experience. These two problems—the relation of body and mind and the reality of external perception—have continued to vex philosophic thinkers from Descartes' day to our own, nor will they cease to trouble us till dualism is laid to rest.

The Cartesian Dualism and the Duality of Experience.

§ 3. On these grounds alone we should be amply justified in rejecting *in limine* the perfunctory definition of psychology—etymology notwithstanding—as the science of mind, over against which there stands a totally distinct science of matter (which might have been called hylology). It will repay us, however, to continue our historical survey a little further, so as to note the main features in the transition to the third concept of psychology as the science of individual experience. In this the respective merits both of the Aristotelian and the Cartesian doctrines are retained, and their defects redressed. The chief merit of the second of these lies, as already said, in its subjective, *i.e.* individualistic standpoint: this has not been, and is not likely to be, abandoned. The defects consist partly in its metaphysical, we might even say, its theological assumptions, and partly in the predominantly 'intellectualistic' character it assigns to individual experience. Though the dogmatic assumptions of Descartes' mental philosophy were seriously discredited by the empirical psychology which Locke began, and a long line of British workers carried forward; yet that philosophy continued

to flourish on the Continent. It attained its zenith in the *Psychologia rationalis* of Wolff: in this the simplicity, immateriality and immortality of the soul were evolved out of the bare concept of consciousness. But such *a priori* demonstrations of the nature of mind were at length rudely shaken, along with the rest of metaphysical dogmatism, by Kant. He maintained the emptiness of all concepts save as they derive their 'content' from experience, and the invalidity of all concepts when extended beyond it. For us there were no *noumena* or thought-given realities: all our knowledge was confined to *phenomena* or sense-given realities. To experience, the duality of subject and object was essential, and these factors in isolation were not *res completae* but purely problematic concepts, about which there might be faith or speculation, but certainly not knowledge. In whatever way our practical interest in such problems as that of immortality may be met, they have, at any rate since Kant's day, ceased to be regarded as psychological problems[1], and psychology has now become entirely an empirical science, divested alike of theological and of metaphysical assumptions. The recognition of the inseparability of subject and object in experience, which was a cardinal doctrine with Kant, has helped too to bring the mind theory into line with the life theory; but in place of the life of body, organic life, we have now the life of mind, psychical life. But mind here properly denotes the subject of experience, the Ego—as we sometimes say—in contradistinction to the Non-Ego or object of experience; and mental life is tantamount to experience as the interaction of the two. It is with this mental life that Subjective Psychology, as contrasted with the Objective Psychology of Aristotle, is primarily concerned[2].

But Locke and his successors, Kant included, were still hampered by the defective analysis of the facts of mental life, which they took over from Descartes, while rejecting more or less completely his metaphysical assumptions. That analysis, it has just been said, was unduly intellectualistic: in other words, as Descartes conceived the subject as essentially intellectual, so he regarded its experience as fundamentally cognitive. The only experience he recognised was experience at

[1] For Kant himself immortality was a postulate of the practical reason.

[2] Cf. on this distinction, H. Spencer's *Principles of Psychology*, pt. I. ch. VII.

the self-conscious level; and in this he tended first to identify the experience with the self-consciousness, the whole with the part, and next to identify the cognitions of self-consciousness with the facts cognised. Each of these twin errors we must examine in turn.

In external perception the mind, Descartes conceived, "turned towards the body," but in self-consciousness "it turned in some way upon itself." In keeping with this Locke distinguishes sensation and reflexion as the two sources of simple ideas, the one of the ideas of the sensible qualities of external objects, the other of the ideas of the mind's own operations. Reflexion, though not actually a sense, is yet, he says, "very like one, and might properly enough be called *internal sense*[1]." And Kant proceeded without misgiving so to regard it and placed external sense and internal sense on a par as distinct but co-ordinate sources of experience, the one of the experience of physical phenomena, the other of the experience of psychical phenomena. So we get a new dualism, the dualism of phenomena, which serves to keep the old dualism of substances in countenance[2]; and with it we get also a new definition of psychology that is scarcely better than the old. Psychology becomes the science of internal experience as observed through the inner sense, and so is sharply contrasted, though otherwise co-ordinate, with the sciences of external experience, which treat of the objects observed through the outer senses. One step more and the subject and the object of our immediate experience seem again to fall completely apart. This step was taken, for example, by Bain, who distinguishes object-experience from subject-experience, and confines psychology to the latter. He further refers to these as two worlds, "the one circumscribed by one property, extension," the other definable "negatively by a single fact, the absence of extension[3]." But it is certain that immediate

[1] *Essay*, II. i. 4.

[2] Thus we find Hamilton saying: "Mind and matter, as known and knowable, are only two different series of phenomena or qualities; mind and matter, as unknown and unknowable, are the two substances in which these two different series of qualities are supposed to inhere. The existence of an unknown substance is only an inference we are compelled to make, from the existence of known phenomena; and the distinction of two substances is only inferred from the seeming incompatibility of the two series of phenomena to coinhere in one." *Lectures on Metaphysics*, vol. i. p. 138.

[3] *Mental Science*, pp. 1 f.

experience is never thus sundered, and obvious, therefore, that in all this there is some confusion which we must endeavour to clear up.

We may note first of all that the phrase 'internal sense' is a complete misnomer, save where reference is intended solely to what is internal to the organism. But here 'internal' is meant to distinguish what occurs 'in the mind' from what occurs out of the body, and involves a correlation of 'in' and 'not in,' *i.e.* 'out of,' which is as absurd as contrasting what occurs in a given day with what occurs outside of a given door. And as to an internal *sense*—even if it were allowable to speak with Locke of sensory "impressions of *objects* extrinsical to the mind"—what could be the meaning of sensory impressions from "powers intrinsical and proper to [the *subject*] itself[1]"? The physiologist who recognises organs and 'centres' of the outer sense knows nothing of any such in the case of this supposed 'inner sense.' Locke bids us "follow a child from its birth and observe the alterations that time makes," and he then himself briefly describes the child's gradual advance till "in time it comes to reflect on its own operations about the ideas got by sensation." But when this stage is reached Locke does not suppose that the child passively receives impressions differing from all previous ones, as the sensations of colour for one couched differ from all his preceding sensations. In the earlier stage the child was conscious, but not self-conscious: "the constant solicitation of the senses," as Locke says, "then employed and directed [it] in looking abroad." But when at length "it turns its view inward upon itself, and observes its own actions about those ideas it has[2]," it becomes self-conscious; but it does not thereby acquire a new mode of what Kant called sensibility, comparable to the addition of a sixth sense to the five it had before. On the contrary it is only intellectually active "*about the ideas it* [*already*] *has*[3]." Beforehand it could not hear that it tasted, or taste that it heard; nor can it now, for the external senses are severally

[1] This is the 'paradox' that Kant vainly attempted to explain. The havoc wrought in psychology and philosophy by Locke's doctrine is nowhere more appalling than here and throughout the *Critique*. Cf. 2nd ed. § 24.

[2] *Essay*, II. i. §§ 22, 24, 8; vi. § 1.

[3] Thereby indeed it acquires other ideas, but these are not sensory and cannot with any propriety be called *impressions* of reflexion, as they were by Hume, for example.

distinct. But beforehand when it tasted it was not conscious of tasting, when it heard it was not conscious of hearing, as it may be now. In short, on the new level of self-consciousness the objects of the external senses are not only related to the self but both they and it are recognised as thus related: in other words, the so-called object-experience seems clearly implicated in the so-called subject-experience. How, then, can psychology be confined to the latter?

Nevertheless, must not psychology be so confined if it is the science of individual experience: otherwise wherein lies the one merit accorded to Descartes of making this subjective standpoint once for all clear? Moreover, if psychology is to embrace the experiences attained from the objective standpoint, will not the whole of knowledge fall within its domain? Questions such as these, which will naturally occur at this point, lead us at once to the main source of the confusion we are discussing.

What we have first to ascertain is whether the disjunction suggested is complete. Must the experience with which psychology is concerned be either confined to what can be known about the subject of experience, or be extended to include all that is known about the objects of experience? In other words, is the subject the only factor implicated when we occupy the subjective standpoint, and the object the only factor implicated when we occupy the objective, much as we might say that sound alone concerns us when we study acoustics, and light alone when we study optics? Certainly if we were all deaf the former science would be non-existent, and the latter if we were all blind. But we have just seen that this analogy does not apply to the distinction of so-called 'internal phenomena,' the facts of the 'inner sense,' and external phenomena, the facts of the external senses. These facts are *not* co-ordinate and they *are* mutually implicated. Of this the term phenomenon is evidence; for when a phenomenon or appearance is actual, there must also be someone to whom it appears, for whom it is a fact; and nobody will maintain that internal phenomena are exclusively perceived by one subject, and external phenomena exclusively by another. Thus we find Bain, who began by distinguishing subject-experience from object-experience, presently admitting that "object-experience is also *in a sense* mental[1]." But in what

[1] *Mental Science*, p. 2.

sense is it mental, that is to say, pertaining to psychology; and in what sense, not? This is the question that ought to clear up the confusion that Bain was content to leave alone.

We are agreed that psychology deals with individual experience, but we have found that in this experience both subject and object are factors. We have to ask, then, wherein its subjective standpoint differs from what we call the objective standpoint, in which, *apparently*, the subject is not a factor. And we can answer at once: the one is the standpoint of conscious Life —or more fully the standpoint of the living subject in intercourse with his special environment; the other is the standpoint of Science in which the characteristics of individual environments are in general ignored. But if there were *really* no subject whatever implied in the standpoint of science, how could we speak of science as concerned with object-*experience*, or as dealing with actual phenomena; and what would be the meaning of a 'standpoint' which was altogether unoccupied? The truth, however, is not that for science no subject, but only that no single subject, is implied, to whom as for psychology the experience is relative. Science is concerned with knowledge only, knowledge as it is for all; and again with knowledge only as the product of many co-operating minds, not as a process in one. Moreover the process entails both feeling and conation with which science in general is not concerned.

The failure of the pre-Kantian thinkers to apprehend the bearing upon psychology of a distinction in itself so clear, was due in the first place to their neglect of comparative psychology and the consequent restriction of the science to the data of self-consciousness which this neglect entailed. They recognised indeed, as we have seen that Aristotle—and still more, Descartes—did, the discontinuity that the possession of self-consciousness and reason placed between man and the lower animals. But they did not realise that both reflexion and reasoning are the result of social intercourse, the gradual development of which has produced this gulf between man and brute. Assuming that each man by himself is rational instead of recognising that humanity has achieved rationality, they then proceeded to confound psychology with that division of philosophy which is now called epistemology, or the theory of knowledge. In fact, it was mainly for the sake of epistemological problems that they

were led to take up psychological investigation at all[1]. It was reserved for Kant first to discern the fundamental difference between the two inquiries, thanks, however, to the philosophical deadlock into which his predecessors were led by confusing them.

But we can all now see that 'subjective' and 'objective' have different meanings in psychology and in epistemology. In epistemology, 'objective,' we might say, means so much of experience as is common property, and 'subjective' so much as is private property: in psychology, 'subjective' refers to the owner and 'objective' to the property that he owns. But science regarded what is common property as if it were not property at all, and psychology assumed private ownership to be the only ownership. Again the 'subjective objects' of psychology were not found among the 'objective objects' of epistemology, and so were regarded as only copies or symbols of these originals, which science placed somehow within the man's head and psychology found within his consciousness. So the result was reached: a subject without real objects, and real objects without an assignable subject, a non-extended subject-world and an extended object-world without any satisfactory account of their connexion. The Cartesian dualism still lingered on. This was the *impasse* that led Kant to expose the 'transcendental realism' of the latter world, and Reid to protest against the 'subjective idealism' of the former. What Reid meant to say was:—In perception we are not conscious of ideas in us, but we affirm objects present to us. What Kant said was:—The objects of science only become objects for and through our common experience; they are not, for experience, at any rate, things in themselves and apart. Combined, these statements amount to a recognition of the duality of subject and object throughout all experience, individual as well as universal. But still the psychological analysis of Kant and Reid was inadequate to do justice to this duality of individual

[1] This was avowedly the case with Locke: his famous *Essay* only professed to deal with the human understanding. Hume's mature work had the same aim and an almost identical title, and Berkeley called his one systematic treatise, *A Treatise concerning the Principles of Human Knowledge*. Even writers as recent as Hamilton and Mansel only treat of psychology under the name of Metaphysics. Indeed until comparatively lately the interest in psychical facts rarely extended further than seemed required by such problems as those concerning the criteria of knowledge, the grounds of moral responsibility or the existence of a life beyond.

experience as one of Ego and Non-Ego, Self and Other. This point brings us to the second of the twin errors just now signalised[1], the tendency to treat the facts cognised by the self-conscious subject in reflexion as being themselves cognitions.

The Cartesian Dualism and Intellectualism.

§ 4. This in one form or other is an inveterate error: I have formerly described it as "a confusion between the standpoint of a given experience and the standpoint of its exposition," and as "one to which no other science is liable except psychology and the sciences dependent upon it." Professor James afterwards named this error 'the psychologist's fallacy,' and the name is now commonly adopted[2]. As a consequence of this fallacy the pure feelings of pleasure and pain, for example, which are entirely subjective—in the psychological and not merely in the epistemological sense—were described as psychologically objective, and classed among sensations or percepts, because we come to have 'ideas' about them when we attain to the standpoint of social intercourse and self-consciousness. And again because at this level a general connexion was discernible between pleasure and increased vitality on the one hand, and between pain and diminished vitality on the other, the feelings themselves were identified with the consciousness of some perfection or imperfection in ourselves, and finally defined by Wolff as "the intuitive cognition of any perfection or imperfection whatever, real or apparent[3]." This failure to realise the purely subjective and unique character of feeling is common to all our earlier British psychologists from Locke to Reid. It was first corrected by Tetens, who insisted on what is called the tripartite division of faculties into cognitive, affective, and conative; but this classification, now almost universally accepted, only obtained general recognition through the advocacy of Kant, who was a pupil of Tetens. As a further consequence of their intellectualistic

[1] Cf. p. 14 above.

[2] Cf. J. Ward, "A General Analysis of Mind," article in the *Journal of Speculative Philosophy*, 1882; W. James, *Principles of Psychology*, 1890, vol. i. p. 196.

[3] Cf. Descartes, *Letter to the Princess Elizabeth*, Sept. 1645; Wolff, *Psychologia empirica*, §§ 511, 518. It is a nice question how far this view is justly attributable to Descartes, notwithstanding the unanimity that has hitherto prevailed on the point.

bias, the earlier psychologists strangely neglected the important *rôle* that bodily movements sustain in every stage of experience—a fact that even Aristotle had not failed to recognise. Not till the beginning of the last century[1], and then thanks mainly to the physiologists, were these movements seen to be not only an indispensable factor in every act of perception—as evidenced in listening, looking, sniffing, tactually exploring—and a chief source of our knowledge of the primary properties of things—extension and resistance—but to be also in the various phases of reflex, sensori-motor and ideo-motor action, so many steps in the development of volition. But the mature volition alone was taken into account by the psychologists who looked to self-conscious reflexion for all their data. And since this mature volition is normally always determined by reasons, the so-called active powers were regarded as throughout secondary to the so-called intellectual.

But a decided reaction against intellectualism, which first set in more than a century ago among philosophers[2], has since been greatly extended and confirmed by the ascendancy of evolutionary ideas and the consequent growth of genetic and comparative psychology. The result is that in the present day psychologists are beginning more and more generally to insist that not intellect but will, not cognition but conation, not sensitivity but activity, is the clue to a true understanding of the character and development of experience. A winged cherub—all head and no body—might suffice, as Schopenhauer suggested, for the purely contemplative experience of Descartes' *res cogitans*. But the fact that the inlets to knowledge are primarily subservient to the inlets to food and air, which they encircle, shews unmistakably that experience, as the psychologist deals with it,

[1] The part played by the so-called muscular sense in the appreciation of 'weight' or 'resistance' was pointed out by certain Italian physicians as early as the 16th century (see Hamilton's *Reid*, p. 867 note), but their views failed to gain attention and were forgotten.

[2] It began with Kant's assertion of the primacy of the practical reason, which Fichte reiterated with new emphasis: the *objects* of theory were there solely for the sake of the projects of practice, the external world is nothing but a means for the attainment of the moral end. Schopenhauer's *The World as Will and Idea* (indicating by its mere title the inversion of the old order), has, despite its disjointed and 'romantic' speculation, exercised a profound influence by its forcible and detailed defence of this topic, though many who have adopted his arguments have not thought it proper to mention his name.

is primarily and pre-eminently practical. Obvious as this must appear to those who look at the facts of life in the light of the theory of evolution, yet it is a truth that was for the most part overlooked so long as psychology was studied mainly in its bearing on philosophical problems. But the notion of an independent realm of truth existing *sub specie aeternitatis* has literally no place within the purview of a psychology that knows its business. Here we find no such thing as mere cognition: the uninteresting is not known but ignored, and the interesting leads at once to response, and sooner or later to adjustment—in the race, at all events. Success is then completed experience or expertness, and in general prepares the way for a new advance. So far the true is the useful, and the criterion is not theoretical but practical. Looking broadly at the progress of life, as it ascends through the animal kingdom and onwards through the history of man, it seems safe to say that knowledge is always a means to ends, is never an end by itself—till at length it becomes interesting and satisfying in itself. Psychologically regarded, then, the sole function of perception and intellection is, it is contended, to guide action and subserve volition—more generally to promote self-conservation and betterment.

Consciousness and Experience.

§ 5. For psychical life so regarded, 'experience' is the obvious term, and the term which in our ordinary affairs is the one usually employed. But in psychology the far less appropriate term 'consciousness' holds the field, and its manifold ambiguities are something of a scandal. It is continually confused with self-consciousness, which was its original meaning[1]; and thereby the errors of intellectualism, which we have just discussed, are apt to be perpetuated and a part of experience mistaken for the whole. "Everybody knows what consciousness is," we are told, "for everybody is conscious." But this is only true when it becomes trivial: every experient is experient. A mouse, we believe, feels and strives: feeling and striving are then factors of its experience, but we have no reason to think that they are objects of its knowledge. They may become such for

[1] Cf. *e.g.* Locke's definition:—"Consciousness is the perception of what passes in a man's own mind," *Essay* II, i. § 19.

a man, no doubt; but there is much, even in his experience, of which we should say that he is conscious no longer or not conscious as yet. For in ordinary language we tend to speak of being 'conscious of' only what we specially attend to: in this sense the adept is no longer conscious of the painstaking efforts by which he first acquired his skill, and the tyro is not yet conscious of the subtle differences to which, as a connoisseur, he will come to attend. In psychology, however, consciousness is regarded as admitting of indefinite gradations. Indeed this is often given as "its capital and pervading idea. ...Consciousness is co-extensive with mental life" in so far as "that life is considered to rise or to fall in degree[1]." Variations of intensity are certainly characteristic both of the psychical and of the physical: this fact alone then will not serve to define them, nor will it alone enable us to distinguish the one from the other. But we hear not only of degrees of consciousness, but also of operations of consciousness, states of consciousness, contents of consciousness and form of consciousness; and here, obviously something more than variations of intensity is implied. As instances of operations—perceiving, remembering, comparing, desiring, resolving, and the like would probably be cited. But, though it does not strike us as strange to speak of consciousness *of* remembering or *of* desiring—since for a self-conscious subject such reflective cognition is possible—it does seem forced to speak of consciousness remembering or desiring; for the self-conscious subject does not say: My consciousness remembers or desires, but, I do so. If, then, it is the subject of experience that is active, why should activity be attributed to consciousness, which after all is but an abstract term; not a conscious being, but the state of being conscious, which surely implies a conscious being?

The answer to this question is to be found not in the facts of experience but in the history of psychological theories concerning

[1] So Bain, who gives this as the first of thirteen meanings of consciousness, a topic, which on account "of the subtleties and complications involved in it" he reserves for a closing dissertation, *Emotions and Will*, 3rd ed., 1875, p. 545. Again, Fleming: "The meaning of a word is sometimes best attained by means of the word opposed to it. *Unconsciousness*, that is, the want or absence of *consciousness*, denotes the suspension of all our faculties. Consciousness, then, is the state in which we are when all or any of our faculties are in exercise." *Vocabulary of Philosophy*, 3rd ed., 1875, p. 105.

them. It is to be found, that is to say, in the reaction against the Cartesian doctrine, that experience is nothing but modes of a *res cogitans*. The conscious substance, it was held, lay beyond the pale of science, but the modes were supposed to remain within it; in other words, as we have already seen, the Cartesian analysis of mind was retained, though its philosophy of mind was rejected[1]. This was a very naïve proceeding, for—as just said—the so-called modes of consciousness are themselves neither conscious nor active, and without the explicit recognition of either subject or object are really unmeaning. Two alternatives were then open. Having eliminated the subject of experience along with the substance, some psychologists proceeded to hypostatize or personify consciousness, and assigned to it the *rôle* of subject; these are the psychologists who talk freely of operations of consciousness and states of consciousness, and tell us that "everybody knows what consciousness is."

Others have preferred to restore the missing reality from the object side; and they first resolve all the 'modes' into ideas or presentations, and then from such 'mind-*stuff*' and its interactions they proceed to build up experience in a quasi-mechanical, quasi-chemical fashion[2]. 'Content of consciousness' is the favourite phrase of these psychologists. Often they allow that such content of consciousness implies 'the form of consciousness,' implies, that amounts to saying, a conscious subject; but they attempt, on methodological grounds, to justify the omission of all recognition of this which is only 'the *general* condition' of the content's existence and not a part of the content itself. Such a plea rests upon a complete misapprehension of the psychological standpoint. The empirical psychologist, it is contended, should imitate the procedure of the natural or objective sciences. But this he cannot do; for the two standpoints, as we have just seen, are entirely different. The language the physicist uses is simply: there *is* this or that—*a*, *b*, *c*, or *d*. But the psychologist cannot by saying: there are such and such presentations or

[1] Cf. above, p. 12.

[2] For this doctrine I have suggested the name of Presentationism: it is often called Sensationism or Associationism; the first because sensations are regarded as the elements or atoms of which its 'contents of consciousness' ultimately consist: the second because the combination of these elements is supposed to be effected by a sort of 'cohesion' among those that are contiguous and by an 'attraction' of those that are similar.

feelings or movements—as if they were independent entities —bring out the characteristics of his own standpoint. To this end his statements must (and always do), either explicitly or implicitly, take the form: *The individual experient has* such and such presentations, feels thus or thus, and acts in this wise or in that. And this is 'the form of consciousness': to eliminate *it* is to ignore the concrete experience of the individual subject altogether, and to abolish what is characteristic of psychology. When its 'absolute presupposition' goes the content is no longer content of consciousness in the psychological sense.

The form of Experience and questions of method.

§ 6. To deal adequately with experience we must combine what is positive in both these alternative views. The so-called operations and states of consciousness are not mere modes *in vacuo*: they imply an active and affectible subject, and it can only conduce to clearness to make this fact as explicit as possible. The so-called contents of consciousness again, though not necessarily actions or affections of the subject, are never objects *per se*; but to be contents of consciousness they must be objects for a subject. The form of consciousness cannot, then, be expressed by contrasting consciousness with unconsciousness in respect of intensity; nor by contrasting psychical phenomena with physical, the inextended with the extended, nor indeed by any single term which does not recognise the duality of subject and object. The one term that does recognise this duality most simply is experience. And experience we find is not merely nor primarily cognitive; neither does it always attain, nor is it ever entirely confined, to that joint-knowledge which the term con-sciousness originally denoted.

The most complex form of experience that we know is our own. We find simpler and ever simpler forms of experience as we pass backwards from man to the higher mammals, and from these to the lower mammals and birds, and thence to reptiles and fish. Long before we reach the end of the chain of animal life however it becomes a moot question whether there is any clear evidence of the presence of experience at all. Experience appears, that is to say, to be a comparatively late result of

organic evolution, and human experience to be the summit of a long progressive series. Now this idea of gradual evolution has certainly exerted a powerful influence upon modern psychology. It is the less surprising therefore—especially when we remember the defects of the older psychology—to find that the attempt is now frequently made to treat psychology wholly according to the historical, or as it is oftener called, the genetic, method. In biology such a procedure is possible; for the protozoan as well as man, the paragon of animals, is equally accessible as an organism. But the only *experience* immediately accessible to us is our own, and this—in spite of its complexity—is the first we know and the one we know best. Lower forms of experience, notwithstanding their greater simplicity, we know later and know less. Accordingly all attempts—regardless of this difference—to treat of human experience as merely the culmination of a long but entirely objective development, have so far been marked by serious defects. The start is avowedly physiological—from what is metaphorically described as 'organic behaviour,' meaning thereby such adaptability of organism to environment as seems to be determined solely and completely by the organism's structure, and from its apparently automatic and invariable character to require merely mechanical explanations. Later on, psychological conceptions are gradually introduced to eke out the shortcomings of the mechanical interpretation, when the spontaneity of the behaviour and its varying adjustment to varying conditions suggest that the machine is more or less under guidance.

So, as we advance, we pass as it were insensibly from biology proper to psychology proper, from the living protoplasm of the *Amoeba* to the living experience of man. We began with mechanism and we end with mind. But the psychology, when we reach it, is apt to be of the Presentational or Sensational type, since a psychology of this type can be most readily equated to the physiology from which the exposition set out. We have, that is to say, a 'physiological psychology' of the very worst sort; where physiological and psychological conceptions are for ever coquetting with each other, and where, as a result, unseemly hybrids are not infrequent[1]. If it be a sound maxim to proceed

[1] Cf. *e.g.* Huxley's 'ideagenous molecules' as 'a physical basis of memory,' *Collected Essays*, I. p. 239.

from the known to the unknown, then Analytic Psychology, starting from human experience should precede any attempt to treat of the genesis of experience as a whole, or to correlate psychology with physiology. And when psychology is regarded not simply as ancillary to philosophy or theology, but is studied throughout with scientific impartiality, there are happily facts in plenty within the range of human experience, though long overlooked as trivial or unimportant, which throw far more light on, say the problem of instinct, than biology alone could ever bring to bear. But in truth there is no question of a choice of methods: in every case physiological and comparative psychology must fall back on the facts and analogies of our own experience.

The Standpoint of Psychology as individualistic.

§ 7. We conclude then that psychology cannot be defined by reference to a special subject-matter as such concrete sciences, for example, as mineralogy and botany can be; and yet, since it deals in some sort with the whole of experience, it is obviously not an abstract science in any ordinary sense of that term. To be characterized at all, it must be characterized by the standpoint from which this experience is viewed. This standpoint is sometimes termed 'individualistic,' that of the so-called object-sciences being distinguished as 'universalistic.' But both alike are to be regarded as 'objective' in the sense of being true for all—consisting of what Kant would call judgments of experience. For psychology is not biography in any sense, least of all biography as dealing with idiosyncrasies, and in an idiom having an interest and a meaning for one subject only, and incommunicable to any other. Locke, Berkeley and Hume have been justly censured because they regarded the critical investigation of knowledge as a psychological problem, and set to work to study the individual mind simply for the sake of this problem. But none the less their standpoint was the proper one for the science of psychology itself; and, however surely their philosophy was foredoomed to failure, there is no denying a steady psychological advance as we pass from Locke to Hume and his modern representatives. By 'idea' Locke tells us he means "whatsoever is the object of the understanding when a man thinks" (*i.e.* is conscious). But shut in within such a circle of ideas he found

himself powerless to explain his knowledge of a world assumed to lie beyond it and to be independent of it. Though he was able to give a very good account of some of those ideas themselves, he could not justify his belief in the universal world of things whence, as he supposed, certain of them 'were conveyed'; any more than Robinson Crusoe could have explored the continents whose existence he inferred from the strange products that were drifted to his island, though he might perhaps survey the island itself well enough. Berkeley accordingly, as Professor Fraser happily puts it, abolished Locke's hypothetical outer circle. Thereby he made the psychological standpoint clearer than ever —hence the truth of Hume's remark, that Berkeley's arguments "admit of no answer"; at the same time the epistemological problem was as hopeless as before—hence again the truth of Hume's remark that those arguments "produced no conviction." Of all the facts with which he deals, the psychologist may truly say that their *esse* is *percipi*, in so far as such facts are facts of presentation, are ideas in Locke's sense, or objects which imply a subject. Before we became conscious there was no world for us; should our consciousness cease, the world for us ceases too; had we been born blind, the world would for us have had no colour; if deaf, it would have had no sounds; if idiotic, it would have had no meaning. Psychology, then, never transcends the limits of the individual.

But now, though this Berkeleyan standpoint is its standpoint, psychology in the first place is not pledged to the method employed by Berkeley and by Locke; and in the second place must repudiate altogether the Cartesian confusion of presentations with subjective modifications in which they shared. Psychology may be individualistic without being confined exclusively to the introspective method. There is nothing to hinder the psychologist from employing materials furnished by his observations of other men, of infants, of the lower animals, or of the insane; nothing to hinder him taking counsel with the philologist or even the physiologist, provided always he can show the psychological bearings of those facts which are not directly psychological. But by whatever methods, from whatever sources its facts are ascertained, they must—to have a psychological import—be regarded as having a place in, or as being a constituent of, *someone's experience*. In this sense, *i.e.* as presented

to an individual, 'the whole choir of heaven and furniture of earth' may belong to psychology, but otherwise they are beyond its scope.

Psychology then we define as the science of individual experience—understanding by experience not merely, not primarily, cognition, but also, and above all, conative activity or behaviour.

CHAPTER II

GENERAL ANALYSIS

Psychology and Epistemology.

§ 1. We have just seen that in seeking to make a first general analysis of experience, we must start from individual human experience; for it is this alone that we immediately know. From this standpoint we have now to endeavour to determine the 'irreducible minimum' which all experience involves; in other words, to reach a concept applicable to every other form of experience as well as to our own. Etymologically *experience* connotes practical acquaintance, efficiency and skill as the result of trial—usually repeated trial—and effort. Many recent writers on comparative psychology propose to make evidence of experience in this sense the criterion of psychical life. The ox knoweth his owner and the ass his master's crib, and so would pass muster; but the ant and the bee, since they are said to learn nothing, would, in spite of their marvellous instinctive skill, be regarded as mere automata in Descartes's sense. That this criterion is decisive on the positive side will hardly be denied; the question how far it is available negatively we must examine later on. *Experience is the process of becoming expert by experiment*, let us say meanwhile. It will be well next briefly to note some of the implications of this positive criterion. The chief implication, no doubt, is that which in psychological language we express as the duality of subject and object—already strenuously insisted on in the preceding chapter. Looking at this relation as the comparative psychologist has to do, we find that it tallies in the main with the biological relation of organism and environment. The individuality of the organism corresponds to, though it is not identical with, that of the psychological subject; while to the

environment and its changes corresponds the continuously changing objective *continuum* or *totum objectivum*, as we shall call it, though again the two are not identical. This double correspondence helps us to see still more clearly the error of regarding individual experience as wholly subjective, and at the same time helps us to find some measure of truth in the naïve realism of Common Sense. As these points have an important bearing on the connexion of psychology and epistemology, we must attempt to elucidate them more fully.

Though it would be unwarrantable to resolve a *thing*, as some have done, into a mere meeting-point of relations, yet it is perhaps as great a mistake to assume that it can be anything determinate in itself apart altogether from relations to other things. By the physicist this mistake can hardly be made: for him action and reaction are strictly correlative: a material system can do no work on itself. For the biologist, again, organism and environment are invariably complementary. But in psychology, when presentations are regarded as subjective modifications, we have this mistaken isolation in a glaring form, and all the hopeless difficulties of what is called 'subjective idealism' are the result. Subjective modifications no doubt are always one constituent of individual experience, but always as correlative—directly or remotely—to objective modifications or changes—present or prospective—in the objective *continuum*. If experience were throughout subjective, not merely would the term 'subjective' itself be meaningless, not merely would the conception of the objective never arise, but the entirely impersonal and intransitive process that remained, though it might be described as 'absolute becoming[1],' could not be called even solipsism, least of all real experience. Wherever experience is inferred, Common Sense, then, is right in positing a real agent answering to what we know as Self and interacting with another reality answering to what each of us knows as the World. It is further right in regarding the world which each of us immediately knows, as a coloured, sounding, tangible world—more exactly, as a world of sensible qualities. But the assumption of naïve realism, that the world *which each one knows*, exists as he knows it, independently of him, is questionable, to say the least. This assumption, however, goes beyond

[1] Cf. Herbart, *Einleitung in die Philosophie*, Hartenstein's ed., 1850, § 129.

individual experience, and does not, indeed could not, arise at this standpoint.

Answering to the individuality and unity of the subjective factor, there is a corresponding unity and individuality of the objective. Every Ego has its own correlative Non-Ego. The doctrine of Leibniz, that "each monad is a living mirror.. representative of the universe according to its point of view," will, with obvious reservations, occur to many as illustrative here. In particular, Leibniz emphasized one point on which the psychologist will do well to insist. "Since the world is a plenum," he begins, "all things are connected together and every body acts upon every other, more or less, according to their distance, and is affected by their reaction; hence each monad is a living mirror[1]," &c.—continuing as above. Subject and Object, or (as it will be clearer in this connexion to say) Ego and Non-Ego, are then not merely logically a universe, but actually *the universe*, in so far as, as Leibniz put it, "He who sees all could read in each what is happening everywhere[2]." Though every individual experience is unique, yet the more Ego_1 is similar to Ego_2 the more their complementaries $Non\text{-}Ego_1$, $Non\text{-}Ego_2$ are likewise similar; much as two perspective projections are more similar the more adjacent their points of sight; and more similar as regards a given position the greater its distance from both points. And thus beyond a certain finite limit the universe will be indistinguishably the same for both. It was only by including this outer region of 'confused perception' that Leibniz could call *the universe* the objective factor in each and every individual's experience. But we too shall have to allow that, besides the strictly limited 'field' within the bounds of 'clear perception,' there is an indefinite 'extension' of the presentational *continuum* beyond it[3]. Again, the Leibnizian Monadology helps us also to clear up a certain confusion that besets terms such as 'field of consciousness,' or 'finite centre of experience'—a barbarous but intelligible phrase that has recently appeared—their confusion, that is, with a mosaic of mutually exclusive areas, or with a scheme of mutually exclusive logical compartments. Consciousnesses,

[1] *Principles of Nature and Grace*, § 3.
[2] *Monadology*, § 61.
[3] Cf. below, ch. iv, § 6.

though in one respect mutually exclusive, do not limit each other in this fashion. For, though relatively different as to their point of view, it is the same absolute whole which is sundered into subjective and objective factors for each.

This way of looking at the facts of mind helps too to dispel the obscurity investing such terms as *subjective, objective, intersubjective* and *transsubjective*, as these occur in psychological or epistemological discussions. The psychologist must maintain that no experience is merely subjective. But epistemologists who nevertheless, as we have already seen, describe individual experience as subjective—because of its particularity which pertains, like an idiosyncrasy, to the individual alone—confine the term 'objective' to universal experience, the objects of which are the same for every experient. And so has arisen the time-honoured opposition of Sense-knowledge and Thought-knowledge: so too has arisen the dualism of Empiricism and Rationalism, which Kant sought to surmount by logical analysis. It is in the endeavour to supplement this analysis by a psychological genesis that the terms 'intersubjective' and 'transsubjective' prove useful. One of the problems of psychology is to ascertain the successive stages in the advance from the one level of experience or knowledge to the other. "When ten men look at the sun or the moon," said Reid, "they all see the same individual object." But according to Hamilton this statement is not "philosophically correct...the truth is that each of these persons sees a different object....It is not by perception but by a process of reasoning that we connect the objects of sense with existences beyond the sphere of immediate knowledge[1]." Now it is to this 'beyond' that the term *transsubjective* is applied; and the question before us is: How do individual subjects thus get *beyond* the immanence or 'immediacy' with which all experience begins? By a 'process of reasoning,' says Hamilton. Yes, but psychologically there is a prior process; for it is at least true in fact, whether necessarily true or not, that such reasoning is the result of social intercourse, which obviously presupposes and rests upon individual experience. Further, it will be generally allowed that Kant's *Analytik* has made plain the insufficiency of merely formal reasoning to yield the categories of Substance, Cause and End, by which

[1] *Lectures on Metaphysics*, ii. 153.

we pass from mere perceptual experience to that wider experience which transcends it. And psychology, again, may claim to have shewn that in fact these categories are the result of that reflective self-consciousness to which social intercourse first gives rise.

But such intercourse, it has been urged, presupposes the common ground between subject and subject which it is meant to explain. How, it is asked, if every subject is confined to his own unique experience, does this intersubjective intercourse ever arise? If *no* progress towards intellective synthesis were possible before intersubjective intercourse began, such intercourse, as presupposing something more than immediate sense-knowledge, obviously never could begin[1]. Let us illustrate by an analogy which Leibniz's comparison of experience to a 'point of view' at once suggests. If it were possible for the terrestrial astronomer to obtain observations of the heavens from astronomers in the neighbouring stars, he might be able to map in three dimensions constellations which now he can only represent in two. But unless he had ascertained unaided the heliocentric parallax of these neighbouring stars, he would have no means of distinguishing them as near from the distant myriads besides, or of understanding the data he might receive; and unless he had first of all determined the still humbler geocentric parallax of our sun, those heliocentric parallaxes would have been unattainable. So in like manner we may say: 'any more general parallax' presupposes what may be called 'special parallax,' and even this presupposes the primordial duality of object and subject. Again such special parallax or acquaintance with others of its own kind is the direct outcome of the extended range in time which the individual's progress in perception and memory secured; and when in this way its (bodily) self has become an object, the objects that resemble it become other selves or 'ejects,' to adopt with slight modification a term originated by the late W. K. Clifford. We may be quite sure that his faithful dog is as little of a solipsist as the noble savage whom it accompanies. Indeed, in rudimentary form the social factor, if we may judge

[1] And it is precisely for want of this mediation that Kant's "two stems of human knowledge, which *perhaps* may spring from a common but to us unknown root," leave epistemology still more or less hampered with the old dualism of sense and understanding.

by biological evidence, is to be found very early. Sexual union in the physiological sense occurs in all but the lowest *Metazoa*, pairing and courtship are frequent among insects, while "among the cold-blooded fishes the battle of the stickleback with his rivals, his captivating manœuvres to lead the female to the nest which he has built, his mad dance of passion around her, and his subsequent jealous guarding of the nest, have often been observed and admired[1]." Among birds and mammals we find not merely that these psychological aspects of sexual life are greatly extended, but we find also prolonged education of offspring by parents and imitation of the parents by offspring. Even language, or, at any rate 'the linguistic impulse,' is not wholly absent among brutes[2]. Thus as the sensori-motor adjustments of the organism to its environment—*generally*—advance in complexity and range, there is a concomitant advance in the variety and intimacy of its relations—*specially*—with individuals of its own kind. It is therefore reasonable to assume no discontinuity between phases of experience that for the individual are merely objective and phases that are also ejective as well; and once the ejective level is attained, some interchange of experience is possible. So disappears the great gulf fixed betwixt subjective or individual and intersubjective or universal experience by rival systems in philosophy.

The Subject of Experience.

§ 2. From this preliminary epistemological discussion we may return to the psychological analysis of experience itself. As to this, there is in the main substantial agreement; the elementary facts of experience cannot be expressed in less than three propositions—"I feel somehow," "I know something," "I do something." But here at once there arises an important question which claims consideration before we attempt to discuss the meaning or the merits of this analysis itself, the question:—What after all are we to understand by the subject of these propositions? The proposition "I feel somehow" is not equivalent to "I know that I feel somehow." Though it

[1] *Evolution of Sex*, by Geddes and Thomson, 1st ed. p. 265.

[2] Cf. Darwin, *Descent of Man*, 1871, i. pp. 53 ff.

cannot actually be made without implying this knowledge, yet to identify the two would be to confound consciousness with self-consciousness. The point is that, whether seeking to analyse one's own consciousness or to infer that of a lobster, whether discussing the association of ideas or the expression of emotions, there is always an individual self or 'subject' in question. It is not enough to talk of feelings or volitions: what we mean is that some individual—man or worm—feels, strives, acts, thus or thus. Obvious as this may seem, it has been frequently either forgotten or gainsaid. It has been forgotten among details or through the assumption of a medley of faculties, each of them treated as an individual in turn, so that among them the real individual was lost. Or it has been gainsaid, because to assert that all psychological facts pertain to an experiencing subject or experient was supposed to imply that they pertained to a particular spiritual substance, which was simple, indestructible, and so forth; and it is manifestly desirable to exclude such assumptions from psychology as a science aiming only at a systematic exposition of what can be known and verified.

But, however much assailed or disowned, the concept of a 'self' or conscious subject is to be found implicitly or explicitly in all psychological writers whatever—not more in Berkeley, who accepts it as a fact, than in Hume, who treats it as a fiction. This being so, we are far more likely to reach the truth eventually if we openly acknowledge this inexpugnable assumption, if such it prove, instead of resorting to all sorts of devious periphrases to hide it. Now wherever the word *Subject* and its derivatives occur in psychology we might substitute the word Ego and analogous derivatives, did such exist. But Subject is almost always the preferable term; its impersonal form is an advantage, and it readily recalls its modern correlative Object. Moreover, Ego has two senses, distinguished by Kant as pure and empirical, the latter of which was, of course, an object, the *Me* known, while the former was subject always, the *I* knowing. By pure Ego or Subject it is proposed to denote here the simple fact that everything experienced is referred to a Self experiencing. This psychological concept of a self or subject, then, is after all by no means identical with the metaphysical concept of a soul: it may be kept as free from metaphysical implications as the concept of the biological

individual or organism with which it is so intimately connected.

It would, however, be a mistake to seek to explain the individuality of the psychological subject by reference to the individuality of the organism. Yet this mistake has been made by those who represent the individual 'mind' as a complex of faculties which work consentiently like the organs of the body, and are sometimes active and sometimes quiescent. As an animal has legs whether it is walking or not, so they suppose a mind has a memory, whether it is remembering or not. But the analogy is false. If we find anything among the facts of psychology corresponding to the parts or organs of the animal body, these would rather be the ideas, objects or presentations which constitute the 'contents of consciousness.' In the unity of this content at any one moment and its continuity from moment to moment we have indeed a certain counterpart to the unity and continuity of the body. Still this unity and continuity of the contents of consciousness is not what we mean by the psychological subject; on the contrary, we look to the psychological subject for an explanation of that unity. And we may have to look to it too for an explanation of the unity of the organism. At any rate, as soon as the biologist regards the organism as adapted to the end of living and surviving in a struggle for life—thereby giving to life a meaning other than that of a series of physical processes—he has changed his front. Such teleological references imply feeling, and effort or impulse, as the result of feeling: and it is just these purely psychological facts of feeling and impulse that compel us to recognise a conscious subject as well as a unity and continuity of the so-called contents of consciousness.

Still the attempt, at least, has frequently been made to resolve the former into the latter, and so to accord to mind only such an individuality as has an obvious counterpart in the individuality of the organism, *i.e.* what we may call an objective individuality. But such procedure owes all its plausibility to the fact that it leaves out of sight the difference between the physiological and the psychological standpoints. For the physiologist a dog, say, is simply a certain wondrously complex mechanism, whose working he essays to describe entirely in terms of matter and motion. If this be all that he means by

dog, then a dog is simply "the sum of the phenomena which make up this corporeal existence[1]." And inasmuch as its presentation to anyone in particular is a matter of no importance, the fact of presentation at all may be very well dropped out: the biological dog is just that complex whole and no more. But to say that this 'sum of phenomena' is only the *body* of the dog, implies that the dog itself has some distinct existence, is, in fact, the soul or self or subject that has that body. Let us now turn to the distinct whole, whose existence is thus implied. "Leaving aside the problem of the substance of the soul," why it is then asked, should we not here take "the word 'soul' simply as a name for the series of mental phenomena which make up an individual mind, just as we took 'body' as the name for the sum of material phenomena that make up an organism"? Surely the moment we try distinctly to understand this question, we realise that the cases are different. 'Series of mental phenomena' for whom? For any passer-by such as might take stock of our biological dog? No, obviously only for that 'individual mind' itself. But then that is supposed to be made up of, to be nothing different from, the said 'series of phenomena.' Are we, then, (1)—using the words of J. S. Mill—"to accept the paradox that something which *ex hypothesi* is but a series of feelings, can be aware of itself as a series[2]"? Or (2) shall we say that the several parts of the series are mutually phenomenal, much as A may look at B, who was just now looking at A? Or (3) finally, shall we say that a large part of the so-called series, in fact every term but one, is phenomenal for the rest—for that one?

As to the first, paradox is too mild a word for it; even contradiction will hardly suffice. It is as impossible to express 'being aware of' by one term as it is to express an equation or any other relation by one term: what knows can no more be identical with what is known than a weight with what it weighs[3]. If a series of 'feelings' is what is known or presented, then what knows, what the series is presented to, cannot be itself that series of feelings; and this without regard to the point Mill

[1] Cf. T. H. Huxley, *Hume*, "English Men of Letters Series" (1879), pp. 171 f. *Collected Essays*, vi. p. 199.

[2] *Examination of Sir W. Hamilton's Philosophy*, ch. xii. *fin.*

[3] So far as our experience goes, at least: as to the Absolute we can here say nothing.

mentions, viz. that the infinitely greater part of the series is either past or future. The question is not in the first instance one of time or substance at all: it turns simply upon the fact that knowledge or consciousness is unmeaning except as it implies something knowing, or conscious of, something. But it may be replied: Granted that the formula for consciousness is something doing something, to put it generally; still, if the two somethings are the same when I touch myself or when I see myself, why may not agent and object be the same when the action is knowing or being aware of; why may I not know myself—in fact, do I not know myself? Certainly not; agent and object never are the same in the same act; such terms as self-caused, self-moved, self-known, *et id genus omne*, either connote the incomprehensible or are abbreviated expressions—as *e.g.* when we talk of touching oneself when one's right hand touches one's left.

And so we come to the alternative:—As one hand washes the other, may not different members of 'the series of feelings' be subject and object in turn? Compare, for example, the state of mind of a man succumbing to temptation (as he pictures himself enjoying the coveted good and impatiently repudiates scruples of conscience or dictates of prudence) with his state when, filled with remorse, he sides with conscience and condemns this 'former self'—the 'better self' having meanwhile become supreme. Here that organized group of presentations and their associated sentiments and motives, which together played the *rôle* of self in the first situation, have—only momentarily it may be true, but still have—for the time the place of not-self; and under abnormal circumstances this partial alteration may become complete alienation, as in what is called 'double consciousness.' Or again, the development of self-consciousness might be loosely described as taking the subject or self of one stage as an object in the next—self being, *e.g.*, first identified with the body and afterwards distinguished from it. But all this, however true, is beside the mark; and it is really a very serious misnomer to speak, as *e.g.* Herbert Spencer does, of the development of self-consciousness as a 'differentiation of subject and object.' It is rather a differentiation of object and object, *i.e.* in plainer words, it is a differentiation among presentations—a differentiation every step of which

implies just that relation to a subject which it is supposed to supersede[1].

There still remains the alternative, expressed in the words of J. S. Mill, viz. "the alternative of believing that the Mind or Ego is something different from any series of feelings or possibilities of them." To admit this, of course, is to admit the necessity of distinguishing between Mind or Ego, meaning the unity or continuity of consciousness as a complex of presentations, and Mind or Ego, meaning the subject to which this complex is presented. In dealing with the body from the ordinary biological standpoint no such necessity arises. But, whereas there the individual organism is spoken of unequivocally, among psychologists, on the other hand, the individual mind may mean either (i) the series of 'feelings' or 'mental phenomena' above referred to; or (ii) the subject of these 'feelings' for whom they are phenomena; or (iii) the subject of these 'feelings' or phenomena *plus* the series of 'feelings' or phenomena themselves, the two being in that relation to each other in which alone the one is subject and the other a series of 'feelings' or phenomena, *i.e.*, objects. It is in this last sense that Mind is used in empirical psychology[2]. Its exclusive use in the first sense is favoured only by those who shrink from the speculative associations connected with its exclusive use in the second. But psychology is not called upon to transcend the relation of subject to object or, as we may call it, the fact of presentation. On the other hand, as has been said, the attempt to ignore one term of the relation is hopeless;

[1] Another variant of this second alternative was afterwards espoused and vigorously defended by William James. "Each pulse of cognitive consciousness, each thought," he says, "dies away and is replaced by another. The other, among the things it knows, knows its own predecessor, and finding it 'warm'...greets it, saying: 'Thou art *mine* and part of the same self with me.' Each later Thought, knowing and including thus the Thoughts which went before, is the final receptacle—and appropriating them is the final owner—of all that they contain and own. Each Thought is thus born an owner and dies owned, transmitting whatever it realised in its self to its own later proprietor....It is this trick which the nascent thought has of immediately taking up the expiring thought and 'adopting' it, which is the foundation of most of the remoter constituents of the self." This 'provisional solution' he declares must be 'the final word' of psychology concerning the self or subject: "the thoughts themselves are the thinkers." *The Principles of Psychology*, 1890, vol. i. pp. 339 f., *Textbook of Psychology*, 1892, p. 216. Special criticism of this extraordinary position we must reserve till we come to deal in detail with the analysis of the presentation of self and of the self-consciousness in which it is said to be presented.

[2] A meaning in general better expressed, as here maintained, by Experience.

and equally hopeless, even futile, is the attempt, by means of phrases such as consciousness or the unity of consciousness, to escape the implication of a conscious subject. This brings us again to our main topic—the ultimate analysis of the experience of such a subject.

What however are we to understand by such ultimate analysis? Is it the resolution of all that can enter anyone's consciousness into hypothetical elements; and analogous therefore to the physicist's resolution of all the varieties of matter into hypothetical ions? Or is it rather the determination of what is always present wherever there is consciousness or psychical life at all, and more analogous therefore to the inquiry of the biologist concerning the invariable characteristics of animal life? In the one case the elements reached might exist apart, just as nitrogen and nickel may; in the other they would necessarily coexist and together constitute one concrete 'state of consciousness.' There is yet a third view, also suggested by an analogous biological inquiry, namely, that this consciousness is resolvable into a cycle of events, the several phases of which psychological analysis is to ascertain. Perfect clearness on these points does not seem to exist among psychologists. While it is agreed—practically on all hands—that the ultimate facts of mind are cognition, feeling, and conation, there is no corresponding unanimity either as to the category to which these facts belong or as to how they are related. They are spoken of as processes, states, affections, actions, and so on: formerly they were for the most part dealt with in separation as the 'energies' or 'functions' of corresponding faculties. At other times we are told that "they are never presented to us separately, but always in conjunction and that it is only by an ideal analysis that they can be discriminated and considered apart[1]." Again feeling and cognition are sometimes represented as antithetical, 'in inverse ratio'; sometimes it is said feeling may be absent altogether: by some, 'will' is said to be dependent throughout upon feeling, by others it is regarded as a veritable *primum movens*. In such a state of matters it is obviously desirable to distinguish two different questions, even though we work towards an answer to both simultaneously. The questions are (1) What do we find invariably present when we are conscious at all?—the result of such an analysis being to

[1] Hamilton, *Lectures on Metaphysics*, vol. ii. p. 9.

determine the elements, factors or constituents of a concrete state of consciousness or *psychosis*, as it has been termed: (2) Is there any definite cycle or order of succession among these, and how are they causally related? Having determined these points —more or less in course of so doing—it may become possible to attain to a more exact terminology.

Feeling.

§ 3. Keeping as much as may be to the first question, we are at once confronted by the doctrine that *feeling* alone is primordial and invariably present wherever there is consciousness at all. Every living creature, it is said, feels, though it may never do anything more: only the higher animals, and these only after a time, learn to discriminate and identify and to act with a purpose. This doctrine, as might be expected, derives its plausibility partly from the vagueness of the word 'feeling,' and partly from the intimate connexion that undoubtedly exists between feeling and cognition on the one hand and feeling and volition on the other. As to the meaning of the term, it is plain that further definition is requisite for a word that may denote (*a*) a touch, as feeling of roughness; (*b*) an organic sensation, as feeling of hunger; (*c*) an emotion, as feeling of anger; (*d*) *any* purely subjective state, as feeling of certainty or of activity; (*e*) the *one* subjective state that is purely 'affective,' as feeling of pleasure or pain. Since we find precisely the same variety of usage in the case of the equivalent German *Gefühl* and more or less of it in the case of the French *sentiment*, it may well be asked if there are no common traits connecting these various significations together. There seem to be three. *Feeling* in the last sense accompanies organic sensations and is present in emotions. *Passivity*, which renders passion almost a synonym for emotion, is but another aspect of feeling as affective and of sensation as given. *Immediacy*, the common mark of all subjective states, is applicable to sensations also and the more applicable the more their so-called 'feeling-tone' predominates and the less they have of any specific *quale*. In this respect the sensations of touch have, after organic sensations, the best title to the name feeling, and they are probably the first of all our specific sensations to be clearly differentiated from the general sensibility

or general feeling, as it is indifferently called[1]. But all three characteristics apply to, and exhaust the meaning of, feeling only in the last (*e*), which we may therefore call its strictest sense. In all the remaining meanings some of these characteristics are lacking while others beside are present. And feeling is taken in this sense, by those who maintain—with any show of plausibility—that all the more complex forms of experience are resolvable into, or at least have been developed from, feeling[2].

The only proof of such position, since we cannot observe the beginnings of conscious life, consists of considerations such as the following. So far as we can judge, we find feeling everywhere; but, as we work downwards from higher to lower forms of life, the possible variety and the definiteness of sense-impressions

[1] Cf. below, ch. v, § 3.

[2] This doctrine was a natural reaction from the one-sided 'intellectualism' which culminated in the teaching of the Leibniz-Wolffians. A full and careful history of this movement is still a desideratum. It seems to have been fostered by—if it did not originate in—the 'sentimentalism' of Rousseau and the Romanticists. From the 'faith and feeling philosophy' of Herder and Jacobi it passed over to the psychology of Beneke and Fortlage, to be finally worked out with great ingenuity and thoroughness by A. Horwicz in his *Psychologische Analysen auf physiologischer Grundlage* (1872–8). And here the reaction is complete: a position is reached which is perhaps as indefensible as the opposite extreme that it was meant to supersede. But, in truth, Horwicz, who had to recognise sensation and movement as distinct in his 'physiological basis,' is nevertheless driven to admit that feeling and conation are inseparable on the psychological side. So likewise with his immediate predecessor, Fortlage. The main difference between them was that Fortlage, following Schopenhauer, began with conation (*Trieb*) and Horwicz, influenced rather by Wundt, began with feeling (*Gefühl*).

There is another doctrine to be mentioned here that can hardly be called even 'plausible' and which had a very different source: the doctrine already referred to as presentationism or sensationalism (ch. i, § 5: cf. also ch. iii, § 2). Where sensations are called feelings—as they sometimes are even now, and still oftener were in the past—there is a verbal resemblance between sensationalism and the doctrine just discussed. And, thanks to the ambiguity in their leading term, the two doctrines tend to merge, as, for example in the following:—"In the beginning there is...nothing beyond presentation which has two sides, sensation and pleasure and pain.... All is feeling in the sense, not of pleasure and pain, but of a whole given without relations, and given *therefore* as one with its own pleasure and pain" (F. H. Bradley, *Mind*, O.S. 1887, xii. p. 367). What Mr Bradley has said *en passant* of Horwicz's position (*Mind*, N.S. 1893, ii. p. 212) will doubtless be regarded by many as applicable to this—it does not 'seem worth discussing,' and it is questionable how far Mr Bradley would still uphold it or indeed ever meant what it seems to mean (cf. his article "On our Knowledge of Immediate Experience," *Mind*, 1909, pp. 40 ff.; *Truth and Reality*, 1914, ch. vi.).

Views more or less akin to the above were advocated by Spencer, Maudsley, Ribot, Münsterberg and Titchener. Cf. Villa, *Contemporary Psychology*, 1903.

both steadily diminish. Moreover, we can directly observe in certain organic sensations—and these seem to come nearest to the whole content of primitive or infantile experience—scarcely any evidence of any assignable *quale*. Finally, in our sense-experience generally, we find the element of feeling at a maximum in the lower senses and the cognitive element at a maximum in the higher. But the so-called intellectual senses are the most used, and use (we know) blunts feeling and favours intellection, as we see in chemists, who sort out the most filthy mixtures by smell and taste without discomfort. If, then, feeling predominates more and more as we approach the beginning of conscious life, may we not conclude that feeling is its only essential constituent? On the contrary, such a conclusion would be rash in the extreme. Two lines, *e.g.*, may get nearer and nearer and yet will never meet, if the rate of approach is simply proportional to the distance. A triangle may be diminished indefinitely, and yet we cannot infer that it becomes eventually all angles, though the angles get no less and the sides do. Before, then, we attempt to decide whether pleasure or pain alone can ever constitute a complete experience, it may be well to inquire into the connexion between feeling and cognition, on the one hand, and between feeling and conation on the other, so far as we can now observe them at the stage where all these are present—an inquiry which is tantamount to the second question raised above.

Broadly speaking, in any state of mind that we can now directly observe, what we find is (1) that we are aware of a certain change that has occurred either 'in things without or in our thoughts within,' (2) that we are pleased or pained by the change, and (3) that, being pleased or pained, we *want* and strive for, the continuance of what pleases us, and still more urgently for the cessation of what pains us. But we never find that feeling directly alters—*i.e.* without the intervention of the action to which it prompts—either our sensations or our situation, but that regularly these latter with remarkable promptness and certainty alter it. We have not *first* a change of feeling, and then a change in our sensations, perceptions and ideas; but, these changing, change of feeling *follows*. In short, feeling appears to be an effect, which therefore cannot exist without its cause, though in different circumstances the same immediate cause may produce a different

amount or even a different state of feeling. Turning from what is often called the receptive phase of an experience to what is called the active or appetitive phase[1], we find in like manner that feeling is certainly not—in such cases as we can clearly observe—the whole of what we experience at any moment. True, in common speech we talk of liking pleasure and disliking pain; but this is either tautology, equivalent to saying we are pleased when we are pleased and pained when we are pained; or else it is an allowable abbreviation, and means that we like pleasurable *objects* and dislike painful *objects*, as when we say we like feeling warm and dislike feeling hungry. But feeling warm or feeling hungry, we must remember, is not pure feeling in the stricter sense of the word. Within the limits of our observation, then, we find that feeling accompanies some more or less definite presentation which, on account of it, becomes the object of appetite or aversion; in other words, feeling implies a relation to a pleasurable or painful presentation or situation, that, as cause of feeling and as end of the action to which feeling prompts, is doubly distinguished from it. Thus the very facts that lead us to distinguish feeling from cognition and conation make against the hypothesis that consciousness can ever be all feeling.

But, as already said, the plausibility of this hypothesis is in good part due to a laxity in the use of terms. Most psychologists before Kant, and some even to the present day, speak of pleasure and pain as sensations. It is plain however that pleasure and pain are not ideas, as Locke called them, in the sense in which touches and tastes, colours and sounds, are—that is to say, they are never localised like the former or projected like the latter, nor are they elaborated in conjunction with other sensations and movements into percepts or intuitions of the external. This confusion of feeling with sensations is largely consequent on the use of one word *pain* both for certain organic sensations and for the purely subjective state of being displeased. Yet organic pains—which, of course, are subjectively displeasing—are not only always more or less definitely localised—and this of itself is so far cognition—but they may often be distinguished as shooting, burning, gnawing, &c., all which symptoms indicate

[1] Though, strictly speaking, there is rarely or never in actual experience any such exclusive alternation. Cf. below, ch. v. *fin.*

a certain objective quality. Accordingly psychologists have been driven by one means or another to recognise two 'aspects' (Bain), or 'properties' (Wundt), in what they call a sensation, the one a 'sensible or intellectual' or 'qualitative,' the other an 'affective' or 'emotive,' aspect or property—the latter being also called the 'feeling-tone' (*Gefühlston* or *Betonung*) of the sensation. The term 'aspect' is figurative and obviously inaccurate; and to describe pleasure and pain, strictly understood, as 'properties' of sensation is a flagrant psychological barbarism.

The one point however which at present concerns us is simply that when feeling is said to be the primordial element in consciousness more is usually included under feeling than pure pleasure and pain, *viz.* some characteristic or quality by which one pleasurable or painful sensation is distinguishable from another. No doubt, as we go downwards in the chain of life the qualitative characteristics of the so-called sensations become steadily less and less definite; and at the same time organisms with well-developed sense-organs give place to others without any clearly differentiated organs at all. But we have no reason to suppose even the *Amoeba* itself to be affected in all respects the same whether by changes of temperature or of pressure or by changes in its internal fluids; albeit all of these changes will further or hinder its life and so presumably be in some sort pleasurable or painful. On the whole, therefore, there are grounds for saying that the endeavour to represent all the various facts of consciousness as evolved out of feeling is due to a hasty striving after simplicity, and has been favoured by the ambiguity of the term feeling itself. If by feeling we mean a strictly subjective state varying continuously in intensity and passing from time to time from its positive phase (pleasure) to its negative or opposite phase (pain) or *vice versa*, then this purely subjective state implies some agreeing or disagreeing object which psychologically determines it. If, on the other hand, we let feeling stand for both this state and that cause of it, then, perhaps, a succession of such 'feelings' may make up a consciousness; but in that case we are including two of our elementary facts under the name of one of them. *The simplest form of psychical life, therefore, involves not only a subject feeling but a subject having qualitatively distinguishable objective presentations which are the causes of its feeling.*

Presentations.

§ 4. We may now try to ascertain what is meant by cognition as an essential element in this life, or, more exactly, what we are to understand by the term *presentation*. It was an important step onwards for psychology when Locke introduced that 'new way of ideas' which Stillingfleet found alternately so amusing and so dangerous. By ideas Locke told him he meant 'nothing but the immediate objects of our minds in thinking'; and it was so far a retrograde step when Hume restricted the term to certain only of these objects, or rather to these objects in a certain state, viz. as reproduced ideas or 'images.' And, indeed, the history of psychology seems to shew that its most important advances have been made by those who have kept closely to this way of ideas; the establishment of 'the laws' of association with their many fruitful applications and the whole Herbartian psychology may suffice as instances. The truth is that the use of such a term, while it helps to free us from the mythology and verbiage of the faculty-psychologists, is itself a mark of the following important generalisation, *viz.*:—All the various constituents of experience spoken of as sensations, movements, percepts, images, intuitions, concepts, notions, have two characteristics in common: (1) they are more or less attended to, and (2) they can be variously combined together and reproduced. It is here proposed to denote them all by the general term *presentation*, as being the best English equivalent for what Locke meant by idea and what Kant and Herbart called a *Vorstellung*[1].

A presentation has then a twofold relation—first, directly to the subject, and, secondly, to other presentations. The former relation answers, as has just been said, to the fact that a presentation is attended to, that the subject is more or less aware of it: in this sense it is 'in his mind' or presented. As presented to a subject a presentation might with advantage be called an object, or perhaps a 'psychical' object, to distinguish it from what are commonly called 'physical' objects, objects apart

[1] Cf. Kant's *Critique of the Pure Reason*, Dialectic, bk. i. § 1 *fin.* This extended meaning of presentation, though becoming increasingly common, is still not universal. For an excellent discussion of the various meanings given to it by different authors and a defence of that here adopted see an article by Benno Erdmann in the *Vierteljahrsch. f. wissenschaftliche Phil.*, 1886, Bd. x. pp. 307—15.

from immediate presentation, *i.e.* conceived as independent of any particular subject. Locke, as we have seen, did so call it; still, to avoid possible confusion, it may turn out best to dispense with the frequent use of 'object' in this sense. But on one account, at least, it is desirable not to lose sight altogether of this, which is after all the stricter as well as the older signification of the term[1]; namely, that it enables us to express definitely, without implicating any ontological theory, what we have so far seen reason to think is the fundamental fact in experience. Instead of depending mainly on that vague and treacherous word 'consciousness,' or committing ourselves to the position that presentations are to be regarded as modifications of the subject to whom they are presented, we may leave all this on one side, and say that presentations are objects, and that the relation of objects to subjects—that whereby the one is object and the other subject—is presentation. It is because *only objects sustain this relation* that we may safely speak of them simply as presentations.

It will be convenient however to pause for a moment to take account of an objection that is sure to be urged, in spite of all that has been already said, *viz.* that sensations ought not to be called objects, that they are 'states of the subject' and that this is a deliverance of common sense, if anything is. Now if by this be meant (i) that sensations are *metaphysically* and ultimately subjective modifications of some sort, then the psychologist has perhaps as little warrant for denying it as he has for asserting it. But if the meaning be (ii) that sensations are *presented* as modes of the experiencing subject, then such a position—it may be urged—is due to a confusion between the subject proper or pure Ego and that complex presentation or object, the empirical, or as we might call it the biotic, Ego. A self-conscious subject may not only have a sensation but may recognise it as his own, recognise, that is to say, a certain connexion between the sensation and that presentation of the empirical self which self-consciousness implies. But this, as a connexion between one object and another, only renders more obvious the objective nature of a sensation, in the psychological sense of the term 'objective.' Moreover such connexion, as an 'external' or extrinsic relation, cannot be truly described

[1] Cf. for the history of this term, Hamilton's edition of Reid's *Works*, p. 806 *n.*

as a 'mode' of either of the entities related. Or, again, the meaning may be (iii) that a subject whose presentations were all sensations would know nothing of the difference between subject and object; and that, therefore, no such difference would be there. In this objection there is a lurking confusion between the standpoint of a given experience and the standpoint of its exposition —'the psychologist's fallacy.' The infant who is delighted by a bright colour does not of course conceive himself as face to face with an object; but neither does he conceive the colour as a subjective affection. We are bound to describe his state of mind truthfully, but that is no reason for abandoning terms which have no counterpart in his consciousness, when these terms are only used to depict that consciousness to us.

As to the objection (iv) that, when all is said and done, sensations are *conceived* by common sense as modifications of self, whether so presented or not—it may be granted that it appears so at first blush, but not when common sense is more closely examined. The fact is we are here upon what has been called 'the margin of psychology,' where our ordinary thinking brings into one view what science has to be at great pains to keep distinct. Though it is scientifically a long way round from a fact of mind to the corresponding fact of body, yet it is only on careful reflexion that we can distinguish the two if our practical interests happen to have closely associated them. Such a case we have in sensation. The ordinary concept of a sensation coincides, no doubt, with the definition given by Hamilton and Mansel:—"Sensation proper is the consciousness of certain affections of our body as an animated organism"; and it is because in ordinary thinking we reckon the body as part of self that we come to think of sensations as subjective modifications. But, when considerations of method compel us to eliminate the physiological implications from the ordinary concept of a sensation, we are able here to distinguish the conscious subject and the bodily 'affections' of which it is conscious as clearly as we can distinguish subject and object in other cases of presentation. *On the whole, then, we may conclude that there is nothing either in the facts or in our necessary concepts of them to prevent us from representing whatever admits of psychical reproduction and association, no matter how simple it be, as an object presented to a subject.*

On the side of the subject this presentational relation implies what, for want of a better word, may be called *attention*, extending the denotation of this term so as to include even what we ordinarily call inattention. Attention so used will thus cover part of what is meant by consciousness—so much of it, that is, as answers to being mentally active, active enough at least to '*receive* impressions.' Attention on the side of the subject implies intensity on the side of the object: we might indeed almost call intensity the *matter* of a presentation, without which it is a nonentity[1].

The inter-relations of presentations, on which their second characteristic—the possibility of combination and revival—depends, though of the first importance in themselves, hardly call for examination in a general analysis like the present. There is, however, one point still more fundamental that we cannot wholly pass by: it is—in part at any rate—what is commonly termed the unity or continuity of consciousness, already noted in a different connexion (§ 1). From the physical standpoint and in ordinary life we can talk of objects that are isolated and independent and in all respects distinct individuals. The screech of the owl, for example, has physically nothing to do with the brightness of the moon: sound and light, owl and moon—either one may come or go without changing the order of things to which the other belongs. But for me, the individual percipient, these are parts of one whole, not merely because special attention to one diminishes the intensity of the others, but also because as attention passes from one to the other it passes over no void. And not only are they parts of one whole, but such distinctness as they have at present is the result of a gradual differentiation.

It is quite impossible for us now to imagine the effects of years of experience removed, or to picture the character of our infantile presentations before our interests had led us habitually to concentrate attention on some and to ignore others. In place of the many things which we can now see and hear, not merely would there then be a confused presentation of the whole field of vision and of a mass of undistinguished sounds, but even the difference between sights and sounds themselves would be without its present distinctness. Thus the further we go back

[1] Cf. Kant's *Principle of the Anticipations of Perception*: "In all phenomena the real, which is the object of sensation, has intensive magnitude."

the nearer we approach to a total presentation having the character of one general *continuum* in which differences are latent. There is, then, in psychology, as in biology, what may be called a principle of 'progressive differentiation or specialisation[1].' This, as well as the facts of reproduction and association, forcibly suggests the conception of a certain background or basis of the several relatively distinct presentations gradually discerned within it or eventually constructed upon it—the equivalent, in fact, of that unity and continuity of consciousness which has been supposed to supersede the need for a conscious subject.

There is one class of objects of special interest even in a general survey, viz. movements or motor presentations. These, like sensory presentations, admit of reproduction and association, and seem also to attain to such distinctness as they possess in adult human experience by a gradual differentiation out of an original diffused mobility, which is little besides emotional expression. (Of this, however, more presently.) It is primarily to such dependence upon feeling that movements owe their most distinctive character, the possession, that is, under normal circumstances, of definite and assignable psychical antecedents, in contrast to sensory presentations, which are devoid of them. We cannot psychologically explain the order in which particular sights and sounds occur; but the order in which the movements that follow them occur, on the other hand, can be adequately explained only by psychology. The twilight that sends the hens to roost sets the fox to prowl, and the lion's roar which gathers the jackals scatters the sheep. Such diversity in the movements, although the sensory presentations are similar, is due, in fact, to what we may call the principle of 'subjective preference or selection' in which the primarily practical character of experience already referred to[2], is clearly manifested. By this name, then, let us denote the fact that—out of all the manifold changes of sensory presentation which a given individual experiences—only a few are the occasion of such decided feeling

[1] The biological principle referred to is that known as von Baer's law, viz. "that the progress of development is from the general to the special." In anticipation of future exposition it is desirable to note from the first that 'progressive differentiation' always means advance in function as well as advance in structure; and that, further, it is the dynamic or functional that is normally the cause of the statical or structural, not *vice versa*.

[2] Cf. above, ch. i, § 4.

as to become objects of possible appetite or aversion. It is thus by means of movements that we are more than the creatures of circumstances and that we can with propriety talk of subjective selection. The representation of what interests us comes then to be associated with the representation of such movements as will secure its realisation, so that—although no concentration of attention will secure the requisite intensity to a pleasurable object present only in idea—we can, by what is strangely like a concentration of attention, convert the idea of a movement into the fact, and so, by means of the movement, attain the coveted reality.

Conation.

§ 5. And this has brought us round naturally to the third of the commonly accepted constituents of experience. What, we now ask, is *conation* or rather *conative action*? For there are two questions often more or less confused, the question of the motive or spring of action, as it is sometimes called,—why is there action at all? and the question of means—how do definite actions come about? The former question relates primarily to the connexion of conation and feeling[1]. It is only the latter question that we now raise. In ordinary voluntary movement we have first of all an idea or re-presentation of the movement, and last of all the actual movement itself—a new presentation which may for the present be described as the filling out of the re-presentation, which thereby attains that intensity, distinctness and embodiment we call reality. How does this change come about?

The attempt has often been made to explain it by a reference to the more uniform, and apparently simpler, case of reflex action, including under this term both what are called sensori-motor and ideo-motor actions. In all these the action seems to be the result of a mere transference of intensity from the 'coherent' sensation or idea. But if by some chance or mischance the same sensory presentation thus excites two or more nascent motor changes and these happen to conflict, a temporary block is said to occur. And, when at length one of these nascent motor changes finally prevails, then, it is said, "there is constituted a state of consciousness which displays what we term volition[2]."

[1] On this see below, p. 54, and also ch. xi.

[2] Compare Spencer's *Principles of Psychology*, i. §§ 217, 218.

It is, however, a pure assumption that definite sensory and motor presentations are 'coordinated' or associated prior to any conation, and that so volition begins only where automatic or reflex action ends—an assumption due to that inveterate habit of confounding the psychical and the physical which is the bane of modern psychology. How did these particular sensory and motor presentations ever come to be connected? The only psychological evidence we have of any very intimate connexion between sensory and motor re-presentations is that furnished by our acquired dexterities, *i.e.* by such movements as Hartley[1] styled 'secondarily automatic.' But then all these have been preceded by 'voluntary' or conscious movement: as Herbert Spencer says, "the child learning to walk wills[2] each movement before making it." Surely, then, a psychologist should take this as his typical case and prefer to assume that all automatic actions that come within his ken at all are in this sense secondarily automatic: that either in the experience of the individual or of his ancestors, volition, that is to say, conscious action, preceded habit.

But, if we are thus compelled by a sound method to regard sensori-motor actions as degraded or mechanical forms of voluntary actions, instead of regarding voluntary actions as gradually differentiated out of something physical, we have not to ask: What happens when one of two alternative movements is selected? but the more general question: What happens when any movement is made in consequence of feeling? It is obvious that on this view the simplest *definitely purposive* movement must have been preceded by some movement simpler still. For any distinct movement purposely made presupposes the ideal presentation, before the actual realisation, of such movement. But again such ideal presentation, being a re-presentation, equally presupposes a previous actual movement as its origin. There is then, it would seem, but one way left, *viz.* to regard those movements which are immediately expressive of pleasure or pain as primordial, and to regard voluntary movements as elaborated out of these. The vague and diffusive character of primitive emotional manifestations is really a point in favour of this position. For such 'diffusion' is evidence of an underlying continuity of motor presentations, parallel to that

[1] D. Hartley, *Observations on Man* (6th ed., 1834), pp. 66 *sqq.*

[2] 'Wills' in the sense of attending to it and striving to make it.

already discussed in connexion with sensory presentations, a continuity which, in each case, becomes differentiated in the course of experience into comparatively distinct and discrete movements and sensations respectively[1].

But whereas we can only *infer*, and that in a very round-about fashion, that our sensations are not absolutely distinct, but parts of one massive sensation, as it were, we are still liable, under the influence of strong emotion, directly to experience the corresponding continuity in the case of movement. Such motor-continuum we may suppose is the psychical counterpart of that permanent readiness to act, or rather that continual nascent acting, which among the older physiologists was spoken of as 'tonic action.' This 'skeletal tone,' as it is now called, is found to disappear more or less completely from a limb when its sensory nerves are divided. "In the absence of the usual stream of afferent impulses passing into it, the spinal cord ceases to send forth the influences which maintain the tone[2]." And a like intimate connexion, we have every reason to believe, obtains throughout—both between sensation and movement as well as between movement and sensation. There is, certainly, as every physiologist knows, a very close connexion between sensation and such various organic movements as those of circulation, respiration and secretion. Ordinarily this connexion only tells on our conscious life as it affects that 'general sensibility' which, so to say, helps to keep us awake and going. But in strong emotions it rises into distinct prominence as part of what is called 'emotional

[1] It may be well to call to mind here that Alexander Bain, who was the first to recognise the fundamental position we have assigned to what G. H. Lewes called diffusion, also regarded emotional expression as a possible commencement of action; but only eventually to reject it in favour of his own peculiar doctrine of 'spontaneity.' This, however, is open to the objection that it makes movement precede feeling instead of following it—an objection that would be serious even if the arguments advanced to support his hypothesis were as cogent as only Bain supposed them to be. Against the position maintained above he objects that "the emotional wave almost invariably affects a whole group of movements," and therefore does not furnish the "*isolated* promptings that are desiderated in the case of the will" (*Mental and Moral Science*, p. 323). But to make this objection is to let heredity count for nothing. In fact, wherever a variety of isolated movements is physically possible there also we always find corresponding instincts, "that untaught ability to perform actions," to use Bain's own language, which a minimum of practice suffices to perfect. But then these suggest gradual ancestral acquisition.

[2] Foster, *Text-book of Physiology*, 5th ed., § 597.

expression'—as, for example, in the palpitation, gasping, cold sweat and dry mouth of fear. Though all such movements are now for us purely reflex, yet the principle of continuity as well as the facts of evolution justifies us in supposing that they were originally due to the intervention of feeling. But we should not be justified in supposing that feeling is ever determined solely by sensation. For we *cannot imagine the beginning of life but only life begun.* Psychology cannot start with a *tabula rasa.* The simplest picture, then, that we can form of a concrete state of mind is not one in which there are movements before there are any sensations or sensations before there are any movements, but one in which change of sensation is followed by change of movement, the link between the two being a change of feeling. But the feeling again is what it is, because the subject has already a determinate nature: hence such sayings as, What is one man's food is another man's poison, &c.[1].

Having thus simplified the question, we may now ask again: How is this change of movement through feeling brought about? The answer, as already hinted, appears to be: By a change of attention. We learn from such observations as psychologists describe under the head of fascination, imitation, hypnotism, &c., that the mere concentration of attention upon a movement to be effected is often enough to bring the movement to pass. Of course, in such cases neither emotion nor volition is necessarily implied; but none the less they shew the close connexion that exists between attention and movements. Everybody, too, must often have observed how the execution of any but mechanical movements arrests attention to thoughts or sensations, and how, *vice versa*, a striking impression or thought interrupts the performance of skilled movements[2]. Let us suppose, then, that we have at any given moment a certain distribution of attention between sensory and motor presentations; a change in that distribution then will mean a change in the effective intensity of some of these, and, in the case of motor presentations, change of intensity means, at any rate, a tendency to change of movement. Such changes are, however, quite minimal in amount so long as the given presentations are not conspicuously agreeable or disagreeable.

[1] Cf. above, p. 50, and ch. xi, § 2 on 'subjective selection.'

[2] Cf. below, ch. iii, § 2, p. 67.

So soon, however, as this is the case, there is evidence of a most intimate connexion also between attention and feeling. But it is hardly possible to exhibit this evidence fully without first attempting to ascertain what are the characteristics of the presentations or groups of presentations that are respectively pleasurable and painful—an attempt that must for the present be deferred[1]. In general it may be said that we find pleasure to lead at once to concentration of attention on the pleasurable object, so that pleasure is not followed by movement as certainly as we find pain to be; save of course when movements are themselves the pleasurable objects and are executed, as we say, for their own sakes. In fact, pleasure would seem rather to repress movement, except so far as this is coincident either with a more economic distribution, or with a positive augmentation, of the available attention; then either of these, on the view supposed, might lead to increased but indefinite (*i.e.* playful) movement. Pain, on the other hand, is—at the outset, at all events—much more closely connected with movement; and movement too, which for obvious reasons much sooner acquires a purposive character. Instead of voluntary concentration of attention upon a painful presentation we find attention to such an object always involuntary; in other words, attention is, as it were, excentrated or withdrawn. If, therefore, the painful presentation is a movement, it is suspended: if it is a sensation, movements are set up, which further distract attention, and some of which may effect the removal of what we call the physical source of the sensation. Such movement, of course, the last of the series of apparent tentatives, may by and by become 'associated' with the disturbing sensation, which thenceforth suggests its own remedy.

Summary of results.

§ 6. We are now at the end of our analysis, and the results may perhaps be most conveniently summarised by first throwing them into a tabular form and then appending a few remarks by way of indicating the main purport of the table. Taking no account of the specific differences between one concrete experience and another, and supposing that we are dealing

[1] Cf. below, ch. x.

with presentations in their simplest form, *i.e.* as sensations and movements, we have:—

A SUBJECT { (1) non-voluntarily attending to changes in the sensory-continuum[1]; [*Cognition*] } = Presentation of *sensory*

(2) being, in consequence, either pleased or pained; [*Feeling*]

and (3) by voluntary attention or 'innervation' producing changes in the motor-continuum[1]. [*Conation*] } = Presentation of *motor* } OBJECTS.

Of the three constituents, thus logically distinguishable but not really separable, the first and the third correspond in the main with the receptive and the active 'powers of mind' described by the older psychologists. The second, being more difficult to discriminate, was, as we have seen, long overlooked; or, at all events, its essential characteristics were not distinctly marked. It was either confounded with the first, which is its cause; or with the last, its effect. But perhaps the most important of all psychological distinctions is that which traverses both the old bi-partite and the prevailing tri-partite schemes, viz. that between the subject, on the one hand, as acting and feeling, and the objects of this activity on the other. This distinction lurks indeed under such terms as faculty, power, consciousness; but none the less they tend to keep it out of sight. What are here called objects or presentations are not the products of a sort of creative activity pertaining to the conscious self, which it is somehow mysteriously stimulated to exert. They have properties and laws of their own, in accordance with which indeed their interactions may be modified, but that is all. It was perhaps a wild dream of Herbart's that there could ever be a statics and dynamics of presentations; but his attempt may at least serve to exhibit more impressively the large amount of independence there is between the subject of consciousness and its objects. Keeping this distinction in view—instead of crediting the subject with an

[1] To cover more complex cases, we might here add 'or in the train of ideas.'

indefinite number of faculties or capacities, we must seek to explain not only assimilation, differentiation, reproduction, association, &c., but all varieties of thinking and acting, by laws pertaining primarily to ideas or presentations, leaving to the subject only the one power of variously distributing that attention upon which the effective intensity of a presentation in part depends. Of this single subjective activity, what we call activity in the narrower sense (as *e.g.* purposive movement and intellection) is but a special case, although a very important one.

According to this view, then, Presentations, Attention, Feeling are not to be regarded as three co-ordinate genera, each of which is a complete 'state of mind or consciousness,' *i.e.* all alike and severally included under this one supreme category[1]. There is, as Berkeley long ago urged, no resemblance between activity and an idea; nor is it easy to see anything common to pure feeling and an idea, unless it be that both possess intensity. Classification seems, in fact, to be here out of place. Instead, therefore, of the one *summum genus*, 'state of mind or consciousness' with its three co-ordinate subdivisions, cognition, emotion, conation, our analysis seems to lead us to recognise three distinct and irreducible components, Attention, Feeling and Objects or Presentations, as together constituting one concrete state of mind or *psychosis*. Of such concrete states of mind or *psychoses* we may then say—so far agreeing with the older, bi-partite psychology—that there are two distinguishable —but normally inseparable—forms, corresponding to the two ways in which attention may be determined and the two classes of objects attended to in each, viz. (*a*) the *sensory* or *receptive* attitude, when attention is non-voluntarily determined, *i.e.* where feeling follows the act of attention; and (*b*) the *motor* or *active* attitude, where feeling precedes the act of attention, which is thus determined voluntarily.

To assert that feeling and attention are not presentations will seem to many an extravagant paradox. If all knowledge is

[1] Among German psychologists it has been common of late to use the term *Erlebnis* in a wide sense to cover what is common to cognitions, feelings and conations—*viz.*, that they are all events experienced or 'lived through.' But the point, then easily overlooked, is that each of these miscalled 'elements' is not itself an *Erlebnis*, but each only a single function in one *Erlebnis* or experience: though, analytically distinguishable, they never actually exist apart.

concerned with presentations, how, it will be asked, come we to know anything of feeling and attention, if they are not presented? We know of them mediately through their effects; we do not *know* them immediately in themselves. This is, perhaps, but a more concrete statement of what philosophers have very widely acknowledged in a more abstract form since the days of Kant—the impossibility of the subjective *qua* subjective being presented. It is in the main clearly put in the following passage from Hamilton, who, however, has not had the strength of his convictions in all cases:—"The peculiarity of feeling, therefore, is that there is nothing but what is subjectively subjective; there is no object different from self,—no objectification of any mode of self. We are, indeed, able to constitute our states of pain and pleasure into objects of reflection, but, in so far as they are objects of reflection, they are not feelings but only reflex cognitions of feelings[1]." But this last sentence is not, perhaps, altogether satisfactory. The meaning seems to be that feeling "can only be studied through its reminiscence," which is what Hamilton has said elsewhere of the 'phænomena of consciousness' generally. But this is a position hard to reconcile with the other, *viz.*, that feeling and cognition are generically distinct. How can that which was not originally a cognition become such by being reproduced? The statements that feeling is 'subjectively subjective' and that in it "there is no object different from self," are surely tantamount to saying that it is not presented; and what is not presented cannot, of course, strictly speaking, be re-presented. Instead, therefore, of the position that feeling and attention as such are known by being made objects of reflexion, it would seem we can only maintain that in this way we know *of* them by their effects, by certain changes, *i.e.*, which they bring about in the character and succession of our presentations. But, while we cannot say that we perceive directly what attention and feeling, as such, are, inasmuch as they are not presented; neither can we with any propriety maintain that we are ignorant of them, inasmuch as they are by their very nature unpresentable. As Ferrier contended, "we can be ignorant only of what can possibly be known; in other words, there can be ignorance only of that of which there can be knowledge[2]." The antithesis between the

[1] *Lectures on Metaphysics*, ii. p. 432.

[2] *Institutes of Metaphysics*, § II, Agnoiology, prop. iii. *sq.*

objective and the subjective factors in presentation is wider than that between knowledge and ignorance. That is an antithesis pertaining to the objective side alone; but this is the ontological antithesis, so to say, between Self and Not-Self, the antithesis which our experience—at any rate—presupposes and therefore can never transcend.

We ought also to bear in mind that the effects of attention and feeling cannot be known without attention and feeling: to whatever stage we advance, therefore, we have always in any given 'state of mind' attention and feeling on the one side, and on the other a presentation of objects. Attention and feeling seem thus to be ever present, and not to admit of the continuous differentation into parts which gives to presentations a certain individuality, and makes their association and reproduction possible. To assume such differentiation on the subjective side is to lapse into the atomistic psychology of presentationism[1]. It is to lose sight of the *Leben* implied in *Erlebnisse*[2].

[1] Cf. ch. i, § 5, p. 23.

[2] We shall have, of course, to return to this—perhaps the most difficult topic in psychology—when we come to attempt the special analysis of self-consciousness. What has been said above may suffice for this first general analysis.

CHAPTER III

THEORY OF ATTENTION

'Consciousness' or 'Attention'?

§ 1. It will be well to attempt here some further explication of the theory of attention advanced in the preceding chapter in place of the objectionable 'faculty-psychology' of the older writers. Instead of a congeries of faculties we have assumed a single subjective activity, and have proposed to call this *attention.*

We started from the duality of subject and object as fundamental. Now we can often form a distinct conception of the relation between two terms when we have no such distinct conception of the two terms themselves. So here: without waiting to examine ontological theories about them we can at once ask how subject and object are related. We say of man, mouse or monkey that it *feels, remembers, perceives, infers, desires, strives* and so forth. Leaving aside the first term, it is obvious that all the rest imply both an activity and an object. The question then arises as to the possibility of resolving these instances and others like them into a form in which the assumed diversity of the act appears as a diversity of its object. An obvious difficulty confronts us at the outset. At first sight it looks rather as if the kind of activity might vary while the object remained the same; that *e.g.* having perceived an object, we later on remembered or desired it. It would then be most natural to refer these several activities to corresponding faculties of perception, memory and desire. This, indeed, is the view embodied in common speech, and for practical purposes it is doubtless the simplest and the best. Nevertheless, a more thorough analysis shews that when the supposed faculty is different the object is never entirely and in all respects the same. Thus in perception, *e.g.* we deal with

'impressions' or primary presentations, and in memory and imagination with 'ideas' (in the later sense) or secondary presentations. In desire the *want* of the object gives it an entirely different setting, adding a new characteristic, that of *value* or *worth*, so that the acquisition of the object becomes the *end* of a series of efforts or movements.

The older psychology, accepting the Cartesian doctrine that all the facts of immediate experience are really subjective modifications, failed to distinguish adequately between the subject as active and the objects of its activity. Hence the tendency to rest content with the popular distinction of various faculties, in spite of the underlying sameness implied in saying that we are 'conscious' of them all. In fact, Locke's definition of idea (in the older and wider sense) as the immediate object of consciousness or thinking was censured by Reid as "the greatest blemish in the *Essay on Human Understanding*[1]." But, admitting this definition, since it is implied in the duality of subject and object; and admitting too the underlying sameness which the active form 'conscious' undeniably implies, we have simply to ask: Which is the better term to denote this common element—consciousness or attention? The former is soon disposed of: in spite of its properly active signification it is frequently used in a passive sense; and when actively used its meaning is as often too wide as too narrow, ranging between the whole extent of the facts to be analysed and one of the most specialised of these, what we otherwise call internal perception, reflexion, and less accurately self-consciousness[2].

Attention, on the other hand, has invariably an active sense, and there is an appropriate verb, to attend. The obvious objection

[1] *Works*, Hamilton's ed. p. 277. The real blemish lay rather in treating this object as a subjective modification. Had Descartes' resolution of psychical facts into consciousness and ideas been as clear or as consistently maintained as his resolution of physical phenomena into matter and motion, psychology might by now have attained to a simplicity of treatment comparable with that which the doctrine of energy and its transformations has secured for physics. Cf. below, p. 70.

[2] Of course this is only a question of words, but questions of words are not always unimportant, and in psychology especially a more definite terminology is a great desideratum. Physicists pour scorn upon a man who cannot see the difference between momentum and energy or between force and work, but analogous confusions abound in the language of psychologists. Take for example some of Hamilton's assertions about this 'very transparent matter,' Consciousness, over which, he tells us, philosophers (*i.e.* other philosophers, of course) have spread obscurity by their attempts to

to the term attention is that it seems too narrow: many things, it may be said, are presented, but few are attended to. If attention is to be made co-extensive with the activity implied in consciousness, the vital distinction between attention and inattention, it has been said, will be lost; and it is surely but an ill way to advance knowledge to rob 'the central word of discipline' of its essential meaning. But on the other side it may be urged that even in common parlance the drill serjeant's is not the only use of the word: there is a generic sense of attention which is recognised as well. Attention 'in the school and the army' is also known as *concentrating* attention, and its absence as *relaxing* or *remitting* attention, 'standing at ease.' As ordinarily used, then, attention implies some selection or preference; in other words, implies at least two degrees of attention in the wider sense that we are seeking to defend. The first of these degrees is what we in everyday life distinguish as attention, the second what we contrast with it as inattention[1]. What is preferred, selected or otherwise determined for special

define it, but which, though undefinable, 'we ourselves clearly apprehend.' Can a man be said clearly to apprehend a fact about which he makes statements like the following?

It is the one necessary condition of all mental phenomena (*Metaphysics*, i. p. 183).	Among its special conditions are Discernment, Memory, Judgment, Attention, &c. (*Met.*, i. p. 201).
It is an *act* (*Met.*, i. p. 192).	It has *contents*: "The phenomena of Feeling and Conation appear only as they appear in consciousness" (*Met.*, ii. p. 431).
"It is the recognition by the mind or ego of its acts and affections" (*Met.*, i. p. 193).	It "is not to be regarded as aught different from the mental modes or modifications themselves," but is just "these above a certain degree of intensity" (*l.c.*, and *Reid*, p. 932).
"It may be compared to an internal light, by means of which, and which alone, what passes in the mind is rendered visible" (*Met.*, i. p. 183).	"It is not to be viewed as an illuminated place, within which objects coming are presented to . . . observation" (*Reid*, p. 932).

There is an unmistakable contrariety among these statements, and others almost equally conflicting might be added both from Hamilton and other writers. Consciousness, then, perhaps the most protean of psychological terms, will hardly serve our purpose.

[1] Of course, it hardly needs to be said, that the 'inattention,' for which the school boy is punished—attention to something else—is not the inattention that we are concerned with here.

attention is, of course, something presented; but what of that which is not in this wise singled out and attended to? It also is assuredly something presented, however much neglected or ignored. We do not talk of inattention to what is going on in Timbuctoo or on the other side of the moon; though we might quite well refer to our inattention to the ticking of the clock or the pattering of the rain, while we were absorbed in thought. But the sudden cessation of such uninteresting impressions will often, as everyone knows, interrupt the course of our thinking, little as we heeded their continuance. Moreover this is more likely to happen the less absorbed we were; and contrariwise, less likely to happen, the more we were absorbed[1]. These familiar experiences, then, surely point to a certain continuity between the two degrees and so far justify us in regarding them *as* degrees, degrees of one process. For, obviously, every concentration of attention in one direction involves, *ipso facto*, an equivalent excentration in another—if such a term is allowable: in other words, concentration and diffusion of attention are but inverse aspects of one act.

The proposal to use the one term attention absolutely or in the wider sense for this one process is very much like the proposal to use 'magnitude' or 'heat' (*i.e.* temperature) in such fashion. Many an unsophisticated old lady might demur to a description of the minuteness of a snow crystal in terms of 'magnitude' or of its temperature as so many degrees of 'heat' (reckoning from absolute zero). What has been found necessary in these physical matters seems necessary here, for the two cases seem perfectly parallel; and it will be as easy to get accustomed to the absolute sense in the one case as in the other[2]. And after all it is not nearly so violent a change as some imagine. The recognition of all degrees of attention in everyday

[1] So far there is ground for the common recognition not merely of two but of several degrees of attention, or—for those who prefer to say so—of several degrees of attention and of inattention, as we may see later. Cf. ch. iv, §§ 6, 7.

[2] Even Bain in a notice of the *E. B.* article (*Mind*, 1886, p. 476) fully allowed "the need of a general word to express the reaction of the Subject upon presentation, etc." and suggested "a still more general designation, such as 'mental *tension*' or 'conscious *intensity*'." In both the root of attention is there; but it is obvious that tension and intensity are, so to say, terms of different dimensions and cannot be equated to each other; and also that neither of them clearly expresses 'the reaction of the Subject upon presentations.'

life has been referred to already. The following from Locke is also very much to the point:—

"*The various attention of the mind in thinking*....That there are ideas, some or other, always present in the mind of a waking man, everyone's experience convinces him; though the mind employs itself about them with several degrees of attention. Sometimes the mind fixes itself with such intention[1]...that it shuts out all other thoughts and takes no notice of the ordinary impressions made on the senses;...at other times, it barely observes the train of ideas that succeed in the understanding without directing and pursuing any of them; and at other times, it lets them pass almost quite unregarded, as faint shadows that make no impression."—*Essay concerning Human Understanding*, ii. 19, sec. 3.

The last sentences of the next paragraph (sec. 4) are also interesting:—

"Since the mind can sensibly put on, at several times, several degrees of thinking [obviously here equivalent to attention in the section above], and be sometimes, even in a waking man, so remiss as to have thoughts dim and obscure to that degree that they are very little removed from none at all, and at last, in the dark retirement of sound sleep, loses the sight perfectly of all ideas whatsoever...I ask, whether it be not probable that thinking is the action, and not the essence of the soul? Since the operation of agents will easily admit of intention and remission; but the essences of things are not conceived capable of any such variation."

Locke then came very near indeed to a full and explicit recognition of attention in our sense. But Hamilton—though in a somewhat bungling fashion—comes quite as near; and could he but have freed himself from the trammels of the old Scottish psychology the change of nomenclature which is here defended might have been put forward under better auspices and long ago. The following passages from his *Lectures on Metaphysics* may be cited in evidence:—

"But to view attention as a special act of intelligence, and

[1] In an earlier paragraph Locke distinguishes 'intention or study' from mere attention: in the former the mind resists the solicitation of other ideas, in the latter such ideas as offer themselves are taken notice of as they pass; in fact, it is attention as it is in the school and the army, that Locke here calls intention.

to distinguish it from consciousness, is utterly inept...we might, with equal justice, distinguish in the eye the adjustment of the pupil from the general organ of vision, as, in the mind, distinguish attention from consciousness as separate faculties" (i. p. 238). "It therefore appears to me the more correct doctrine to hold that there is no consciousness without attention—without concentration—but that attention is of three degrees or kinds. The first, a mere vital and irresistible act; the second, an act determined by desire, which, though involuntary, may be resisted by our will; the third, an act determined by a deliberate volition. An *act* of attention,—that is, an act of concentration,—seems thus necessary to every *exertion*[1] of consciousness...[but] the mere vital or automatic act of attention has been refused the name; and 'attention,' in contradistinction to this mere automatic contraction, given to the two other degrees, of which, however, Reid only recognises the third.... The faculty of attention is not, therefore, a special faculty, but merely consciousness acting under the law of limitation to which it is subjected. But whatever be its relations to the special faculties, attention doubles all their efficiency and affords them a power of which they would otherwise be destitute. It is, in fact, as we are at present constituted, the primary condition of their activity" (i. 247 f.).

That a writer—for whom attention is only consciousness contracted or limited, and consciousness absolutely without such contraction or limitation is consciousness no longer—should find it needful to talk both of acts of attention and exertions of consciousness is but one more proof of the perturbing influence of a bad terminology. Locke, who wrote before this word 'consciousness' had been allowed to run wild over the whole field of psychology, found the one action of attending or thinking sufficient. Between attentive consciousness and inattentive or bare consciousness there is, it is maintained, only a difference of degree. If we say that consciousness as an activity must have some intensity, that the more it is concentrated on some objects the more it is withdrawn from others—then this difference of degree is to be traced to a difference in the distribution of attention, subject as that is to Hamilton's 'law of limitation.' The more we intensify our

[1] Italics mine.

hold on A, the more we must relax our hold on B; but between the intension and the remission there is perfect continuity, and not a difference of kind. The activity of attention, we therefore conclude, is one. It is only in its relation to A and B that we are tempted to resolve it into a plurality of faculties, as, *e.g.*, when the one is a sensation, the other a movement; or the one an 'impression,' the other an 'idea'; or again the one a relation of presentations *inter se*, the other their relation to the subject as pleasurable or painful; and so on.

'Attention' and Presentations: Presentationism.

§ 2. Of course—as we have had repeatedly to urge, in disclaiming the Cartesian idealism—we do not attribute such diversities among objects to subjective activity. That will not account for the differences between sensation and movement, between presentation and re-presentation, nor for the revivability and associability of the latter; nor yet for the relations of presentations to each other or their worth for the subject itself. All objects—no matter what—must be 'there' for, or be given to, the subject; they cannot be 'originated' by it—in other words they must be 'presented.' Such presentation affects the subject: herein lies its one primitive capacity—that of feeling. Feeling again implies but one primitive faculty—that of being conscious or attending. This is the subjective side of our 'irreducible minimum.' But we must not stop here.

To produce conviction it is also desirable to shew directly that all the other 'faculties' with which a subject may be credited are resolvable into attention to as many classes or states or relations of the objects which are presented. The most striking difference that here confronts us is probably that between sensory and motor objects, which we have already noted as underlying the older, bi-partite division of mental 'powers' as respectively cognitive or receptive and conative or reactive. It will be well, then, to consider first of all, how far our position holds good here. This has been attempted already in the course of the preceding analysis; but perhaps a restatement in a somewhat different form may conduce to clearness. In as far as conation implies not merely action, overt or intended, but also motives, in so far also it contains an

element not resolvable into attention to motor presentations. This farther element, due to what is called 'the volitional character of feeling,' we may here leave aside. Apart from feeling as the direct spring of action, the question, then, is simply whether action in process is anything more than attention to a special class of objects.

To depart as little as may be from current usage and to avoid, as far as possible, the charge of presumptuous meddling with the sacred ark of words, the question may be put in this fashion: Are 'apperception' and 'innervation,' as they are sometimes called,—in other words, are the receptive and reactive factors in consciousness—reducible to one (attention)? First of all, it is noteworthy that they have the same characteristics. Thus what Hamilton has called the law of limitation holds of each alike and of either with respect to the other; and it holds too not only of the number of presentations but also of the intensity. We can be absorbed in action just as much as in perception or thought; also movements, unless mechanical, inhibit ideas, and *vice versâ* ideas, other than associated trains, arrest movements. It is as impossible to lift a heavy weight and go on thinking as it is to scrutinise the dot on an *i* and go on thinking. Intoxication, hypnotism or insanity, rest or exhaustion, tell on apperception as well as on innervation. The control of thoughts equally with the control of movements requires 'effort'; and, as there is a 'strain' peculiar to intently listening or gazing, which is known to have a muscular concomitant, so too there is a strain equally characteristic of recollection and intellection, which probably has what is functionally equivalent to one. When movements have to be associated the same continuous attention is called for as is found requisite to associate sensory impressions: when such associations have become very intimate, dissociation is about equally difficult in both cases. The process of control is also, so far as we yet know, much the same: it is a process of direct repression in one direction, of alternative intensification in another, or a combination of both. One real difference there is, no doubt: movement may ensue through a concentration of attention on the idea of the movement. The like, it need hardly be said, does not hold of sensations; though in abnormal cases there is often a close approach to it. "If *ifs* and *ans* were pots and pans there'd be no trade for tinkers"—

nay, more, there'd be no trade for movements of any sort, except so far as these were pleasurable in themselves. It is just this difference in the objects that makes all the difference in our attitude, but it is not a difference in the psychical activity concerned with them.

There is one striking fact that brings to light the underlying unity of apperception and innervation (*i.e.* of receptive and reactive consciousness) which was cited by Wundt for this very purpose. In what are called 'simple reaction-time' experiments it is found that if a warning signal precedes by a suitable interval the impression to be registered the reaction registering the impression is often instantaneous: the reaction-time, in other words, is *nil*. In such a case the subject is aware not of three separate acts, (1) apperceiving the impression, (2) reacting to it, (3) apperceiving the effect of the reaction: it is distinctly conscious of one act and one only. The anticipatory idea of the impression to be perceived and the idea of the movement to be executed are so adjusted that, when the preliminary signal is given, the impression is realised and the movement actualised at once and together. Wundt called this relation of the two ideas a 'simultaneous association'[1]: the expression is scarcely a happy one, but at least the adjustment brought about is like an association, in so far as the two ideas are attended to as one complex. But that the two attitudes, the receptive and the reactive, whatever their fundamental sameness, are—now at any rate—normally distinct though still ultimately identical is shewn by certain 'complex reaction' experiments, where, that is to say, the subject has to discriminate between different impressions and react in a prescribed but distinct manner to each. The time of the entire process was found approximately constant for the several persons reacting, but some discriminated quickly and responded slowly while others discriminated slowly and responded quickly. The expectant attitude of the former was primarily sensory, that of the latter primarily motor; so that the one was less prepared for the second half of the trial and the other for the first[2].

[1] *Physiologische Psychologie*, 2nd edn., 1880, ii. p. 391. He now (cf. 6th edn., 1911, iii. 391) calls it a 'brain-reflex,' which is hardly an improvement.

[2] Cf. E. Tischer, Wundt's *Philosophische Studien*, i. (1883), pp. 537 f.; A. Pilzecker, *Die Lehre v. d. sinnlichen Aufmerksamkeit*, Diss. 1889, pp. 77 f.

Sensory attention we have described as primarily non-voluntary and so far passive: attention here is not subjectively directed but objectively diverted. To be *noticed* or specially attended to, an impression—when not expected—must then, as we have already remarked, have more intensity the more attention is concentrated elsewhere, and in any case more intensity than would insure its recognition, if it *were* expected. The minimal—or, as it is technically called, the liminal—intensity that suffices in the latter case has to be exceeded, often greatly exceeded, in the former. What we may call 'the effective intensity' of a sensation then depends in part upon the attention it receives, and is not wholly determined by what we may perhaps call its 'inherent intensity' meaning by this the psychical concomitant of the neural excitation which immediately concerns the physiologist. This inherent intensity however sets an upper limit beyond which the effective intensity cannot increase[1]. And in this fact, that the effective intensity is, so to say, a function of two variables, we have, by the way, a further proof—if further proof were wanted—of the inadequacy of the doctrine that presentations are nothing but subjective modifications.

In like manner we have allowed that the retentiveness and associability of 'ideas' in the narrower sense, or re-presentations, pertain primarily to the objective factor in experience. Nevertheless in their actual or 'effective,' revival and association, attention, the subjective factor in experience, is all-essential: to quote Hamilton again, "it doubles all their efficiency and affords them a power of which they would otherwise be destitute." What we effectively retain, assimilate and integrate is just what we have attended to and no more.

Such integration or 'synthesis' is, as Kant[2] was the first clearly to see, 'the indispensable condition, without which we should have no experience whatever.' Its recognition meant —and has proved to be—the revolution of psychology[3]. It

[1] Under the mistaken assumption that such increase is implied according to the view here maintained, which the majority of psychologists in fact accept, not a few have been led to call it in question. We shall return to the question later on. Cf. ch. v, § 4.

[2] Cf. *Critique*, 1st edn., pp. 77 f. Max Müller's trans., pp. 68 f.

[3] "The synthesizing principle, that for Hume had been the stone of stumbling impressed Kant as the fundamental principle of all knowledge—from the perceptior

dispenses us also at this stage from any further examination of faculties in detail; for synthesis underlies them all and attention is essential to effective synthesis.

But it is a matter of quite secondary importance what name we give to this common element of activity supposed to be present wherever we find psychical life. Provided the fact be recognised we shall not be long without an appropriate name for it. Meanwhile to call it 'attention' seems to do least violence to existing usage, and to have most precedents in its favour. The really important question is whether the contrast of Subject and Object is of such a fundamental character as to justify the resolution of psychological facts into two entirely distinct categories—the one subjective faculty or function of Action-under-Feeling or Consciousness on the one side, and a Field of Consciousness, consisting of Objects, Ideas or Presentations, on the other. The older psychologies, with their legion of faculties, were no doubt unscientific, just as were the older physics with their legion of forces or inherent powers. But modern physicists have not abandoned the older concept of 'forces' entirely: they have merely substituted in their stead the exacter concept of energy. Some modern psychologists, however, have not been equally guarded; for they have rejected the concept of subjective activity altogether. They hold the doctrine here called Presentationism, and to this we must now turn for a moment; for, if this doctrine be true, our theory of attention will not hold.

The most important generalisations in psychology—as probably everybody will allow—are those included together as the Laws of Association. Now it was the Associationist psychology which in England gave the death-blow to the Scottish school with its interminable faculties; and a like fate befel the '*alte Vermögenstheorie*' at the hands of the Herbartians in Germany. In the new psychology of presentations—'*Psychologie ohne Seele*,' as Lange called it[1]—thus brought into vogue, we are asked to recognise only interaction of presentations *inter se*. Ideas, it was said, tend to attract or repel each other; they

of sense onwards up to the highest insight of the understanding." Höffding, *Geschichte des neueren Philosophie*, 1896, ii. p. 50. Cf. also the same writer's *Psychologie*, 3rd edn., 1901, pp. 90 f.

[1] *Geschichte des Materialismus*, II. Absch. iii, 3rd edn., p. 381.

associate and they conflict: in short, as Herbart roundly put it, we have in them a psychical statics and dynamics, and these, as he thought, admit of a mathematical treatment. The activity underlying the old terms 'faculty,' 'power,' &c., which was formerly referred to the subject, here reappears on the side of the object. We find this interaction of presentations pushed to the utmost—with that speculative thoroughness so characteristic of the master minds among our Teutonic brethren—in Herbart's own psychology. It would not be difficult to shew that the metaphysical theory of 'self-conservation,' which Herbart developed, makes no material difference to the general character of his psychology as here described. In Bain and in J. S. Mill the same tendency is apparent, but in them systematic thoroughness is sacrificed to regard for facts, which is said—for better, for worse—to be the peculiarly British trait. Now comes the question:—Can we, provided we credit presentations with certain mutual attractions, repulsions, associations, complications, &c., &c.—dispense altogether with the postulation of an active subject? Whatever our sentimental preferences may be, it is hard to see any scientific objection to such an attempt if only it could succeed. The one question to be asked then is: Can it? The *onus probandi* lies with the Presentationists; and it may fairly be said that as yet they are very far from discharging it[1]. Meanwhile we must still maintain the reality of that subjective activity implied in consciousness, which Descartes and Locke called thinking, but which we propose to call attending. To certain general characteristics of this activity we may now turn.

Attention and Acts of Attention.

§ 3. We have already distinguished between non-voluntary and voluntary changes, or 'movements,' of attention. But besides these, its dynamic aspects, we must with the wider meaning here given to the term, distinguish also the comparatively static aspects, which this extended meaning includes. More definitely, besides *movements* of attention, whether objectively or subjectively initiated, we must assume that there is always some degree

[1] See further my articles, "Psychological Principles," *Mind*, 1887, pp. 62 ff., and "'Modern Psychology': a Reflexion," *Mind*, 1893, pp. 70 ff.

of continuous attention to the presentation-continuum as a whole. Acts of attention are changes in the distribution of this attention just as presentations are changes in the differentiation of the continuum[1]. As the latter is not completely resolvable into a discrete manifold so neither is the former wholly resolvable into discrete acts. But there is a difference between the two cases answering to the difference between the central *unity* of the subject and what we shall call the primitive *extensity* of the objective continuum. Thus while there may be an indefinite number of simultaneous changes in the so-called 'field of consciousness' there can at one time be only one movement of attention[2]. Hence it used to be argued that 'we can only attend to *one thing* at once.' But this is only true, if it be understood to mean that a plurality of presentations to which attention is directed—or on which it is concentrated—thereby tends to become a unity, to be more or less definitely 'synthesized' or 'integrated' as one 'situation' or one complex whole of some sort. How complex such a whole may be is mainly a question of previous practice and the 'complications,' 'associations' or 'secondary automatisms' thereby acquired. Every acquisition, whether cognitive or practical, presupposes such acts of attention, and to these its retention, assimilation and association—matters to be further dealt with presently—are largely due. This is a principle of absolutely fundamental importance, grievously overlooked by earlier British psychologists and the occasion of much just censure from without. We cannot be always insisting upon it, but it must never be forgotten.

[1] The somewhat figurative term 'movement of attention' perhaps needs a word or two of explanation lest it perplex or mislead. Attention cannot be conceived as itself moving: this would be to regard as concrete what is really abstract. Again the subject in attending does not move, nor does the object move in being merely attended to: there is, strictly speaking, no change of position in either. But any object specially noticed is a more or less definitely discriminated part within the presented whole; and further, the subject's relation to that whole is different when different parts of it are singled out. No wonder, then, that this varying relation of the subject to the *totum objectivum* should suggest an analogy between this relation and the movements of the eye to and fro over the field of sight. (Cf. below, ch. iv, § 6, p. 91.) But, as we have already remarked, it is probably more than an analogy (cf. the last §, p. 67): the visual movements are themselves consequent on attention, are subjectively or objectively determined acts.

[2] And such movements of attention have a good deal to do with what we call 'one time.' Cf. below ch. viii, § 4.

But what can be effectively comprised in one act of attention has very narrow limits: hence Locke's well-known references to "the narrowness that human minds are confined to here" as "not being capable of having many ideas under view and consideration at once[1]" and as contrasted with the 'larger views' "which the several degrees of angels may probably have." The phrase 'narrowness of consciousness' (Herbart's *Enge des Bewusstseins*) in this sense has now passed into psychology as a technical term.

[1] *Essay* II, x. §§ 9, 2.

CHAPTER IV

THEORY OF PRESENTATIONS

The Psychological Individual.

§ 1. We come now to the exposition of the objects of attention or consciousness, *i.e.* to what we may call the objective or presentational factor of psychical life. The treatment of this will fall naturally into two divisions. In the first we shall have to deal with its general characteristics and with the fundamental processes which all presentation involves. In view of its general and more or less hypothetical character we may call this the theory of presentations. In the second division, the chapters following, we shall then pass on to the special forms of presentations, known as sensations, percepts, images, &c., and to the special processes to which these forms lead up.

This exposition will be simplified if we start with a supposition that will enable us to leave aside, at least for the present, the difficult question of heredity. We know that in the course of every human life there has been more or less of progressive differentiation or development. Further, it is believed that there has been a succession of sentient individuals beginning at the lowest level of life and advancing continuously up to the level of man. Some trace of earlier stages may be seen in the behaviour of a human infant now—in its crawling before walking for example—but for the most part such traces have been obliterated. What was experience in the past has become instinct in the present. The descendant has no consciousness of his ancestor's failures when performing at once by 'an untaught ability' what they slowly and perhaps painfully acquired. But, if we are to attempt to follow the genesis of mind from its earliest dawn, it is the primary experience rather than the eventual instinct that we have first of all to keep in

view. To this end, then, it is proposed to assume that we are dealing with one individual who has continuously advanced from the beginning of psychical life, and not with a series of individuals all of whom, save the first, 'inherited' a certain 'capital' from their progenitors. The life-history of such an imaginary individual[1], that is to say, would correspond with all that was new in the experience of a certain typical series of individuals each of whom advanced a certain stage in mental differentiation. On the other hand, from this history would be omitted that inherited reproduction of the net results of ancestral experience, that innate tradition, so to say, by which alone, under the actual conditions of existence, racial progress is possible.

The process of thus reproducing the old might differ as widely from that of producing the new as electrotyping does from engraving. However, the point is that as psychologists we know nothing directly about it; neither can we distinguish precisely at any link in the chain of life what is old and inherited, original in the sense of Locke and Leibniz, from what is new or acquired, original in the modern sense. *But we seem bound as a matter of method to suppose all discernible complexity and differentiation among presentations to have been originated,* i.e. *experimentally acquired, at some time or other.* So long, then, as we are concerned primarily with the progress of this differentiation we may disregard the fact that it has not actually been, as it were, the product of one hand dealing with one *tabula rasa* to use Locke's—originally Aristotle's—figure, but of many hands, each of which, starting with a *reproduction* of what had been effectively wrought on the preceding *tabulae,* put in more or fewer new touches before devising the whole to a successor who would proceed in like manner.

The Presentational Continuum: Differentiation.

§ 2. What is implied in this process of differentiation and what is it that becomes differentiated?—these are the questions to which we must now attend. Psychologists have usually

[1] He may be compared to Hegel's 'general mind': cf. *Phaenomenologie des Geistes,* 1832, p. 23. Professor Baillie's trans. i. p. 26. Pascal had a similar idea:—"Toute la suite des hommes, pendant le cours de tant de siècles, doit être considerée comme un même homme qui subsiste toujours et qui apprend continuellement." *Pensées et Opuscules,* edit. L. Brunschvicg, 1900, p. 80.

represented mental advance as consisting fundamentally in the combination and recombination of various elementary units, the so-called sensations and primitive movements: in other words, as consisting in a species of 'mental chemistry.' If needful, we might find in biology far better analogies to the progressive differentiation of experience than in the physical upbuilding of molecules. The process resembles a partial segmentation of what is originally continuous rather than an aggregation of elements at first independent and distinct. Comparing higher minds or stages of mental development with lower,—by what means such comparison is possible we need not now consider—we find in the higher conspicuous differences between presentations which in the lower are indistinguishable or absent altogether. The worm seems to be aware only of the difference between light and dark. The steel-worker sees half a dozen tints where others see only a uniform glow. To the child, it is said, all faces are alike; and throughout life we are apt to note the generic, the points of resemblance, before the specific, the points of difference. But even when most definite, what we call a presentation is still part of a larger whole. It is not separated from other presentations, whether simultaneous or successive, by something which is not of the nature of presentation, as one island is separated from another by the intervening sea, or one note in a melody from the next by an interval of silence. In our search for a theory of presentations, then, it is from this 'continuity of consciousness' that we must take our start. Working backwards from this as we find it now, we are led alike by particular facts and general considerations to the conception of a *totum objectivum* or objective continuum which is gradually differentiated. This continuum thus gives rise to what we call distinct presentations, just as—later on—some particular presentation, clear as a whole, as Leibniz would say, becomes with mental growth a complex of distinguishable parts. Of the very beginning of this continuum we can say nothing; absolute beginnings, we must repeat, are beyond the pale of science. Experience advances as this continuum is differentiated, every differentiation being a change of presentation. Hence the commonplace of psychologists—We are only conscious as we are conscious of change.

But 'change of consciousness' is too loose an expression to

take the place of the unwieldy phrase 'differentiation of a presentation-continuum,' to which we have been driven. For not only does the term 'consciousness' confuse what exactness requires us to keep distinct, an activity and its object, but also the term 'change' fails to express the characteristics which distinguish new presentations from other changes. Differentiation implies that the seemingly simple becomes complex or the complex more complex. It implies also that this increased complexity is due to the persistence of former changes: we may even say that such persistence is essential to the very idea of growth or development. In trying, then, to conceive our psychological individual in the earliest stages of development we must not picture him as experiencing a succession of absolutely new sensations, which, coming out of nothingness, admit of being strung upon the 'thread of consciousness' like beads picked up at random, or of being cemented into a mass like the bits of stick and sand with which the young caddis covers its nakedness. The notion—which Hume and Kant did so much to encourage—that psychical life begins with a confused manifold of sensations, devoid not only of logical but even of psychological unity, is one that becomes more inconceivable the more closely we consider it. An absolutely new presentation, having no sort of connexion with former presentations till the subject has synthesized it with them, is a concept for which it would be hard to find a warrant either by direct observation, by inference from biology, or in considerations of a general kind. *At any given moment we have a certain whole of presentations, a 'field of consciousness,' psychologically one and continuous; at the next we have not an entirely new field but a partial change within the old.*

Many who would allow this in the case of re-presentations, *i.e.* where idea succeeds idea by the workings of association, would demur to it in the case of primary presentations or sensations. "For," they would say, "may not silence be broken by a clap of thunder, and have not the blind been made to see?" To urge such objections is to miss the drift of our discussion, and to answer them may serve to make it clearer. Where silence can be broken there are residua of preceding sounds and in all probability even so-called 'subjective' presentations of sound as well; silence as experienced by one who has heard is very different from the deafness of Condillac's statue before it had ever heard.

The question is rather whether such a conception as that of Condillac's is possible at all: supposing a sound to be absolutely distinct from a smell, could a field of consciousness consisting of smells be followed at once by one in which sounds had part? And, as regards the blind coming to see, we must remember not only that the blind have eyes but that they are descended from ancestors who could see. What nascent presentations of sight are thus involved it would be hard to say; and the problem of heredity is one that we have for the present left aside.

The view here taken is (1) that at its first appearance in psychical life a new sensation or so-called elementary presentation is really a partial modification of some pre-existing and persisting presentational whole, which thereby becomes more complex than it was before; and (2) that this increasing complexity and differentiation never gives rise to a plurality of discontinuous presentations, having a distinctness and individuality such as the atoms or elementary particles of the physical world are supposed to have. Beginners in psychology, and some who are not beginners, are apt to be led astray by expositions which set out from the sensations of the special senses as we now know them: as if presentation began with these! The fact is we never now experience a mere sensation of colour, sound, and the like; and what the young student mistakes for such is really a case of perception, where, that is to say, a sensory presentation is combined with various sensory and motor presentations and with re-presentations, thus entailing a definiteness and completeness only possible to complex presentations. Moreover, if we could attend to a pure sensation of sound or colour by itself, there is much to justify the suspicion that even this is complex and not simple, and owes to such complexity its clearly marked specific quality. In certain of our vaguest and most diffused organic sensations there is probably a much nearer approach to the character of the really primitive presentations.

In such sensations we can distinguish three variations, viz. variations of quality, of intensity, and of what Bain called massiveness, or, as we shall say, extensity. This last characteristic, which everybody knows who knows the difference between the ache of a big bruise and the ache of a little one, between total and partial immersion in a bath, is, as we shall

see later on, an essential element in our perception of space. But it is certainly not the whole of it; for in this experience of massive sensation alone it is impossible to find other elements which an analysis of spatial intuition unmistakably yields. Extensity and extension, then, are not to be confounded. Now we note, even at our level of mental evolution, that an increase in the intensity of a sensation is apt to entail an increase in its extensity too. In like manner we note too a greater extent of movement in emotional expression when the intensity of the emotion increases. Even the higher region of imagination is no exception; as is shewn by the whirl and confusion of ideas incident to delirium, and, indeed, to all strong excitement. But this 'diffusion' or 'irradiation,' as it has been called, diminishes as we pass from the class of organic sensations to the sensations of the five senses, from movements expressive of feeling to movements definitely purposive, and from the tumult of ideas excited by passion to the steadier sequences determined by efforts to think. Increased differentiation seems, then, to be intimately connected with increased 'restriction.' Possibly there may be found certain initial differentiations which for psychology are ultimate facts that it can only accept but cannot explain. As already said, the very beginning of experience is beyond us, though it is our business—*working from within*—to push back our analysis as far as we can. But some differentiations being given, then it may be safely said that, in accordance with what we have called the principle of subjective selection[1], attention would be voluntarily concentrated upon certain of these and upon the voluntary movements specially connected with them. To such subjectively initiated modifications of the presentation-continuum, moreover, we may reasonably suppose 'restriction' to be in large measure due. But increased restriction would render further differentiation of the given whole of presentation possible, and so the two processes might supplement each other.

These processes have now proceeded so far that at the level of human consciousness we find it hard to form any tolerably clear conception of a field of consciousness in which an intense sensation, no matter what, might—so to say—diffuse over the whole. Colours, *e.g.* are with us so distinct from sounds that—

[1] Cf. above, p. 50.

except as regards the excitement of attention or the drain upon it—there is nothing in the intensest colour to affect the simultaneous presentation of a sound. But, at the beginning, whatever we regard as the earliest differentiation of sound might have been incopresentable with the earliest differentiation of colour, if sufficiently diffused; much as a field of sight all blue is now incopresentable with one all red. Or, if the stimuli appropriate to both were active together, the resulting sensation might have been not a blending of two qualities, as purple is said to be a blending of red and violet, but rather a neutral—so-called 'general'—sensation without the specific qualities of either. Now, on the other hand, colours and sounds are so far localised that we may be directly aware that the eye is concerned with the one and the ear with the other. Thus we have brought to our notice a fact so ridiculously obvious that it has never been deemed worthy of mention, although it has undeniably important bearings—the fact, *viz.* that certain sensations or movements are an absolute bar to the simultaneous presentation of other sensations or movements. We cannot see an orange as at once yellow and green, though we can feel it at once as both smooth and cool; we cannot open and close the same hand at the same moment, but we can open one hand while closing the other. Such incopresentability or contrariety is thus more than mere difference, and occurs only between presentations belonging to the same sense or to the same group of movements. Strictly speaking, it does not always occur even then; for red and yellow, hot and cold, are presentable together provided they have certain other differences which we shall meet again presently as differences of 'local sign[1].'

Retentiveness.

§ 3. In the preceding paragraphs we have had occasion to distinguish between the presentation-continuum or whole field of consciousness, as we may for the present call it[2], and those several differentiations within this field which are ordinarily spoken of as presentations, and to which—now that their true character as parts is clear—we too may confine the term[3]. But

[1] Cf. below, ch. vi, § 3.

[2] But cf. below, § 6.

[3] Without risk, in view of what has been said, of confounding them either with subjective modifications, as the so-called mentalists do, or with some independent 'mind-stuff' or presentational elements, as the materialist and the presentationist do.

it will be well in the next place, before inquiring more closely into their characteristics, to consider for a moment that persistence of preceding modifications which the principle of progressive differentiation implies. Such persistence is best spoken of as due to *retentiveness*. This is often confused with memory, though memory is something much more complex and special; for in that there is necessarily some contrast of past and present, whereas here there is simply the persistence of the old. But what is it that persists? On our theory we must answer, the continuum as differentiated, not the particular differentiation as an isolated unit. If psychologists have erred in regarding the presentations of one moment as merely a plurality of units, they have erred in like manner concerning the so-called 'residua' of such presentations. As we see a certain colour or a certain figure again and again, we do not go on accumulating images or representations of it, which are somewhere crowded together like shades on the banks of the Styx. Nor is such colour, or whatever it be, the same at the hundredth time of presentation as at the first, as the hundredth impression of a seal on wax might be. There is no such lifeless fixity in mind. The explanations of perception most in vogue are far too mechanical and, so to say, atomistic; but we must fall back upon the continuity of our presentation-continuum, to get a better.

Suppose, then, that in the course of a few minutes we take half a dozen glances at a strange and curious flower. We have not as many complex presentations, which we might symbolize as $F_1, F_2, \dots F_6$. But rather, at first only the general outline is noted, next the disposition of petals, stamens, &c., then the attachment of the anthers, position of the ovary, and so on; that is to say, symbolizing the whole flower as $[p'(a\,b)\,s'(c\,d)\,o'(f\,g)]$, we first apprehend say $[p' \dots s' \dots o']$, then $[p'(a\,b)\,s' \dots o']$, or $[p'(a\dots)\,s'(c\dots)\,o'(f\dots)]$, and so forth. It is because the traits first attended to persist that those noticed later form an addition to them so that the complex at length may be complete. There is nothing in this instance properly answering to what are known as the reproduction and association of ideas; in the last and complete apprehension as much as in the first vague and inchoate one the flower is there as a primary presentation. There is a limit, of course, to such a procedure, but the instance taken, we may safely say, is not such as to exceed the bounds of a simultaneous

field of consciousness. We assume, then, that such increase of differentiation through the persistence of preceding differentiations holds of the presentation-continuum as a whole. Next, we conclude that, in those circumstances in which we now have a specific sensation of, say, red or sweet, there would be for some more primitive experience nothing but a vague, almost 'organic,' sensation, which, however, on every repetition of the circumstances, would become somewhat further differentiated. The earlier differentiations, in short, do not disappear like the waves of yesterday in the calm of to-day, nor yet last on like old scars beside new ones; but rather the two are combined, so that the whole field of consciousness, like a continually growing picture, increases indefinitely in complexity of pattern.

Assimilation.

§ 4. This process, in which later differentiations seem to blend with' and thereby further restrict and specialise what is retained of earlier and less definite presentations, is thus a further implication of the principle of the progressive development of the presentational continuum. When not ignored altogether, this further process has been commonly regarded as merely a simple form of 'association,' its peculiarity being, as it was supposed, that the presentations associated—though numerically distinct—were in quality perfectly identical. In point of fact, both these assumptions seem to be erroneous and due to the so-called psychologist's fallacy[1]. For the experiencing subject there is apparently at this stage—as we have already urged—neither the numerical distinctness nor the qualitative identity which the words 'past impression (A_1)' and 'present impression (A_2)' suggest. Still the connexion between the process of association proper and the process of mere 'blending or fusion'—as it is frequently termed, though we shall call it *assimilation*—is so close, and the detailed analysis called for so complex, that we must needs defer further discussion till we come to treat of association as a whole[2]. It may then be possible to shew that we have here to do with a process much simpler and more fundamental

[1] As, *e.g.*, in interpreting the conduct of children as if they were already 'grown-up' persons.

[2] Cf. below, ch. vii, § 2.

than association. But it is at least clear at once that, if the term *association* is to be correctly used, it must imply that the presentations associated were from the first distinct, were attended to as distinct, became associated solely in consequence of such attention, and remain to the last distinguishable. Herbert Spencer seems to have been the first psychologist to appreciate the elementary character of this process, which—so far from being a form of true association—is presupposed in all association properly so called. He names it 'automatic association.' "This association," he says, "is not an act of thought [better to have said 'a result of an act of attention'] that may or may not take place, but constitutes the very recognition of each feeling [= sensation]. A feeling cannot form an element of mind at all, save on condition of being associated with predecessors more or less the same in nature....All other phenomena of association of feelings are consequent on the union of this process with a parallel and simultaneous process to be described later." In the course of his exposition Mr Spencer frequently uses 'assimilation' as a variant for his technical term 'automatic association'; and assimilation is the term here adopted for the process[1].

In view of the intimate connexion between differentiation, retentiveness and assimilation it will sometimes be convenient to refer to all three together as constituting what we may call the plasticity *of the presentational continuum.*

Relativity.

§ 5. This will be the most convenient place to take note of certain psychological doctrines which, though differing in some material respects, are usually included under the term Law of Relativity.

[1] *Principles of Psychology*, §§ 115 ff. In ignorance of Mr Spencer's usage I myself proposed this term and expressed the hope that it might find general acceptance (*Ency. Brit.* 9th ed. art. Psychology, p. 52). I first became aware of Spencer's priority in reading Benno Erdmann's paper, "Zur Theorie der Apperception," already referred to (p. 46). He contends that Herbart's term 'apperception' is the more appropriate and also that to Herbart, as the discoverer of the process, and not to Spencer, the right to coin a name for it must be conceded. But unfortunately we shall find it needful to restrict the Herbartian term equally with the term association to much narrower limits. As to 'assimilation'—I have since come across it in Drobisch's *Empirische Psychologie*, 1842, p. 142, *fin.*

a. Hobbes's *Sentire semper idem et non sentire ad idem recidunt*[1] is often cited as one of the first formulations of this law. If we take this to apply to the whole field of consciousness it becomes at once true and trite; for a field of consciousness unaltered either by change of impression or of idea would certainly be a blank and a contradiction. The Law of Relativity in this sense is in fact what Hamilton called the Law of Variety: "that we are conscious only as we are conscious of difference[2]"—*i.e.* of variety or change. But, though consciousness involves change, it is still possible that particular presentations may continue in the field of consciousness indefinitely. When it is said that "a constant impression is the same as a blank," what is meant sometimes turns out to be something not psychological at all, as, *e.g.*, our insensibility to the motion of the earth or to the pressure of the air—cases in which there is obviously no presentation, nor even any evidence of nervous change[3]. Sometimes this paradox proves to be but an awkward way of expressing what we may call accommodation, whether physiological or psychological. Thus the skin soon adapts itself to certain seasonal alterations of temperature, so that heat or cold ceases to be felt: the sensation ceases because the nervous change, its proximate physical counterpart, has ceased. Again, there is what James Mill called 'an acquired incapacity of attention,' such that a constant noise, for example, like the clatter of a weaver's loom, in which one has no interest, is soon unnoticed. As a rule, no doubt, impressions do not continue constant for more than a very short time; still there are sad instances enough in the history of disease, bodily and mental, to shew that such a thing can quite well happen, and that such constant impressions (and 'fixed ideas,' which are in effect tantamount to them), instead of becoming blanks, may dominate the entire consciousness, colouring or bewildering everything.

b. From the fact that the field of consciousness is continually changing it has been supposed to follow that every presentation is essentially nothing but a transition or difference. "All feeling," says Bain, the leading exponent of this view, "is two-sided....

[1] *Elementa philosophica*, IV. xxv. 5.

[2] *The Works of Thos. Reid*, Supplementary note, p. 932.

[3] Yet these were given as 'notable examples' of this law by Bain (*Senses and Intellect*, 3rd ed., p. 9) but afterwards suppressed in view of the criticism in the text.

We may attend more to one member of the couple than to the other....We are more conscious of heat when passing to a higher temperature, and of cold when passing to a lower. The state we have passed *to* is our *explicit* consciousness, the state we have passed *from* is our *implicit* consciousness[1]." But the transition need not be from heat to cold, or *vice versa*: it can equally well take place from a neutral state, which is indeed the normal state, of neither heat nor cold; a new-born mammal, *e.g.*, must experience cold, having never experienced heat. Again, suppose a sailor becalmed gazing for a whole morning upon a stretch of sea and sky, what sensations are implicit here? Shall we say yellow as the greatest contrast to blue, or darkness as the contrary of light, or both? What, again, is the implicit consciousness when the explicit is sweet; is it bitter or sour, and from what is the transition in such a case? For one thing it seems clear that the transition of attention from one presentation to another and the differences between the presentations themselves are distinct facts. It is strange that Bain, the psychologist who has laid such stress on neutral states of surprise as being akin to feeling and so distinct from special presentations, should in any way confound the two. The mistake is perhaps accounted for by the fact that, in common with the rest of his school, Bain failed adequately to distinguish between attention and the presentations that are attended to. If 'change of impression' and being conscious or mentally alive are the same thing, it is then manifestly tautologous to say that one is the indispensable condition of the other. If they are not the same thing, then the succession of shocks or surprises cannot wholly determine the impressions which successively determine them.

But we have still to consider whether the impressions themselves are nothing but differences or contrasts. "We do not know any one thing of itself but only the difference between it and another thing[2]," said Bain. But plainly, we cannot speak of contrast or difference between two states or things as a contrast or difference, if the states or things are not themselves presented; the so-called contrast or difference would then be itself a single presentation, and its supposed 'relativity' but an inference. Difference is not more necessary to the presentation

[1] *Logic*, i. 1870, p. 3.

[2] *Senses and Intellect*, 3rd ed., p. 321.

of two objects than two objects to the presentation of difference. And, what is more, a difference between presentations is not at all the same thing as the presentation of that difference *as such*[1]. The former must precede the latter; the latter, which requires an act of comparison, need not follow. There is an ambiguity in the words 'know' and 'knowledge,' which Bain seems not to have considered: to know may mean to perceive or apprehend, it may also mean to understand or comprehend[2]. Knowledge in the first sense is only what we shall have presently to discuss as the recognition of an object and is embodied in an existential proposition[3]; knowledge in the latter sense is the result of intellectual comparison and is embodied in a logical proposition. Thus a blind man who cannot know light in the first sense can know about light in the second if he studies a treatise on optics. Now in simple perception or recognition we cannot with any exactness say that two *things* are perceived: straight is a thing, *i.e.* a definite object presented; not so not-straight, which answers to no definite object at all. Only when we rise to intellectual knowledge is it true to say: "No one could understand the meaning of a *straight* line without being shown a line not straight, a bent or crooked line[4]." Two *distinct* presentations are necessary to the comparison that is here implied; but we must first recognise our objects before it is possible to compare them, and this further step we may never take. We need, then, to distinguish between the 'comparativity' of intellectual knowledge, which we must admit—for it rests at bottom on a purely analytical proposition—and the 'differential theory of presentations,' which, however plausible at first sight, must be wrong somewhere, since it commits us to absurdities. Thus, if we cannot have a presentation X but only the presentation of the difference between Y and Z, it would seem that in like manner

[1] Cf. especially Lotze's *Logik*, § 11.

[2] Other languages give more prominence to this distinction; compare γνῶναι and εἰδέναι, *noscere* and *scire*, *kennen* and *wissen*, *connaître* and *savoir*. On this subject there are some acute remarks in a little-known book, J. Grote, *Exploratio philosophica* (1865, p. 60). Hobbes, too, was well awake to this difference, as *e.g.* when he says, "There are two kinds of knowledge; the one, sense or knowledge original and remembrance of the same; the other, science or knowledge of the truth of propositions, derived from understanding."

[3] See below, ch. vi, § 2.

[4] Bain, *Logic*, i. 3.

we cannot have the presentation of Y or Z, nor therefore of their difference X, till we have had the presentation of A and B say, which differ by Y, and of C and D, which we may suppose differ by Z.

The lurking error in this doctrine, that all presentations are but differences, may perhaps emerge if we examine more closely what may be meant by difference. We may speak of (*a*) differences in intensity between sensations supposed to be qualitatively identical, as *e.g.* between the taste of strong and weak tea; or of (*b*) differences in quality between presentations of the same sense, as *e.g.* between red and green; or of (*c*) differences between presentations of distinct senses, as *e.g.* between blue and bitter. Now as regards (*a*) and (*b*), it will be found that the difference between two intensities of the same quality, or between two qualities of the same order, may be itself a distinct presentation; that is to say, in passing from a load of 10 lb. to one of 20 lb., for example, or from the sound of a note to that of its octave, it is possible to experience the change continuously, and to estimate it as one might the distance between two places on the same road[1]. But nothing of this kind holds of (*c*)[2]. In passing from the scent of a rose to the sound of a gong or to a sting from a bee we have *no such means*[3] of bringing the two into relation—scarcely more than we might have of measuring the length of a journey made partly on the common earth and partly through the looking-glass. In (*c*), then, we have only a diversity of presentations, but not a special presentation of difference; and we only have more than this in (*a*) or (*b*) provided the selected presentations occur together. We say that we know the 'difference' (*i.e.* the diversity) between a sound and a taste; but what we mean is simply that we know what it is to pass from attending to the one to attending to the

[1] Difference has here a quasi-mathematical meaning like $x - x'$ and is quite distinct from the diversity referred to under *c*. Experimental psychology is largely concerned with such sensory estimation of 'difference.'

[2] Common language seems to recognise some connexion even here or we should not speak of harsh tastes and harsh sounds, or of dull sounds and dull colours and so forth. All these, however, are epithets applied to diverse special sensations, probably on the ground of similarities in the organic sensations accompanying them.

[3] I have been forced to use italics here by way of rebutting a criticism of Professor Ladd, which has no point unless these words and their context are ignored. Cf. his *Psychology, Descriptive and Explanatory*, 1894, p. 663.

other. It is simply an experience of definite change. Change, however, implies continuity, and there is continuity here in the movement of attention and the affective state consequent on that, but not directly in the qualities themselves.

c. If red follows green we may be aware of a greater difference than if red followed orange; and we should ordinarily call a 10 lb. load heavy after one of 5 lb. and light after one of 20 lb. Facts like these it is which make the differential theory of presentations plausible. On the strength of such facts Wundt formulated a law of relativity, free, apparently, from the objections just urged against Bain's doctrine. It ran thus: "Our sensations afford no absolute but only a *relative* measure of external impressions. The intensities of stimuli, the pitch of tones, the qualities of light, we apprehend (*empfinden*) in general only according to their mutual relation, not according to any unalterably fixed unit given along with or before the impression itself[1]."

But if true, this law would make it quite immaterial what the impressions themselves were: provided the relation continued the same, the sensation would be the same too, just as the ratio of 2 to 1 is the same whether our unit be miles or millimetres. But in the case of intensities, *e.g.* there is a *minimum sensibile* and a *maximum sensibile.* The existence of such extremes is alone sufficient to turn the flank of the thorough-going relativists; but besides these there are instances enough of intermediate intensities that are directly recognised. A letter-sorter, for example, who identifies an ounce or two ounces with remarkable exactness identifies each for itself and not the first as half the second; of an ounce and a half or of three ounces he might have a comparatively vague idea. And so generally within certain limits of error, *indirectly ascertained,* we can identify intensities, each for itself, neither referring to a common standard nor yet to one that varies from time to time—to any intensity, that is to say, that chances to be simultaneously presented—just as an enlisting sergeant will recognise a man fit for the Guards without a yard measure and whether the man's comrades are tall or short. As regards the qualities of sensations the outlook of the relativists is, if anything, worse. In what is called 'Meyer's experiment' a tint

[1] *Physiologische Psychologie,* 1st ed., p. 421; the doctrine reappears in later editions, but no equally general statement of it is given.

that appears greenish on a red ground will acquire an orange shade on a ground of blue. But this contrast is only possible within certain very narrow limits. In fact, the phenomena of colour-contrast, so far from proving, distinctly disprove that we apprehend the qualities of light only according to their mutual relation. In the case of tones it is very questionable whether such contrasts exist at all.

Summing up on this particular doctrine of relativity, of which Wundt is the most distinguished exponent, the truth seems to be that in some cases where two presentations, whose difference is itself presentable, occur in close connexion, this difference—as we indirectly learn—exerts a certain bias on our estimate of one or other of the two presentations. There is no 'unalterably fixed unit' certainly; but, on the other hand, 'the mutual relations of impressions' are not everything. "*Alles in der Welt steht in Verhältnissen, besteht aber nicht daraus*," as Stumpf has happily said. In this sense, to be sure, the psychologist must recognise a 'principle of relativity'; but this seems already sufficiently implied in what has been said of the presentational continuum and its differentiation.

d. Relativity is often used to denote what we have called the duality of experience and various epistemological consequences that it is supposed to involve as in the distinction of phenomenon and noumenon, for example. But there are two results of this relation that are psychologically important. Whether the nature of the subject in any way affects the *quality* of its objects is very doubtful, but it certainly entirely determines what is called their algedonic *character*, their painfulness or pleasantness. It also affects their quantitative characteristics in such wise that a stimulus that is minimal for one subject may be quite otherwise for another: a particle too light for a man to feel might break the back of a gnat[1]; and again while the man experienced but one change the gnat—with its quicker *tempo*—might experience many. But this very relativity in giving a meaning to 'minimal' presentation, for example, introduces a certain absoluteness—as we have already noticed—into immediate experience, which contrasts with the thorough-going relativity of science. Without this indeed it would be hard to see

[1] This relativity was the basis of Aristotle's famous doctrine of 'the mean.' Cf. *Nic. Ethics*, II. vi. 7.

how we could ever come by any conceptual knowledge of time or space at all.

Subconsciousness: (a) of Impressions.

§ 6. The term *field of consciousness*[1] has occurred sundry times in the course of this exposition: it is one of several employed in describing what have been incidentally referred to as 'degrees or grades of consciousness'—a difficult and perplexing topic that we must now endeavour further to elucidate. Sailors steering by night are said to look at the pole-star, 'the cynosure of every eye,' but this does not prevent them from seeing the rest of the starry vault. At a conversazione we may listen to some one speaker while still hearing the murmur of other voices, and while listening we may also see the speaker and thereby identify him the better. What in these instances is looked at or listened to has been called the *focus* of consciousness, the rest of what is heard or seen or otherwise presented being called the *field*, within which attention is thus concentrated or brought to a point[2]. Of these objects beyond the focus we have then only a lower degree of consciousness, and the more 'distant' they are from the centre of interest the fainter and obscurer they are supposed to be or to become. Now, it is obvious that the continuity here implied, if strictly taken, logically commits us to a field of consciousness 'extending' with ever diminishing intensity *ad indefinitum*: in other words the continuity of our presentational continuum will be thoroughgoing, as it was with Leibniz[3].

But we have next to notice certain new features that have led psychologists to give to the term field of consciousness a more restricted meaning. A meteor flashing across the sky would certainly divert the helmsman's attention, and for the nonce he would look at that and not at the star in the Little Bear's tail; a voice at our elbow accosting us, we should turn to the new

[1] Professor Wundt is commonly credited with the introduction of this terminology; but Professor Titchener (*Psychology of Attention and Feeling*, 1908, pp. 225, 368) gives many earlier instances of its use, going back as far as Abraham Tucker; it is, however, to be found already in Chr. Wolf and again in Baumgarten (see Eisler's *Worterbuch*. s.v. *Blickfläche*).

[2] According to Wundt the whole field is said to be perceived, the focus within it to be apperceived (cf. his *P.P.*, 6th ed., iii. p. 307).

[3] Cf. above, p. 31.

speaker and listen to him, still hearing it may be, but no longer 'following,' the discourse thus for us interrupted. In these cases a change in the field of consciousness brings about a non-voluntary change in the focus. But it only does so provided it is sufficiently intense and abrupt; and—as already remarked—the more attention is already concentrated the less effective a given disturbance will be[1]. A whole swarm of meteors might have streaked the sky unheeded while Ulysses, life in hand, steered between Scylla and Charybdis, just as all the din of the siege failed to distract Archimedes bent over his figures in the sand. On the other hand, we can voluntarily transfer the focus of consciousness to any object within the field, provided again this is sufficiently differentiated from the rest. But, more than that, we can not only of our own motion turn to look at or to listen to what we have only seen or heard—but not noticed—before; we can also look out or listen for something not as yet distinguishable, perhaps not as yet existing at all. And here again the concentration of attention may be maximal; as when a shipwrecked crew scan the horizon for a sail, or a beleaguered troop hearken for the oncoming of rescue. Now, such anticipated presentations as soon as they are clearly discernible have already a certain finite intensity, and so they are said to have passed over 'the threshold'—to use Herbart's now classic phrase—and to have entered the field of consciousness. Afterwards, any further increase in their intensity is certainly gradual; are we then to suppose that, before this, their intensity changed instantly from zero to a finite quantity; and not rather that there was an ultra-liminal or sub-liminal phase where too it only changed continuously? The latter alternative constitutes the hypothesis of *subconsciousness*.

According to this hypothesis the total field with which we began is divided into two parts by what Fechner emphatically called 'the *fact* of the threshold,' and the term field of consciousness is henceforth restricted to that part within which the focus of consciousness always lies, the outlying part being the region of subconsciousness. Difficulties now begin to be apparent. The intensity or vivacity of a presentation within the field of consciousness depends—we have seen reason to think—partly on what we may call its inherent or absolute

[1] Cf. above, ch. iii, p. 63.

intensity, partly on the attention that it receives. But this does not hold of presentations in subconsciousness. These sub-presentations, as we ought perhaps to call them, cannot be severally and selectively attended to, cannot be singled out as direct objects of special attention. Many psychologists have accordingly maintained not only that they cannot with propriety be called presentations, but that they have no strictly psychical existence at all. This, however, seems too extreme a view.

In the first place, if nothing of a presentational character can exist, save in the field of consciousness as thus circumscribed by a definite boundary or threshold, a breach of continuity is implied such as we nowhere else experience: even the field of sight, from which the metaphor of a field of consciousness is derived, has no such definite margin. The threshold then is not comparable to a mathematical line on opposite sides of which there is an intensive discontinuity. And experience shews that even where it is narrowest—where we are all eyes or ears, intently expecting some signal—it still has an appreciable breadth. This has been amply proved, for example, by the psychophysical investigations of Fechner and others. We listen, say, to a certain sound as it steadily diminishes; at length we cease to hear it. Again, we listen for this same sound as it steadily increases and presently just barely hear it. In general it is found that its intensity in the former case is less than it is in the latter, and there is also in both cases a certain margin of doubt between clear presence and clear absence; the presentation seems to flicker in and out, now there and now gone. Further, in comparing differences in sensations—of weight, brightness, temperature, &c.—we may fail wholly to detect the difference between *a* and *b*, *b* and *c*, and yet the difference between *a* and *c* may be clearly perceived. We have thus to recognise the existence of a difference between sensations, in cases where there is no so-called 'sensation of difference[1].' But if this much continuity must be admitted we can hardly fail to admit more. If differences of presentation exist within the field of consciousness but beyond the utmost verge of the 'threshold of *difference*,' we cannot consistently deny the existence of any presentations at all beyond the threshold of *consciousness*. Finally, since the

[1] Such difference is then said to be beyond the 'difference threshold.'

field of consciousness varies greatly and often suddenly with the amount and distribution of attention, we must, as already said, either admit that such subconscious presentations exist, or suppose that clearly differentiated presentations, presentations that is to say of finite intensity, pass abruptly into or out of existence with every such variation of the field. It is obviously impossible to ascertain directly whether this does or does not happen. But if it did, the intensity of a presentation, so far from being determined from two sides—the objective and the subjective—would be a function of attention simply. Non-voluntary attention, which we have regarded as primary, would disappear altogether: a man asleep might awake *proprio motu*, but to awaken him would be impossible.

The hypothesis of subconsciousness, then, is in the main nothing more than the application to the facts of presentation of the law of continuity. Its introduction into psychology was in fact due to Leibniz, who first formulated that law. Half the difficulties in the way of its acceptance are due to defective terminology. With Leibniz consciousness was not coextensive with all psychical life, but only with certain higher phases of it[1]. Of late, however, the tendency has been to make consciousness cover all stages of mental development, and all grades of presentation, so that a presentation of which there is no consciousness resolves itself into the manifest contradiction of an unpresented presentation—a contradiction not really involved in Leibniz's 'unapperceived perception[2].' Moreover, the active form of the word 'conscious' almost unavoidably suggests that an 'unconscious mental modification'—Hamilton's phrase—must be one in which that subjective activity, variously called consciousness, thinking, or attention, has no part at all. But such is not the

[1] The following brief passage from his *Principes de la nature et de la grace* (§ 4) shews his meaning: "Il est bon de faire distinction entre la *Perception*, qui est l'état intérieur de la *Monade* représentant les choses externes, et *l'Apperception*, qui est la *Conscience*, ou la connaissance réflexive de cet état intérieur, laquelle n'est point donnée à toutes les âmes, *ni toujours à la même âme*. Et c'est faute de cette distinction que les Cartésiens ont manqué, en comptant pour rien les perceptions dont on ne s'apperçoit pas, comme le peuple compte pour rien les corps insensibles" (*Op. Phil.* Erdmann's ed., p. 715). A like distinction was made far earlier by Plotinus (*Enn.* 4, iii. 30), a writer to whom Leibniz sometimes refers.

[2] Provided, of course, there is continuity between the two, as Leibniz doubtless intended. Cf. Latta, Leibniz, *The Monadology, etc.*, 1898, p. 127; Rabier, *Psychologie*, 3rd ed., 1888, p. 54.

meaning intended when it is said, for example, that a soldier in battle is often unconscious of his wounds or a scholar unconscious at any one time of most of the knowledge 'hidden in the obscure recesses of his mind.' There would be no point in saying that a subject is not conscious of what is not presented at all; but to say that what is presented lacks the intensity requisite in the given distribution of attention to change that distribution appreciably is pertinent enough. Subconscious presentations may tell on conscious life—as sunshine or mist tells on a landscape, or the underlying writing on a palimpsest—although lacking either the intensity or the individual distinctness requisite to make them definite features. Even were there no facts to warrant this concept of an ultra-liminal presentation of impressions it might still claim *a priori* justification. For to assume that there are no presentations beyond those within the field of consciousness is as arbitrary and improbable as it would be to suppose—in the absence of direct evidence to the contrary—that there was no vision or audition save such as is mediated by human eyes and ears. Psychical magnification or diminution is not more absurd than physical, though neither is possible without limit. We cannot fix the limit at which the subconscious becomes the absolutely unconscious. The probability is certainly against the assumption that the profoundest sleep carries us beyond this limit, and Leibniz may have been right in maintaining that even death does not. Still such speculation does not much concern empirical psychology. But what that does seem to warrant is the existence, beyond the discriminated differentiations of our continuum, of other possible differentiations that form the 'confused' background of the field of consciousness. And we may fairly assume that the nearer we approach to the beginning of experience the more this background predominates, the less there would be of a field of consciousness within it and of a focus of consciousness within that.

Subconsciousness: (b) of Ideas.

§ 7. The subconscious presentation of ideas as distinct from impressions is a still more perplexing as well as a more important topic, which calls for special consideration. As we can turn our attention to the sensory threshold and await the

entrance of an expected impression, so we may await the emergence of a 'memory-image'; and again the threshold turns out to be not a mathematically exact boundary but a region of varying depth[1]. What we are trying to recollect seems first to waver, now at the tip of our tongue and the next moment completely gone, then perhaps a moment afterwards rising into clear consciousness. Sometimes when asked, say, for the name of a certain college contemporary we reply: I cannot tell, but I should know his name if I heard it. We are aware that we could 'recognise,' though we cannot 'reproduce.' At other times we are confident that even recognition is no longer possible; and still, if we met the man himself in the old scenes and heard his voice, his name might yet return. The sad memories of a great loss may continue as a chill substratum to check the springs of life like a wintry frost, long after the blight of it has disappeared from the surface. Even the imagery of a troubled dream may sometimes vaguely haunt us during the day, or an odd fancy of the day, forgotten in a moment, may resume its place and further unfold itself as soon as we sleep. And as years increase upon us, we are led to contrast the shallowness and rashness of youth with the depth and stability that age brings: "still waters run deep." The field of consciousness is different because of the greater volume of subconscious experience on which it is superposed, and with which it is vitally continuous. There is less hopefulness but also often less fear, less sensitiveness, but more sagacity, in a word, more 'presence of mind.'

Nevertheless, it may be urged, it is surely incredible that all the incidents of a long lifetime and all the items of knowledge of a well-stored mind, that may possibly recur—'the infinitely greater part of our spiritual treasures,' as Hamilton said—are severally retained and continuously presented in the form and order in which they were originally experienced or acquired. *This, however, is not implied.* Ideas, in contrast to impressions, have always a certain generality. The same image may figure in very various connexions, as may the same letter, for example,

[1] Herbart and Fechner describe subconscious presentations generically as existing *below* the threshold. On the other hand, we have spoken of subconscious *impressions* as existing *beyond* it. In view of the important differences between the two forms of presentations, primary and secondary, it seems convenient and justifiable to distinguish ultra-liminal impressions from sub-liminal ideas.

in many words, the same word in many sentences. We cannot measure the literature of a language by its vocabulary, nor may we equate the extent of our 'spiritual treasures' when these are successively unfolded with the psychical apparatus, so to say, in which they are subconsciously involved[1]. Take the first book of the *Aeneid*, which, as Macaulay would say, every schoolboy knows: as subconsciously involved, when the boy is not thinking of it, his knowledge is more comparable to a concordance than to the text itself, which nevertheless can be reproduced from it. In the text the word Aeneas occurs many times, in the concordance as a heading but once. But give him the cue *Aeneas scopulum*, and the boy reels off from the 180th line; or *Praecipue pius Aeneas*, and he starts with the 220th. Ask him, however, for the 580th line; he is probably helpless, while a dunce with the book in his hand can straightway read it out. Say instead *Et pater Aeneas*, and the boy can at once complete the line while the dunce is now helpless. It is a mistake, then, to suppose that all the experiences that have successively occupied our attention are still present, item for item just as at first, in this *multum in parvo* apparatus that we sometimes call our 'ideational mechanism.' Though its explicit revival is successional, occurs, so to say, in single file, a whole scheme—what Herbart called 'an apperception-mass'[2]—in which many ideas are involved, may rise *towards* the threshold together[3]. When our schoolboy, for example, turns from classics to geography, the mention of Atlas, which might then have recalled a Titan, now leads him to think only of his book of maps. And there is a like sudden

[1] This doctrine of the involution and evolution of ideas we probably owe to Leibniz. Herbart attempted in a very arbitrary and *a priori* fashion to develop it in his psychical statics and dynamics with the result—usual to extreme views—that later psychologists neglected it altogether. There are now signs of a fresh reaction, and we shall continually come across evidence of the wide range and great importance of the doctrine as we proceed. Professor Stout's important distinction between 'implicit' and 'explicit' apprehension may be cited as an instance. *Analytic Psychology*, 1896, vol. i. p. 95 f. Cf. below, ch. xii, § 3, *fin.*

[2] Cf. below, ch. xii, § 5.

[3] Hume was already aware of such subconscious ideas, when in his account of abstraction he says:—"The word not being able to revive the idea of all these individuals only touches the soul...and revives that custom which we have acquired by surveying them. *They are not really and in fact present to the mind, but only in power; nor do we draw them all out distinctly in the imagination*, but keep ourselves in a readiness to survey any of them, as we may be prompted by a present design or necessity." *Treatise*, pt. 1, § 7, Green and Grose's ed., vol. i. p. 328. Italics mine.

shifting of the substratum of our thoughts, when, taking up the morning paper, we glance first at the foreign telegrams, then at the money market, and then at the doings of our political friends. Yet more remote than all, obscurer but more pervasive, like the clouds of cherubs or imps vaguely limned in mediaeval pictures, are the indefinite constituents of our emotional atmosphere, "gay motes that people the sunbeams" of our cheerfulness and make all *couleur de rose*, or 'horrid shapes and sights unholy' that overcast the outlook when we 'have the blues.' And as attention relaxes, these advance into the foreground and become the nucleus of more or less palpable hopes or fears.

Because of the manifold forms into which they may *evolve*, subconscious images, while still *involved*, are sometimes called 'psychical' or more definitely 'presentational dispositions.' The word *disposition* means primarily an arrangement, as when we talk of the disposition of troops in a battle or of cards in a game; the *disposita*, that is to say, are always something actual. Which of several *potential* dispositions will *become* actual, must depend upon circumstances; but at least, as Leibniz long ago maintained, "les puissances véritables ne sont jamais des simples possibilités." What is requisite to the realisation of a given potentiality is sometimes a condition to be added, sometimes it is one to be taken away. A lazy horse needs the spur to keep him going, a restive horse the reins to keep him still. Now presentational dispositions we assume to be always of the latter sort: as Leibniz went on to say, "il y a toujours de la tendance et de l'action[1]." These dispositions are processes or functions more or less inhibited, and the inhibition is determined by their relation to other psychical processes or functions[2]. The analysis and genesis of such presentational interactions will occupy us at length by and by. It may then be possible to explain the gradual involution of what was successively unfolded in explicit consciousness into those combinations which Herbart called 'apperception-masses,' combinations devoid of the concrete hints of date and place which are essential to memory. Meanwhile the evidence adduced—decidedly cogent though admittedly indirect—together with the difficulties besetting the

[1] *Nouveaux Essais*, II. i. § 9.

[2] This is the truth underlying Herbart's psychological dynamics which Leibniz had already adumbrated.

extreme view that beyond or below the threshold of consciousness there is nothing presentational, seems here again clearly to justify the hypothesis of subconsciousness. At the same time the principle of continuity, everywhere of fundamental importance when we are dealing with reality, also forbids the attempt arbitrarily to assign any limits to the subconscious.

Many psychologists have proposed to explain subconscious retention by habit. But it is obvious that habit itself implies retention and is practically synonymous with disposition[1]. It must therefore presuppose *disposita*, if we are to escape the absurdities of *puissances ou facultés nues*, with which in this very connexion Leibniz twitted Locke[2]. Yet, obvious as all this may be, it is frequently ignored even by those who are fond of exposing the pretended explanations of the 'faculty-psychologists' and quoting Molière to confute them. Thus we find J. S. Mill arguing: "I have the power to walk across the room though I am sitting in my chair; but we should hardly call this power a latent act of walking[3]." Neither should we call it *a power* if Mill had shared the fate of Widrington and 'both his legs were choppéd off' or had become paralysed, or if, instead of sitting in his chair, he had been lying in his cradle. What we want is the simplest psychological description of the situation after the 'power' has been acquired by practice and is still retained. Well, at any rate, it may be said, he was, as a matter of fact, sitting still and neither walking nor dancing. True, but let us suppose that Mrs Mill enters with a piece of good news and suggests a waltz or a *pas seul* by way of giving vent to the exuberant emotion evoked. The familiar steps would at once rise in idea above the threshold of consciousness, and might in less balanced minds straightway 'break into action,' though inhibited, it may be, in this instance, by a sense of philosophic decorum. The situation, in brief, would be the familiar one described by psychologists as 'ideo-motor action.' In such a case we can be conscious of the 'idea' of the movement without the movement actually ensuing; yet only in such wise that the

[1] Thus we find Locke saying the "power or ability in man of doing anything, when it has been acquired by frequent doing the same thing, is that idea we name *habit*; when it is forward and ready upon every occasion to break into action, we call it *disposition*." *Essay*, II. xxii. 10.

[2] *Op. cit.* II. x. § 2.

[3] *Examination of Sir W. Hamilton's Philosophy*, 3rd ed., p. 329.

idea is more apt to pass over into action the intenser it is, and often actually passes over in spite of us. As there must be some functional activity answering to this conscious presentation; why may not a much less amount of it be conceived possible in subconscious presentation?

But Mill, though he talked of 'the power to walk,' was not thinking of functional activity at all. For him, as for some psychologists in our own day, dispositions were structural not functional. The only 'distinct meaning to be attached to them,' he contended, was not that of a subliminal presentation of ideas but that of 'an unconscious modification of nerves.' They answer then, strictly speaking, not to physiological processes having psychological concomitants but to physical structures having, as such, none. What Mill meant has been set forth with more detail by Wundt. Presentations, says Wundt, are not substances but functions: their physiological counterparts also are functional, *i.e.* are the activities of certain arrangements of nerve-cells. Further, consciousness of the presentation and the nervous activity cease together. So far then Wundt recognises concomitant functions and so far we agree, including under consciousness all degrees of subconsciousness but not, of course, unconsciousness or the utter absence of consciousness altogether. But continuing his exposition, Wundt goes on to say that the nervous activity leaves behind it a molecular modification of the nervous structure, which becomes more and more permanent with exercise, and is such as to facilitate the recurrence of the same functional activity. In other words Wundt next recognises the structural side of what we have called *plasticity*; and again we shall agree:—Wherever there is psychical plasticity there is also neural plasticity. Wundt however seems to overlook one obvious but all-important point: plasticity implies life, implies function. If then a given functional activity entirely ceases, it does not '*leave behind it*' a structural plasticity that survives independently. On the contrary when the function has completely lapsed the molecular structure has no longer any 'power' to facilitate its recurrence. The naturalistic attempt to account for function by structure, though it is as old as Lucretius, has hitherto always broken down, and Wundt certainly never meant to defend it. Biologically the two are inseparable; but the functional activity must surely be the formative principle. For

to assign this priority to structure—meaning thereby molecular configuration—is to accept the materialists' *generatio æquivoca*, as Kant happily termed it, of life and mind from inert 'stuff.'

Again, the attempt to get behind the psychical by talking about a physical arrangement of molecules *predisposing*, is to allow oneself to be misled by a metaphor, as if inert matter could ape the living mind. There is no predisposition in nitric chloride to explode if slightly disturbed—to take Wundt's illustration—analogous to an irascible man's outburst when slightly provoked. Along with the explosion of the chloride there is no plasticity such as will facilitate its recurrence as there always is in the after-effects of exercise by living things.

Finally Wundt seems to go too far when he contends that whereas we may some day know the nature of his so-called 'physical' disposition, that of the psychical disposition, which he nevertheless recognises, must of necessity be for ever unknown, since the threshold of consciousness is also the limit of internal experience. The existence of psychical dispositions is without immediate evidence, certainly: the very nature of subconsciousness implies that. But it surely cannot be maintained that the only evidence of existence is that of direct acquaintance or distinct presentation? To assert that in this case is plainly to beg the whole question. The distinction already pointed out between explicit and implicit, evolved and involved, presentation cannot be simply ignored. Presentations are not substances or atoms, Wundt has truly said; but just for that reason the continuity of the presentational whole can never be left out of account[1].

In conclusion:—We may take it as conceded that wherever there is psychical process there is also concomitant neural process. So far it is unreasonable to assume discontinuity between the two[2]. Also it is now generally conceded that neural process cannot be transformed into psychical process, as even Spencer and Lewes, in common with the older materialists, supposed. In short, against the attempt to supersede psychical dispositions by

[1] Cf. Wundt, *Physiologische Psychologie*, 2nd ed., 1880, ii. p. 203; 6th ed., 1911, iii. pp. 304 f.

[2] There are indeed certain neural processes, those, *e.g.* of the sympathetic system of nerves, which normally tell on conscious life only as determining the character of the general sensibility or *coenaesthesis*. But these do not concern us here.

physical, we find three fatal objections:—(1) It simply ignores the indirect evidence in favour of subconscious presentations and violates the principle of continuity. (2) It implicitly sets aside plasticity as a psychological and not merely a biological fact. In other words, it is the logical outcome of a psychophysical—or rather, a physicopsychical—theory, which, working primarily from the physical side, regards mind as simply an epiphenomenal and collateral product of matter. (3) In conformity with this theory, it accords to voluntary attention no more initiative in the grouping of ideas than belonged to non-voluntary attention in the reception of the original impressions: as the one admits of only a physical explanation, so, it is held, does the other. Such a physicopsychical theory is appropriate only to presentationism, a doctrine that, as we proceed, we shall find to be more and more at variance with facts. If the so-called 'interaction of presentations' is never altogether independent of voluntary attention it can never be accounted for by physiology alone, and consequently the dispositions that only arise through such interaction cannot be so accounted for either.

CHAPTER V

SENSATION AND MOVEMENT

Definition of Sensation.

§ 1. On the view of experience here maintained, we are bound to challenge the physiological method, still widely current, of describing sensations as due to physical stimuli. The following definition, given by Bain, may be taken as a type:— "By sensations, in the strict meaning, we understand the mental impressions, feelings, or states of consciousness following on the action of external things on some part of the body, called on that account, sensitive[1]." It is true, no doubt, that what the psychologist calls sensibility has as its invariable concomitant what physiologists call sensibility, or what the more careful of them call irritability; and, true again, that this irritability is invariably preceded by a physical process called stimulation. But the converse statements are not necessarily true: there may be stimulation and no consequent irritation, irritation and no concomitant sensation. The three processes are then certainly distinct, and it is equally certain that the last alone enters into immediate experience. Nevertheless, it is urged, why not recognise a connexion that actually obtains; since otherwise sensation must remain unexplained? Well, in the first place, such 'psychophysical' connexion is not a psychological explanation: it cannot be turned directly to account in psychology, either analytic or genetic. Next, the psychological fact called sensation always is, and at bottom always must be, independently ascertained; for, as said, the physiological 'neurosis' or irritation has not necessarily a concomitant 'psychosis' or sensation, and,

[1] *Senses and Intellect*, 4th ed., 1894, p. 101. In his shorter work, *Mental and Moral Science* (1868, p. 27), Bain said not 'following on,' but 'resulting from' the action of external things, &c.

strictly dealt with, affords no hint of such. Finally, this psychological inexplicability of sensation is a fact of the utmost moment: it answers to what we call reality in the primary sense of the term. The psychophysicist, in setting out to explain sensation, has—unawares to himself—left this fundamental reality behind him. For it belongs essentially to individual experience, and this—in assuming the physical standpoint—he has of course transcended.

Nevertheless the mistake of method that here reveals itself was perhaps inevitable; for the facts of another's sense-organs and their physical excitants must have obtruded themselves on observation long before the reflective attitude was advanced enough to make strictly psychological analysis possible. The psychophysical standpoint, that is to say, was attained before the purely psychological[1]; and the consequent bias is only now in process of correction. A series of physical processes, first without and then within the organism—of ethereal or aërial vibrations, of neural and cerebral excitations, for example,—was the starting-point. What comes first, immediately, and alone, in the individual's experience, and is there simply and positively *real*, was then misinterpreted as subjective modification, mental impression, *species sensibilis*, or the like. For from the days of Democritus down to our own the same crude metaphor has prevailed without essential variation. And here the saying holds: *Nulla vestigia retrorsum.* Into the man's head the whole world goes, including the head itself. Such thorough-going 'introjection' affords no ground for subsequent 'projection.'

Thus the endeavour to explain sensation has clearly overreached itself: the external object or thing that was supposed to cause sensations, and to be therefore distinct from them, was in the end wholly resolved into these and regarded as built up out of them by association (Mill) or by apperceptive synthesis (Kant). But no 'mental chemistry,' no initial alchemy of 'forms,' can generate objective reality from 'feelings' or sense-impressions as psycho-physically defined[2]. A's experience as it is for B is not real, immediately known, but inferential. If now

[1] Cf. above, ch. i, § 1.

[2] Nothing shews this more plainly than the newly-coined term, epiphenomenon, now applied in this connexion.

the grounds of B's inference, which are the only immediate realities for him, are to be regarded as the causes of which A's immediate experiences are merely effects, then B's experience and A's are on a wholly different footing. When A treats B's experience in the same fashion we get the world in duplicate: (1) as original and outside, *i.e.* as *cause*, and (2) as copied within each percipient's head, *i.e.* as distinct *effect*. But when B interprets his own experience as he had interpreted A's, we seem to have lost the one real world altogether. In presence of this dilemma, the philosophers of our time, as already said, are feeling it needful to revise their psychology. The question of method is vital. If the psychophysical standpoint were the more fundamental, psychology would be based on physiology, and the old concept of sensation might stand. But what in that event would become of epistemology it is not easy to say. If, on the other hand, it is the exclusive business of psychology to analyse and trace the development of individual experience as it is for the experiencing individual, then—however much neurological evidence may be employed as a means of ascertaining psychological facts—the facts themselves must be scrupulously divested of all physical implications. The psychophysical method then takes a secondary place, and the objective reality of 'sensory' presentations stands unimpeached.

The duality of subject and object in experience compels us also to protest against the description of sensations as 'states of consciousness.' Since it is the subject, not the object that *is* conscious, the term state of consciousness implies strictly a subjective reference; and so is inapplicable to sensations, unless they are regarded as subjective modifications, either affective or active. The former view would identify sensation with feeling, and this—for reasons already given—we must disallow. But it is true that a sensation, like other presentations, implies the subjective activity we call attention; it is not, however, a modification or state of this activity, but the object of it. This relation is expressed in German by means of the distinction generally of *Vorstellen* and *Vorstellung* and in the present case of *Empfinden* and *Empfindung*; and German psychology has gained in clearness in consequence. The distinction of conception and concept (conceit) is to be found in older English writers and was revived by Sir W. Hamilton, who suggested

also the parallel distinction of perception and percept. It would be a great gain if there were a corresponding pair of terms to distinguish between 'the sensing act' and the object 'sensed,' as some have been driven to say. Reception and recept at once occur and seem unexceptionable—apart, of course, from their novelty[1]. At any rate, if we are to rest content with our present untechnical terminology we must understand sensations to mean objective changes as they first break in upon the experience of our psychological individual; in this respect Locke's figurative term 'impression' has a certain appropriateness. So regarded, we may call them also simple presentations. Whether any of our sensations now are actually simple as sensations is questionable. Certainly many that are commonly taken to be such prove to be complex. But we shall best prepare for the discussion of this question by considering first the characteristics that what we ordinarily call a sensation is found to possess.

Characteristics of Sensations.

§ 2. A single sensation we find has not only a determinate quality but it is also quantitatively determined in respect of intensity, protensity (or duration) and extensity[2]. A plurality of properties, it may be said, straightway implies complexity of some sort. This is obvious and undeniable: psychological—as distinct from psychical[3]—analysis of simple sensations is possible, and the description just given is reached by means of it. Such analysis, however, presupposes the comparison of many sensations;

[1] Reception does not in English suggest the taking *back* of the Latin *recipere*; it expresses only the comparative passivity of sense. In contrast to *percipere* (to take entire possession of) it implies the absence of that assimilation which is essential to perception; and finally it contrasts appropriately with retention. Romanes proposed to use the term 'recept' to distinguish what are often called 'generic images' from concepts proper; but in view of the English meaning of reception there is no special fitness in this suggestion. I cannot but hope that some day this term may obtain currency in the sense here proposed, and am pleased to note that Professor Sherrington is leading the way from the physiological side.

[2] It is interesting to find Kant using these three terms together in a like sense. Cf. *Critique of the Pure Reason*, Max Müller's trans., p. 691 *fin.*

[3] This distinction, though continually overlooked, is vitally important. By *psychological* analysis we mean such analysis as the psychological observer can reflectively make, by *psychical* analysis only such analysis as is possible in the immediate experience of the subject observed.

but to the complexity it discloses there is no answering plurality discernible in the immediate experience of a single sensation. To make this clearer let us start from a case in which such plurality *can* be directly verified. In a handful of rose petals we are aware at once of a definite colour, a definite odour and a definite 'feel.' Here there is a plurality $(a+b+c)$, any item of which can be withdrawn from our immediate experience without prejudice to the others; for we can close the eyes, hold the nose, or drop the petals on the table. Let us now turn to the colour alone; this we say has a certain quality, intensity, extensity, &c. But not only have we not one sense for quality, another for intensity, another for extensity: we cannot reduce the intensity to zero and yet have the quality remaining; nor can we suppress the quality and still retain the extensity. In this case then what we have is not a plurality of presentations $(a+b+c)$, but a single presentation having a plurality of attributes (abc) so related that the absence of any one annihilates the whole. But though, as already said, such single presentation gives, as it stands, no evidence of this plurality, yet it is to be remembered that in actual experience we do not deal with sensations in isolation; here, accordingly, we find evidence in plenty to justify our psychological analysis. In innumerable cases we experience varieties of intensity with little or no apparent change of quality, as happens, for example, when a sounding pitch-pipe is moved towards or away from the ear; and continuous changes of quality without any change of intensity, as happens when the pipe is shortened or lengthened without any alteration of position. We may have tactual or visual sensations which vary greatly in extensity without any striking change of quality, and we may have such sensations in every possible variety of quality without any changes of extensity. Sudden and intense sensations of whatever quality tend to startle us into attending; whereas liminal sensations, even when sudden, are only discernible when attention is definitely concentrated upon them.

But such experiences besides revealing the diverse characteristics of a sensation may serve also to bring out the mutual relations of these characteristics. In contrast with its quality, the intensity, extensity, and protensity of a sensation might be classed together as quantitative. Again, in contrast to the indefinite and

seemingly irreducible variety in the qualities of specific sensations, their quantitative characteristics have severally a homogeneity and generality which led Kant to treat them as epistemologically *a priori*. All percepts, he said in effect, have extensive (spatial and temporal) and intensive magnitude. Space and time, though not indeed the same as extensity and protensity, nevertheless presuppose them as simpler and more fundamental facts. To the psychological analysis of Kant's day this however was unknown: in substituting the one pair for the other then we are only bringing Kant's epistemological principles, his so-called 'Axioms of Intuition' into line with our present knowledge. The first of these axioms is for us tantamount to saying that every sensation as a differentiation of the presentational continuum partakes of the extensity which belongs to it; and the second means for us simply that such differentiation as a change of process involves duration. The title of Kant's next epistemological principle is suggestive: he calls it 'Anticipations of Perception.' He says, in effect: "That every sensation and the phenomenal reality corresponding to it must have intensive magnitude or degree —this is a point we can (epistemologically) anticipate; what specific qualities there will be we cannot (in any way) anticipate." Of qualities therefore in our sense Kant says nothing. But, in bringing the intensity of sensations into close relation with reality or what he calls 'the transcendental *matter* of all objects[1]' as 'things by themselves,' he seems unwittingly to suggest that, though experience alone can disclose *what* qualities sensations will have, we can at least 'anticipate' *that* they will have qualities. In other words, their 'matter' or intensity will have particular 'forms' like the *species intentionales* of the scholastics or 'sensible ideas' of Locke[2], though we cannot tell *a priori* what. Over and above the quantitative or 'mathematical' constituents of experience, which Kant's epistemological exposition explicitly recognised, qualitative constituents are, then, also implied—a position entirely in accord with psychological facts. But at this

[1] Cf. in the *Critique* the section on Schematism, Müller's trans. p. 126 *fin.*; and also ch. ii, § 4, p. 49 above.

[2] Cf. "Anticipations of Perception," Max Müller's trans. p. 147. At an earlier period Kant was more explicit: "In allen Erkenntnissen ist am Object: (1) die Materie und die Form derselben, d. i. die Qualität...zu bemerken"—that is to say, Quality was recognised as a category. (*Reflexionen Kants zur Kritik der reinen Vernunft*, edited by B. Erdmann, 1884, p. 173.)

point a number of debateable questions arise to which we must now turn. And first, the one already raised :—

Differentiation of Sensations.

§ 3. Can we regard the sharply differentiated qualities of our present sensations as primordial, or must we not rather seek for evidence of their gradual elaboration, possibly from a single primitive sensation? Some psychologists have not only adopted the latter alternative but have pushed it to such lengths as to assume the existence of absolute 'units of sensibility,' all identically the same. They then explain the unlikenesses in our existing sensations as resulting "from unlike modes of integration of these absolute units[1]." This is psychological atomism of the extremest type: its physical analogue is to be found not in the several chemical elements with which we are familiar but in the single pristine element out of which these are thought to be compounded. The sole evidence advanced for such simple primordial sensation is physiological, the supposed existence of a single nerve shock or 'neural tremor.' And it is true that in an extirpated nerve what is known as the 'negative variation' is approximately such an isolated event of uniform quality. But the same cannot be said of what happens during the stimulation of a nerve *in situ*, with its peripheral and central connexions still intact. We have then to deal with an event which varies with the character of the nerve-terminals and with the state of the whole organism at the time. And psychologically in such a case we should be dealing with a differentiation of our presentational continuum, no two of which differentiations are ever entirely the same[2].

The only evidence apparently to which we can safely appeal in this inquiry is that furnished by biology. Protoplasm, the so-called 'physical basis of life,' is amenable to stimulation by every form of physical agency—mechanical, chemical, thermal,

[1] Cf. G. H. Lewes, *Problems of Life and Mind*, vol. iii. (1879), pp. 250 *sqq.*; H. Spencer, *Principles of Psychology*, vol. i. (1870), § 60.

[2] In agreement with this a brilliant advocate of psychological atomism, after effectively exposing in Leibnizian fashion the latent absurdities of a purely quantitative atomism, decides for the opposite extreme, maintaining that the psychical *Urelemente*, unlike the physical, are all qualitatively different. And of the two, this seems certainly the more philosophical position. Cf. Münsterberg, *Grundzüge der Psychologie*, 1900, pp. 266 ff., 369 ff.

photical, electrical—with the single exception of the magnetical. In keeping with this fact it is found that unicellular organisms respond, and respond in ways more or less peculiar, to each of these possible modes of excitation. Since, so far as is known, there is no morphological separation of function in these lowest forms of life, it is reasonably assumed that the single cell acts the part of 'universal sense-organ.' Again, it is reasonably assumed that the advance to such complete differentiation of sense-organs as we find among the higher vertebrates has been a gradual advance. Numerous facts can now be adduced of the occurrence of 'transitional' or 'alternating' sense-organs among the lower forms of multicellular animals; organs, that is to say, which are normally responsive to two or more kinds of stimuli, and thus hold an intermediate position between the universal sense-organ of the *Protozoa* and the special sense-organs of the *Mammalia*[1]. For example, a group of cells which would respond towards all stimuli impartially, were the cells independent unicellular organisms, becomes, as an organ in a multicellular organism, amenable only to mechanical or only to chemical stimuli,—becomes, that is to say, an organ of touch and of hearing, or an organ of taste and of smell. Finally, when differentiation is sufficiently advanced, the group ends by becoming exclusively the organ of one specific sense, touch *or* hearing in the one case, taste *or* smell in the other[2]. Of

[1] Cf. W. A. Nagel, "Die Phylogenese specifischer Sinnesorgane," *Bibliotheca zoologica* (1894), pp. 1—42.

[2] And when at length this stage of sensory differentiation is reached, then, any stimulus of whatever kind, if effective at all, may occasion sensations of the same quality: *e.g.* whether the visual apparatus is affected by light, by mechanical pressure, or by electric shock, visual sensations equally result. Facts of this kind have led to the doctrine of the 'specific energy of nerves' which was first propounded by Johannes Müller and is still *sub judice*. Were we to accept this doctrine without reservation and therefore to apply it to the lowest forms of life, where the organism functions as 'universal sense-organ,' we should have to conclude that primitive sensations are entirely without qualitative diversity. But the variety in the reactions to stimulation even among the *Protozoa*—and these furnish all the evidence of sensation we have in this case—makes against such a conclusion. Moreover it would be very difficult to explain the diversity we now experience through our several senses collectively, if primordial sensations were absolutely homogeneous. On the other hand it would be equally difficult to explain our supposed knowledge of the existence of diverse stimuli if sensory qualities were entirely independent of this diversity—if, for example, one and the same stimulus by affecting different sense-organs could give rise to all the sensory qualities that we experience. It seems obvious then that the doctrine of 'specific energies'

course the imperfectly specialised sensations, say of the leech, and still more the wholly unspecialised sensations of the amoeba, cannot be regarded as blends of some or all of those which we are said to receive through our five senses. Differentiation is not, either biologically or psychologically, the same as separation; nor, as has been already said, is the objective continuum, which it presupposes, the same as a confused aggregation. On the contrary, there is always objective (as well as subjective) continuity even in the most advanced experience. At the same time, we must admit also that, even in the most elementary experience there is always some differentiation[1].

Keeping both these points in view, we are led to suppose that sensations at the outset corresponded very closely with what is called the general vital action of contact, light, heat, &c. as distinct from the action of these stimuli on specially differentiated sensory apparatus. The genial light, warmth and freshness which we seek as exhilarating, or the sultry glare and stifling heat which we avoid as depressing, furnish us with sensations of this kind, and we can readily imagine them to exist—nay we can actually experience them—without any apprehension of the specific qualities we may now discern along with them. The same may be said of the relish or nausea that we now know as accompanied by definite tastes or smells, and of the shudders now produced by scratching a pencil, or rubbing a dry sponge, over a slate. In many cases we are still only aware of some change of 'symptom,' more or less invigorating or depressing, but too vague and unlocalised to justify the psychological use of the term 'organic.' This remark may be extended

requires limitation. And looking closer we find that the facts on which the doctrine is based at once suggests one limitation of importance. We find, that is to say, that stimuli are divided into two classes, adequate and inadequate. Thus light-waves are the adequate stimuli for visual sensations and sound-waves for auditory sensations; electrical stimulation and mechanical pressure are inadequate, though effective stimuli for both; and so on for all the other senses. In other words every sense normally functions, and has assuredly been developed, solely *en rapport* with its natural or 'adequate' form of stimulus: the effects now found to result from inadequate stimuli presuppose this adaptation and development, which they do nothing to explain and could never have produced, though they are impossible without them. In short the range of this doctrine is entirely physiological: it has no apparent relevance either in biology or psychology. And even in physiology it is not true that any inadequate stimulus will produce any sensation: it may be ineffective altogether.

[1] Cf. above, ch. iv, § 2, p. 79.

to the use even of 'somatic,' if somatic be taken to imply any experience of the distinction of the organism from external bodies. On the other hand those who prefer to speak of general feeling (*Gemeingefühl*) rather than of general sensation (*Gemeinempfindung*) or to use the two terms indifferently are in the opposite extreme, as has been already said[1], if they assume that experience consists primarily of purely affective states (*Zustände*) without objective antecedents or consequents or if they regard the two as originally identical. What is obviously lacking at the outset, when differentiation is still inchoate, is not sensation as objective in distinction from feeling as subjective, but rather the specific objective diversity which advancing differentiation brings. But the vagueness and generality of the experience described is no reason for confusing the concepts used in its description. Again, though less definitely discriminated, the earlier, and what we call the lower, sensations are not any less concrete than the later and higher. They have been called general rather than specific; not because psychologically they lack any essential characteristic of sensation which those acquired later possess; but simply because physiologically they are not, like these, correlated to special sense-organs.

Short, however, of resolving such sensations into combinations of one primordial modification of consciousness, if we could conceive such, there are many interesting facts which point clearly to a complexity that we can seldom directly detect. Several of our supposed sensations of taste, *e.g.*, are complicated with sensations of touch and smell: thus the pungency of pepper and the dryness of wine are tactual sensations, and their spicy flavours are really smells. How largely smells mingle with what we ordinarily take to be simply tastes is effectively brought home to us by a severe cold in the head, as this temporarily prevents the access of exhalations to the olfactory surfaces. The difference between the smooth feel of a polished surface and the roughness of one that is unpolished, though to direct introspection an irresolvable difference of quality, probably answers to the fact that several nerve-terminations are excited in each case: where the sensation is one of smoothness all are stimulated equally; but where it is one of roughness the ridges compress the nerve-ends more, and the hollows compress them

[1] Cf. ch. ii, § 3, pp. 44 f.

less, than the level parts do. Hence we infer that such sensations are really compounds of several.

The most striking instance in point, however, is furnished by the differences in musical sounds, to which the name *timbre* is given. To the inattentive or uninstructed ear notes or 'compound tones' appear to be only qualitatively diverse and not to be complexes of simple tones. Yet it is possible with attention and practice to distinguish these, as 'partial tones,' in a note produced on one instrument, a horn, say, and to recognise that they are different from those of the same note produced on a different instrument, for example, a violin. In like manner many persons believe that they can discriminate in certain colours, hence called 'mixed,' the elementary colours of which they are held to be composed; red and yellow, for example, in orange, or blue and red in violet; and the vocabularies of most languages seem to bear them out in the frequency of terms such as bluish green, yellowish green, and the like. It is at any rate certain that orange resembles red on the one hand and yellow on the other; it very naturally therefore reminds us of these colours, between which in the colour spectrum it invariably stands. But it is also certain that we cannot distinguish two colours in orange or purple in the sense in which we distinguish partial tones in a note or notes in a chord. Yes, it may be replied, but that only amounts to saying that the complex colour is not a plurality: it does not prove that it is not a blend or mixture of simple or primary colours—which is all that is maintained. In other words the note, like the chord, is a sensation-complex, the secondary colour is a complex sensation. If now from the fact that such a secondary colour resembles the primary colours on either side of it we could straightway infer that it *must* consist of both, the question would be positively settled. To many this has seemed a valid argument; nevertheless, as we shall see later on[1], in the particular case of sensory continua this argument fails to apply. But we may see at once that if this argument were generally valid it would force us to conclude that a tone, since this also resembles the two between which it is intermediate, ought to be a blend of both; whereas, in fact, as Ebbinghaus pointed out[2], the tone *d*, though as regards pitch having a certain

[1] Cf. below, ch. xiii, § 5.

[2] H. Ebbinghaus, *Grundzüge der Psychologie*, 3te Auf., 1911, i. p. 201 *fin.*

resemblance to *c* and *e*, its neighbours on either side, differs widely from the chord *c—e*, which is made up of these. Nay further, so far as bare resemblance is concerned, the argument in question ought to lead us to conclude that red is complex, for it resembles purple on the one side and orange on the other. Thus even if we could argue from mutual resemblance to complexity we should still have to determine where the complexity lay; in the orange or in the red. It is not, however, enough to know that there may be two physical or two physiological processes, or both, concerned in the sensation of orange, whereas in the sensation of (saturated) red, these processes are always single. The one thing essential after all is that in the sensation of orange its components—if it be a compound—should be in some sort distinguishable. 'Mixture' in any literal sense of the word is not a term appropriate to psychology; and hence—so far as *immediate experience* is concerned—we seem driven to deny the existence of complex sensations and to recognise only sensation-complexes.

In all cases where the presence of such sensation-complexes is beyond dispute the partial sensations can be distinguished by discernible differences of extensity (and often of intensity). Thus if the skin be touched by the point of a hot or cold bradawl, the temperature sensation has not the punctual character of the touch, but seems rather to surround this as a sort of penumbra. Similarly the ground-tone of a clang-complex has not only a greater intensity but also a greater extensity than any of the over-tones[1]. There is too in such cases a certain rivalry or antagonism between the complex as an unanalysed whole and the complex as analysed, and even between the several partial sensations after such analysis. Such differences are no doubt often due to differences in the distribution of attention brought about by practice, expectation, interest, and the like; but they are sometimes due to physiological variations in stimulation consequent on partial exhaustion or recuperation[2]: both alike however point to the underlying presentational complexity. In the absence of such evidence it is unwarrantable to infer psychical complexity from complexity in the physical stimuli or in the processes which they immediately set up.

[1] Cf. Stumpf, *Tonpsychologie*, ii. pp. 58 f.

[2] Cf. Stumpf, *op. cit.*, i. pp. 360 ff.

White light, for example, is physically the most complex of all light, whereas the sensation of white is not only simple but probably the most primitive of our visual sensations. It is difficult to give any clear meaning to the statement that two sensations become one sensation or that one sensation has two qualities. It seems best therefore to define a sensation as the simplest element in our analysis of the objective factor in experience. It is complex, indeed, inasmuch as it has a plurality of characteristics, but any further complexity would seem to be most appropriately described as due to a plurality of sensations, since the only evidence of such further complexity that is psychologically admissible is a discrimination of qualities.

We find, however, some indirect evidence of the complexity of our existing sensations in the variations in quality that in certain special cases accompany variations in intensity, extensity, and duration. With the exception of (saturated) red, all spectral colours[1] give place, sooner or later, to a mere colourless grey as the intensity of the light diminishes, and all in like manner become indistinguishably white after a certain increase of intensity. A longer time is also in most cases necessary to produce a sensation of colour than to produce a sensation merely of light or brightness: the solar spectrum seen for a moment appears not of seven colours but of two only—faintly red towards one end and blue towards the other. Very small objects, again, such as coloured specks on a white ground, though still distinctly seen, appear as colourless if of less than a certain size: the relation between their intensity and extensity being such that within certain limits the intenser they are the smaller they may be without losing colour, and the larger they are the fainter in like manner. Similar facts are observable in the case of other senses, so that generally we seem justified in regarding what we now distinguish as a sensation as probably complicated in several respects. In other words, if psychical magnification were possible, we might be directly aware that sensations which we now regard as simple were really complexes—that they consisted, that is, of two or more sensational elements or changes, different in quality, of uniform or variable intensity, and occurring either simultaneously or in regular or irregular succession. So much for the

[1] The light is supposed to be thrown on a perfectly black ground. Cf. v. Kries, *Die Gesichts-empfindungen und ihrer Analyse*, 1882, pp. 81, 82.

general nature of sensations; we have next to consider (1) their quantitative and (2) their qualitative properties in more detail.

Quantitative Continuity.

§ 4. Every sensation within the fields of consciousness has sensibly some continuous duration and seems sensibly to admit of some continuous variation in intensity and extensity. But whether this quantitative continuity of presentational change is more than apparent has been questioned. Sensations of almost liminal intensity are found to fluctuate every few seconds, and, as already remarked, when the threshold of intensity is actually reached, they seem intermittently to appear and disappear, a fact which Hume long ago did not fail to notice[1]. The results of numerous experiments, however, justify the conclusion that these variations are due primarily to oscillation of attention, and furnish so far no ground for the assumption that even the liminal sensation is discontinuous. Again, we can only detect a difference of intensity when this is of finite amount and bears a certain constant ratio to the initial intensity with which it is compared—a fact commonly known as Weber's Law—so that, although the stimulus may be augmenting continuously, increments in the intensity are only apprehended *per saltum*. This imperfection in our power of discrimination is, however, no proof that our sensations vary discontinuously; and not only is there no positive evidence in favour of such discontinuity, but it is altogether improbable on general grounds. Lastly, there is always more or less distinctness in the several nerve-endings as well as isolation of the nerve-fibres and neurons themselves. The skin, for example, when carefully explored, turns out to be a complex mosaic of so-called 'spots,' severally responding to stimulation by sensations of pressure, heat, cold, and pain. But from this to argue that the extensity of a sensation is really a mere aggregate without any continuity is on a par with calling a lake a collection of pools because it is fed by separate streams. If it could be shewn that in the brain as a whole there is no functional continuity a formidable psychophysical problem would no doubt arise. Meanwhile, however, whatever the number of nerve-endings or of neurons with which it is correlated, there is nothing

[1] *Treatise of Human Nature*, Green and Grose's edn., i. p. 347 *fin.*

to hinder us from now regarding as one, a sensation that seems extensively and intensively continuous as well as qualitatively simple.

The so-called quantitative characteristics of sensations—intensity, protensity, extensity—is a difficult topic. Of all three alike it must be noted that none of them—not even extensity, as actually experienced—is a pure quantity, in the sense, that is, of being divisible into homogeneous and interchangeable parts. But the right of extensity to be regarded as an attribute of all sensations whatever has been often disputed. Many are willing to recognise its presence in sight and touch but nowhere else. The difficulty commonly felt in distinguishing between extensity and space has probably been in most cases the chief ground for insisting on this restriction. It is indeed true that the only space we perceive is either tactual or visual; we cannot make lines or figures out of auditory or olfactory 'positions': the positions to which we may at length refer other sensations are always directly perceived either through sight or touch. But these facts, since they really do nothing to prove that other sensations have not extensity, are after all beside the mark. Why sight and touch have such preeminence in respect of spatial perception we shall see later on[1].

Meanwhile the question is not whether other sensations are localised but simply whether in them we find anything analogous to that quantitative variation that distinguishes the bare 'feel' of a penny from that of a pin-point or the mere sight of a glow-worm in the darkness from that of a forest on fire. The clearest case is that of organic sensations, for they may all differ unquestionably in respect of massiveness or voluminousness while remaining qualitatively unchanged. The importance of this fact can hardly be underrated, if it be true—as we have seen reason to suppose—that specific sensations are due to the differentiation or development of a primitive general sensibility or *coenaesthesis*[2]. For differentiation implies the advent of new characteristics, not the lapse of old ones. If then extensity pertains to the general sensibility it is not likely to be wanting in any of the special

[1] Cf. below, ch. vi, §§ 3–5.

[2] Cf. above, § 3. The influence on the extensity of various specific sensations both of drugs and of cerebral diseases that affect the general coenaesthesis is well known. Cf. Carpenter, *Mental Physiology*, 1874, pp. 642 ff.

sensations differentiated from it. But much of the evidence supposed to prove the extensity of sensations of taste and smell and even of sound is more or less faulty. Tastes and smells, for example, are often regarded as localised when they are in fact only complicated with touches that are localised; and smells may even be confused with tastes as in eating confections of cinnamon or vanilla, which yield all three kinds of sensation together. But that a sensation of taste may be more or less extense one may readily experience by first applying a spot of *eau sucrée* to the tongue and then filling the mouth with it. A similar experience with smell is hardly possible; because the normal stimulus here is always gaseous and so is at once diffused over the whole olfactory surface, at any rate of one nostril. But there are some who think they discern slightly more massiveness when the stimulation is binasal than when it is not. Human beings, however, for the most part have little or no power of discriminating the excitation of one olfactory surface from that of the other. Nevertheless there is every reason to believe that dogs possess this power to a remarkable extent[1]. In their case to all appearance binasal (olfactory) sensations and movements are complicated much as binocular sensations and movements in our own[2]: they seem to perceive by smell somewhat as we perceive by sight. The point of this is that although we cannot infer localisation from extensity we can infer extensity from localisation[3].

Reference has already been made[4] to the fact that the quantitative characteristics of presentations are all as Aristotle said, 'relative to us.' But it is just the peculiarity of this relativity that makes it difficult to describe them clearly; for we have no direct means of equating the standards of one subject's immediate experience with those of another: in every immediate experience there is, as we have said, a certain absoluteness. Proceeding indirectly however the way is easier. The extensity of a given sensation as a continuous quantity is relative to the presentational continuum as a whole, but this as *totum objectivum*

[1] Cf. Romanes, *Mental Evolution in Animals*, 1883, p. 93.

[2] Cf. L. Edinger, *Vorlesungen über den Bau der nervösen Centralorgane*, 4te Aufl. 1893, pp. 58–66, for anatomical evidence.

[3] As regards the extensity of auditory sensations, see below, § 6.

[4] ch. iv. § 5, p. 89.

is for the subject, so to say all there is, is the universe. Nevertheless we have come to know that it is immediately correlative to the organism as the concomitant of the primitive coenaesthesis, in which we find specific sensations to be grounded. Shall we then say, for example, that when a beetle is immersed in the bath (with Bain) the extensity of their 'body-sense' varies in some sort with the size of their bodies? Must we not rather say

> The poor beetle that we tread upon
> In corporal sufferance finds a pang as great
> As when a giant dies?

So doing we should recognise what we may call the subjective factor in extensity.

As regards the intensity of sensations—or, indeed, of all presentations whatever[1]—there is a close connexion between the objective intensity for a given subject and the distribution of his attention at the time of presentation. If a sensation is out of the focus of attention, it has effectively and actually for the experient himself not only less clearness—stands out less from the general field—but it has also less intensity than when attention is concentrated upon it. Though seemingly a matter of everyday experience yet this is a question about which psychologists have long differed and differ still. But the disagreement is probably to be explained partly by a bias that even the psychologist and especially the 'physiological psychologist' cannot readily overcome, and partly by a misapprehension as to what is here maintained. As to the first point, we are all aware in ordinary life that the intensity of any given sensation depends primarily upon certain physical quantities and varies directly in some proportion as these vary. Hence, since our habitual standpoint is the physical, not the psychological, we conceive sensory objects as having an intensity of their own regardless of the attention—whether more or less—that their presentation may secure: in other words we conceive them as objects *per se* apart from presentation altogether. Even if he disowns such transcendental realism the physicist must still assume that subjective sources of variation are eliminated. In the 'objective mind' to which he implicitly appeals there are no subjective grounds for variation, and attention is therefore regarded as constant, as only objectively determined. But psychologically

[1] Cf. above, ch. iv, § 5.

we cannot, of course, assume this: here we find feeling and subjective selection necessarily entail variations in an attention that is always limited. But, as to the second point, we do not and could not assume that variations in what I have termed 'the effective intensity' of a sensation—and this alone immediately concerns us—produce any variation in the physical stimulus, to which what we might call 'the inherent intensity' of a sensation corresponds. All that we maintain is a certain connexion between this 'epistemologically objective' intensity and that intensity which is only 'psychologically objective.' We learn (1) that concentration of attention increases and its diversion diminishes the latter (effective) intensity, in circumstances where physically there is nothing to prevent the former (inherent) intensity from remaining uniform; and (2) that, in circumstances where we are aware of no previous change in the distribution of attention, the effective intensity of a presentation is nevertheless increased or diminished when certain physical concomitants are increased or diminished. Also when we talk of *the* intensity of a sensation we mean its maximal intensity, that intensity which it has when we concentrate attention upon it. We conclude then that concentration of attention upon some presentations lowers the intensity of others in the same field, whether the concentration be voluntary or non-voluntary; and also that—though only within limits—increasing attention voluntarily has an effect on the intensity of a presentation similar to that of increasing its intensity from the physical side. It would not perhaps be difficult to account for our inability to concentrate attention beyond a certain point, though we might have to call the physiologist to our aid. But at any rate it seems on the whole certain that there is a subjective as well as an objective factor in what we speak of psychologically as the intensity of a presentation.

The protensity ascribed to a sensation is—in a sense—the equivalent of the duration of the stimulus upon which its presentation primarily depends. But of this duration as immediately experienced, the subject, and not the stimulation as an external change, furnishes the measure, a measure that varies widely from subject to subject—according to the *tempo* of each—and even somewhat for the same subject from time to time—according to circumstances—independently of 'objective' duration. Here

again, then, there is a subjective factor involved. The further consideration of all this however we must for a while defer[1].

Sensations of Sight.

§ 5. Turning to the quality of sensations—there is a vast literature devoted to sensations of sight in relation to the concomitant physiological processes and the physical stimuli, on which these processes depend. But psychology is *directly* concerned with neither; and it is specially important in the interests of psychophysical investigation itself that the psychologist as such should most scrupulously avoid any risk of confusion here. Confining ourselves then strictly to what is of purely psychological import, we have to note first that the primitive sensation of sight consists only of the single quality we call 'light,' a quality which ranges in intensity from the zero of complete darkness—for us an ideal limit[2]—up to a dazzling brightness that becomes painful and blinding.

The first responses to light stimulation seem to be very much on a par with our own to diffused heat or cold: some creatures seek the light and others avoid it; the worm, for example, on a sudden flash of light withdrawing into its hole, and the bee sallying forth from its hive only in the sunshine. As little as our temperature-sense at present yields us a perception of form just as little does their light-sense yield these creatures any. Not until the stage of visual spatial perception is reached, and some discrimination of form is possible, do black and white attain the meaning they have for us. In ordinary language—primarily at any rate—we apply these terms only to shapes or 'things': to use Helmholtz's terminology, they are 'body-colours[3].' A coloured object can be perceived only when its colour differs from that of the surrounding visual field: so far black as a 'secondary quality' is on a par with other colours, and for *practical* purposes would be equally entitled to the name, even if there were black objects devoid of all lustre and absolutely absorbent of light.

[1] Cf. below, ch. viii, § 4.

[2] A limit actually never attained, inasmuch as intra-organic excitations are invariably present even in perfectly healthy persons and these give rise to what is popularly called 'light-dust,' 'the retina's own light' (*Eigenlicht der Netzhaut*) as Helmholtz named it.

[3] *Physiologische Optik*, 2te Ausg. S. 322.

But there is still an important difference: in a light field many colours may be distinguished but in a dark field none. Though it is correct to speak of *perceiving* a black object, must we not then maintain that, so far as it is really black, the object yields us directly no *sensation*? Its so-called 'black' colour answers only to a dark portion of the visual field, and with this *causa deficiens* on the sensation level—to adopt an apt comparison of Meinong's—there corresponds a positive *percept*; but only because some form or other is demarcated by the rest of the field, which does yield positive sensations. Similarly the piper is said to 'feel' the holes in his whistle when actually he only touches the solid metal in which they are pierced; or the soldier is said to hear the tattoo though he has no auditory sensation of the silence intervening between successive taps on the drum. An obvious means of differentiating between 'positive' and 'negative' sensations here suggests itself:—The order in which the first occur is immaterial; but the second—that is the absence of certain sensations—can only be experienced, when preceded by their presence. We can begin with, say, rough or smooth, *c* or *c'*, red or blue; but we cannot begin by experiencing the impalpable, the inaudible, or the invisible.

A distinctly probable hypothesis, held to apply to all the senses, is sometimes appealed to here. It assumes that our sense-organs, even when free from all external stimulation, still retain their functional 'tone' in virtue of the trophic processes that restore their efficiency when they are seemingly at rest. Such 'tonal sensations' (*Stimmungsempfindungen*)[1] distinguish the normal man's state when seeing nothing from the state of the congenitally blind man, who has never seen at all. There is something positive in the one case that is absent in the other. Moreover this 'tonal sensation' or positive awareness of something is one experience in connexion with seeing and another in connexion with hearing: the first is an optical rather than a visual sensation, the second an aural rather than an auditory one. It was on these lines that Helmholtz dealt with black. He began by restricting black to a certain property perceived as pertaining to bodies; but then, almost immediately, he proceeds:—"Black is an actual sensation, *i.e.* a perception of a definite state of our organ, even though it is brought about

[1] Volkmann, *Lehrbuch der Psychologie*, 1875, i. §§ 33, 36, pp. 226, 247.

through lack of all light[1]." The perception of a certain body-colour and the perception of a certain 'state of our organ' are then both to be called black. Now a black state may be produced in a body, say, lunar caustic, by the *presence* of light; can it be maintained that it is to the same black state that our organ is brought by the *absence* of light and that the perception of both these blacks is the same? A specific sensation is never a sensation—still less a perception—of the state of its sense-organ as such. We have 'tonal sensations,' it may be, but they are *organic* sensations simply. They give however what point there is to the indisputable contention of Helmholtz and others that we do not refer the darkness we are aware of to our hands or our ears. But on this ground to contend that darkness equally with light is a positive sensation, is to confound the difference between positive and privative. Hering, who also identifies darkness with tonal sensations, is the chief champion of its specific and positive character. The facts which he has marshalled in support of this position are *prima facie* so striking that most people are at once convinced[2]. Nevertheless, when critically examined this doctrine has been found to be hampered with serious objections that, whether answerable or not, have so far only been ignored. "But what is the use of attending to people who reject the plain testimony of their senses?" it is said. It is precisely here that the weakness of the whole case lies. What is observation and what is inference is proverbially a difficult matter to determine. The mere enumeration of the errors thus occasioned would be a very long task and most of them pertain to the sense of sight. And that is the case simply because sight, 'the most intellectual sense,' is the most overlaid with perceptual interpretations of its bare 'sense-data[3].' The *perception* of black as a secondary quality of bodies nobody will question, but to maintain, as Hering does, that as a sensation it is the polar opposite of white and admitting of an equally dazzling intensity is an affront to common sense. What, in that case, would be the use of eye-lids? But this needless paradox has involved other blemishes in an otherwise admirable theory.

[1] *Op. cit.* p. 324.

[2] I have to confess that I was long among the number. Mr W. M°Dougall, who also now dissents, has made a like admission. *Mind*, 1901, p. 52 *fin.*

[3] Cf. von Kries, Nagel's *Handbuch der Physiologie*, Bd. III. 1905, pp. 239 ff.

Is there any justification for speaking of visual sensations without luminosity: must we not rather maintain that in absolute darkness we should not *see* black, since we should not see at all[1]? No doubt we are prone to identify the two concepts, darkness and blackness, for what we may call their sensory content is the same—*viz.* the absence of visual sensation[2].

Whereas the only diffused light we need consider is that emitted by the sun[3], the light transmitted by the things about us is of different wave-lengths and the photochemical effects of these waves on protoplasm are likewise different. As soon as visual forms can be distinguished a qualitative differentiation among light sensations over and above the quantitative differences of lighter and darker, that might suffice for their recognition as forms, would become advantageous: sour grapes could then be known from ripe ones and nauseous caterpillars detected among wholesome ones, without continual tasting. The first colours to be differentiated, it has been supposed, were probably yellow and blue[4], or—perhaps it would be truer to say—'warm' colour and 'cold' colour; upon which there

[1] Again the cessation of light entails no change for the stone-blind, who cannot see, just as the cessation of sound makes none to the stone-deaf, who cannot hear; whereas for the normal man it is quite otherwise; for he, since he can see and hear, experiences the change; and we say he then sees or hears 'nothing.' We may call this 'nothing' darkness or stillness, but we may not call it a positive sensation.

[2] I have tried to deal with this troublesome question more fully in an article entitled: "Is 'Black' a Sensation," *Brit. Jl. of Psychology*, 1905, vol. i. pp. 407–27. Cf. especially A. Fick, *Sitzungsber. d. phys.-med Gesellschaft. z. Wurzburg*, 1900, pp. 9–15; von Kries, *op. cit.* p. 273; W. McDougall, *Mind*, 1901, pp. 94 ff.

[3] The experiments of Paul Bert, Lord Avebury and others shew that where environments illuminated by light of different wave-lengths are provided, some of the lower forms of life (*Daphnia pulex*, &c.) select the brightest. But this is so far no evidence of colour discrimination; and in fact these creatures shew no preference in respect of the colour of objects. Cf. V. Graber, *Helligkeits- und Farbensinnes der Tiere*, 1884, Abschn. i.

[4] It is assumed that the physiological differentiation of the retina has advanced from the centre, where vision is most distinct, towards the margin where it is least so; and it is found that stimulation of the margin in all cases yields only achromatic sensations, stimulation of a certain intermediate zone only sensations of yellow and blue, and central stimulation alone sensations of every hue. Further, total colour-blindness is extremely rare and usually accompanied by other defects; they can hardly therefore be regarded as cases of reversion. Two forms of red-green colour-blindness are however comparatively common and might be so regarded: the last acquisition, as often happens, being the first to fail. On the other hand there are very few recorded cases of so-called blue-yellow colour-blindness and the right interpretation of these is uncertain. Cf. J. H. Parsons, *Colour Vision*, 1915, pp. 158 ff.

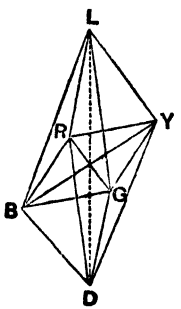
followed a further differentiation of the warm colour into red and green. The four colours, red, yellow, green and blue are called psychologically *principal* colours: in numerous languages too they have distinctive names, whereas the so-called *subsidiary* colours are either denoted by combining these names, as greenish yellow, bluish green, or by using the name of some object possessing the colour, as orange, violet, &c. There are facts to justify this nomenclature. Starting from the red at one end of the solar spectrum we can pass continuously to violet at the other and on through (non-spectral) purple and carmine back to the red again. Yellow marks a distinct turning-point in this progress. For, as we advance, the intervening colours—scarlet and orange for example—resemble red less and less and yellow more and more (just as in travelling along a straight road the distance from our starting-point steadily increases as that from our goal diminishes); but in passing through and beyond the yellow itself we lose the old indication of getting further from red: the colours which we now meet, on the other hand, resemble yellow less and green more the further we advance, till green itself is reached. In other words, in passing through yellow we have, so to say, changed our direction. From green onwards the yellow milestones cease, like the red ones, when yellow was reached: our direction, in other words, has again changed. The same happens once more when we get to blue, whence by a last change of direction we return to our starting-point in red. The course we have traversed then may be represented by the boundary of a quadrilateral, the four colours at the angles, where its direction changes, being on this account entitled to the name of principal colours. It is within the competence of experimental psychology to determine the form of this boundary; but for merely descriptive purposes it will be simplest and sufficient to regard it as a square. But the whole surface of our square—as well as its boundary—can be shewn to represent colours as soon as we take account of new differences among them, commonly known as degrees of saturation. The colours in the boundary are said to have the maximum of saturation and are often called pure colours or colour-tones in contradistinction to those lying within the boundary. These, appearing as if more or less diluted with white—as we may for the present call it—or as this white more or less tinged

with colour, are called tints; while the white itself as the common starting-point of the series of tints becomes the 'neutral tint.' For our qualitative account of the facts of colour-sensation again it will suffice to place this neutral tint at the intersection of the two diagonals of our square and to regard the surface as a plane. Proceeding outwards from this central and neutral point along any straight line in the plane we shall then have a series of tints of one colour, but paler or less saturated the nearer they are to the centre and deeper or more saturated the nearer they are to the boundary. It is reasonable to suppose that as the colour-sense developed the length of these lines increased, that the earliest blue or yellow tones, for example, were less rich and full than those of which we now have experience; and, as we certainly have no grounds for assuming that this development is complete, we can only apply such terms as pure and saturated to the colours on the boundary of our square in a relative sense. They are the purest we now experience, but others still purer are perfectly conceivable; in other words the area of our square cannot be regarded as absolute[1].

So far we have found our visual sensation advancing from the single quality represented by our central point of neutral tint to a continuum of one dimension, as in the blue-yellow vision of ordinary colour-blindness; and finally to a continuum of two dimensions, as in normal sight. But when we also take into account the continuous variations of intensity or differences of 'light' and 'shade' that may occur, we have need of a third dimension to represent these. Through the centre of our colour square (answering to a shade which we may now call medium grey) a straight line may be drawn, making certain angles with its diagonals—of which angles more presently. This neutral axis will terminate on the lower side in a point representing the zero intensity we call pure black and in the upper in a point answering to the maximum intensity we call pure white. Lines parallel to this central axis will then represent a series of coloured shades. But now it is, we might say, *a priori* evident, and at any rate certainly the fact, that all colour-tones and tints alike will, as

[1] In point of fact the saturation of any of the spectral colour-tones is increased by looking steadily for a few seconds at its so-called complementary colour (green in the case of red, yellow in that of blue) immediately before looking at the colour itself.

their intensity diminishes, approximate towards the dark pole, and will all alike end there when their intensity is *nil*: in the night when, as Hegel used to say, all cows are black. It is also a fact, though one we could scarcely have anticipated, that all alike, as their intensity approaches the maximal, converge towards the light pole. We may give expression to these facts then by drawing lines—which for descriptive purposes we may take as straight—from the angles of our square to the two extremities or poles of our colourless axis. And so we obtain what is called the colour octahedron, a figure that is to say consisting of two pyramids having a common base in the colour square; the apex of the one which contains the lighter shades corresponding with the maximal intensity or white and that of the other, containing the darker shades, corresponding with zero intensity or absolute black. The intensity of the most saturated yellow, which forms one angle of the colour square, is decidedly greater, while on the other hand the intensity of the most saturated blue, occupying the opposite angle, is decidedly less, than that of the median grey situated at the square's centre. Thus in the light pyramid the side connecting the white and yellow will be proportionately shorter than that connecting the white and the blue; and *vice versa* in the dark pyramid: in other words the common base of the double pyramid will be tilted upwards on the yellow side and downwards on the blue, as shewn in the figure annexed.



Sensations of Sound.

§ 6. In dealing with the quality of auditory sensations it will be best to begin with the simple sensations called tones: the tone-complexes or clangs, which result from their combination, may then follow; and finally the moot question of noises.

Simple tones constitute a qualitative continuum of one dimension, their so-called 'pitch': this may be represented by a straight line ranging between two more or less indefinite extremes. If intensity, that is to say 'loudness,' be taken into account we have, of course, a continuum of two dimensions.

The two extremes are more or less metaphorically distinguished by terms which indicate further quantitative or qualitative differences or rather qualitative accompaniments and associations. Thus we contrast deep, dull and grave as one extreme, with high, bright and acute as the other. As we approach the lower limit the tones become less 'even' and continuous; at length distinct, more or less pervasive, tremors are 'felt' rather than heard; till finally these alone persist as distinct impulses (on the ear-drum) after the limit of audible tones is passed. The highest tones again if at all loud or near are accompanied by tactual, often more or less painful sensations, as if the ear were pierced by a fine needle[1]; and this characteristic increases much more quickly than the perceptible difference of tone, as the upper limit of audibility is neared. This connexion of auditory with tactual sensations confirms the independent evidence of biology pointing to an original differentiation of sound from touch. In keeping with these facts, though doubtless not wholly in consequence of them, the tone-continuum is also universally regarded as steadily diminishing in massiveness or extensity as the pitch increases.

The special characteristics of tone-complexes or clangs, as distinct from other sensation-complexes, are due to the remarkable analytic power which belongs to the sense of hearing —in man at least. Two colours cannot be simultaneously presented unless they are differently localised, but several tones may form one complex whole within which they, as 'partial tones,' are distinguishable though spatially undifferentiated. The simplest case is that of the single clang or 'note.' It consists of a ground tone—always the strongest—from the pitch of which the note is named, and of a discrete series of over-tones, increasing in pitch but diminishing in intensity, and corresponding to the series of partial vibrations in the source of the sound. The periods of these partial vibrations may form an ascending order of multiples (2, 3, 4, ...) of the period of the ground-tone, and the partial tones are then called harmonic: when this relation does not hold they are called inharmonic. The clangs produced by musical instruments or by human song belong to the former class, which is the only one

[1] Cf. W. Preyer, *Ueber die Grenzen der Tonwahrnehmung*, 1876, pp. 21 ff.; Hensen, *Physiologie des Gehörs*, Hermann's *Handbuch* (1880), III. ii. p. 112.

we need specially to consider here. The same note sounded by different instruments or voices has in each case a distinctive character, to which the name clang-tint or *timbre* is given. This peculiarity is the result partly of attendant noises due to friction, the mode of producing the sound, &c., but chiefly to the number and intensity of the constituent tones, the clang-tint or *timbre* in the narrower, musical sense. The resulting diversities are innumerable; every kind of instrument, nay every single instrument, like every single voice, has its distinctive individuality. A continuum of timbres, as of noises, is thus out of the question; though each particular voice or instrument will have its own note-continuum. But the timbre will be apt to alter gradually with the pitch, and the range to be less than that of simple tones. In fact even a continuum of simple tones is rather an ideal to which we can approximate than a reality which we actually experience; and we may thus regard the simple tone as the limit of the single clang, as a clang, *i.e.* of one tone.

The terminology by which varieties of timbre are ordinarily characterized is largely metaphorical: nevertheless it bears evidence not only to the complexity of clangs but also to the nature of their constituents, although the untrained hearer does not—if we may so say—verify the analysis which the ear has already made. Thus clangs that are called rich or full are those in which a predominant ground-tone is accompanied with pronounced over-tones; while in those called thin, empty, aethereal, the over-tones are scarcely audible. Again the clangs described as hollow are those in which only the odd (1, 3, 5, ...) partial tones are perceptible, as in the clarionet or in closed pipes, for example; smooth clangs, such as those of the piano, open pipes, &c., lack the higher over-tones (from the sixth onwards), while in rough, sharp and piercing clangs, like those of 'string' or brass instruments, these predominate. Roughness is an effect of what are called beats: these are especially distinct in the upper region of over-tones, and consist in the rapid waxing and waning of intensity resulting from the summations and interferences of the sound waves. Since smoothness depends upon the uniform, roughness upon the irregular, stimulation of a group of cutaneous nerves, the analogy of clangs with touches is in this respect complete, and is so far an indication of their extensity as well as of their complexity. This is further shewn

by the differences underlying the contrasts of full, hollow, empty, dull, sharp, penetrating and the like.

When two tones are sounded together they are said to be either dissonant or consonant. The familiar facts so named underlie the whole structure of music[1], and have engaged attention for ages; though it cannot even now be said that they are satisfactorily explained. As to the facts themselves, it is found in the first place that dissonance is the rule and consonance the exception; for when the pitch of one of two distinguishable tones is gradually altered while both are sounded together, they remain dissonant save at a few isolated 'intervals,' which are consonant in various degrees. So long as they are positively dissonant they can be readily distinguished; but in perfect consonance they are distinguished only by trained ears and with more or less difficulty. The untrained hear only one tone, and that of the same pitch as the lower (unless this is markedly different in intensity). Taken alone, all this would naturally lead us to account for the one case by some difference, and for the other by some resemblance, to be found between the two tones. But in point of fact difference, and the only qualitative difference there can be, *viz.* difference of pitch, is present in *both* cases. Moreover—within the 'interval[2]' of an octave—this difference may be less though the dissonance is greater; and it is always greatest where the consonance is most perfect.

However agreement and difference in another sense are present when, as is normally the case, the two tones are complex, and so accompanied by over-tones. Thus in the octave, the most perfect consonance, there is no interference either between the ground tones or their over-tones, and therefore no beats—in other words the two notes accord or agree. But when we pass to the less perfect forms of consonance, such interferences enter, and increase as the degree of consonance decreases till the extreme of dissonance or discord between the two is reached. Even with simple tones such active agreement or disagreement may still

[1] As commonly understood, that is to say: cf. Helmholtz, *Die Lehre von den Tonempfindungen*, 1877, pp. 385 ff. The so-called music of the Veddas or the Torres Straits islanders is quite another matter.

[2] It is hardly necessary to point out that this familiar technical term is not itself a difference or distance of the kind just mentioned. It corresponds rather to a ratio between the differing pairs, a fact which helps still further to distinguish between '-sonance' and pitch.

be present; for though there are no over-tones, there are still so-called 'difference-tones,' one or more according as the dissonance is more or less pronounced: these give rise to beats and inter-tones, which aggravate the discord or conflict. But still, it is said, they only aggravate it; for the imperfect consonance or the actual dissonance remains when they are eliminated. Such elimination may, it is supposed, be effected either by increasing the interval, in which case the difference-tones disappear; or by moderating the intensity of the primary tones and presenting one to each ear. From such crucial instances (?) it is inferred that the essence of consonance and dissonance must lie in some relation of the primary tones themselves to each other. And now how, when thus stript of all accessories, are we to describe this essential relation?

What we have is two simple tones presented together. When they are dissonant, there is a certain diversity—though the two may be closely alike in pitch—such that, notwithstanding this resemblance, they are always distinguished. When they are consonant, though the two may differ widely in pitch, there is always a certain affinity, such that, notwithstanding their difference, they are often not distinguished, though still distinguishable. All which, it has been supposed, may be concisely summed up by saying that in the latter case the tones are blended more or less completely, while in the former case they have not blended, and will not blend, at all. Moreover two notes may be sounded one after the other—when blending is excluded by this difference of time-order—and yet they may be consonant, and that though the 'interval' between them is more distinctly perceived. But consonance cannot depend on a literal blending, for its constituent tones in that case could not be distinguished; and—when actually not distinguished—would, we should suppose, sound like an intermediate tone and not like the lower of the two[1]. We may however say that in *con*sonance we are aware

[1] Cf. Stumpf, *Tonpsychologie*, ii. 1890, §§ 19, 20. For Stumpf the blend is psychologically as final as sensation itself. Its physiological concomitant, he thinks, may be a central 'specific synergy' or synthesis of the specific energies of the nerves concerned (cf. above, p. 109, n. 2). But such central synthesis surely suggests psychical assimilation at least. That the process is central Stumpf infers partly from the fact that blending is possible in imagination. But again surely this points to some previous psychical process. Finally he sketches very tentatively a possible genetic theory which seems to bring his views very near to that advocated below.

of a whole, which we may or may not fail to analyse, whereas in *dis*sonance we are aware of a disconnected plurality which we cannot combine. Can this difference be explained?

Analytical psychology at all events seems to furnish no clue, but genetic psychology, based upon it, perhaps may do so. In the first place it is to be remembered that normal experience is and always has been confined to clangs or complex tones: the approximately simple tones that are now artificially produced in our laboratories and elsewhere lie altogether beyond it. We may, then, reasonably suspect the earlier and commoner experience—that of the consonance or dissonance of complex tones—to be the clue we are seeking to this consonance or dissonance of simple tones, which is so nearly akin to an ideal. Suppose it were possible to cure a man born stone-deaf and to restrict his first experiences of sound to simple tones, would he distinguish between consonance and dissonance as we do? This crucial question we have no means of definitely answering. But, as Hensen has well said[1], we should expect that he would have to learn to hear just as if born blind and cured he would have to learn to see. Bearing in mind the actual course of our auditory experience, we have, in the second place, to note the similarity in structure between a single harmonic clang and two consonant tones or clangs: the partial tones of the one may exhibit all the degrees of consonance possible to the other two; and the more perfect the consonance the closer the resemblance. Here then is an adequate basis for the assimilation of the latter, whether they be simple or complex, to the former[2]. An inharmonic clang—which is characterized by its obtrusive beats—approximates more or less to a medley of tones; and so, here again a basis is provided for the assimilation of two dissonant clangs to such a complex tone. But if it be verily true that *simple* tones sounded together can be perceived not merely as diverse but as dissonant, even when beats are altogether excluded, it is difficult to see how genetic psychology can account for this. If however it be true that such dissonance is only detected by musical experts, it may be argued

[1] Hensen, *Physiologie des Gehörs*, Hermann's *Handbuch*, III. ii. p. 27.

[2] Cf. Max Meyer, *Zeitschr. f. Psych.* xvii. (1898), p. 413; Krueger, Meumann's *Archiv f. d. gesammte Psych.* ii. (1904), pp. 42 f.; Wundt's *Psych. Studien*, iv. (1909), pp. 226 ff.; C. S. Myers, *Textbook of Experimental Psychology*, 1911, p. 55.

that their judgment in this case is mediate or inferential, not immediate or sensory: the difficulty would then disappear. And on the whole facts seem to bear out this supposition[1].

The psychological connexion between noises and tones has long been a keenly controverted topic. The physical relation of the two is clear enough: noises here, it is allowed, are complexes of pendular vibrations and so presuppose these. But to assume that the like holds good psychologically, that noises, like clangs, must be true complexes, is certainly a mistake. Fish and frogs have no 'ear for music' yet they are not deaf. The biological evidence for the differentiation of tones from sound is quite as conclusive as that for the differentiation of sounds from touch. In the higher vertebrates the auditory apparatus is more complicated, but certain elementary structures comparable to rattles and found even among the invertebrates, still persist. What function have these? Among others the perception of sound, it is maintained, but not the discrimination of tone, for which they are not adapted. If cases were forthcoming in which the discrimination of tones was lost while the perception of noise was retained, or *vice versa*, such positive evidence would be conclusive. Throughout an immense record, however, not a single clear case of this sort is to be found. But this negative evidence is not equally conclusive, especially not in view of repeated instances of serious defects on the one side without corresponding defects on the other[2]. And when the continuity of the organ of hearing is taken into account this is perhaps all that we ought to expect; save that a defective sense for tones might be looked for more frequently if such sense is later in development and correlated to a more complex and differentiated structure, as is here maintained. It is true that numerous gradations between noises and clangs are perceptible to human beings. This however is scarcely to the point, the physiologist could reply, for we have the requisite resonatory apparatus. But even a so-called 'momentary noise,' such as that of an electric spark or the thud of a steam hammer, still has some pitch: so it is said, but the statement is very questionable.

[1] Cf. Helmholtz, *Tonempfindungen*, 4th edn., pp. 328 ff. Helmholtz's statements have been questioned, but it is doubtful whether they have been satisfactorily answered.

[2] Cf. Stumpf, *Tonpsychologie*, i. p. 402.

So far as the impression is verily momentary and single, so far the difference of 'high' or 'low' seems far more like a difference of extensity than a difference of pitch. Again the physiologist could reply that a single impulse could not, and in fact does not, give rise to a tone. If now it be objected that there are no instantaneous, single, and simple noises, it is enough to remark that the nearer we approach to such a limit the more the explosive character predominates. That most of our auditory sensations are complexes of noises and tones is unquestioned[1].

One such complex of special interest is human speech. In this the consonants are almost pure noises whereas the vowels approximate to tones, so much so indeed as to lead some recent writers to identify the two. In that case however the vowels should form a linear continuum as the tones do. On the contrary, as it is in many ways interesting to notice, the vowels are pretty definitely correlated only to certain fixed points in the tone-continuum, points moreover which together form a series of octaves—their order being *u, o, a, e, i* (as pronounced on the continent)[2]. This is exemplified in many onomatopœic names for sounds or for the creatures producing them. It is also generally, perhaps always, true that the creatures voluntarily producing the most varied sounds have the most complicated organs of hearing—a fact which confirms the biological evidence for the differentiation of tonal sensations from noises[3].

The Lower Senses.

§ 7. Unlike the higher senses of sight and hearing, the lower senses of touch, taste, smell, warmth, &c., do not constitute qualitative continua. 'Temperatures' may indeed be represented as

[1] Cf. v. Hensen, *Arch. f. Ohrenheilk.* xiii. (1886), pp. 69 ff.; Stumpf, *Tonpsychol.* ii. § 28.

[2] Cf. the investigations carried out in Stumpf's laboratory by Köhler, *Zeitschr. f. Psych.* liv. (1910), pp. 241 ff., lviii. (1911), pp. 59 ff.

[3] *À propos* of this connexion between the production and the perception of tone a suggestion of Külpe's is worth mentioning. Notwithstanding the greater difference in pitch between the two tones of a given interval in a higher octave as compared with a lower one, musical people—unlike the unmusical—regard the equality of both cases as a matter of course, and that it by no means is. It becomes however more comprehensible if we suppose that difference in the adjustment of the vocal chords in singing the said interval is in both cases the same. Cf. Külpe, *Grundriss der Psychologie*, 1893, p. 110; also Stumpf, *Tonpsychologie*, i. pp. 339 ff.

ranging in opposite directions between a zero of no sensation and the organic sensations due to the destructive action at both extremes of heat and cold alike. But the continuity in each direction in this case is intensive rather than qualitative. Tastes fall into the four distinct qualities known as sweet, sour, bitter, saline; but smells hardly admit of classification at all.

Unlike the higher senses again, these lower senses frequently yield sensation-complexes from two or more of them: in a draught of mulled claret, for example, we can discriminate various 'flavours' as well as 'aroma,' astringence, and warmth. Their treatment in detail, however, is for the most part mainly of interest to the physiologist; though there are one or two points calling for our notice in the case of touch and 'temperature.' Noteworthy first of all is their close connexion with, we might almost say their primary inclusion within, the general sensibility—as we have already remarked *à propos* of the ambiguity of the term 'feeling[1].' So when differentiated as specific senses, even in perception they are still beset with a certain ambiguity because of the peculiar share of the body itself in 'the physical basis' of their stimuli. Thus when I say I feel warm or cold, I refer to a certain state of my body, with which I so far identify myself. But when we talk of specific sensations of temperature such language has not the passable accuracy there is in talking of a specific sensation of red. What is meant is neither a state of the body alone nor a state of the environment alone, but a varying relation between the two. As Locke and Berkeley remarked—and indeed the ancient sceptics long before them—water of a given temperature 'sensed' as warm by one hand may be 'sensed' as cool by the other. For the stimulus is not a temperature at all but a loss or gain of heat, and the intensity of the sensation depends on the rate of such loss or gain. But there is a further relativity still. The zero or indifference point at which there is neither loss nor gain of heat, or—to be more accurate—where the temperature is steady, varies considerably for different parts of the body[2]. A like local

[1] Cf. above, ch. ii, § 3, p. 41.

[2] The temperature of exposed parts of the body is usually considerably lower than that of the rest, but there is still no sense of heat or cold unless it is raised or lowered; and after a fall of temperature there is a sensation of cold till the indifference point is regained though all the while the temperature is rising, and *vice versa* after a rise of

relativity, as we might call it, pertains in a far higher degree to the sense of touch and is peculiar to these two senses, since they alone have an organ, the skin, coextensive with the whole superficies of the body: we shall have presently to consider it further under the title of 'local signs.' Again the imperfect differentiation that makes it inaccurate to describe the one sense as presenting temperature also makes it inaccurate to speak of the other as presenting pressure. The 'adequate stimulus,' to put the matter physiologically and here most simply, is not necessarily mechanical pressure: the same sensation may be the concomitant of either pressure or tension[1].

Still less sharply differentiated from the general sensibility or *coenaesthesis* are the many very various sensations which are classed together as 'organic,' because we come later to refer most of them to states of one or other of the internal organs, as with hunger, thirst, dyspnoea, for example; though some, as exhilaration or depression, are referred rather to the bodily state as a whole. But the two are in fact inseparable, in so far as the healthy working or otherwise of any organ tends to increase or decrease the general sense of bodily comfort. In other respects too these so-called organic sensations are extremely complex and difficult to analyse: they seem usually to be not only complexes of simpler sensations but to involve reflex actions as well[2]. They are nevertheless very important, and we shall have to deal with them again in other connexions later on.

Movement

§ 8. Closely allied to organic sensations are the sensations that we at first normally experience only when we react to such sensations as are given: they belong to the active as distinct from the passive or receptive side of experience, but are none the less in themselves sensory. Like organic sensations they are usually complexes, but are more readily analysed—so to

temperature. But, if the change persists, a new indifference point ensues in consequence of adaptation. The 'subjective' relativity is thus altogether very great.

[1] Cf. T. Thunberg's article, Nagel's *Handbuch der Physiologie*, 1907, iii. p. 658.

[2] Experimental psychology has already begun to throw some light on this intricate subject. The following are worth consulting:—Articles by E. Meumann, *Archiv f. die ges. Psychol.* ix. (1907), pp. 26 ff.; xiv. (1909), pp. 279 ff.; and by F. E. O. Schultze, xi. (1908), pp. 147 ff.

say, experimentally—first by anaesthesia or paralysis, which may suspend some of them, and secondly by movements of our limbs or body, so-called 'passive movements,' effected externally. Unlike many organic sensations, of which we are scarcely conscious save when the organs are out of gear, these motor presentations pertain exclusively to the normal working of such organs as we directly control. These have their own strictly 'organic sensations' as in fatigue from excessive exercise, or its opposite, that want of exercise which might be called 'muscular hunger.' In describing such complexes as motor presentations, we need carefully to guard against importing spatial implications into the term. As 'sensed' but not perceived, they have extensity and protensity, but imply neither time nor space nor motion.

But as normally experienced they have always one characteristic of physical movement that does not belong to the mere geometry of motion: though they do not directly and alone suffice to make us acquainted with position or direction or velocity, certain of them do make us acquainted with 'force' both as freely exerted and as more or less completely resisted. In other words, though none of them as such are kinematic, there is one constituent always present in 'active movement' that is kinetic, or dynamic, using this term, as physicists do, to cover both momentum and pressure. It may be thought that in 'free' unimpeded movements there is no sense of effort. But that some effort is present, however unobtrusive, may be inferred from the fact that even such movements, if continued long enough, lead to fatigue. But the experience of force would be of no practical avail without the other constituents which help to prepare the way for spatial perception. It seems well therefore to confine the useful term 'kinaesthetic sensations,' which was proposed as a name for the whole group[1], to its last-mentioned constituents exclusively. They might be more significantly called 'dirigo-motor' if Spencer had not unfortunately misapplied this term to the kinetic factor itself. I have suggested 'auxilio-motor'; but, so far as I know, it has not been adopted. It is because of the absence of these sensations that the anaesthetic

[1] Bastian, *The Brain as an organ of Mind*, 1880, p. 543. The term is useful as avoiding the confusion of psychology and physiology which the term 'muscular sense' involves.

patient cannot directly tell whether his efforts have been effectual or not, nor in what position his limbs have been placed by movements from without, but has to fall back on the indirect evidence afforded him by sight[1]. Movements, we must suppose, originally belonged to one undifferentiated, or rather imperfectly differentiated continuum; but, as development advanced, tended more and more to become like sensations, a collection of special continua, *i.e.* groups of distinct movements separately possible and admitting of definite combinations in various ways.

Whereas kinaesthetic presentations were commonly allowed to be purely sensory—the concomitants of various centripetal excitations[2] from skin, tendons, muscles, &c.—a very different view[3] long prevailed concerning motor presentations proper, a view, however, now generally discredited, if not completely overthrown[4]. According to this view, "the characteristic feeling of exerted force" must be regarded, Bain maintained, "not as arising from an inward transmission...but as the concomitant of the *outgoing* current by which the muscles are stimulated to act" (*Op. cit.* p. 79). The necessity for this assumption has certainly not been established on physiological grounds, nor apparently did Bain rely primarily on these; for at the very outset of his discussion we find him saying "that action is a more intimate and inseparable property of our constitution than any of our sensations, and enters as a component part into every one of our senses[5]" (*Op. cit.* p. 59). But this important psychological truth is affirmed as strenuously by some, at any rate of Bain's opponents (*e.g.* William James) as it was by Bain himself. Unhappily many, under the same psychophysical bias and so induced, like the upholders of this innervation theory, to look for evidence of subjective activity in the wrong place, have been led to doubt or to deny the reality of this activity altogether.

[1] The stock instance is that of an unfortunate woman who was liable to drop her baby if she took her eyes off it.

[2] Hence the older name of 'muscular or sixth sense' applied to them by Sir Charles Bell, Weber, Sir William Hamilton and others.

[3] First tentatively advanced by the great physiologist Johannes Müller, and adopted by Helmholtz, Ludwig, Wundt, and especially by Bain.

[4] Cf. Bastian, *Op. cit.* pp. 691 *sqq.*; Ferrier, *The Functions of the Brain* (1886), 2nd ed., pp. 382 *sqq.*; James, *Principles of Psychology* (1890), ch. xxvi.

[5] Precisely for this reason activity is not to be regarded as presentational at all. Cf. above, ch. iii, § 2.

In fact, this theory, while it lasted, tended to sustain an undue separation of so-called 'sensory' from so-called 'motor' presentations, as if living experience were literally an alternation of two independent states, one wholly passive and the other wholly active, corresponding to the anatomical distinction of organs of sense and organs of movement. The subject of experience or Ego does not pass to and fro between a *sensorium commune* or intelligence department and a *motorium commune* or executive, is not in successive intervals merely receptive or merely active, still less always passive; but is rather always actively *en rapport* with an active Non-Ego, commonly called the External World.

CHAPTER VI

PERCEPTION

Integration: Meanings of Perception.

§ 1. IN treating apart of the differentiation of our sensory and motor continua, as resulting merely in a number of distinguishable sensations and movements, we have been compelled by the exigencies of exposition to leave out of sight another process which really advances *pari passu* with this differentiation, *viz.* the integration or synthesis of these proximately elementary presentations into those complex presentations which are called percepts, intuitions, sensori-motor reactions and the like. It is, of course, not to be supposed that in the evolution of mind any creature attained to such variety of distinct sensations and movements, as a human being possesses, without making even the first step towards building up this material into the most rudimentary knowledge and action. On the contrary, there is every reason to think, as has been said already incidentally, that further differentiation was helped by previous integration, that perception prepared the way for distincter sensations, and purposive action for more varied movements[1]. This process of synthesis, which is in the truest sense a psychical process, deserves some general consideration before we proceed to the several complexes that result from it.

Certainly the most important—if not all—of these complexes are consequences of that principle of subjective selection whereby interesting sensations lead through the intervention of feeling to movements; and whereby the movements that turn out to subserve such interest come to have a share in it. In this way—which we need not stay to examine more closely now—it happens that a certain sensation, comparatively intense, and

[1] Cf. ch. iv, § 3, p. 81.

a certain movement, definite enough to control that sensation, engage attention, to the more or less complete exclusion of the other less intense sensations and more diffused movements that accompany them. Apart from this intervention of controlling movements, the presentation-continuum—no matter how much it became differentiated—would still remain, for all purposes of knowledge, little better than the disconnected manifold for which Kant took it. At the same time it is to be remembered that the subject obtains command of particular movements out of the general mass involved in emotional expression only because such movements, when they occur, are found to control certain sensations. Before experience, and apart from heredity, there seems not only no scientific warrant for assuming any sort of practical prescience but also none for the hypothesis of *a priori* forms of knowledge. Nor is there any evidence of a pre-established harmony between the active and affective states of the subject, or—it may be safer to say—there is indefinitely little: painful reactions are aversive and pleasurable reactions become appetitive. A sentient creature moves first of all, as we have already seen, because it feels, not because it intends. A long process of trial and error must have been necessary to secure as much purposive movement as even a worm displays. In this process natural selection probably played the chief part at the outset, subjective selection becoming more prominent as the process advanced. It seems impossible to except from this process the movements of the special sense-organs. Here too subjective interest will explain, so far as psychological explanation is possible, those syntheses of motor and sensory presentations which we shall call spatial percepts and intuitions of material things. Some of the earliest lessons of this kind seem to be acquired, as we may presently see, in the process of exploring the body by means of the limbs,—a process for which grounds in subjective interest can obviously never be wanting.

All such syntheses or integrations depend primarily on what we have called 'movements of attention' (cf. ch. iii, § 3), which movements in turn depend very largely upon the pleasure or pain that presentations occasion. To some extent, however, there is no doubt that attention may pass non-voluntarily from one indifferent presentation to another, each being sufficiently intense to give what has been called a 'shock of surprise,' but

not so intense as to awaken feeling to move for their detention or dismissal. But throughout the process of mental development, where we are concerned with what is new, the range of such indifference is probably small: indifferent presentations there will be, but that does not matter while there are others that are interesting to take the lead.

Perception as a psychological term has various, though related, meanings with different writers. It sometimes means merely the recognition of a sensation or movement as distinct from its simple apprehension. But more frequently it is used as the equivalent of what has been otherwise called the 'localisation and projection' of sensations—that is to say, of sensations apprehended either as affections of some part of our own body regarded as extended —a pin prick, for example—or as qualities of it or of some foreign body beyond it—for example, the colour of one's hand or of the pen in it. According to the former usage strictly taken, there might be perception without any spatial presentation at all; a sensation that had been attended to a few times being perceived as familiar. Such percept as a 'presentative-representative' complex and wholly sensory, we might symbolize, so far, as $S + s$, indicating by S the present sensation and by s the ground in past experience of its familiarity[1]. According to the latter usage, an entirely new sensation—if such were possible—provided it were complicated with motor experiences in the way required for its localisation or projection, would become a percept. Such a percept again might be roughly symbolized as $X + (M + m)$, or as $X + m$ simply, M standing for actual movements, as in ocular adjustment, which in some cases might be only former movements represented, or m. But as a matter of fact actual perception probably invariably includes both meanings: impressions which we recognise we also localise or project, and impressions which are localised or projected are never entirely new—they are, at least, perceived as sounds or colours or aches, &c. It will, however, frequently happen that we are specially concerned with only one side of the whole process, as is the case with a tea-taster or a colour-mixer on the one hand; or, on the other, with the patient who is perplexed to decide whether what he sees is 'subjective,' like the spectral dagger that bewildered Macbeth, or whether it is 'real.'

[1] Cf. below, ch. vii, § 2, pp. 180 ff.

But there is still a distinction called for: perception, as we now know it, involves not only recognition (or assimilation) and 'spatial reference,' as it is not very happily termed, but it usually involves 'reference' to a thing as well. We may perceive a sound or a light without any presentation of that which sounds or shines; but none the less we regard such sound or light as the quality or change or state of a *something* that is distinct not only from the subject attending but from all the impressions to which he is attending. Here again actual separation is impossible, because this 'objective reference' has been so intertwined throughout our mental development with the other two. Still a careful psychological analysis will shew that such 'reification,' as we might almost call it, has depended on special circumstances, which we can at any rate conceive absent. These special circumstances are briefly the constant conjunctions and successions of impressions, for which psychology can give no reason, and the constant movements to which they prompt. Thus we receive together, *e.g.* those impressions we now recognise as severally the scent, colour, and 'feel' of the rose we pluck and handle. We might call each a 'percept,' and the whole a 'complex percept.' But there is more in such a complex than a sum of partial percepts; there is the apprehension or intuition of the rose as a thing having this scent, colour and texture[1]. We have, then, under perception to consider (*a*) the recognition, and (*b*) the localisation, of impressions, and (*c*) the 'intuition' of things.

Recognition of Impressions.

§ 2. The range of the terms recognition or assimilation of impressions is wide: between the simplest mental process they may be supposed to denote and the most complex there is a great difference. The penguin that watched unmoved the first landing of man upon its lonely rock becomes as wild and wary as more civilised fowl after two or three visits from its molester: it then recognises that featherless biped. His friends at home

[1] Intuition is used here to denote a complex of simple percepts synthesized as a unity in space and time. But to speak instead of a complex or of an acquired percept does not adequately indicate either the unity or the 'ideal construction' that 'thinghood' implies. The German *Anschauung* is frequently used in a like sense.

also recognise him though altered by years of peril and exposure. In the latter case some trick of voice or manner, some 'striking' feature, calls up and sustains a crowd of memories of the traveller in the past—events leading on to the present scene. The two recognitions are widely different, and it is from states of mind more like the latter than the former that psychologists have usually drawn their description of such simple perception. At the outset, they say, we have a primary presentation or impression P, and after sundry repetitions there remains a mass or a series of P residua, $p_1 p_2 p_3 \ldots$; perception ensues when, sooner or later, P_n 'calls up' and associates itself with these representations or ideas. Much of our later perception awakens, no doubt, both distinct memories and distinct expectations. But, since these imply previous perceptions, it is obvious that the earliest form of recognition must be free from such associations, and so is not equivalent to the logical judgment, P_n is a P. Assimilation involves retentiveness and differentiation, as we have seen, and prepares the way for re-presentation; but in itself there is no confronting the new with the old, no determination of likeness, and no subsequent classification[1]. The pure sensation we may regard as a psychological myth; and the simple image, or such sensation revived, seems equally mythical, as we may see later on. The nth sensation is not like the first: it is a change in a presentation-continuum that has itself been changed by those preceding; and it cannot with any propriety be said to reproduce these past sensations, for they never had the individuality which such reproduction implies. Nor does it associate with images like itself, since where there is association there must first have been distinctness, and what can be associated can also, for some good time at least, be dissociated.

So far for expository convenience we have regarded recognition or simple perception as if it were an isolated process: in point of fact, like all other psychical processes, it is always an integral part of the larger whole, living experience. Hence in becoming familiar an impression acquires what has been well called 'primary meaning'[2]; for it has only become familiar through attention and it has only been attended to because it interested the subject—affecting it pleasantly or painfully—

[1] Cf. below, ch. vii, § 2.

[2] Stout, *Manual of Psychology*, 3rd edn. (1913), pp. 182 f.

and so has acquired practical significance—merely cognitive significance has no place at this level[1].

Localisation of Impressions: the factors involved.

§ 3. To treat of the localisation of impressions is really to give an account of the steps by which the psychological individual comes to a knowledge of space. At the outset of such an inquiry it seems desirable first of all to make plain what lies within our purview, and what does not, lest we disturb the peace of those who, confounding philosophy and psychology, are ever eager to fight for or against the *a priori* character of this element of knowledge. That the knowledge of space is *a priori* in the epistemological sense it is no concern of the psychologist either to assert or to deny. Psychologically *a priori*, it certainly is not: not, that is to say, in the sense of being from the very beginning either implicitly or explicitly a factor in all presentation whatever. It will help to make this matter clearer if we distinguish what philosophers frequently confuse, *viz.* the *concrete* spatial experiences, constituting actual localisation for the individual, and the concept of space, at once *abstract* and *ideal*, based on what is found to be common in such experiences. A gannet's mind 'possessed of' a philosopher, if such a conceit may be allowed, would certainly afford its tenant very different spatial experiences from those he might share if he took up his quarters in a mole. So, any one who has revisited in after years a place from which he had been absent since childhood knows how largely a 'personal equation,' as it were, enters into his spatial perceptions. Or the same truth may be brought home to him if, walking with a friend more athletic than himself, they come upon a ditch, which both know to be twelve feet wide, but which the one feels he can clear by a jump and the other feels he cannot. In the concrete 'up' is much more than a different direction from 'along.' The hen-harrier, which cannot soar, is indifferent to a quarry a hundred feet above it, to which the peregrine, built for soaring, would at once give chase; but the hen-harrier is on the alert as soon as it descries prey that is on or near the ground.

In the concrete, the body is the origin or datum to which

[1] Cf. ch. i, § 4, pp. 20 f.

all positions are referred, and thus 'here' for the individual percipient is an absolute position, one that has no counterpart in the thoroughgoing relativity of pure space. Also 'the body-sense' in contrast with what may be called 'the projecting senses' yields the further absolute distinction of internal and external, marking off the bodily self from its environment. The environing space, again, for the percipient, varies in character, intimacy, and even dimensions as perception recedes from the foreground towards the background, from objects to which we can adjust by changes of posture to objects only to be reached by locomotion. Moreover, our various bodily movements and their combinations constitute a network of co-ordinates, qualitatively distinguishable but geometrically, so to put it, both redundant and incomplete. It is a long way from these facts of perception, which the brutes share with us, to that scientific concept of space, as having three dimensions and no qualitative differences, which we have elaborated by the aid of thought and language; and which reason may see to be the logical presupposition of what in the order of mental development has chronologically preceded it. That the experience of space is not psychologically original seems obvious—quite apart from any successful explanation of its origin—from the mere consideration of its complexity. Thus we must have a plurality of objects—*A* out of *B*, *B* beside *C*, distant from *D*, between it and *A*, and so on; and all these relations of externality, juxtaposition, distance and internality imply further specialisation; for with a mere plurality of objects we have not straightway spatial relations. Juxtaposition, *e.g.* is, strictly speaking, only possible when the related objects form a sensible continuum; but, again, not any continuity is extensive. Now how has the perception of this complexity come about? We shall find that it depends on three factors, each of which is indispensable.

(*a*) The first condition of spatial experience seems to lie in what has been noted above as the extensity of sensation[1]. This much we may allow is original; for the longer we reflect the more clearly we see that no combination or association of sensations varying only in intensity and quality, not even if motor presentations were among them, will account for this element in our spatial perception. A succession of touches *a*, *b*,

[1] Cf. ch. iv, § 2, p. 78; ch. v, § 4, p. 116.

c, d may be combined with a continuous series of movements m_1, m_2, m_3, m_4; both series may be repeatedly reversed; and finally the touches may be presented simultaneously. In this way we might attain to a knowledge of coexisting objects having a certain quasi-distance between them. Such knowledge is an important element in our perception of space; but it is not the whole of it. For, as has been already remarked by critics of the associationist psychology, we have an experience very similar to this in singing and hearing musical notes or the chromatic scale—where also we talk figuratively of 'distance,' 'compass,' &c. The most elaborate attempt to get extensity out of succession and coexistence in this way is that of Herbert Spencer. He has done, perhaps, all that can be done, and only to make it the more plain that the entire procedure is a ὕστερον πρότερον. We do not first experience a succession of (active) touches by means of movements, and then, when these impressions are simultaneously presented, regard them as extensive, because they are now associated with or symbolize the original series of movements. But, before and apart from movement altogether, we experience that massiveness or extensity of impressions within which, *when it is differentiated*, movements enable us to find positions, and to determine distances[1].

But, it may be impatiently objected, this surely amounts to the monstrous absurdity of making the contents of consciousness extended. The edge of this objection will best be turned by rendering the concept of extensity more precise. Thus, suppose a postage stamp pasted on the back of the hand; we have in consequence a certain sensation. If another be added beside it, the new experience would not be adequately described by merely saying we have a greater quantity of sensation; for intensity also involves quantity, and increased

[1] We are ever in danger of exaggerating the competence of a new discovery; and the associationists seem to have fallen into this mistake, not only in the use they have made of the concept of association in psychology generally, but also in the stress they have laid upon the fact of movement when explaining our space-perception in particular. Indeed, both ideas have here conspired against them: association, in keeping up the notion that we have only to deal with a plurality of discrete impressions; and movement, in keeping to the front the idea of sequence. Mill's *Examination of Hamilton* (3rd ed., pp. 266 *seq.*) surely ought to convince us that, unless we are prepared to regard, as Mill does, 'the idea of space as at bottom one of time' (p. 276), we must admit the inadequacy of our experience of movement alone to explain the origin of it.

intensity is not what we have got. A sensation of a certain intensity, say a sensation of 'warm,' cannot be changed into one having two qualities, warm and cold, leaving the intensity unchanged; but with extensity the corresponding change is possible. For one of the postage stamps a piece of wet cloth of the same size might be substituted and the massiveness of the compound sensation would still remain very much the same. Intensity belongs to what may be called graded quantity: it admits of increment or decrement, but is not a sum of parts. Nor is extensity, *as such*, a sum of parts; though it turns out to imply plurality, since it can be differentiated. We might describe it as latent or merged plurality, or better still as a 'ground' of plurality. In other words, to say that a single presentation has massiveness is the same as saying that a portion of the presentation continuum, at the moment undifferentiated, is capable of differentiation—as happens, if for one of the two stamps the wet cloth is substituted.

b. Attributing this property of extensity to the presentation-continuum as a whole, we have now to consider the relation of any particular sensation to this larger whole. So long as the extensity of such sensation admits of diminution without the sensation becoming *nil*, so long the sensation either has or may have two or more so-called 'local signs.' For what is gone—one of the stamps *e.g.* being removed—though identical in quality and intensity, with what remains, will obviously *be* a different part of the whole. But such difference of relations to the whole can only be regarded as affording a ground or possibility of local distinction, not as being from the beginning such an overt difference as the term 'local sign,' when used by Lotze, is meant to imply. But we can say that more partial presentations are concerned in the sensation where there are two stamps than where there is only one. The local differentiation of such compound sensation is what we have next to consider or, in other words, the development of what Weber called *Ortsinn*, local or topical sense. To illustrate what is meant it will be enough to refer to the psychological implications of the fact that scarcely two portions of the sensitive surface of the human body are anatomically alike. Not only in the distribution and character of the nerve-endings but in the variety of the underlying parts—in one place bone, in another fatty tissue, in others tendons or muscles variously arranged—we

find ample ground for diversity in 'the local colouring' of sensations. And comparative zoology helps us to see how such diversity has been developed as external impressions and the answering movements have gradually differentiated an organism originally almost homogeneous and symmetrical. Between one point and another on the surface of a sphere there is no such ground of difference; but this would no longer be true if the sphere revolved, still less if it also moved to and fro in the direction of its axis. Assuming then that to every immediately distinguishable part of the body there corresponds a local sign, we may allow that at any moment only a certain portion of this continuum is definitely within the field of consciousness. But no one will maintain that a part of one hand is ever felt as continuous with part of the other or with part of the face[1]. Local signs have thus an invariable relation to each other: two continuous signs, for example, are not one day quite indistinguishable and quite distinct the next[2]. The possibility of such distinctness is implied in the mere massiveness of a sensation only in so far as this admits of gradual differentiation into local signs[3].

We have, then, so far as such differentiation is accomplished, a plurality of presentations mutually excludent[4], constituting an extensive continuum, presented simultaneously, and having certain fixed and invariable relations to each other. Of such experience the typical case is that of passive touch. It must be

[1] It does however happen in certain pathological cases of so-called 'allocheiria' that the patient localises a sensation on the opposite side to, but in a position symmetrical with, that of the exciting stimulus. Also it is often found that ambidextrous persons have more than usual difficulty in distinguishing between right and left. With internal sensations these mistakes are never made. Such facts may be fairly regarded as evidence of the existence of local signs.

[2] The improvements of our so-called 'spatial sense' consequent on practice are obviously no real contradiction to this; on the contrary, these facts are all in favour of making the differentiation of extensity a distinct factor in our space experience. And the more so inasmuch as the improvements in question are also very marked for symmetrical positions even though the practice has been only unilateral.

[3] The heroic and interesting "Human Experiment in Nerve Division carried out by Dr Rivers and Dr Head" tends to confirm this view of the genesis of local signs from an originally undifferentiated extensity, although their novel terminology—protopathic and epicritic sensibility—is not very felicitous. Cf. *Brain*, xxxi. (1908), pp. 323–450; also for later experiments, Trotter and Davies, "Experimental Studies in the Innervation of the Skin," *Journal of Physiology*, xxxviii. (1909), pp. 134–246.

[4] As to this 'incopresentability' cf. above, ch. iv, § 2, p. 80.

allowed that space in like manner involves a fixed continuity of positions; but then it involves, further, the possibility of movement. Now in the continuum of local signs alone there is nothing whatever of this. A *plenum* we might call it; but the presentation of *occupied space* it can only yield after its several local signs have been complicated in an orderly way with *active* touches; when, that is, we have frequently experienced the contrast of movements with contact and movements without, or *in vacuo*. It is quite true that we cannot now imagine this plenum except as a space, because we cannot now divest ourselves of the motor experiences by which we have explored it. We can, however, form some idea of the difference between the perception of space and this one element in the perception by contrasting massive internal sensations with massive superficial ones, or the general sensation of the body as 'an animated organism' with our perception of it as extended. Or we may express the difference by observing that extension implies the distinction of here and there, while extensity suggests rather a certain ubiquity—*l'ubiété définitive* of the Schoolmen of which Leibniz speaks in his *Nouveaux Essais* and to which Clarke too referred in his correspondence with him[1].

It must seem strange, if this conception of extensity is essential to a psychological theory of space, that it has escaped notice so long. The reason may be that in investigations into the origin of our knowledge of space it was always the *concept* of space and not our concrete space *percepts* that came up for examination. Now in space as we conceive it one position is distinguishable from another solely by its co-ordinates, *i.e.* by the magnitude and signs of certain lines and angles, as referred to a certain datum, fundamental position or origin; and these elements our motor experiences seem fully to explain. But on reflexion we ought, surely, to be puzzled by the question, how these coexistent positions could be distinguished as 'places' before those movements were made which constitute them different positions; and how, if they were not distinguished the movements could be interpreted spatially. So we are led naturally to take note of local signs. That is to say, the link we suspected to be missing is supplied by the more concrete experiences we obtain from our own body, in which two positions have a

[1] Cf. Leibnitii *Opera philosophica omnia*, Erdmann's edn., pp. 273, 750.

qualitative difference or 'local sign' *independently of movement.* True, such positions would not be known as spatial without movement; but neither would the movement be known as spatial had those positions no other difference than such as arises from movement. In a balloon drifting steadily in a fog we should have no more experience of change of position than if it hung becalmed and still. Again, if we were magically spirited from place to place we might become familiar with them as τόποι and be competent to write a topography about them, but we should be altogether unable to produce an itinerary to guide others in reaching them in a natural way.

c. We may now consider the part which movement plays in furnishing this information, that is to say, in elaborating the presentations of the originally dimensionless continuum[1] into percepts of space. In so doing we must bear in mind that while this continuum implies the incopresentability of two impressions having the same local sign, it allows not only of the presentation of sensations of varying massiveness, but also of a sensation involving the whole continuum *simultaneously,* as in Bain's classic example of the warm bath, answering to the 'definitive ubiquity' just now mentioned. As regards the motor element itself, on the other hand, the first point of importance is the incopresentability and invariability of a *successive* series of auxilio-motor or kinaesthetic presentations, $P_1, P_2, P_3, \ldots P_n$. P_1 cannot be presented along with P_2, and from P_4 it is impossible to reach P_1 again save through P_3 and P_2. Such a series, taken alone, could afford us, it is evident, nothing but the knowledge of an invariable sequence of impressions which it was in our own power to produce. Calling the series of P's 'positional signs,' the contrast between them and local signs is obvious. Both are invariable, but succession characterises the one, simultaneity the other; the one yields potential position without place, the other potential place (τόπος) without position; hence we call them both merely signs[2]. But in the course of the movements necessary to the exploration of the body—probably

[1] 'Primitively amorphous' as Poincaré calls it. To identify it explicitly with three-dimensional space is to anticipate our spatial concepts before the level even of our spatial percepts is reached. To identify it with two-dimensional space is to mistake the meaning of extensity altogether.

[2] Thus, as we have seen, a place may be known topographically without its position being known geographically, and *vice versa.*

our earliest lesson in spatial perception—these positional signs receive a new significance from the active and passive touches that accompany them, just as they impart to these last a significance they could never have alone.

Tactual Perception of Space.

§ 4. It is only in the resulting complex that we have the presentations of actual position and of spatial relation. For space, though conceived as a coexistent continuum, excludes the notion of omnipresence or ubiquity: two positions l_d and l_g must coexist, but they are not strictly distinct positions so long as we conceive ourselves present in the same sense in both. But, if F_d and F_g are, *e.g.* two impressions produced by compass points touching two different spots as l_d and l_g on the hand or arm, and we place a finger upon l_d and move it to l_g, experiencing thereby the series P_1, P_2, P_3, P_4, this series constitutes l_d and l_g into positions and also invests F_d and F_g with a relation not of mere distinctness as τόποι but of definite distance. The resulting complex perhaps admits of symbolization as follows:

$$\ldots\ldots \mathrm{F}_a\mathrm{F}_b\mathrm{F}_c F_d \mathrm{F}_e\mathrm{F}_f F_g \mathrm{F}_h\mathrm{F}_k \ldots\ldots$$
$$T\ t\ t\ t$$
$$P_1 p_2 p_3 p_4$$

Here the first line represents a portion of the tactual continuum, F_d and F_g being distinct 'feels,' if we may so say, or passive touches presented along with the fainter sensations of the continuum as a whole, which the general 'body-sense' involves; T stands for the active touch of the exploring finger and P_1 for the corresponding kinaesthetic sensation regarded as 'positional sign'; the rest of the succession, as not actually present at this stage but capable of revival from past explorations, is symbolized by $t\ t\ t$ and $p_2 p_3 p_4$.

When the series of movements is accompanied by active touches without passive there arises the distinction between one's own body and foreign bodies. When the initial movement of a series is accompanied by both active and passive touches, the final movement by active touches only, and the intermediate movements are unaccompanied by either, we get the further presentation of empty space lying between us and them—but not until, by frequent experience of contacts along with those

intermediate movements, we have come to know *all* movement not merely as a succession but as a change of position. Thus active touches come at length to be 'projected,' passive touches alone being 'localised' in the stricter sense. But in actual fact, of course, the localisation of one impression is not perfected before that of another is begun. We must take care lest our necessarily meagre exposition give rise to the mistaken notion that localising an impression consists wholly and solely in performing or imaging the particular movements necessary to add active touches to a group of passive impressions. That this cannot suffice is evident; for a single position out of relation to all other positions would be a contradiction. Localisation, then, though it depends on many special experiences of the kind described, is not like an artificial product which is completed a part at a time. It is essentially a growth, and such that its several constituents advance together in definiteness and interconnexion. So far has this development now advanced that we do not even imagine the special movements which the localisation of an impression implies; that is to say, they are no longer distinctly represented as they would be if we definitely intended to make them: the past experiences are 'retained,' but too much 'complicated' in the mere perception to be appropriately spoken of as remembered or imaged.

À propos of this almost instinctive character of even our earliest spatial percepts it will be appropriate to animadvert on another misleading implication in the current use of such terms as 'localisation,' 'projection,' 'bodily reference,' 'spatial reference' and the like. The implication is that the body as extended, or more generally that external space, is in some sort presented or supposed apart from the localisation, projection or reference of impressions to such space. That it may be possible to put a book in its place on a shelf there must be (1) the book, and (2), distinct and apart from it, the place on the shelf, and (3) a ticket or mark on the book indicating this place[1]. But in the

[1] It was in this sense that Lotze used the term 'local sign.' But this is just the meaning we have to avoid and the use of the term sign is so far misleading. 'Topical factor' would be a safer term, if we could begin framing our terminology afresh. Anyhow it must be borne in mind that 'local sign' is used proleptically not indicatively. It is not meant to refer to 'a clue by means of which sensations can be localised in our percept of space' (Lotze, *Metaphysik*, § 279). It is our name for one of the factors whereby that percept is obtained. This, of course, applies also to the term 'positional sign.'

evolution of our spatial experience impressions and positions are not thus presented apart. We *can* have, or at least we can suppose, an impression which is recognised without being localised as has been already said. But if it *is* localised this means that a more complex presentation is formed by the synthesis of new elements, not that a second distinct object is presented and then some indescribable connexion established between the impression and it, still less that the impression is referred to something not strictly presented at all. The truth is that the body *as extended* is from the psychological point of view not perceived apart from localised impressions. In like manner impressions projected (or the absence of projected impressions) will constitute all that is perceived as the occupied (or unoccupied) space beyond. It is not till a much later stage, after many varying experiences of different impressions similarly localised or projected, that even the mere materials are present for the formation of such an abstract concept of space as 'spatial reference' implies[1]. Psychologists, being themselves at this later stage, are apt to commit the oversight of introducing it into the earlier stage, the genesis of which they are seeking to ascertain.

Visual Perception of Space.

§ 5. To ascertain the genesis of the tactual perception of space is all that we have yet attempted. The visual perception —so far as it is metrical—presupposes this; as the common names for linear magnitudes, hand, foot, ell, step, &c., at once suggest. It is only by reference to tangible or 'real' magnitude that the various visual or 'apparent' magnitudes of an object have any sense or meaning: "otherwise there can be nothing steady and free from ambiguity spoken of it[2]," as Berkeley said long ago. "But, as has been often remarked, this is true, though to a less degree, of tangible as well as of visible objects": such is the comment on this passage made by Berkeley's editor, Dr Campbell Fraser. There is a certain relativity besetting our tactual as well as our visual perception of magnitude, it is true; but it is not true that the difference between the two is one of degree; it is rather a difference of kind. For in vision the apparent size of

[1] Cf. on this point Poincaré, *La Science et l'Hypothèse*, pp. 74, 75.

[2] Cf. *Essay towards a New Theory of Vision*, §§ 55–61.

an object is relative to its distance from the eye; in touch, which —necessarily implying contact—excludes distance, it is relative to the part touched or touching: compare, *e.g.* a corn-plaster applied to the back and then to the thumb or a dental cavity explored by the tongue and afterwards by the finger-tip. But for the parts severally, Berkeley's assertion holds: for each any given object has a constant determinate magnitude, though such magnitudes differ widely *inter se.* For the eye, on the other hand, any given magnitude may appear as that of an object that is really either very large or very small, if the object be sufficiently distant in the one case and sufficiently near in the other. But "distance of itself, and immediately cannot be seen. For distance, being a line directed endwise to the eye, it projects only one point on the fund of the eye—which point remains invariably the same, whether the distance be longer or shorter[1]." That is to say, till we know the distance we cannot judge the size: distance is in the last resort entirely a tangible or locomotor magnitude. If, then, visual magnitude can only be interpreted by means of tangible magnitude, and if the tangible magnitudes of an object differ widely from each other according to the parts exploring or affected, what determines which is to be the standard? Nothing but convenience: experience very soon singles out and perfects the best, that for which the local signs of passive touch and the positional signs of active touch are in themselves the most finely graduated and together the most easily combined. That one is the hand[2]. The most mobile parts have the keenest 'spatial sense' and the least mobile the bluntest of all, as Vierordt[3] has shewn. In these facts we have, by the way, further confirmation of the mutual co-operation of the two factors, extensity and motility, in producing and perfecting our tactual perception of space.

But though Berkeley was right in his contention that ocular perception cannot be the primary source of (metrical) geometry,

[1] Berkeley, *op. cit.* § 2. In the last clause Berkeley went too fast, as he might have learnt if it had occurred to him to put his *a priori* statement to the test of experiment (cf. below, p. 160).

[2] For "the space inside the mouth, which is so intimately known and accurately measured by its inhabitant the tongue, can hardly be said to have its internal directions and dimensions known in any exact relation to those of the larger world outside. It forms almost a little world by itself." W. James, *Psychology*, ii. 181.

[3] *Physiologie des Menschen*, 5te Auf. 1877, pp. 342-9.

he nevertheless overlooked what Reid afterwards made clear, *viz.* that it does give rise to a geometry altogether independent of 'tactual perception'; such is the 'geometry of visibles,' as Reid called it, projective geometry as we now say. It would be strange if it were not so, since to the eye pertains an extensity and motility peculiar to it, which are most minutely differentiated *inter se* and most intimately correlated together. The differentiation into local signs of the retinal extensity is but a further stage in the development which began in the differentiation within the general dermal sensibility of a specific light sense. It seems to consist in an increased specialisation of the more central portions of the retina as compared with the rest. The most central portion which answers to the functioning of what, from its colour, is called 'the yellow spot,' is trichromatic under conditions (as to amount of light, size of object, &c.), such that its marginal zones are only dichromatic, and the peripheral zone only monochromatic. Also—and still more important—along with this comparative lack of sensory differentiation, there is a marked diminution in exact definition as we pass from centre to periphery: thus, the ace of diamonds, say, which in the first case is distinct both in shape and colour becomes in the last only a colourless blur and is soon lost to sight altogether if it remains at rest. Again, as with touch, the question arises: which of these conflicting deliverances are we to prefer? And again we may answer that practice selects and perfects that which works best. The yellow spot, or rather a central hollow within this, called the *fovea centralis*, thus comes to be the finger of the eye, if we may so say. And surely we may, for though there is not much resemblance between a dimple and a finger, still the *functions* of the finger in active touch and that of the *fovea centralis* in active vision are practically identical[1]. The whole extensity of the field of sight, the somatic field as it should be called to distinguish it from its objective projection, is *simultaneously* presented and its content *passively* received, but what we actively fixate and look at—the contour or the motion of the object, for example—forms a *successive* series and each item of it is brought in turn by the *movements*[2] of the eye to occupy the yellow spot. The

[1] Cf. the German *Sehen* and *Blicken*, *Fühlen* and *Tasten*.

[2] These movements as 'positional signs' again, as in the tactual perception of space, are not objective movements already implying space, but the serial kinaesthetic

analogy of such 'macular' or active vision with active touch is then so far very complete[1].

In the case of the visual perception of the Invertebrates however it is much less so. Here there are in general no eye-movements, and we must look elsewhere for our positional signs. The reactions of the lowliest organisms to changes of light consist simply of more or less random efforts to move the whole body into or out of it—positive or negative 'phototaxis'—according to habit. But we can hardly call translatory movements of the body as a whole positional signs; for, though they have altered the body's place in space, yet since the body itself is the *point de repère*, which all spatial *perception* implies, things are so far just where they were. Movement is determined solely by the general bodily discomfort, the organic sensations due to changes of illumination. Such sensations have extensity; but at this early stage, they have no local signs and therefore nothing for positional signs to relate. The first requisite for spatial perception then is still wanting. When however this is forthcoming in the form of retinal differentiations visual perception of space becomes possible, provided any movements whether of the body or its limbs can be correlated with them.

But their behaviour and the structure of their eyes alike shew that the higher invertebrates still lack the visual perception of definite forms and of the environment as a perspective whole, which most vertebrates possess. What the said invertebrates shew signs of perceiving and what their eyes are specially constructed to disclose are movements. In this respect their sight is comparable to that which the extreme margin of the retina affords to us. Images from objects at rest are not discriminated in either case; but the moment the objects move—relatively to the body—attention is arrested in both. But for the invertebrate there is no yellow spot to bring images into, and even if there were, there are no eye-movements to bring them into it[2].

Even among mammals—to say nothing of the lower classes of the *Vertebrata*—there is an enormous development of visual

sensations that we afterwards learn from the physiologist to be the psychical concomitants of the lengthening and shortening of the eye-muscles and the consequent intra-ocular pressures, straining of tendons, &c.

[1] Cf. above, § 4, p. 151.

[2] Cf. F. Plateau, *Recherches expérimentales sur la vision chez les Arthropodes*, 5me partie, 1888.

perception. It is marked by a gradual advance from (*a*) predominantly 'periscopic or panoramic vision' as in the hare and the rabbit, for example—where the eyes are so laterally placed that practically little or no binocular vision of the same object is possible—to (*c*) 'the stereoscopic vision' of man and the apes, where the axes of the eyes at rest are parallel and all but the margins of the two visual fields can be perceptually united into a single 'solid' or projective field. Intermediate between these extremes are varying degrees of (*b*) merely 'binocular vision,' becoming more perfect as the lateral position of the eyes gives place to one more frontal, so that the divergence of the optical axes continuously diminishes. To these three types of vision correspond roughly three very different modes of life—that of defenceless herbivora whose food is stationary, and most of whom need[1] only to be aware at once of the presence of their enemies anywhere round the whole horizon in order to make a timely flight in whatever direction is most convenient; that of their enemies, the carnivora, who need, on the other hand, accurately to adjust their movements to those of their prey in front of them; that of the primates, whose arboreal habits and use of the hands as a prehensile organ calls for exact perspective or 'plastic' vision. Without such vision our manual skill would be very imperfect and much of it impossible[2]. Though all stereoscopic vision is binocular, we cannot assume that the converse is true. The two eyes may yield the perception of one form just as the two ears yield the perception of one note—without the form being perceived to be geometrically solid as it is in human vision.

The psychological outcome of this gradual development is remarkable[3]. It is tantamount, as Helmholtz put it, to the

[1] Those that climb—as the goat and the chamois—have more prominent and more mobile eyes, and these set widely apart.

[2] The very great dexterity sometimes acquired by the blind we may reasonably attribute to long and patient training by those who can see.

[3] So too is the physiological result. In the first place the movements of the two eyes are perfectly co-ordinated and simultaneously conjugate for all directions (cf. W. Harris, "Binocular and Stereoscopic Vision in Man and other Vertebrates, &c.," *Brain*, Vol. xxvii. 1904, pp. 107–47): the independent movements so striking in the case of the cameleon's eyes and still observable in many mammals, the Ungulates for example, have altogether ceased. Again, the wide retinal area of tolerable definition, that sufficed so long as the function of sight was mainly that of a sentinel, is replaced by a restricted area of exact definition—the sentry function being however still discharged by the rest of the retinae. And this higher, so-called 'macular,' vision is attained *pari passu* with that of the exact synergizing of all the eye-muscles

acquisition of a single median or Cyclopean eye, combining the retinal fields and the conjoint movements of the two eyes. A central *functional* eye, that is to say, is attained and sustained by the joint action of the two peripheral *anatomical* eyes. Any object that we look at is never seen as double nor yet as it appears to either eye singly, unless it is so far off that the images on both eyes are the same: otherwise it is seen as a stereoscopic image to which each eye contributes a complementary 'half-image.' Again any object that we look at is not located on the line of sight of either eye singly; but when it is so distant that these lines are parallel, the object is located on the line midway between them, *i.e.* in the median plane of the body. When the object is nearer, so that the fixation-lines converge, it is located on the line that bisects the angle between them and normally terminates in the so-called 'orientation point' situated midway between the so-called 'rotation-points' of the two eyes[1]. Thus guided by both eyes together, *i.e.* by what is called 'binocular parallax,' a man, as we say, 'follows his nose.'

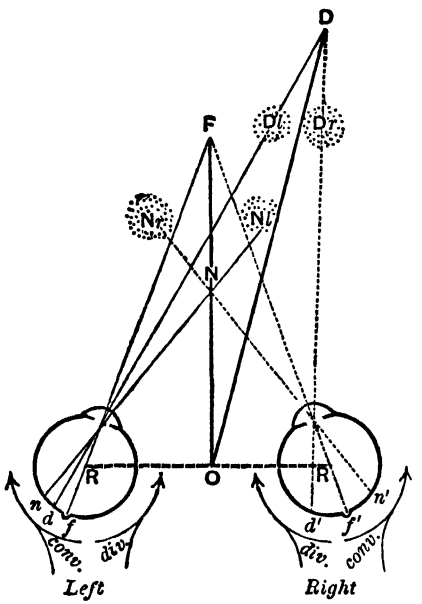
When an object indirectly and so more or less imperfectly seen, attracts attention, its half-images are not at first combined and in some positions of the object can be readily observed apart, in many others they can be so observed with a little practice. They then appear as double images either on opposite sides of the object at the moment fixated—when they are seen most easily—or, if on the same side, one appears nearer to that object than the other. If now the intruding object is more distant the double image to the right will be found to disappear when the right eye is closed, that to the left when the left eye is closed: thereby we learn to which eyes the half-images respectively belong. When the new object is nearer than that at the moment

as one organ. Finally the optic nerves are no longer completely 'decussate' as at first —the right optic nerve, that is to say, ending entirely in the left cerebral hemisphere, and the left entirely in the right hemisphere. There is now only 'semi-decussation'— the outer or temporal half of *each* retina being represented in both hemispheres, and only the inner or nasal half of each, alone in the opposite hemisphere. This change also is a gradual one advancing *pari passu* with the others. What alone accounts for the unity of the whole complex structure, it is worth noting in passing, is just the function that it subserves—accurate stereoscopic vision: in this we have a striking instance of the biological principle that function dominates structure.

[1] Practically we may regard the human eyes as solid spheres enclosed in a firm socket, incapable therefore of any but rotary movements round certain axes passing through its centre.

fixated these relations are reversed: the right double image disappears with the closing of the left eye, and the left with the closing of the right eye: the images are then said to be 'crossed.' In the first case the eyes automatically diverge till the double images give place to single and distinct vision: in the second case they converge till the same result is attained. At the same time the focus of the optic lenses, which varies with the distance, is adjusted by an appropriate reflex controlling their curvature. And so the originally periscopic vision predominant among the lower mammals—yielding a wide field merely imperfectly defined—gives place to the wonderful orientation in three dimensions, which enables us either to thread a needle or to gaze into the depths of space[1].

[1] The accompanying diagram may serve to make these results clearer. F is the object fixated. D a more distant and N, a nearer, object: all three being isolated and in the plane of the paper. The half-images of F, *viz.* *f* and *f'*, fall within the small depressions representing the *foveae centrales*. F is accordingly seen, singly and stereoscopically, in the direction of the thickened line—here lying in the median plane of the body—joining F and O, the so-called 'orientation' point, and seen at a distance indicated by the mutual inclination of F*f* and F*f'* brought about by conjugate movements of the eyes. D*l* and D*r* are the *uncrossed* double images of D answering respectively to the half-images *d* and *d'* 'projected.' To fixate D each eye rotates on an axis perpendicular to the plane of the paper and passing through the rotation point R. These rotations continue in the directions indicated by the arrows marked *conv.* for the left eye, and *div.* for the right—the eyes *together* converging less and less—until the half-images come to be within the *foveae centrales*. When accordingly the double images coalesce in D, the 'orientation' line OD bisects the angle at O formed by the two new fixation-lines, which, for simplicity's sake, are here not shewn. N*r* and N*l* are the *crossed* double images answering respectively to *n'* and *n* 'projected.' In fixating N instead of F both eyes converge more and more, as indicated by the arrows marked *conv.* till the double images coalesce in N. Again the orientation line, here ON, gives the direction in which the complete image is seen, the convergence of the new fixation lines being an index of its distance.



Nevertheless it would be a mistake to suppose that monocular vision apart from experiences gleaned by the use of both eyes would yield *no* perception of distance. Even a person who had never had but one eye would still find some indication of varying depth in the varying 'accommodation' requisite for distinct vision between distances ranging from a few inches to a few feet. Beyond these even this imperfect means of discrimination would be of no avail[1]. But when either the object or the eye was moved, the rate at which the image of the object changed its position on the retina would vary inversely as the distance of the object and so would furnish a comparative index of this distance as long as any change of rate was appreciable. Among the lower vertebrates, where owing to the lateral insertion of the eyes periscopic vision predominates, these means appear to furnish a sort of stereoscopic vision, which within narrow limits is extremely precise, as the familiar pecking of the hen—after slightly raising its head—or that of the thrush—after turning its head aside—sufficiently shew. But it is noteworthy that both lose sight of their object before reaching it, as their own beak comes in the way. There is also considerable evidence of the existence of a *fovea lateralis* in the eyes of these vertebrates[2].

As the *final outcome* of this long development, the eye-movements, which we have supposed to have been the primary means of perfecting macular and stereoscopic vision, come to assume a secondary place. Thus we *now* become aware by means of retinal images of eye-movements that we had not directly noticed[3]. Again, a momentary flash of lightning or an electric spark may now be sufficient for stereoscopic vision, though eye-movements are then out of the question[4]. It is

[1] In birds however it is by no means imperfect. The bird's eye has been called 'the accommodation eye κατ' ἐξοχήν,' inasmuch as it is furnished with an intraocular organ, the '*pecten*,' very sensitive to changes in the adjustment of the lens.

[2] Cf. A. von Tschermak, "Studien u. d. Binocularsehen der Wirbelthiere," *Pflügers Archiv*, xci. (1902), pp. 1–20; "U. d. Sehen der Wirbeltiere," *Tierärztliches Zentralblatt*, 1910.

[3] As, for example, in looking for a moment at the setting sun or an electric light and then closing the eyes, we see a whole crowd of after-images due to defective fixation, which we had neither observed nor intended.

[4] As said, this *may* be the case, but it is not necessarily so. Certain experiments by v. Karpinska (*Zeitschr f. Psychol.* 1908, Bd. lvii. pp. 1–88) bring out the frequent existence of a series of phases in, and the consequently gradual oncoming, of the stereoscopic interpretation even when the exposure is instantaneous. In other

however most illogical to appeal to these results in order to discredit the genetic or empirical theory of visual perception which alone accounts for them[1].

Intuition of Things.

§ 6. We come now to the intuition of things or, as it is more often called, 'the perception of the external world.' In a complex percept, such as that of an orange or a piece of wax, may be distinguished the following items concerning which psychology may be expected to give an account: (*a*) the object's reality, (*b*) its solidity or occupation of space, (*c*) its unity and complexity, (*d*) its permanence, or rather its continuity in time, and (*e*) its substantiality and the connexion of its attributes and powers. Though, in fact, these items are most intimately blended, our exposition will be clearer if we consider each for a moment apart.

a. The terms *actuality* and *reality* have each more than one meaning. Thus what is real, in the sense of material, is opposed to what is mental; as the existent or actual it is opposed to the non-existent; and again, what is actual is distinguished from what is merely possible. But here, by real or actual is meant, with a certain shade of difference—in so far as actual is more appropriate to movements and events—whatever is sense-given or presented in antithesis to whatever is ideal or represented. This seems at least their primary psychological meaning: it is, at any rate, the one most in vogue in English philosophy, over-tinged as that is with psychology[2]. Any

words there are psychological factors present: as v. Kries puts it, the observer has to *understand* the object, and for this a very noticeable time is often requisite. Cf. Helmholtz's *Phys. Optik*, 3rd ed. 1911, III. p. 470.

[1] Nevertheless, if that theory is to work it must accept extensity as an ultimate fact. To overlook this was Helmholtz's initial mistake and to recognise it Hering's great merit. Unhappily he—like William James—goes too far in the opposite extreme. He attributes a length, breadth and depth value to each retinal point *as such*, in fact treats space as perceptually on a par with light, heat or sound. Such a position is psychologically indefensible. Without localisation, as we have already said, we have not space but only extensity: with localisation we have not only extensity but relations that imply movement and are only brought to our knowledge by means of it. See the very able criticism by von Kries, *op. cit.* pp. 522–34.

[2] Thus Locke says, "Our simple ideas [*i.e.* presentations or impressions, as we should now say] are all real...and not fictions at pleasure; for the mind...can make to itself no simple idea more than what it has received" (*Essay*, ii. 30, 2). And Berkeley says, "The ideas imprinted on the senses by the Author of Nature are called *real*

examination of this characteristic will be best deferred till we come to deal with ideation generally[1]. Meanwhile it will suffice to shew that reality or actuality is not a single distinct element added to the others which enter into the complex presentation of what we call a *thing*, as colour or solidity may be. Nor is it a special relation among these elements, like that of substance and attribute, for example. For in both these respects the real and the ideal, the actual and the possible, are alike. All the elements or qualities within the complex, and all the relations of those elements to each other, are the same in the rose represented as in the presented rose. The difference turns, not upon what these elements are, regarded as qualities or relations whether presented or represented: it turns solely upon whatever it is that distinguishes the presentation from the representation of the thing's qualities or their relations. Now this distinction, as we shall presently see, depends partly upon the relation of the presentation of the thing to other presentations in consciousness with it[1], partly upon the relation to it, the attitude (*Einstellung*) which it evokes in the subject whose presentation it is[2]. In these respects we find a difference, not only between the simple qualities, such as cold, hard, and sweet in strawberry ice, *e.g.*, as presented and as represented; but also, though less conspicuously, in the spatial, and even the temporal, relations which enter into our intuition as distinct from our imagination of it. So then, reality or actuality is not strictly an item by itself, but a characteristic of all the items that follow. Epistemologically expressed it answers to the existential judgment: *It is* or *There is*, and a judgment of this kind all perception implies.

b. In the so-called physical solidity or impenetrability of things our properly dynamic presentations or 'feelings of effort' come *specially* into play[3]. They are not entirely absent in those movements of exploration by which we attain a knowledge of space. But it is when these movements are definitely resisted, or are only possible by increased effort, that we reach the full meaning of body as that which occupies space. What we come to call heat and cold, light and sound, the natural man regards

things; and those excited in the imagination, being less regular, vivid and constant, are more properly termed *ideas* or *images of things*, which they copy or represent" (*Prin. of Hum. Know.* pt. i. § 33).

[1] See next chapter, § 1. [2] Cf. below, p. 173. [3] Cf. above, ch. v, § 8, p. 137.

as real; and by and by he perhaps regards them as due to certain 'powers' of things, known or unknown. But he does not regard them as themselves things. At the outset things for him are all corporeal like his own body, the first and archetypal thing; and they are clearly intuited only when active touch is accomplished with effort. At a later stage passive touch without such effort may suffice, but only because pressures, depending on a subjective initiative, *i.e.* on voluntary muscular exertion, have been previously experienced. It is of more than psychological interest to remark that the primordial factor in external reality or 'materiality,' as we may now call it, is thus due to the projection of a subjectively determined exertion which meets with resistance, thereby making us acquainted with the occupation of space—autantitypy as it has been called[1].

It is further of interest to remark that to yield such acquaintance the passive displacement of our own body by another would not suffice: that alone would only be a new case of incopresentability: active resistance is essential to the nature of an opponent. Still we must remember that the accompanying sense-impressions are also an essential condition. Muscular effort without simultaneous sensations of contact would not yield the distinct presentation of something resistant occupying the space from which we have been obtruded and to which we would return. Nay more, it is in the highest degree an essential circumstance in this experience that the muscular effort, though subjectively initiated, is still only possible when there is contact with something that, as it seems, is making an effort the counterpart of our own. Especially important is the case where this counterpart effort also is our own, as when we press the hands together or pull with one against the other—"an experience," as Herbert Spencer has truly said, "which, perhaps more than any other, aids in developing the consciousness of objective power[2]." But the 'something' is otherwise, so far, no more than thing-stuff: without the factors here already implied and now to be considered in more detail our psychological individual would fall short of distinct intuition of other things.

c. Of these remaining factors concerned in the intuition or perception of external things we have first of all to note the

[1] Cf. Hamilton, ed. of *Reid's Works*, p. 847.

[2] *Principles of Psychology*, 2nd ed. ii. § 468, p. 483.

temporal and spatial relations of the sense-data composing them. Such relations are themselves in no way psychologically determined: they are primarily and in the main quite independent of the subject's interest or of any psychological principles of synthesis or association whatsoever. But it is essential that impressions should recur, and recur more or less as they have previously occurred, if knowledge is ever to begin; for out of a continual chaos of sensation, all matter and no form, such as some philosophers describe, nothing but chaos could result. Even a flux of impressions having this real or sense-given order will not suffice; there must also be attention to, and retention of, the order itself as well. These indispensable processes at least are psychological.

But for its familiarity we should marvel at the fact that out of the variety of impressions simultaneously presented we do not instantly group together all the sounds and all the colours, all the touches and all the smells. But, dividing what is given together, we single out a certain sound or smell and regard that along with a certain colour and feel, similarly singled out, as belonging to what we call one thing. We might wonder, too —those at least who have made so much of association by similarity ought to wonder—that, say, the white of snow calls up directly, not other shades of white or other colours, but the expectation of cold or of powdery softness. The first step in this process has been the simultaneous projection into the same occupied space of the several impressions which we thus come to regard as the qualities of the body filling it. Yet such projection would avail but little—indeed could hardly arise—unless the constituent impressions were again and again repeated in like order, so as to prompt anew the same grouping; nor unless, further, this constancy in the one group was present along with changes in other groups and in the general field. There is nothing in its first experience to tell the infant that the song of the bird does *not* inhere in the hawthorn whence the notes proceed, and that the fragrance of the mayflower does. It is only where a group, as a whole, has been found to change its position relatively to other groups, and to be—in general—independent of changes of position among them, that such complexes can become distinct unities, a world of many things. Again, because things are so often a world within themselves,

their several parts or members not only having distinguishing qualities but moving and changing with more or less independence of the rest, it comes about that what from one point of view is one thing becomes from another point of view several —like a tree with its separable branches and fruits, for example. Wherein then, more precisely, does the unity of a thing consist? This question, so far as it here admits of answer, carries us over to temporal continuity.

d. Amidst all the change above described there is one thing comparatively fixed. Our own body is both constant as a group and a constant item in every field of groups; and not only so, but it is, beyond all other things, an object of continual and peculiar interest, inasmuch as our earliest pleasures and pains depend solely upon it and what affects it. The body becomes, in fact, the earliest form of self, the first datum for our later conceptions of permanence and individuality. A permanence like that of self is then transferred to other bodies which resemble our own, so far as our direct experience goes, in passing continuously from place to place and undergoing only partial and gradual changes of form and quality. As *we* have existed—or, more exactly, as the body has been continuously presented—during the interval between two encounters with some other recognised body, so this comes to be regarded as having continuously existed during its absence from us. However permanent we suppose the conscious subject to be, it is hard to see how, without the continuous presentation to it of such a group as the bodily self, we should ever be prompted to convert the discontinuous presentations of external things into a continuity of existence. It might be said: Since the second presentation of a particular group would, by the mere workings of psychical laws, coalesce with the image of the first, this coalescence would suffice to 'generate' the concept of continued existence. But such assimilation is only the ground of a qualitative identification and furnishes no motive, one way or the other, for real identification: between a second presentation of A and the presentation at different times of two A's there is so far no difference. Real identity no more involves exact similarity than exact similarity involves sameness of things; on the contrary, we are wont to find the same thing alter with time, so that exact similarity after an interval, so far from suggesting one thing, is often the

surest proof that there are two concerned. Of such real identity, then, it would seem we must have direct experience; and we have it first of all in the continuous presentation of the bodily self; apart from this it could not be 'generated' by association among changing presentations. Afterwards, other bodies being in like manner personified, that then is regarded as one thing —from whatever point of view we look at it, whether as part of a larger thing or as itself compounded of such parts—which we take to have had one beginning in time. But what is it that is thus assumed to have had a beginning and to continue indefinitely? This leads to our last point.

e. So far we have been concerned only with the combination of sensory and motor presentations into groups and with the differentiation of group from group; the relations to each other of the constituents of such a group still for the most part remain. To these relations in the main must be referred the correlative concepts of substance and property, the distinction in substances of qualities and powers, of primary qualities and secondary, and the like[1].

Of all the constituents of things only one is universally present, that above described as physical solidity, which presents itself according to circumstances as impenetrability, resistance or weight. Things differing in temperature, colour, taste and smell agree in resisting compression, in filling space. Because of this quality we regard the wind as a thing, though it has neither shape nor colour, while a shadow, though it has both but is non-resistant, is the very type of nothingness. This constituent is invariable, while other qualities are either absent or change—form altering, colour disappearing with light, sound and smells intermitting. Many of the other qualities—colour, temperature, sound, smell—increase for us in intensity if we advance till we touch a certain body occupying a certain place; with the same movement too its visual or 'apparent' magnitude increases. At the moment of contact an unvarying tactual magnitude is ascertained, while the other qualities and the visual magnitude reach a fixed maximum; then first it becomes possible by effort to

[1] The distinction between the thing and its 'properties' is one that must be more fully treated under the head of Real Categories (cf. ch. xiii, § 6). Still, inasmuch as the objective warrant for these concepts is contained more or less implicitly in our percepts, some consideration of them is in place here.

change or attempt to change the position and form of what we apprehend. This tangible plenum we thenceforth regard as the seat and source of all the qualities we project into it. In other words, that which occupies space is psychologically the substantial. It is strange that Locke did not lay more stress on this point; though, to be sure, in common with Descartes he recognised it as the one sense-datum that is a primary quality. But neither remarked that this 'sense-datum' is *sui generis* in being the only one that the subject gives to itself, or at any rate, gets for itself by its own activity, as we have already seen. The other real constituents are only the properties or attributes of this substance, the marks or manifestations which lead us to expect its presence.

Perception as partly re-presentative.

§ 7. But there is still an observation concerning percepts that we must not omit, though the full discussion which it opens up must be deferred[1]. Even the simplest percepts, we have seen, involve not only present experience but also experiences of the past: in the language of Herbert Spencer they are 'partly presentative, partly representative.' On this account it has been usual to say that all perception implies both memory and imagination. But such a statement, we must here remark, can be allowed only so long as the terms memory and imagination are vaguely used. The dog's mouth normally waters only at the *sight* of food[2], but the gourmand's mouth will water even at the *thought* of it. We recognise the smell of violets as certainly as we recognise the colour when the spring brings them round again; but few persons, if any, can recall the scent when the flower has gone, so as to say with Shelley—

> Odours, when sweet violets sicken,
> Live within the sense they quicken—

though most can recall the colour with tolerable clearness. In like manner everybody can perform innumerable complex voluntary movements which only a few can mentally rehearse or describe without the prompting of actual execution. And

[1] Ch. vii, § 2.

[2] It can however be brought to water at the *sight* of any coloured object, a particular dish say, that has become associated with the food.

not only does such reproduction as suffices for perception fall short of that involved in reminiscence or memory in the narrower sense, but the manner in which the constituent elements in a percept are combined differs materially from what is strictly to be called 'the association of ideas.' To realise this difference we need only to observe first, how the sight of a suit of polished armour, for example, instantly reinstates and steadily maintains all that we retain of former sensations of its hardness and smoothness and coldness; and then to observe next how this same sight gradually calls up ideas now of tournaments, now of crusades, and so through all the changing imagery of romance. Though the percept is complex, it is but a single whole, and the act of perception is single too. But, where, as is the case in memory and imagination, attention passes—whether voluntarily or non-voluntarily—from one representation to another, it is obvious that these several objects of attention are still distinct and that it is directed in turn to each. The term 'association' seems only appropriate to the latter. To the connexion of the partial presentations in a complex, whether perception or idea, it will be better to apply the term 'complication,' which was used in this sense by Herbart, and has been so used by many psychologists since. When we actually perceive an orange by sight we may say that its taste or feel is represented, when we perceive it by touch or taste we may in like manner say that its colour is represented. The whole complex may be symbolized sufficiently for our present purpose, in the first case as $C\,t\,f$, in the second as $F\,c\,t$. We might also symbolize the idea of an orange as seen by $c'\,t\,f$ and the idea of an orange as felt by $f'\,c\,t$, using the accented letter to signify that different constituents are dominant in the two cases. What we have yet to observe is briefly (1) that the processes by which the *whole* complex $c'\,t\,f$ or $f'\,c\,t$ is brought into consciousness differ importantly from the process by which C or F reinstates and maintains the parts, $t\,f$ or $c\,t$, and (2) that c, t, and f seem never to have that distinct existence as representations which they had as presentations or impressions[1].

[1] Cf. next chapter, §§ 2 and 3.

CHAPTER VII

IMAGINATION OR IDEATION[1]

Impressions and Ideas distinguished.

§ 1. Before the intuition of things has reached a stage so complete and definite as that just described, imagination or ideation as distinct from perception has well begun. In passing to the consideration of this higher level of mental life we must endeavour first of all analytically to distinguish the two as precisely as may be, and then to trace the gradual development of the higher.

At the outset we have to note the distinction between impressions and ideas, which Locke with his epistemological bias too much overlooked, but which Hume placed in the forefront of his *Treatise*. "All the perceptions of the human mind," he begins, "resolve themselves into two distinct kinds, which I shall call *Impressions* and *Ideas*." Both alike may be either 'simple or complex,' he tells us: the difference between them "consists in the degrees of force and liveliness with which they strike upon the mind, and make their way into our thought or consciousness." In all this Herbert Spencer blindly followed Hume. But it is very questionable whether Hume was right in applying Locke's distinction of simple and complex to ideas in the narrower sense as well as to impressions. Regardless of his first statement that they are distinct in kind he goes on to say:—"That idea of red, which we form in the dark and that impression which strikes our eyes in the sunshine differ only in degree, not in nature[2]." What he seems to overlook is that, whereas we may once have received the bare impression called 'red,' we now usually have an image or idea

[1] Ideation—"a word of my own coining" said James Mill.

[2] *Treatise of Human Nature*, vol. I. pt. i. § 1.

only of a red *form* or a red *thing*, *i.e.* of red as it was present in a percept, in some way ideationally projected or intuited. An incomparable observer in this department, in the course of summarising his results, remarks: "I have succeeded a few times in seeing bare colours without object: they then filled out the entire field of sight[1]." In other words, we seem to have no 'ideas' or images—though we have concepts—answering to simple or isolated impressions. The complication which has taken place during the evolution of the percept can only partially fail in the image or idea, can never fail so far as to leave us with a chaotic 'manifold' of mere sensational remnants. On the contrary, we find that in 'constructive imagination' a new kind of effort is often requisite in order partially to resolve these representational complexes as a preliminary to new combinations. But it is doubtful whether the results of such a process are ever the ultimate elements of the percept, that is, are merely isolated impressions in a fainter form.

As to the one difference, which Hume finally recognised—'the force or liveliness' of primary presentations or impressions as compared with secondary presentations or 'ideas,' what exactly are we to understand by this somewhat figurative language? A simple difference of intensity can hardly be all that is meant; for, though we may be momentarily confused, we can usually perfectly well distinguish the faintest impression from an image: moreover, we can imagine such minimal faintness as easily as the maximal[2]. Between moonlight and sunlight or again between midday and dawn we can discriminate many grades of intensity; but it does not appear that there is any corresponding variation of intensity between these extremes when they are not seen, but imagined. Many persons suppose they can imagine a waxing or a waning sound or the gradual abatement of an intense pain; but what really happens in such cases is probably not a rise and fall in the intensity of a single representation, but a change in the complex represented. In the primary presentations there was, if not a change of quality along

[1] G. H. Meyer, *Untersuchungen über die Physiologie der Nervenfaser*, 1843, p. 241. I have repeatedly tried to repeat this among other of Meyer's experiments and, as it seemed, with occasional success; but the colour was far more like a sensation than an image, as was undoubtedly Meyer's experience.

[2] The whole subject of the intensity of representations, however, awaits experimental investigation.

with change of intensity—especially if this was great—at least a change in the muscular adaptations of the sense-organs, to say nothing of organic sensations accompanying these changes. A representation of some or all of these attendants is perhaps what takes place when variations of intensity are supposed to be reproduced. Again, hallucinations are often described as abnormally intense images which simply, by reason of their intensity, are mistaken for percepts. But such statement, though supported by very high authority[1], is almost certainly false, and would probably never have been made if epistemological considerations had been excluded as they ought to have been. Hallucinations, when carefully examined, seem just as much as percepts to contain among their constituents some primary presentation—either a so-called 'subjective sensation' of sight or hearing or some organic sensation due to deranged circulation or secretion. Intensity alone, then, will not suffice to discriminate between impressions and images. By 'force' or liveliness Hume, however, probably meant more than intensity; and indeed psychologists in the present day often distinguish between intense and 'lively,' 'impressive,' or 'striking' presentations, such as 'make their way into consciousness,' as Hume said, *sich aufdringen*, as the Germans say. But we are familiar with striking ideas as well as with striking, but not necessarily intense, sensations. The most we can say is that this characteristic is commoner in the latter case.

The superior steadiness already mentioned[2], is perhaps a more constant and decisive characteristic of percepts. Images are not only in a continual flux, but even when we attempt forcibly to detain them they are apt to vary continually in clearness and completeness, reminding us of the illuminated devices made of gas jets, common at fêtes, when the wind sweeps across them, momentarily obliterating one part and at the same time intensifying another. There is not this perpetual flow and flicker in what we perceive. Again the impressions entering consciousness at any one moment are psychologically independent of each other: they are equally independent of the impressions and images presented the moment before—independent, *i.e.* as regards their order and character, not, of course, as regards the share of

[1] By Hume himself among others.

[2] Cf. ch. vi, § 7, p. 168.

attention they secure. For attention to be concentrated in one direction must be withdrawn from another, and images may absorb it to the exclusion of impressions as readily as a first impression to the exclusion of a second. But when attention *is* secured, a faint impression has a fixity and definiteness lacking in the case of even vivid ideas. One ground for this definiteness and independence lies in the localisation or projection which accompanies all perception. But why, if so, it might be asked, do we not confound percept and image when what we imagine is imagined as definitely localised or projected? Because we have a contrary percept to give the image the lie; where this fails, as in dreams, or where, as in hallucination, the image obtains in other ways the fixity characteristic of impressions, such confusion does in fact result. But in normal waking life we have the whole presentation-continuum, as it were, occupied and in operation: we are distinctly conscious of being embodied and having our senses about us.

This contrariety between impression and image suggests, however, a deeper question: we may inquire, not about its characteristic marks, but about its possibility. With eyes wide open, and while clearly aware of the actual field of sight and its filling, one can recall or imagine a wholly different scene: lying warm in bed one can imagine oneself out walking in the cold. It is useless to say that the times are different; that what is perceived is present, and what is imaged is past or future[1]. The images, it is true, may have certain temporal marks by which they are referred to what is past or future; but as imaged they *are* present, and, as we have just observed, are regarded as actual whenever there are no correcting impressions. We cannot at once see the sky red and blue; how is it, we have still to learn, that we can imagine it the one while perceiving it to be the other? When we attempt to make the field of sight at once red and blue, as in looking through red glass with one eye and through blue glass with the other, either the colours merge and we see a purple sky; or we see the sky first of the one colour and then of the other in irregular alternation. That neither happens between impression and image shews that, whatever

[1] Moreover, as we shall see later, the distinction between present and past or future psychologically presupposes the contrast of impression and image. Cf. below, ch. vii, § 2.

their connexion, images as a whole are distinct from the presentation-continuum and cannot with strict propriety be spoken of as impressions, revived or reproduced: as revived or reproduced they are impressions no longer. This difference is manifest in another respect, *viz.* when we compare the effects of diffusion in the two cases. An increase in the intensity of a sensation of touch entails an increase in the extensity; an increase of muscular innervation entails irradiation to adjacent muscles; but when a particular idea becomes clearer and more distinct, there rises into consciousness an associated idea qualitatively related probably to impressions of quite another class, as when the smell of tar calls up memories of the sea-beach and fishing-boats. Since images are thus distinct from impressions, and yet so far continuous with each other as to form a train in itself unbroken, we should be justified, if it were convenient, in speaking of images as belonging to a secondary continuum distinct from that to which the 'original impressions' belonged. And later on we may see that this is convenient[1].

Impressions then—unlike ideas—have no associates to whose presence their own is accommodated and on whose intensity their own depends. For, as already said, each bids independently for attention, so that often a state of distraction ensues, such as the train of ideas left to itself never occasions. The better to hear we listen; the better to see we look; to smell better we dilate the nostrils and sniff; and so with all the special senses; each sensory impression sets up nascent movements for its better reception[2]. In like manner there is also a characteristic adjustment for images which can be distinguished from sensory adjustments as readily as these are distinguished from each other. We become most aware of this as, *mutatis mutandis*, we do of them, when we voluntarily concentrate attention upon particular ideas instead of remaining mere passive spectators, as it were, of the general procession. To this ideational adjustment may be referred most of the strain and 'head-splitting' connected with recollecting, reflecting and all that people call headwork; and the 'absent look' of one

[1] Cf. below, pp. 176 f.

[2] Organic sensations, though distinguishable from images by their definite but often anatomically inaccurate localisation, furnish no clear evidence of such adaptations. But in another respect they are still more clearly marked off from images, *viz.* by the pleasure or pain which, in proportion to their obtrusiveness, they directly produce.

intently thinking or absorbed in reverie seems directly due to that lack of sensory adjustment which the concentration of attention upon ideas entails.

But, distinct as they are, impressions and images are still closely connected. In the first place, there are two or three well-marked intermediate forms, so that, though we cannot directly observe it, we seem justified in assuming a steady transition from the one to the other. As the first of such intermediate forms, it is usual to reckon what are often, and—so far as psychology goes—inaccurately, styled '*After-images*.' They would be better described as after-sensations, inasmuch as they are due either (1) to the persistence of the original peripheral excitation after the stimulus is withdrawn, or (2) to the effects of the exhaustion or the repair that immediately follows this excitation. In the former case they are qualitatively identical with the original sensation and are called 'positive,' in the latter they are complementary to it and are called 'negative.' The latter, of which we have clear instances only in connexion with sight, are obviously in no sort re-presentations of the original impression, but a sequent presentation of diametrically opposite quality; while positive after-sensations are, psychologically regarded, nothing but the original sensations in a state of evanescence. It is this gradual waning after the physical stimulus has completely ceased that give after-sensations their chief title to a place in the series of forms between impressions and images. There is, however, another point: after-sensations are not affected by movement as percepts usually are. If we turn away our eyes we cease to see the flame at which we have been looking, but the after-sensation remains still projected before us and continues localised in the dark field of sight, even if we close our eyes altogether. This fact, that movements do not suppress them, and the further fact, that we can nevertheless be distinctly aware of our sense-organs as concerned in their presentation, serve to mark off after-sensations as intermediate between primary and secondary presentations. The after-sensation is in reality more elementary than either the preceding percept or its image. In both these, in the case of sight, objects appear in space of three dimensions, *i.e.* as geometrical solids in perspective[1]; but the after-sensation lacks all this detail.

[1] The following scant quotation from Fechner, one of the best observers in this

Next, and still further removed from normal sensations (*i.e.* sensations determined by the stimuli appropriate to the sense-organ) are the so-called '*Recurrent sensations*' often unnoticed but probably experienced more or less frequently by everybody —cases, that is, in which sights or sounds, usually such as at the time were engrossing and impressive, suddenly reappear several hours or even days after the physical stimuli, as well as their effects on the terminal sense-organ, seem entirely to have ceased. Thus portrait-painters and workers with the microscope frequently see the objects which have engaged their attention during the day, stand out clearly before them in the dark. It was indeed precisely such an experience that led the anatomist Henle first to call attention to these facts[1]. But he and others have wrongly referred them to what he called a 'sense-memory'; for all that we know is against the supposition that the sense-organs have any such power of retention and reproduction. Moreover 'recurrent sensations' have all the marks of percepts which after-sensations lack—definite movements and rhythms, for example. They differ, in fact, from what are more strictly called hallucinations only in being independent of any subjective suggestion or mental derangement.

Finally, in what Fechner has called the '*Memory After-image*' or the primary memory-image, as it is better termed, we have the image proper in its earliest form. As an instance of what is meant may be cited the familiar experience that a knock at the door, the hour struck on the clock, the face of a friend whom we have passed unnoticed, can sometimes be recognised a few moments later by means of the persisting image, although—*apparently*—the actual impression was entirely disregarded. The primary memory-image, in the case of vision, can always be obtained, and

department, must suffice in illustration. "Lying awake in the early morning after daybreak, with my eyes motionless though open, there usually appears, when I chance to close them for a moment, the black after-image of the white bed immediately before me and the white after-image of the black stove-pipe some distance away against the opposite wall....Both [after-images] appear as if they were in juxtaposition in the same plane; and, though—when my eyes are open—I seem to see the white bed in its entire length, the after-image—when my eyes are shut—presents instead only a narrow black stripe owing to the fact that the bed is seen considerably foreshortened. But the memory-image on the other hand completely reproduces the pictorial illusion as it appears when the eyes are open" (*Elemente der Psychophysik*, ii. p. 473).

[1] Cf. for further details, Fechner, *op. cit.* ii. pp. 498 ff.

is obtained to most advantage, by looking intently at some object for an instant and then closing the eyes or turning them away. The image of the object will appear for a moment very vividly and distinctly, and can be so recovered several times in succession by an effort of attention. Such reinstatement is materially helped by rapidly opening and closing the eyes, or by suddenly moving them in any way. In this respect a primary memory-image resembles an after-sensation, which can be repeatedly revived in this manner when it would otherwise have disappeared. This seems to shew that the primary memory-image in some cases owes its vivacity in part to a positive after-sensation, at any rate it proves that it is in some way still sense-sustained. But in other respects the two are very different: the after-sensation is necessarily presented if the intensity of the original excitation suffices for its production, and cannot be presented otherwise, however much we attend. Moreover, the after-sensation is only positive for a moment or two, and then passes into the negative or complementary phase, when, so far from even contributing towards the continuance of the original percept, it directly hinders it. Primary memory-images on the other hand, and indeed all images, depend mainly upon the attention given to the impression; provided that was sufficient, the faintest impression may be for some time retained; and without it very intense ones may leave no appreciable trace. The primary memory-image, in fact, retains so much of its original definiteness and intensity as to make it possible with great accuracy to compare two physical phenomena, one of which is in this way 'remembered' while the other is really present. For the most part this is indeed a more accurate procedure than that of dealing with both together, but it is only possible for a very short time. From Weber's experiments with weights and lines[1] it would appear that even after 10 seconds a considerable waning has taken place, and after 100 seconds all that is distinctive of the primary image has probably ceased.

On the whole, then, it appears that the image proper in its earliest complete form is a joint product. It is not the mere residuum of changes in the presentation-continuum: it is a distinct effect of these changes, but only when there has been some concentration of attention upon them. It has the form of a percept,

[1] *Die Lehre vom Tastsinne und Gemeingefühle*, 1851, pp. 86 ff.

but is not constituted of revived *impressions*, for the essential marks of impressions are absent. It is not localised in actual space. In its case there is neither the motor adaptation, nor the feeling-tone, which are incident to the reception of impressions. It does not reproduce the intensity of its original constituents, but only their quality and complication. What we call its vividness is of the nature of intensity, but it is an intensity very partially and indirectly determined by that of the original impression. But the range of vividness in ideas is probably comparatively small; what are called variations in vividness are often really variations in distinctness and completeness[1]. Where there is persistence and great intensity, as in hallucinations, primary presentations, as already said, may be reasonably supposed to enter into the complex. The image may rise above, or fall below, the threshold of consciousness independently of any changes in the presentational-continuum—or, as we may now call it, the primary continuum.

For it seems manifest that a secondary continuum has been in some way formed out of, or differentiated from it in consequence of movements of attention. Still the precise connexion of the two continua is very difficult to determine. In the case of the primary memory-image, though there has been no cessation in its presentation, yet the characteristic marks of the impression are gone. So much so, indeed, that we may have several primary images in the field of consciousness together, as when we count up the strokes of the clock after it has ceased striking. But, though images thus appear first of all as a sort of *ἀπόρροια* or outgrowth from the presentation-continuum, their return—and only then do they become distinct re-presentations—is never determined directly and solely by later presentations like that which first gave them being. A second impression exactly like the first—if that were all—would merely be itself assimilated or recognised. It could not account for the individual distinctness characteristic of the '*revived*' image—which is just what we want

[1] As we have seen that there is a steady transition from percept to image, so, if space allowed, the study of hallucinations might make clear an opposite and abnormal process—the passage, that is to say, of images into percepts, for such, to all intents and purposes, are hallucinations of perception, psychologically regarded. To some extent these processes can be voluntarily evoked. Cf. J. Müller, *Ueber die phantastischen Gesichtserscheinungen*, 1825; G. H. Meyer, *Physiologie der Nervenfaser*, 1851, pp. 228 ff.

to understand—nor, indeed, for the existence of such an image at all; for the only re-presentative element with which it is concerned is that involved in its own assimilation. But how then was the distinctness in the first instance possible, in the series of primary memory-images just mentioned, for example? It was possible owing to differences in the rest of the successive fields of consciousness in which each in turn occurred and to the persistence of these differences. If the whole field which the second impression entered had been just like the field of the first, it is hard to see what ground for distinctness there would have been; and so, *mutatis mutandis*, of the rest.

But when such a subsequent impression does not occur till the primary memory-image itself has become altogether subliminal, how then is distinct re-presentation possible? It is possible only if the new impression is not merely assimilated by what persists of the old but can also reinstate sufficient of the mental framing of this to give to its image individual distinctness. This is really what happens in what is properly called the 'association of ideas.' Our inquiry into the relation between presentations and representations has thus brought us to the general consideration of this association. But it will be well first to follow up this analytic inquiry by next attempting to investigate the genesis and development of the ideas themselves.

Genesis and Development of Ideation.

§ 2. "From the senses to the imagination and from this to the intellect—such is the order of life and of nature[1]." It is the first step in this development that we have now to try and follow. We find ourselves sometimes engrossed in present perceptions, as when watching, for example, the meanderings of an ant; sometimes we may be equally absorbed in reminiscences; sometimes in 'castle-building,' or in thought. Here are three well-marked forms of conscious life: the first being concerned with what is, the second with what has been, and the third with the merely possible. Again, the first involves definite spatial and temporal order, though the temporal order, we may note, is in the main restricted to the 'sensible present[2]'; the second

[1] Vives quoted by Hamilton, *Metaphysics*, ii. p. 320.

[2] On this cf. below, ch. viii, § 3.

involves primarily only definite time-order; and the last neither in a definite way. Thus, analytically regarded, perception, memory, imagination or ideation, shew a steady advance. In infancy the first predominates, while senility lapses back to the second; in the third, where similarities suggest themselves and the contrast of actual and possible is explicit, we have at length the groundwork of logical comparison. Nevertheless, since imagination plays a conspicuous part in child life before much personal reminiscence appears, it would seem probable that ideas do not first arise as definite memory-images or reminiscences. On the other hand, in the so-called homing instincts of the lower animals we have evidence of isolated 'memories' of a simpler form than ours.

The study of this advance is as difficult as it is interesting and important; but we can hardly hope at present for a final solution of all the questions raised. One chief obstacle, as is so often the case in psychology, lies in the unsettled connotation of such leading terms as *memory*, *association* and *idea*. Even what is most fundamental of all, that 'plasticity[1]' which we have analysed into retentiveness, differentiation and integration, is sometimes described as if it already involved memory-images and their association. Images, that is to say, are identified with the mere 'residua' of former impressions, and yet at the same time are spoken of as if they were also their 'copies': which is much like saying that the evening twilight is a faint *replica* of the noonday glare as well as its parting gleam. This mistaken identification by the Associationist psychology of later processes with simpler and earlier ones, which fail to explain them, has not only obscured the science with inappropriate concepts but has prevented the question on which we are entering—that concerning the genesis and development of ideas—from being ever effectually raised. The discussion of this question will incidentally yield the best refutation of such views. We must consider it from two sides, which we may call the subjective and the objective. Under the former we shall have briefly to note what changes the process of such development entails upon the subject. Under the latter we shall have to ascertain more at length the characteristics thereby entailed upon the resulting presentational products. We begin with the first.

[1] Cf. above, ch. iii, § 4 *fin.*

Experience, we say, is the acquisition of practical acquaintance and efficiency, as the result of repeated opportunity and effort. We had first a new or strange situation A; then after more or fewer repetitions, we say this situation was 'recognised,' became quite *familiar*. If A was a complex movement, we say that at first it was hard to perform, but that after repeated trials it was performed with perfect *facility*. Familiarity and facility then may be regarded as characters that perceptions or actions may gradually acquire, characters that by degrees replace the strangeness or difficulty that accompanied them at the first. We may indicate this acquired characteristic by γ, so that A in becoming cognised or assimilated becomes $A\gamma$. Our first problem—the subjective aspect of our inquiry—is to ascertain, if we can, the nature of this γ as an attribute or characteristic of a given situation or performance. One obvious consideration is that it seems essentially the same, however various the experiences to which it applies. May we therefore suppose that the source of this γ is to be found rather in the subjective than in the objective constituents of consciousness? It is at all events certain that familiarity and facility are closely related to feeling. Unfortunately these relations—at first sight at any rate—appear discouragingly complex. Though the familiar is often pleasurable yet we have plenty of familiar pains. Again, beyond certain limits the familiar becomes uninteresting, unless positively painful: also the easy becomes the mechanical. On the other hand, the unfamiliar and the difficult have their attractions, though again only within certain limits: we are hostile towards the utterly strange and averse to difficulty pure and simple. We cannot then regard this feeling that varies as the source of the constant γ: it is rather a consequence of it[1]. But we can quite well maintain—indeed we can hardly do else—that apart from subjective selection and interest the percept or movement A would never have acquired this characteristic γ at all[2].

It is at all events in terms of subjective *function*—so to say—that we ordinarily express the broad facts of habit and practice. Use we say is second nature and practice makes perfect: the effect of exercise is thus conceived as a change on the subjective

[1] Wundt however takes a different view. Cf. his *Physiologische Psychologie*, 6th ed. iii. p. 511.

[2] Cf. above, chh. ii, § 4, p. 50; iii, § 2, p. 69, § 3, p. 72.

side, not as an association of a plurality of identical presentations. Indeed in the case of dexterities acquired by practice, it is obvious that there is no such series of identicals at all. From the first rude beginning—say the schoolboy's pothooks or the schoolgirl's curtsies—up to the finished performance of the adept there is continuous approximation: awkward and bungling attempts pass gradually into the bold strokes and graceful sweep of mastery. Looking simply at the movements themselves we are impressed, not by the sameness of, but by the difference between, the final adroitness and the initial clumsiness. There was little of what characterises the former to begin with and there may remain no trace of the latter in the end. Or if we take note of the effect produced on muscles and limbs by exercise we find that these also gradually change and that such changes may be indefinitely great. Whenever the blacksmith "swings his heavy sledge" there may be physically the same amount of work done. But for the smith himself the same work, now that "his arms are strong as iron bands," does not entail the same effort, is not a repetition of the same experience, as at first. Facility and faculty (or function) are much the same both etymologically and actually. If the facility, efficiency or function is the psychical concomitant—whether directly or indirectly—of structural growth and development, and if the perfected structure has actually superseded the rudimentary, may we not assume the like of the perfected function? As little as new structures are a combination of old so little are new functions an association of old. The less fit may be fossilised and preserved elsewhere but at least it is not embodied in the fittest that finally survives.

If we look next at cases of instinctive or innate skill these seem to point to the same conclusion. The young ring-plover, for instance, can run as soon as it emerges from the shell, that is, without practice and without repetitions. Yet it seems reasonable to assume that the newly-hatched plover has at the outset much the same sense of use and ease that a kitten only has when after many trials it has attained a like facility. Of all but the fundamental endowments of mind, whatever these may be, it is probably true that innate faculty is, in general, due to facility previously acquired by practice and transmitted by heredity. The fact of such transmission—though it lies outside

our present psychological inquiry—seems to force us to admit that, whatever be the means by which a given organism is called into existence, the psychological concomitants normal to such an organism will be there too; and cannot be there otherwise. Were the newly-hatched plover to be put on the water, its first experience would be strange; but the newly-hatched duck so treated would begin by feeling at home. Might not the case be essentially the same, if for plover and duck we substitute, say a boy who has not, and a boy who has, thoroughly learnt to swim? More generally: If, in the case of instinctive ability, the characteristic of facility—γ as we have called it—is not an associative series, may we not assume that even when such a series is an indispensable condition of facility, *viz.*, when the facility is acquired by a subject sufficiently advanced, the series is still no part of the essence of γ? Anyone with a turn for psychology *might* analyse the several steps of his progress in learning some feat of skill and observe the gradual elimination of the *gauche* and irrelevant and the gradual advance of the graceful and fitting. But these observations would not constitute the skill; and in fact they would probably hinder it. The whole situation would be comparable to that of a botanist from time to time interfering with a growing plant to see how it developed. As the botanist may record the several phases of such development so may the psychologist note in himself the rise and progress of some new aptitude he is in course of acquiring. Such records may quite naturally form an associated series, and this series might even be itself associated with the perfection finally attained. The great thing is to take care that we do not confound the two.

It will perhaps be urged that the familiarity concerned in cognition is different from the facility concerned in movement. In acquired dexterity there *is* a gradual approximation towards perfection, but in acquired perception the object perceived is identically the same from first to last. Though neither my juvenile pothooks, nor therefore the movements that produced them, form a series of identicals, yet all my former impressions of the moon's disc may form one. Perhaps such a plea for separating facility from familiarity has never been explicitly made; still it seems fairly implied in the diverse treatment of the two by many psychologists. But if we consider—as it is plain we ought—

not the physical thing but the individual's perception of it, then surely this too is an acquisition, entails activity and progress, gradually approximates towards completeness like motor acquisitions. It too has its physical concomitant in differentiation of structure; and just as there are innate dexterities so there seem to be innate cognitions. The young rabbit begins by being indifferent to mice and interested in carrots, the young cat by being indifferent to carrots and interested in mice, while both are alarmed at the sight of a dog[1]. So much for the subjective side of the process: its bearing in detail on the objective products resulting will be apparent as we proceed.

We have already described this process from the objective side as assimilation or immediate recognition[2]; and have noted how the older psychology described it as association of the completely similar, or automatic association[3]. That the two views have something in common is shewn by the juxtaposition of 'automatic' and 'immediate,' 'similarity' and 'assimilation.' To prepare the way for further discussion, let us first ascertain these points of agreement. "When I look at the full moon," said Bain, "I am instantly impressed with the state arising from all my former impressions of her disc added together[4]." This we may symbolize in the usual fashion as $A + a_n \ldots + a_3 + a_2 + a_1$. Now, it will be granted (1) that the present occurrence (full moon) has been preceded by a series of like occurrences, enumerable as 1, 2, 3, ..., n; (2) that the preceding experiences of those occurrences were a necessary condition of the present experience (A^r); and (3) that this 'arises instantly' in consequence of our previous attention to them. But it is denied (1) that this present experience is the mere sum, or even the mere 'fusion,' of the experiences preceding it; (2) that they were qualitatively identical; (3) that they persist severally unaltered, in such wise that experience "drags at each remove a lengthening chain" or a greater mass of them. The successive experiences of n identical occurrences does not then result in an accumulation of n identical *residua*. The ineptness of the atomistic psychology with its 'physical' and 'chemical' analogies is nowhere more

[1] Many striking instances in point are to be found in the classic papers by the late Douglas Spalding or in the pages of Romanes.

[2] Cf. above, ch. vi, § 2.

[3] Cf. ch. iv, § 4.

[4] *Senses and Intellect*, 4th ed., 1894, p. 489.

apparent than here. Considering the intimate relation of life and mind, and the strong physiological bias shewn by the Associationists from Hartley onwards, it is surely extraordinary how completely they have failed to appreciate the light-bearing significance of such concepts as function and development. Whatever superficial resemblance there may be between the relation of a chemical compound or alloy to the elements composing it, and that of a complex presentation to its constituents, their supposed analogy is faulty in the most essential point. A chemical association that cannot be dissociated is, I fancy, a contradiction in terms. But indissociability is the one distinguishing peculiarity of 'mental chemistry.' So it is also of organic development, between which and mental development there is, however, more than analogy: in certain respects, at any rate, there is minute and exact correspondence. Development implies change of form in a continuous whole: every growth *into* means an equal growth *out of*; thus one cannot find the caterpillar in the butterfly. All that is true in Mill's 'inseparable association'—and there is much that is true in it—is intelligible only when connected with such development.

But though assimilation cannot be analysed into a series of identical ideas (a_1, a_2, ..., a_n), either 'added together' or 'instantaneously fused,' yet it can result in an a which may *provisionally* be called an idea inasmuch as it may eventually become one. To ascertain how it does so, is our second problem —the objective side of our inquiry. Now such idea in the making is, as yet, neither a memory-image in the proper sense nor an idea within the meaning of the term implied in 'constructive imagination' or in thought. For it is devoid of the temporal signs[1] indicated by the subscript numerals in a_1, a_2, ..., and it has not yet become part of an ideational continuum, one, that is to say, divested of the definite spatial and temporal marks belonging to what actually is or has been. It is, so to say, embryonic, something additional to the mere percept as assimilated, and yet something less than a 'free or independent idea.' It is, as it has been happily called[2], a tied

[1] On this term cf. below, ch. viii, § 3 *fin.*

[2] Cf. Drobisch, *Empirische Psychologie*, 1842, § 31; Höffding, "Ueber Wiederkennen, Association und psychische Activität," in *Vierteljahrsschr. f. wissenschaftl.*

(*gebundene*) or implicit idea. We have clear evidence of the sense-bound stage of this immature idea in the so-called 'memory after-image.' There is, however, nothing in this of memory, save as the term is loosely used for mere retentiveness; and *after-percept* would so far be a less objectionable name for it. This along with its earlier name, 'primary memory-image,' indicates its transitional character, as already remarked. This after-percept is entirely sense-sustained and admits of no ideal recall, though—*in minds sufficiently advanced*—as it persists for a few moments, it may form the basis of such comparison with a second sensation, as we find in the experiments of Weber, Fechner and others[1].

It is saying too little to maintain, as the hypothesis of inseparable association in effect does, that this immature idea is subconscious, on the ground that it is not discoverable by direct analysis. Yet it is saying too much, regardless of this defect, to describe a percept as a presentative-representative complex, if representation is to imply the presence of a free or independent idea. To call the representative constituent of the percept a 'tied or nascent idea' on the ground of its possible later development into an independent one seems, then, nearest the truth[2]. The same meaning is sometimes expressed in a wholly different and designedly paradoxical way, by saying that all cognition (perception) is *recognition*. This statement has been met by elaborate expositions of the difference between knowing and knowing *again*, the irrelevance of which any lexicon would shew; and, further, by the question, how on such a view a *first* cognition is possible, or how otherwise an indefinite regress of assimilation is to be avoided? We may confidently reply that it cannot be avoided: an absolute beginning of experience, we have again to remember, is beyond us. Assimilation means further assimilation; in this sense all cognition is further cognition,

Philosophie, 1889, Bd. xiii. pp. 437 ff. To Höffding we are also indebted for the term *Bekanntheitsqualität*, which has suggested the γ character used above.

[1] Cf. above, p. 178. Recent experiments, however, seem to prove that the after-percept is not the sole factor, and often is not a factor at all in such successive comparison (so-called); but that what is now termed 'the absolute impression' may supplement it or even replace it altogether. As to what is meant by absolute impression, cf. ch. iv, § 5, *c*.

[2] Accordingly Höffding symbolizes it as $\left(\frac{a}{A}\right)$, which, by the way, we might call the objective aspect of our A^{γ}.

and a bare sensation is, we allow, an abstraction representing a limit to which we can never regress[1].

We find evidence, again, of ideas in the making in what—adopting a term of G. H. Lewes—we may call preperception. Of this instances in plenty are furnished by everyday illusions, as when a scarecrow is hailed by the traveller who mistakes it for a husbandman, or when what is taken for an orange proves to be but an imitation in wax. In reality all complex percepts involve preperception; and, so far, it must be allowed that such percepts are directly analysable into presentative-representative complexes. Nevertheless, the representative element is not yet, and may never become, an idea proper. The sight of ice yields a forefeel of its coldness, the smell of baked meats a foretaste of their savour. Such prepercepts differ from free ideas just as after-percepts do: they are still sense-bound and sense-sustained. Nor can this complication be with any propriety identified either with the association pertaining to memory or with that specially pertaining to ideation; though, no doubt, complication and association are genetically continuous, as are their respective constituents, nascent and free ideas[2]. The whole course of perceptual integration being determined and sustained by subjective interest, involves from the outset, as we have seen, concurrent conative impulses; and thus the same assimilation that results in familiarity and preperception on the subjective side results in facility and purpose on the conative. Knowing immediately *what to do* is here the best evidence of knowing *what there is* to do with; the moth that flies into the candle-flame

[1] *À propos* of this I append the following, forbearing to translate it, as it seems more telling as it stands: Es gilt für die Psychologie, was für die Naturwissenschaft [auch gilt]: aus Nichts wird Nichts und zu Nichts tritt Nichts hinzu. Wo sich ein Werden zeigen soll, da muss Etwas zu Etwas treten, aus deren Verbindung ein Drittes entstehen kann. Soll also eine Erkenntniss entstehen, so muss zuvor eine Erkenntniss vorhanden sein, zu der eine andere kommt, und mit der sie in Process tritt...Die primitivisten Apperceptionen [=Assimilationen] des Säuglings sind freilich dunkel; aber sie folgen den Gesetzen der klar entwickelten Processe. Steinthal, *Einleitung in die Psychologie und Sprachwissenschaft*, 1871, p. 171.

[2] Hence the earlier process has been named 'impressional association' (Stout, *Analytic Psychology*, 1896, ii. pp. 27–9), and again 'animal association' (Thorndike, *Animal Intelligence, an Experimental Study of the Associative Processes in Animals*, 1898, pp. 71, 87, and *passim*). But it seems preferable to confine the term 'association' to the later process, in which alone the component presentations have that amount of distinctness and individuality which the term *association* properly connotes; and to describe the former as 'complication.' Cf. above, ch. vi, § 7.

has assuredly no preperception of its heat, and does not act with purpose. Bearing this in mind, we may now see one way, and probably the earliest, in which tied ideas become free.

The contrast between the actual and the possible constitutes, as we have seen, the main difference between experience at the perceptual and experience at the ideational stage. A subject confined to the former level knows not yet this difference. Such knowledge is attained, not through any quasi-mechanical interaction of presentations, but usually through bitter experience. The chapter of accidents is the Bible of fools, it has been said; but we are all novices at first, and get wisdom chiefly by the method of trial and failure. Things are not always different in what to us are their essential properties; but they so differ from time to time. Resemblances are frequent enough to give us familiarity and confidence; yet uniformity is flecked by diversity, and thwarted intentions disclose possibilities for which we were not prepared. What was taken for sugar turns out to be salt; what was seized as booty proves to be bait. We catch many Tartars, and so learn wariness in a rough school. In such wise preperceptions displaced by the actual fact yield the 'what' severed from the 'that,' the 'ideal' or 'possible' freed at length from the exclusive hold of the real. In a new situation *after such adventures* the attitude assumed—if, for brevity, we describe it in terms of our own still more advanced experience—is of this sort: "It may be a weasel, if so, I back; it may be a rabbit, if it is, I spring." Instead of unquestioned preperception that 'makes the mouth water,' we have the alternative possibilities present as 'free ideas'; action also is in suspense, the alternative courses again, that is to say, are present only in idea. It is easy to see how in such situations one free idea, a 'what' sundered from a 'that,' will tend to loosen the sensory ties of alternative, still implicit ideas. On the cognitive side, from immediate assimilation an advance is made towards mediate cognition, towards comparison; on the active side there is advance from impulsive action towards deliberate action[1].

We conclude, then, in the first place, that implicit ideas—the products of assimilation, and integrated as such in complex

[1] Some light is perhaps here thrown on the reciprocal relation of 'association by contrast' and 'association by similarity' as leading severally, the one to the differentiation of partial similars, the other to the integration of partial dissimilars.

percepts and the motor co-ordinations to which they lead—are more likely to emerge as free ideas the more this perceptual complexity increases. Perception in such of the lower animals, as give but few signs of either memory or ideation, has apparently no such complexity. A fish, for example, can feel, smell, taste, see, and even hear, but we cannot assume solely on that account that it has any percepts to which its five senses contribute, as they do to our percept, say, of an orange or a peppermint. Taking voluntary movements as the index of psychical life, it would seem that the fish's movements are instigated and guided by its senses, not collectively but separately. Thus a dog-fish, according to Steiner, seeks its food exclusively by scent; so that when its olfactory bulbs are severed, or the fore-brain, in which they end, is destroyed, it ceases to feed spontaneously. The carp, on the other hand, appears to search for its food wholly under the guidance of sight, and continues to do so just as well when the fore-brain is removed, the mid-brain, whence the optic nerves spring, seeming to be the chief seat of what intelligence it has[1]. Again, Bateson observes: "There can be no doubt that soles also perceive objects approaching them, for they bury themselves if a stroke at them is made with a landing-net; yet they have no recognition of a worm hanging by a thread immediately over their heads, and will not take it even if it touch them, but will continue to feel for it aimlessly on the bottom of the tank, being aware of its presence by the sense of smell[2]." In the experience of these fishes there seems, then, to be no object such that the sight of it recalls its smell, or *vice versa*. To this inability to combine simple percepts into one complex percept of a single object or situation we may reasonably attribute the fish's lack of true ideas, and consequent lack of sagacity. The sagacity even of the higher animals does not amount to 'general intelligence,' such as enables a child 'to put two and two together,' as we say, whatever 'two and two' may stand for. So far as life consists of a series of definite situations and definite acts, so far the things done or dealt with together, the contents of the several

[1] J. Steiner, *Die Functionen des Centralnervensystems u.s.w.*, 2te Abth., Die Fische, 1888, pp. 50, 126, 19 seq., 101.

[2] W. Bateson, "The Sense-Organs and Perceptions of Fishes," *Journ. Marine Biol. Assoc.* 1890, p. 239.

foci or concentrations of attention, form so many integrated and comparatively isolated wholes. Round the more complicated of these, and closely connected with them, free ideas arise as sporadic groups, making possible those 'lucid intervals,' those fitful gleams of intelligence in the very heat of action, which occasionally interrupt the prevailing irrationality of the brutes. And as we cannot credit even the higher animals with general trains of ideas, just as little can we credit them with a continuous memory: indeed, it is questionable how far memory of the past, as past, belongs to them at all. For they live entirely in an up-stream, expectant attitude, and it is in such situations that free ideas arise when they arise at all. We cannot imagine a dog regretting, like one of *Punch's* heroes, that he "did not have another slice of that mutton[1]."

We conclude therefore, in the second place, that the free idea (a) at its first emergence has neither (1) an assignable position in a continuous memory-record, as a_1 or a_2, nor has it (2) a definite relation as a 'generic idea' to possible specialisations such as a' or a''. These further developments are the problems we must turn to next. The questions raised are two. From the primitive a how do we advance (i) to true memory-images (a_1, a_2, ...) and (ii) to specific ideas (a', a'', ...)? But first of all, let us begin with a brief analysis to prepare the way for both. True memory—as distinct from mere retention and reproduction—implies accessories that give individuality to the event remembered and antecedents that determine its chronological position: in a word, a_1 or a_2 is a complex whole and has a fixed place in a series[2]. Its complexity is not merely the complexity which, as we have already urged, belongs to all images[3]: a_1 and a_2 are complexes of images $(\mathrm{a} + l + m)_1$, $(\mathrm{a} + p + q)_2$, where a is the central fact remembered and the rest l, p, &c. its 'setting' or accessories. In our daily experience we may note that vague or general recognition does not lead to reminiscence; for the accessories are still indistinct; and indistinct largely because the chief presentation is itself indistinct. I may

[1] Cf. F. H. Bradley, "Memory and Inference," *Mind*, 1899, pp. 145 ff.; and especially Thorndike, *Animal Intelligence*, cited above.

[2] How its place comes to be determined is a further question that we must attempt to decide later on. Cf. below, ch. viii, § 3, pp. 212 ff.

[3] Cf. above, pp. 169 f.

recognise a stranger passing me as a German and no more; but observing a scar on his forehead, I am almost sure to remember a student's duel where I saw such a wound given. Before true memory is possible, then, this chief presentation, a, must acquire certain individuating marks which it lacked at first. And in point of fact, we find in children and in the higher animals, as already remarked, many signs of free ideas before we have evidence of true memory. But such ideas are vague and isolated, like the percepts which they re-present.

It is from them, however, that we advance also to the more specialised forms, a', a'', &c. In this advance differentiation and assimilation, rather than association, appear again to take the lead. The very young child is said to call all men 'Father'; so in dementia, the patient—to borrow an illustration from Hughlings Jackson—"ceasing to recognise his nurse as a nurse, takes her to be his wife[1]." In the one case we have the differentiation of a into a', a'', &c., not yet evolved; in the other we have it dissolved again. The case of a certain sculptor, who could draw a sofa and recognise a statue of Mercury but could not draw his own sofa or recognise the particular statue he had himself modelled, illustrates this regression; and there are familiar instances in plenty to be found in the records of mental affections. Such cases indeed suggested to Hughlings Jackson the distinction of inferior and superior perception. This vague 'inferior' image (a) that confuses father and other men, wife and nurse, seems to be the root or stem whence the 'superior,' more specific, images (a', a'') diverge as it were by proliferation: it is the psychological, potential, generality that precedes distinctions, not the logical, effective, generality that can only follow them. This later, logical (or epistemological) form, I have suggested[2], might be symbolized as a^{ϵ}: it is 'abstracted' from the free ideas a', a'', &c. into which the psychological a or A^{γ} has ramified[3].

[1] *The Croonian Lectures on Evolution and Dissolution of the Nervous System*, 1884, Reprint, from *Brit. Med. Jl.* p. 8. It is deeply to be regretted that these masterly lectures are so little known to psychologists and that they exist only in such an inaccessible form.

[2] "Assimilation and Association, I," *Mind*, N.S. ii. 1893, p. 358.

[3] Here it is that language comes upon the scene; as varying repetitions set free the psychological a, so language sets free the distinctly 'generic image' implicated in the several members a', a'', a''', ..., so bringing to light the one in the many, and at the same time rendering the many distinct. In both these processes, of course,

But in the child learning to distinguish letters from numerals or one letter from another, and generally in what is called 'training the senses,' differentiation and assimilation make one process of growth. The process is not one of construction, comparable to the manufacture of a watch: it is much more akin to the steady increase in clearness and distinctness of a landscape as morning breaks. At first sight the child may still confuse *M* with *W*, the cowslip with the primrose and the cat with the rabbit: only on closer scrutiny do the differences 'emerge.' When they do, the percept in question becomes more distinct and so more complex: but so far there may be no association. The fact is, great as are the advances that psychology owes to the doctrine of association, the time has come to question its finality and to circumscribe its range. The restriction here contended for is one which the earlier writers on association fully allowed: association was wholly confined to ideas that to begin with are distinct and that to the end are separable[1]. The process by which ideas arise from impressions cannot then be explained by association. And for long no such explanation was attempted, but the practice of regarding ideas as merely the residues of sensations prepared the way for such an attempt and the confusions to which it has led.

This remark brings us back to the first of the two questions above mentioned, that concerning the formation of 'a continuous memory-record.' This we may now consider genetically.

Association and the Memory-Continuum.

§ 3. Great confusion has been occasioned, as we have found, by the lax use of the term 'association,' and this confusion has been increased by a further laxity in the use of the term *association by similarity*. In so far as the similarity amounts to identity, as in assimilation, we have a process which, as has been already pointed out, is more fundamental than association and presupposed in it. And when the reviving presentation is only partially similar to the presentation revived, the nature of the association does not appear to differ from that operative when one 'contiguous' presentation revives another. In

association is essentially concerned, particularly when the specialisation exceeds the limits of a single sense.

[1] Cf. Hume, *Treatise of Human Nature*, pt. i. § 4.

the one case we have, say, $a+b+x$ recalling $a+b+y$, and in the other $a+b+c$ recalling $d+e+f$. Now anybody who will reflect must surely see that the similarity between $(a+b)+x$ and $(a+b)+y$, as distinct from the identity of their partial constituent $(a+b)$, cannot be the means of recall; for this similarity is nothing but the state of mind—to be studied presently—which results when $a+b+x$ and $a+b+y$, *having been recalled* are in consciousness together and then *compared*. But if $(a+b)$, having concurred with y before and being now present in $(a+b)+x$, again revives y, the association, so far as *that* goes, is manifestly one of contiguity simply; albeit as soon as the revival is complete, the state of mind immediately incident may be what Bain loved to style 'the flash of similarity.' But, so far as the *mere revival itself* goes, similarity is concerned in it no further than it is concerned when $a+b+c$ revives $d+e+f$. The actual $a+b+c$ that there operates as the reviving presentation was obviously never in time contiguous with the $d+e+f$ that is revived; if all traces of previous experiences of $a+b+c$ were obliterated there would be no revival. In other words, the $a+b+c$ now present must first be assimilated to the previous experience of $a+b+c$ which alone was 'contiguous' with $d+e+f$, before the representation of this can occur. And this, and nothing more than this, we have seen, is all the 'similarity' that could be at work when $a+b+x$ 'brought up' $a+b+y$.

On the whole, then, we may assume that the only 'law of association' we have to examine is the so-called *law of contiguity*, which, as ordinarily formulated, runs: Any primary presentations whatever, occurring (1) together or (2) in close succession, tend to grow together or to cohere, in such a way that when any one recurs it tends to revive the rest as secondary presentations —such tendency increasing with the frequency of the conjunction[1]. It has been often contended that any investigation into the nature of association must be fruitless[2]. But if so, it may at least admit of such a description as will reduce this inquiry to simpler terms. So long, however, as we are asked to conceive presentations as distinct and isolated originally and yet becoming eventually linked together, we cannot but feel the need of some

[1] Cf. Bain, *The Senses and the Intellect*, 4th ed. 1894, p. 341.

[2] So Hume, *Treatise of Human Nature*, pt. i. § 4 (Green and Grose's ed. p. 321); also Lotze, *Metaphysik*, 1st ed. 1879, § 265, p. 526, Eng. trans. 1884, p. 466.

explanation of the process. For neither the isolation nor the links are clear: not the isolation, for we can only conceive two presentations separated by other presentations intervening; not the links, if these are mere also presentations, and then the difficulty recurs. But, if for contiguity we substitute continuity and regard the associated presentations as parts of a new continuum, the one immediately important inquiry is how this new whole was first of all integrated.

To ascertain this point we must examine each of the two leading branches of this supposed association by contiguity—that of simultaneous presentations and that of presentations occurring in close succession. The last, being the clearer, may be taken first. In a series of presentations that have become associated *A B C D* ..., such as the movements made in writing, the words of a poem learned by heart, or the simple letters of the alphabet themselves, we find that each readily recalls its successor but not its predecessor. Familiar as this fact is, it is not perhaps easy to explain it satisfactorily. Since *C* is associated both with *B* and *D*, and apparently as intimately with the one as with the other, why does it usually revive the later only and not the earlier? *B* recalls *C*; why does not *C* equally recall *B*? We have seen that any reproduction at all of *B*, *C* or *D* depends primarily upon its having been the object of special attention, so as to occupy at least momentarily the focus of consciousness. Now we can in the first instance only surmise that the order in which they are reproduced is determined by the order in which they were thus attended to when first presented; since without attention there is no association at all.

The next question is whether the association of objects simultaneously presented can be resolved into an association of objects successively attended to. Now whenever we try to recall a scene noticed only for a moment we commonly find that not more than a few traits recur—those that specially impressed us, the rest being blurred and vague: what we do not find is the whole revived in equal distinctness or indistinctness. On seeing the same scene a second time our attention is apt to be caught by something unnoticed before, as this has the advantage of novelty; and so on, till we have 'lived ourselves into,' become familiar with, the whole[1], which may then, as a whole, admit of

[1] Cf. above, ch. iv, § 4.

simultaneous recall. Bain, who is rightly held to have given the best exposition of the laws of association, admits something very like this in saying: "So far as the mind is concerned, the generic fact is Succession. Co-existence is an artificial growth formed from a certain peculiar class of mental successions[1]." But, whereas it is easy to think of instances in which the associated objects were attended to successively, and whereas too we are all well aware that the surest—not to say the only—way to fix the association of a number of objects is by thus concentrating attention on each in turn, it seems hardly possible to mention a case in which attention to the associated objects could not have been successive. In fact, an aggregate of objects on which attention could be focused at once would either be already associated or would simply be a whole as yet psychically unanalysed. We seem justified, then, in substituting continuity of attention for contiguity of presentations and in talking of a secondary continuum, or 'memory-thread[2],' to which it gives rise. It is worth while to note that, though our acts of attention must always have a chronological order, the cases in which what we attend to is itself likewise chronologically ordered are of especial importance. Not only is the order in which we attend then objectively ordered, but the series to which we attend is more quickly and closely associated in consequence of this double correspondence. In view of our practical interest in such series—in relation to causation—the advantage of this more intimate association is obvious[3].

The exclusively successional character of association has however recently been denied, and its exclusively simultaneous character maintained instead. It is at once obvious that this opposition of succession and simultaneity cannot be pressed so as to exclude duration altogether and reduce the whole process to an instantaneous event. Nor is there any ground for saying that there is a fixed and even distribution of attention to whatever is simultaneously presented: facts all point the other way. Still, though we cannot exclude the notion of process from

[1] *Mental and Moral Science*, 1868, pp. 11 f. Cf. also James Mill's *Analysis*, 1878, i. pp. 80 f., Trautscholdt, "Experimentelle Untersuchungen u. d. Association." Wundt's *Philosophische Studien*, i. 1883, p. 244, *et passim*.

[2] Cf. the current phrase 'thread of consciousness.'

[3] Cf. Kant, *Critique of the Pure Reason*, "Second Analogy," M. Müller's trans., pp. 166 ff.

consciousness, we may say that presentations attended to together become *pro tanto* a new whole, are synthesized or complicated. Where such synthesis is primary, it leads not to an association of images, but rather to the formation of one percept, which may become eventually a free idea. The disconcerted preperception which may later on set it free may likewise liberate a similar or contrasting idea; but it will not resolve either of them into the several 'ideas' of its sensory or motor constituents, with which only the psychologist is familiar[1]. The *actual* recurrence of some of these constituents may again reinstate the rest, not, however, necessarily as memories or as 'thoughts,' but only as tied ideas in a renewed perception. But we have advanced beyond such primary synthesis or complication in the yet more complex situations just now mentioned—the contemplation of a landscape or of an architectural interior, for example—which usually become familiar only after a time. In these the co-existence of the details leaves us more or less free as to the order in which we notice them. When at length familiarity has been attained, then—though the whole is past or absent—the *ideal* recurrence of any part may reinstate the rest in idea. This result is sometimes described as *redintegration*; but we must not forget that the successional associations, which have made it possible, were severally *different*, not many repetitions of one and the same order[2].

It has become usual of late to distinguish the association of contiguous experiences and the so-called association of similar, or of opposite, experiences as respectively external and internal *forms* of association. The new terminology is illuminating: the substitution of *forms* for *laws* marks the abandonment of the old notion that association was by 'adhesion' of the contiguous and 'attraction' of the similar. We are thus left to find the cause of association in interested attention; and that, we may safely say, is an adequate, and apparently the only adequate, cause for the two commonly recognised forms of external association, the so-called simultaneous and the successive. But these two are certainly

[1] Cf. above, § 1, p. 169 f.; § 2, p. 187.

[2] Such redintegration thus pertains not to the memory-thread simply but to a new continuum of a higher dimension, so to say. This new continuum we may call the ideational tissue inasmuch as it is formed by partial redintegration or reduplication of the pre-existing memory-thread.

not co-ordinate; and if our analysis be sound, the former—for which we would retain the Herbartian term complication—yields us not members of an association but a member for association. So far, then, we should have but one form of association, that of the successive contents of focalised attention: and but one direct result, the representation or memory-continuum[1], in contrast to the primary- or presentation-continuum, whence its constituents arise. Turning now to the distinction of external and internal, it at once strikes the unprejudiced mind that 'internal association' is something of an anomaly, since the very notion of association implies externality. Also, on closer inspection what we find is not an association of similars or opposites as such, but—something quite distinct—a similarity or contrast of associates; of ideas, that is to say, which have become contiguous through reduplications of the memory- (or experience-) continuum. Such so-called association of similar ideas again then, like redintegration, belongs to a higher order of mental processes which presupposes association proper.

The only form, then, that now remains to be considered is that of two distinct primary presentations A and B, such as the flash of lightning and the clap of thunder, to take the simplest case, which occupy the focus of consciousness in immediate succession. Thereby their images a and b become 'associated'; for the result of such successive occupation of attention may—as we have already seen—be regarded as a new continuum, in which a and b have become adjacent parts. For it is characteristic of a continuum that an increase in the intensity of any part leads to the intenser presentation of adjacent parts; and in this sense a and b, which were not originally continuous, have come to be so[2]. We have here, therefore, some justification for the term secondary- or memory-continuum, when applied to this continuous series of representations to distinguish it from the primary or presentation-continuum from which its constituents are derived. Thus the most important peculiarity of this continuum is that it is a series of representations integrated by means of the movements of attention out of the

[1] Experience-continuum would perhaps be a better name, since it is only a preliminary to proper memory, as we shall presently see.

[2] In so far as the presence of a tends to call up b, though the presence of B was psychologically independent of A.

differentiations of the primary or presentation-continuum, or rather out of so much of these differentiations as pertain to what we know as the primary memory-image. These movements of attention, if the phrase may be allowed, come in the end to depend mainly upon interest, though at first determined entirely non-voluntarily[1]. To them it is proposed to look for that continuity which images lose in so far as they part with the local signs they had as percepts and cease to be either localised or projected. Inasmuch as these successive movements form the connexion between one representation and another in the memory-train, it is assumed that they also yield us what may be called 'temporal signs[2].' Evidence for the existence of these can be more conveniently adduced presently[3]. It must suffice to remark here that it consists almost wholly of facts connected with voluntary attention; so that temporal signs, unlike local signs, are fundamentally motor and not sensory. And, unlike impressions, representations can have each but a single sign[4], the continuum of which, in contrast to that of local signs, is not rounded and complete, but continuously advancing. But in saying this we are assuming for a moment that the memory-continuum forms a perfectly single and unbroken train. Some approximation to such a state is often found in uncultured persons who lead uneventful lives, and still more in idiots, who can scarcely think at all[5].

[1] Cf. ch. iii, § 2, p. 69. This connexion of association with continuous movements of attention makes it easier to understand the difficulty above referred to, viz. that in a series *A B C D*..., *B* revives *C* but not *A*, and so on—a difficulty that the analogy of adhesiveness or links leaves unaccountable. To ignore the part played by attention in association, to represent the memory-continuum as due solely to the concurrence of presentations, is perhaps the chief defect of the Associationist psychology, both English and German. Spencer's endeavour to shew "that psychical life is distinguished from physical life by consisting of successive changes only instead of successive and simultaneous changes" (*Principles of Psychology*, pt. iv. ch. ii., in particular pp. 403, 406) is really nothing but so much testimony to the work of attention in forming the memory-continuum, especially when, as there is good reason to do, we reject his assumption that this growing seriality is physically determined.

[2] See the Appendix at the end of this chapter.

[3] Cf. next chapter, § 3, pp. 214 f.

[4] Apart, that is to say, of course, from the reduplications of the memory-train spoken of below.

[5] For instances of the latter cf. Noble, *Preliminary Study of Mind*, 1853, p. 112; Maudsley, *The Physiology of Mind*, 1876, pp. 517 f.; W. James, *Principles of Psychology*, 1890, i. p. 660 *n*.

We may now return to the second of the two questions above mentioned[1].

The Formation of an Ideational Continuum.

§ 4. In reality, however, notwithstanding the fact just mentioned, the memory-train is liable to change in two respects, which considerably modify its structure: *viz.* (1) through the evanescence of its parts, and (2) through the partial recurrence of like situations, which produces corresponding reduplications of it. As regards the first, we may infer that the waning or sinking towards the threshold of consciousness which we can observe in the primary mental image continues in subconsciousness after the threshold is past. For the longer the time that elapses before their revival the fainter, the less distinct, and the less complete are the images when revived, and the more slowly they rise. All the elements of a complex are not equally revivable, as we have seen already: tastes, smells and organic sensations, though powerful as impressions to revive other images, have little capacity for ideal reproduction themselves; while muscular movements, though perhaps of all presentations the most readily revived, do not so readily revive other presentations. Idiosyncrasies are, however, frequent; thus we find one person has an exceptional 'memory' for sounds, another for colours, another for forms, and so on[2]. Still it is in general true that the most intense, the most impressive, and the most interesting presentations persist the longest. But the evanescence, which is in all cases comparatively rapid at first, deepens sooner or later into real or apparent oblivion. In this manner it comes about that parts of the memory-continuum seem to lose all distinctness of feature and, being without distinctly recognisable content, to shrivel up to a dim and meagre representation of life that has lapsed—a representation that just suffices, for example, to shew us that 'our earliest recollections' are not of our first experiences, and to save them from being isolated, though they seem to be discontinuous. Discontinuity can, of course, never be absolute; we must have something represented, even to mark the gap. Oblivion and the absence of all representation

[1] Cf. p. 189.

[2] Hence such persons are sometimes described as respectively of the audile, visile, or motile type. Cf. W. James, *Principles of Psychology*, ii. pp. 58 ff.

are thus the same, and the absence of all representation cannot psychologically constitute a break. The terms 'evolution' and 'involution' have in this respect been happily applied to the rising and falling of representations. When we recall a particular period of our past life, or what has long ceased to be a familiar scene, events and features gradually unfold and, as it were, spread out as we keep on attending. A precisely opposite process may then be supposed to take place when the past is left in undisturbed forgetfulness; this process is called *obliviscence*[1].

More important changes are produced by the repetition of parts of the memory-train. The effect of this is not merely to prevent the evanescence of the particular image or series of images thus revived; but also by partial and more or less frequent reduplications of the memory-train or 'thread' upon itself to convert it into a partially new continuum, which we therefore propose to call the ideational continuum or 'tissue[2].' The reduplicated portions of the train are strengthened; but at the points of divergence it becomes *comparatively* weakened, and this apart from the effects of obliviscence. One who had met the king but once would scarcely be likely to 'think' of him without finding the attendant circumstances recurring to his mind as well; this could not happen to one who had met the king in a hundred different scenes. The central representation of the whole complex would have become more distinct; whereas the several diverging lines, by involving opposing representations, would tend to neutralise each other, so that probably no definite background would be reinstated. Even this central representation, it has been said, would be more or less 'general[3].' It would also certainly tend to fluctuate, now one component and now another becoming more distinct, thereby revealing what we have before described as the ramification of *a* into *a'*, *a''*, &c.[4] Again, it has been often remarked

[1] Cf. above, ch. iv, § 6.

[2] This contrast of thread and tissue is suggested, of course, by Herbart's terms *Reihe* and *Gewebe*. It is justified by the fact that memory proper follows the single line of temporal continuity, while ideation furnishes the basis for manifold logical connexions.

[3] This 'generality' of the generic image differs from the true universality of the concept in that the former is the passive and accidental result of reduplication, the latter the product of definite and active comparison.

[4] Cf. above, § 2, p. 190.

that our familiar friends are apt to be mentally pictured less concretely than persons seen more seldom and then in some one 'striking' attitude—like the parson in his pulpit or the coachman on his box. Here in the former case a 'generic image' seems to have been formed out of a group of such more specific representations as the latter affords.

But can we say that the general idea (a) ramifies into, and yet is formed out of, the specific ideas, a', a'', &c.? We here come upon 'the question of the *Primum Cognitum*, as it was called in the schools,' 'a curious question' which, as Hamilton tells us, at the outset of a lengthy exposition of it, 'divided philosophers' from the time of Aristotle down to our own[1]. The broad issue raised was this: Does the child first cognise the particular and afterwards generalise or does it first cognise the general and afterwards particularise? Some—like Locke, for example—maintained the first position and some—as for example, Leibniz—the second; and we might say either that both were right or that both were wrong. For the whole controversy was obscured by the ambiguity of the term 'general' in this connexion, on which we have already incidentally remarked[2]. The child's first acquaintance is doubtless with the particular, but this is so vaguely perceived that his first free idea a^γ *becomes* general by the very process which renders his knowledge more particular. In other words, as on the one hand the indefinite particular a ramifies into the specific a', a'', a'''..., so *pari passu* by their means the definite generic a arises out of them. What was general only in the sense of being ill-defined has become truly general by the recognition of distinctions, the previous lack of which had left it merely vague. In other words the vaguely particular a^γ has been transformed into a potential a^ϵ or true universal. Thus as the joint effect of obliviscence and reduplication we are provided with an ideational tissue elaborated out of, and functionally distinct from, the memory-thread. And as Lotze has said: "Thus the strength of memory for the order in which the incidents of life follow one another not unfrequently declines, while its fidelity for the general relations founded in the nature of things increases[3]." In short we are provided thereby with the

[1] Sir W. Hamilton, *Lectures on Metaphysics*, ii. pp. 319–32.

[2] Cf. above, § 2, p. 190 *fin.*

[3] *Microcosmus*, Eng. trans. i. p. 217 *fin.*

material, already more or less organized, for intellectual and volitional manipulation.

Conflict of Ideas.

§ 5. We do not, however, experience the 'flow of ideas'—save very momentarily and occasionally—altogether undisturbed; even in dreams and reverie it is continually interrupted and diverted. Nevertheless it is not difficult to ascertain that, so far as it is left to itself, such flow takes a very different course from that which we should have to retrace if bent on reminiscence and able to recollect perfectly. The readiness and steadiness of this flow are shewn by the extremely small effort necessary in order to follow it[1]. But still from its very nature it is liable, though not to positive breaches of continuity from its own working, yet to occasional comparative delays at points where reduplications diverge, and for the time neutralise each other[2].

The flow of ideas is, however, exposed to positive interruptions from without. These may occur not only in consequence of the objective intrusion of new presentations but also through subjective or voluntary interference. There is one result of such interruptions which we need here to consider, and that is the so-called 'conflict' or 'mutual inhibition' of ideas—to use the Herbartian term—which may ensue. For Herbart and his followers, we know, went so far as to elaborate a complete system of psychical statics and dynamics, based on the concept of presentations as forces and on certain more or less improbable assumptions as to the modes in which such forces would interact. Since our power of attention is limited, it continually happens that attention is drawn off entirely by new presentations at the expense of old ones. But, even if we regard this non-voluntary redistribution of attention as if it implied a struggle between presentations, still such conflict to enter the focus of consciousness

[1] Hence many of the older psychologists, like Brown, attributed to it 'a rapidity of passage almost as wonderful as omnipresence itself': to be 'as quick as thought' was much the same as being 'as quick as lightning.'

[2] It is a mark of the looseness of much of our psychological terminology that facts of this kind are commonly described as cases of association. Bain calls them 'obstructive association,' which is about on a par with 'repellent affinity'; Mr Sully's 'divergent association' is far better. But it is plain that what we really have is an arrest or inhibition consequent on association, and nothing that is either itself association or that leads to association.

is very different from a conflict between presentations that are already there. Either may be experienced to any degree possible without the other appearing at all; thus, absorbed in watching a starry sky, one might be oblivious of the chilliness of the air, though recognising at once, as soon as the cold is felt, that, so far from being incompatible, the clearness and the coldness are causally connected. This difference between a conflict of presentations to enter the field of consciousness—if we allow for a moment the propriety of the expression—and that opposition or incompatibility between presentations which is not possible till they are actually there has been strangely confused by the Herbartians. In the former the intensity of the presentation is primarily alone of account: in the latter, on the contrary, quality and content are mainly concerned. Only the last requires any notice here; since such opposition arises when the ideational continuum is interrupted in the ways just mentioned, and apparently arises in no other case. Certainly there is no such opposition between primary presentations: there we have the law of incopresentability preventing the presentation of opposites with the same local sign; and their presentation with different local signs involves, on this level at all events, no conflict. But what has never been presented could hardly be represented, if the ideational process were undisturbed: even in our dreams white negroes or round squares, for instance, never appear. In fact, absurd and bizarre as dream-imagery is, it never at any moment entails overt contradictions, though contradiction may be implicit.

But between ideas and percepts actual incompatibility is frequent. In the perplexity of Isaac, *e.g.*—"The voice is Jacob's voice, but the hands are the hands of Esau"—we have such a case in a familiar form. There is here not merely mental arrest but actual conflict: the voice perceived identifies Jacob, at the same time the hands identify Esau. The images of Esau and Jacob by themselves are different, but do not conflict. Neither is there any strain, quite the contrary, in recognising a person partly like Jacob and partly like Esau. For there is no direct incompatibility between smooth and rough, so long as one pertains only to voice say, and the other only to hands; but the same hands and voice cannot be both smooth and rough. Similar incompatibilities may arise without the intrusion of percepts, as

when, in trying to guess a riddle or to solve a problem, or generally to eliminate intellectual differences, we have ideas, which in themselves are only logically opposite, psychologically opposed or in conflict, because each strives to enter the same complex. In all such conflicts alike we find, in fact, a relation of presentations the exact opposite of that which constitutes similarity. In the latter we have two complete presentations, $a+b+x$ and $a+b+y$, as similar, each including the common part $a+b$; in the former we have two partial presentations, x and y, as contraries, each excluding the other from the incomplete $a+b+$. And this $a+b$, it is to be noted, is not more essential to the similarity than to the conflict. But in the one case it is a generic idea (and can logically be predicated of two subjects); in the other it is a partially determined individual (and cannot be subject to opposing predicates). Except as thus supplementing $a+b$ in the latter case, x and y do not conflict; black and white are not incompatible save as attributes of the same thing. The possibility of most of these conflicts—of all, indeed, that have any logical interest—lies in that reduplication of the memory-'thread' which gives rise to an ideational tissue of generic images or general ideas, such as we have here tried to describe.

APPENDIX

Temporal Signs.

§ 6. The term *Temporal Sign* is borrowed from Lotze[1], but the present writer is alone responsible for the meaning here given to it and for the hypothesis in which it is used. Nevertheless Lotze later on in the same work put forward—as an amendment on Herbart's mechanical theory of association—a view of it that approximates very closely to that here suggested and one leading to a substantially identical interpretation of the term 'temporal sign.' Associations, he held, do not take place solely between the specific impressions that we regard as separate presentations, but each of these presentations becomes connected with 'the momentary tinge of the general vital sense *G*,' the tinge predominant *i.e.* at the moment when such presentation enters the

[1] *Metaphysik*, § 154; Eng. trans. 1884, p. 262 *fin.*

focus of consciousness. By such entry a change of G is effected: the arrival of a new presentation A leading to g_1, say; that of B to g_2, of C to g_3, and so on. In this manner the series $g_1\, g_2\, g_3$ becomes the clue according to which the reproduction of $A\ B\ C$ is disposed[1]. The resemblance between the series $g_1\, g_2\, g_3$ and the series $t_1\, t_2\, t_3$ is obvious: both alike are regarded as the means whereby $A\ B\ C$ are associated. The difference between them lies in the reference of the former to 'the general vital sense' and of the latter to movements of attention—both perhaps, it may be thought, somewhat obscure expressions in need of further explication. Well, vital sense was certainly not meant by Lotze to be understood as mere passivity and attention is certainly not meant to be taken as activity divested of feeling. Life or experience as conative involves both activity and feeling. Further, a subject's activity and its feeling both alike imply presentations or objects.

How near Lotze was to the position assumed in the text becomes clearer when his exposition leads him to treat of attention. He dissents from certain earlier psychologists who regarded attention "as a moveable light which the mind directs on to the impressions presented to it," but he holds that they were "right in regarding attention as an activity exercised by the mind...and not as a property that belonged to presentations as such"—as Herbart had maintained. He further identifies attention and what he calls 'relating activity (*beziehende Vorstellen*).' Among the forms resulting from this activity he specially mentions 'the temporal presentations (*Vorstellungen*) of a change (*Wechsel*)[2].' Finally in the chapter on Time, in which the notion of temporal signs is first tentatively suggested, he supposes an objector to urge that even "the illusion (*Schein*) of succession could not take place without a succession of presentations in consciousness, nor an apparent transition of *a* into *b* without the actual transition which we [in such a case] effected from the presentation of *a* to that of *b*." To such an objection he replies: "If the presentation of the later *b* in fact merely followed on that of the earlier *a*, then a change (*Wechsel*) of presentations would indeed occur, but still no presentation of this change: there would *be* a lapse of time, but still not for

[1] *Metaphysik*, § 266; Eng. trans. p. 468.

[2] *Op. cit.* § 273, pp. 478 f.; § 271, p. 476.

anybody [even] the illusion of such a lapse. In order that this comparison, in which *b* is known *as* the later, may take place, it is further necessary for the two presentations to be the entirely simultaneous objects of *a relating knowledge* (*Wissen*), itself completely indivisible *which synthesizes them in a single indivisible act*[1]." Now this is precisely how we too come by the notion of temporal signs, precisely so that we too believe the oneness of time and the continuity of the memory-thread are to be explained[2].

[1] *Metaphysik*, § 154; Eng. trans. p. 262.
[2] Cf. above, ch. iii, § 3, p. 72.

CHAPTER VIII

REMINISCENCE, EXPECTATION AND TEMPORAL PERCEPTION

Imagination and Memory

§ 1. Having thus attempted to ascertain the formation of the ideational continuum out of the memory-train, the question arises: How now are we to distinguish between imagining and remembering, and again, between imagining and expecting? It is plainly absurd to make the difference depend on the presence of belief in memory and expectation, and on its absence in mere imagination; for the belief itself depends on this difference instead of constituting it. One real and obvious distinction, however—and Hume pointed it out as regards memory—is the fixed order and position of the imagery of what is remembered or expected as contrasted with 'the liberty' of the imagination to transpose and change its ideas. This order and position in the case of memory, we have good reasons for supposing, are normally those of the original experiences. But it seems rather naïve of Hume to tell us that memory "is tied down to these without any power of variation," while imagination has liberty to transpose as it pleases, as if the originals sat to memory for their portraits, while to imagination they were but 'studies.' Such correspondence being out of the question—as Hume takes care to state as soon as it suits him—all we have, so far, is just this fixity and definiteness of memory as contrasted with the kaleidoscopic instability of ideation. In this respect what is remembered or expected resembles what is perceived: the grouping not only does not change capriciously and spontaneously, but resists any mental efforts to change it. But, provided these characteristics are there, we should be apt to believe that we were remembering, just as, *mutatis mutandis*, with like characteristics we might believe that we were perceiving: illusion is possible in either case.

This fixity of order and position is, however, not sufficient to constitute a typical reminiscence where the term is exactly used. But remembering is often regarded as equivalent to knowing and recognising, as when on revisiting some once familiar place one remarks, "How well I remember it!" What is meant is that the place is recognised, and that its recognition awakens memories. Memory includes recognition; recognition as such does not include memory. In human consciousness, as we directly observe it, mere recognition in situations of any interest is, perhaps, rare: the new presentation is not only assimilated to the old, but some former framing of circumstance is apt to be reinstated, and so perforce to be distinguished from the present. Even though there is no warrant for supposing that such redintegration of a preceding field is ever for us absolutely *nil*, still we are justified in regarding it as extremely vague and meagre both where mental evolution is but slightly advanced and where frequent repetition in varying and irrelevant circumstances has produced a blurred and neutral zone. The last is the case with a great part of our knowledge; *e.g.* the writer happens to know that *bos* is the Latin for 'ox' and *bufo* the Latin for 'toad,' and may be said to remember both items of knowledge, if 'remember' is only to be synonymous with 'retain.' But if he came across *bos* in reading he would think of an ox and nothing more; *bufo* would immediately call up not only 'toad' but Virgil's *Georgics*, the only place in which he has seen the word, and which he never read but once. In the former there is so far nothing but recognition (which, however, of course rests upon retentiveness); in the latter there is also some remembrance of the time when, and of the circumstances in which, that piece of knowledge was acquired. Of course in so far as we are aware that we recognise, we also think that remembrance is at any rate possible; since what we know, we must previously have learned—recognition excluding novelty. But the point here urged is that actual reminiscence occurs only when the recognition is accompanied by a reinstatement of portions of the memory-train that are continuous with the previous presentation of what is now recognised.

Summarily stated, we may say that between knowing and remembering on the one hand and imagining on the other the difference primarily turns on the fixity and completeness of the

grouping in the former; as contrasted with the shifting play of images more or less 'generic' in the latter. Hence the first two approximate in character to perception, and are rightly called cognitions. Between them, again, the difference turns primarily on the presence or absence of 'temporal signs[1].' In what is remembered, these are still intact enough to ensure its localisation in the past; in what is merely known, such localisation is prevented, either because of the obliviscence of its temporal connexions or because the reduplications of the memory-train, which consolidated the central group, have entailed the suppression of its collateral connexions. There is further the difference first mentioned, which is often only a difference of degree, *viz.* that reminiscences have more circumstantiality, so to say, than mere recognitions have: more of the collateral accessories of the original concrete field of consciousness are reinstated. But of the two characteristics of memory proper—(*a*) concreteness or circumstantiality, and (*b*) fixation in the past—the latter is the more essential.

It sometimes happens that we have the one with little or nothing of the other. For example, we may have but a dim and shadowy picture of a 'scene,' yet if it at once falls into and steadily retains a fixed place in the memory-train we have no doubt that some such experience was once actually ours. On the other hand, in certain so-called illusions of memory, we suddenly think that we are reminded by what is happening at the moment of a preceding experience exactly like it—some even feel that they know from what is thus recalled what will happen next. And yet, because we are wholly unable to assign such representation a place in the past, instead of a belief that it happened, there arises a most distressing sense of bewilderment, as if one were haunted and had lost one's personal bearings[2]. It has been held by some psychologists[3] that memory proper includes the representation of one's past self as agent or patient in the event or situation recalled. And this is true as regards all but the earliest human experience, at any rate; still, whereas it is easy to see that

[1] Cf. below, § 3.

[2] Any full discussion of *paramnesia*, as these very interesting states of mind are called, belongs to mental pathology. Cf. E. Bernard-Leroy, *L'Illusion de fausse reconnaissance*, 1898; H. Bergson, "Le Souvenir du présent, &c." *Rev. phil.* lxvi. (1908), pp. 561 ff., where a wide literature on the subject is cited.

[3] As, *e.g.* James Mill (*Analysis of the Human Mind*, ch. x.), who treats this difficult subject with great acuteness and thoroughness.

memory is essential to any development of self-consciousness, the converse is not at all so clear, and to assume it would involve us in a needless circle.

Expectation—Past, Present and Future

§ 2. Intimately connected with memory is expectation. We may as the result of reasoning conclude that a certain event will happen; we may also, in like manner, conclude that a certain other event has happened. But as we should *not* call the latter memory, so it is desirable to distinguish such indirect anticipation as the former from that expectation which is directly due to the memory-train. Any man knows that he will die, and may make a variety of arrangements in anticipation of death. But he cannot with propriety be said to be expecting it, unless he has actually present to his mind a series of ideas ending in that of death, a series due to previous associations, and revived at this moment in consequence of the actual recurrence as a present experience of its first member. Now we know that familiarity with an object or event in very various settings may be a bar to memory, so too it may be to expectation: the average Englishman, *e.g.*, is continually surprised without his umbrella, though only too familiar with rain; since in our climate one not specially attentive to the weather obtains no clear representation of its successive phases. But after a series of events *A B C D E*... has been often experienced we instinctively expect the recurrence of *D E*... on the recurrence of *A B C*, *i.e.* provided the memory-train continues so far intact. The expectation, at first perhaps slight—a mere tendency easily overborne—becomes strengthened by every repetition of the series in the old order, till eventually, if often fulfilled and never falsified, it becomes certain and, as we commonly say, irresistible. To have a clear case of expectation, then, it is not necessary that we should distinctly remember any previous experience like that expected, but only that we should have actually present some earlier member of a series that has become firmly associated through previous experiences. This expectation may be instantly checked by reflexion, just as it may, of course, be disappointed in fact; but these are matters which do not concern the inquiry as to the nature of expectation while expectation lasts.

We shall continue this inquiry to most advantage by widening it into an examination of the distinction of present, past and future, and this inquiry in turn will open up the still wider question as to our knowledge of time generally.

To a being whose experiences never passed through the transitions which ours undergo—first divested of the strength and vividness of impressions, again reinvested with them and brought back from the faint world of ideas—the sharp contrasts of 'now' and 'then,' and all the manifold emotions they occasion, would be quite unknown. Even we, so far as we confine our activity and attention to ideas, are almost without them. Time-order—succession, antecedence, and consequence—of course, there might still be. But in that sense of events as 'past and gone for ever, which is one of the melancholy factors in our life, and in the obligation to wait and work in the hope or dread of what is 'still to come' there is much more than time-order. It is to presentations in their primary stage, to impressions, that we owe the striking difference we feel between now and then, whether prospective or retrospective; and it is to them also that we directly owe our sense of the *real*, of what *is* and exists as opposed to the *imaginary* that exists not. But the present alone and life in a succession of presents, or, in other words, continuous occupation with impressions, can give us no knowledge of the present as present. This we first obtain when our present consciousness consists partly of memories or partly of expectations.

An event expected differs from a like event remembered chiefly in two ways, (1) in its relation to present impressions and images, and (2) in the active attitude to which it leads. The diverse feelings that accompany our intuitions of time and contribute so largely to their colouring are mainly consequences of these differences. Let us take a series of simple and familiar events *A B C D E*. Such series may be present in consciousness in such wise that *a b c d* are imaged while *E* is perceived anew, *i.e.* the whole, symbolized as usual, being *a b c d E*; such *e.g.* would be the state of a dog that had just finished his daily meal. Again, there may be a fresh impression of *A* which revives *b c d e*; we should have then (1) *A b c d e*—the state of our dog when he next day gets sight of the dish in which his food is brought to him. A little later we may have (2) *a b C d e*. Here *a b* are either after-sensations or primary memory-images, or have at

any rate the increased intensity due to recent impression; but this increased intensity will be rapidly on the wane even while *C* lasts, and *a b* will pale still further when *C* gives place to *D*, and we have (3) *a b c D e*. But, returning to (2), we should find *d e* to be increasing in intensity and definiteness as compared with their state in (1), now that *C*, instead of *A*, is the present impression. For, when *A* occupied this position, not only was *e* raised less prominently above the threshold of consciousness by reason of its greater distance from *A* in the memory-continuum, but, owing to the reduplications of this continuum, more lines of possible revival were opened up, to be successively negatived as *B* succeeded to *A* and *C* to *B*; even dogs know that "there is many a slip 'twixt the dish and the lip."

But, where *A B C D E* is a series of percepts such as we have here supposed—and a series of simpler states would hardly afford much ground for the distinctions of past, present and future—there would be also a varying amount of active adjustment of sense-organs and of other movements supplementary to full sensation. In (2), the point at which we have *a b C d e*, for instance, such adjustments and movements as were appropriate to *b* would have ceased when *B* lapsed and would be replaced by those appropriate to *C*. Again, as *C* succeeded to *B*, and *d* in consequence increased in intensity and definiteness, the movements adapted to the reception of *D* would become nascent; and so on.

Thus, psychologically regarded, the distinction of past and future—what is sometimes called the oneness of direction of time or the irreversibility of experience—seems to be identical with the two facts just described. It depends, that is to say, (1) upon the continuous sinking of the primary memory-images on the one side, and the continuous rising of the ordinary images on the other side, of that member of a series of percepts then repeating which is actual at the moment; and (2) on the prevenient adjustments of attention, to which such words as 'expect,' 'await,' 'anticipate,' all testify by their etymology. These conditions in turn will be found to depend upon all that is implied in the formation of the memory-train and upon that recurrence of like series of impressions which we attribute to the 'uniformity of nature.' If we never had the same series of impressions twice, knowledge of time would be impossible, as indeed would knowledge of any sort.

Time: Succession and Simultaneity.

§ 3. At this point we are confronted with the three modes of time, as Kant calls them—succession, simultaneity and duration. We must therefore now inquire into the character and origin of our knowledge of these, so far, that is, as such an inquiry belongs to psychology. For we have not to ask how time itself comes to be; but, assuming the validity of its concept, we ask how the individual comes by it. But as in the analogous case of space, we shall be told that the knowledge of time is *a priori* and that therefore experience is impossible without it. And here as there we can only reply: Epistemologically *a priori*, the concept of time may be in so far as science presupposes it; but that its perception is not chronologically *a priori* is evident alike from its complexity which we can analyze, and its gradual development which we can trace. Now it is true that experience is impossible without change, and true also that the *concept* of change implies time; but it is not true that the *experience* of change is impossible without the perception of time. For in perceiving time, what we perceive is just relations between changes; and relations presuppose their terms, not the terms their relations. It is this perception that we have first to analyze; and it is with the immediate experience of change that we must begin. This experience is ultimate. Now all our sense-data are present *changes*; but their presence does not for an experient at the sensory level imply the distinction of present from past. The primary meaning of present[1] is 'here' rather than 'now': "here is this, here is red" is what presentation means. The change experienced has an antecedent, no doubt, but its bare presentation does not imply the judgment: "This follows on that." To talk of 'time-sensation' or to suppose that the experience of change is, *ipso facto*, an 'immediate' experience of time-*transience* is assuredly a mistake[2].

But though succession does not *explicitly* enter into this primary experience of change, duration does: but, again, not duration

[1] *Prae-esse*=to be before. Compare too the German *Gegenwart* and *Gegenstand*.

[2] Prepositions invariably connote relations. We cannot therefore identify the immediate experience of change with an experience of *transition*; for then the *fundamenta relationis* implied in this term must needs be themselves transitions, if they are to be experienced. We should thus be committed to a needless and illegitimate regress *ad indefinitum*. Cf. above, ch. iv, § 5, pp. 85 f.

as implying time but simply that 'protensity' which we have already noted as a characteristic of all sensation, nay, of all presentation whatever[1]. To identify this protensity with duration conceived as time-length—time being taken as infinitely divisible—would at once give rise to difficulty. For a sense-datum as an event would then never be protensively minimal. On the other hand, since the existence of such *minimum protensibile* in our immediate experience is indisputable, there *is* a limit to the number of sense-data that we could successively note and mark off in a finite time, though we fail to reach it. Thus our perception of time, when we attain it, differs from the conception of it that we attain still later; and it is the movements of attention we have just described as 'noting and marking off' that are the ultimate ground of such difference. We may now try to examine this difference in detail, deferring—till we then return to it—the further explication of this ultimate ground, the mutual implication of duration and change[2].

Time is often figuratively represented as a line, and we may perhaps utilise this figure in order to make clear the relation of our perception of time to what we call time itself. The present, though conceived as a point or instant of time, is still perceptually such that we actually can and do attend within it to a plurality of presentations which correspond to as many objectively successive moments. Granting this implication of simultaneity and succession in our perception of time, if we represent the succession as a line, we may represent the simultaneity as a second line at right angles to the first; pure time—or time-length without time-breadth, we may say—is a mere abstraction. Now it is with the former line that we have to do in treating of time *as it is* (or as we conceive it), and with the latter in treating of our intuition of time, where, just as in a perspective representation of depth, we are confined to lines in a plane at right angles to the actual line of distance. In a succession of events *A B C D E*... the presence of *B* means the absence of *A* and of *C*. But the direct perception of their succession involves the simultaneous presence of these in distinct phases of representation. In this immediate perception or intuition of time, then, all that corresponds to the differences of past, present and future

[1] Cf. ch. v, § 2, p. 107, § 4, p. 119.

[2] Cf. next section and ch. xiii, § 6.

is presented simultaneously. To this fact the name of 'specious present' or 'psychical present' has been given[1]. What we have is not a moving point or instant of objective time, that strictly contains nothing, but a moving line, or rather a line with a continuously changing content. The contents of this continuously changing 'specious' line simultaneously represent a portion of the 'real' line of objective succession, viz. the immediate past as still present in primary memory-images, and the immediate future as anticipated in prepercepts and nascent acts[2]; its position or *date* being the actual present. This truism or paradox, that all that we immediately know of succession is but an interpretation, or rather explication, of what is really simultaneous or coexistent, we may then concisely express by saying that we are aware of time only through time-perspective. Experience shews that it is a long step from a succession of presentations to this presentation or awareness of the succession that is implicit in them[3]. The first condition of such awareness is that we should have represented together presentations that were in the first instance attended to successively. This we have in the persistence of primary memory-images and in the (comparatively) simultaneous reproduction of longer or shorter portions of the memory-train, constituting the pre-perceptions or expectations that the actual present normally entails[4]. In a series thus secured there may be time-marks, though no time, and by these marks the series will be distinguished from other simultaneous series: these we may call the second condition.

To ask which is first among a number of simultaneous presentations is unmeaning; one might be logically prior to another, but in time they are together and priority is excluded. Nevertheless with each distinct representation *a*, *b*, *c*, *d* there is probably connected some trace of that movement of attention of which we are aware in passing from one presentation to another. In our everyday reminiscences we have, it must be allowed, little direct proof of this interposition; though there is strong indirect evidence

[1] Psychical present and time-perspective are, however, not to be identified: the first is but the foreground of the second. Cf. the closing paragraph of this section.

[2] Cf. W. James, *Principles of Psychology*, i. 629 ff.; L. W. Stern, "Psychische Präsenzzeit," *Z. f. Psych.* (1897), xiii. 325 ff.

[3] Cf. below on 'Objects of a higher order,' ch. xiii, § 2.

[4] We find only approximate simultaneity at this forward end, for here is enacted the living actuality of becoming or change.

of it in the tendency of the flow to follow the order in which the presentations were attended to at first: in recollection the evidence is stronger. With the movements themselves we are familiar enough, though the residua of such movements—if this term may be allowed[1]—are not ordinarily conspicuous. These residua, then, are our temporal signs, and, together with the representations connected by them, constitute the memory-continuum.

But temporal signs alone will not furnish all the pictorial exactness of the time-perspective. They give us only a fixed series; but the working of obliviscence, by insuring a progressive variation in intensity and distinctness as we pass from one member of the series to the next, yields the effect which we call time-distance: this we may call the third condition. By themselves such variations would leave us liable to confound more vivid representations in the distance with fainter ones nearer the present, but from this mistake the temporal signs save us; and, as a matter of fact, where the memory-train is imperfect such mistakes continually occur. On the other hand, where these variations are slight and imperceptible, though the memory-continuum preserves the order of events intact, we have still no such distinct appreciation of comparative distance in time as we have nearer the present where these perspective effects are considerable[2].

[1] And it may well seem inadmissible; for if attention, as here maintained, is not itself presented (cf. ch. ii, § 6, p. 57) how can we talk of 'residua' of its movements? We can only do so in so far as the acts of attention are not simply immanent but also transeunt, *i.e.* have effects. Evidence of such effects we have at every level of mental life: cf. ch. iii, § 3, p. 72. As to the close connexion between them and movements —which can be retained and reproduced—cf. ch. iii, § 2, p. 67. The peculiarity of these particular 'residua,' however, is that we have no evidence of their reproduction unless we regard the continuity of the memory-continuum itself as evidence. This however we seem entitled to do inasmuch as acts of attention alone account for its existence. That we have no other evidence again seems explicable from the intimate connexion between attention and feeling (cf. § 6 of the last chapter, p. 204)—to which the term emotion testifies.

[2] It is interesting here to recall a remark of Spinoza's. "We can distinctly imagine distance of space or even of time only up to some definite limit; that is, all objects...whose distance from us exceeds that which we can distinctly imagine seem to be all in the same plane: so also objects...removed from the present by a longer interval than we can distinctly imagine...we refer as it were to one moment of time" (*Ethics*, IV, def. vi).

Duration

§ 4. When in retrospect we note that a particular presentation X has held its place in the field of consciousness, while a succession of other presentations, A, B, C, D has occurred, then we may be said, in observing this relation of the two, to perceive the duration of X. And in this way we do sometimes subjectively estimate longer periods of time. But first, it is evident that we cannot apply this method to indefinitely short periods without passing beyond the region of distinct presentation; and, since the *knowledge* of duration implies a relation between distinguishable presentations such as A, B, C, D and X, the case is one in which references to the subconscious can hardly help any but those who confound the fact of time with such knowledge of it. Secondly, if we are to compare different durations at all, it is not enough that one of them should last out a series A, B, C, D, and another a series L, M, N, O: we also want some sort of common measure of such series. Locke was awake to this point, though he expressed himself vaguely. He speaks of our ideas succeeding each other "at certain distances not much unlike the images in the inside of a lantern turned round by the heat of a candle," and 'guesses' that "this appearance of theirs in train varies not very much in a waking man[1]." Now what is this 'distance' that separates A from B, B from C, and so on; and what means have we of knowing that it is tolerably constant in waking life? It is probably connected with that, the 'residuum' of which we have called a temporal sign; or, in plainer words, is due to the movement of attention from one presentation, A, to another, B. We must then endeavour now to get a more exact notion of this movement.

Everybody knows what it is to be distracted by a rapid succession of varied impressions, and equally what it is to be wearied by the slow and monotonous recurrence of 'the same sort of thing.' Now these 'feelings' of distraction and tedium owe their characteristic qualities to movements of attention. In the first, attention is kept incessantly on the move; before it is accommodated to A, it is disturbed by the suddenness, intensity, or novelty of B: we are hurried and cannot 'take our time.'

[1] *Essay concerning Human Understanding*, II. xiv. §§ 9–12.

In the second, attention is kept all but stationary by the repeated presentation of the same kind of impression. Such excess and defect of novelty make one realise a fact which in ordinary life is so obscure as to escape notice. But experimental psychology has set this fact in a more striking light, and made clear what Locke had dimly before his mind in talking of a certain distance between the presentations of a waking man. In estimating very short periods of time—of a second or less—it is found that there is a certain period for which the mean of a number of estimates is correct, while shorter periods are on the whole over-estimated, and longer periods under-estimated. This so-called 'indifference-time' we may perhaps take to be evidence of the time occupied in accommodating or fixing attention. But, though the fixation of attention actually occupies more or less clock-time, it is not experienced as a 'length' traversed, but rather as a peculiar intensity—what we have hitherto called 'protensity.'

Thus, if this supposition be true, there is an element in our concrete time-perception which has no place in our abstract conception of time. In time, as conceived by the physicist, there is no trace of intensity; in time, psychically experienced, duration or protensity is primarily a subjectively intensive magnitude: witness the comparison of times when we are 'bored' with others when we are amused—just referred to. It must have struck every one as strange, who has reflected upon it, that a period of time which seems long in retrospect—such as an eventful excursion—should have appeared short in passing; while a period, on the contrary, which in memory has dwindled to a wretched span seemed everlasting till it was past. But, if we consider that in retrospect length of time is represented primarily and chiefly by impressions that have survived, we have an explanation of one-half; and in the intensity of the movements of attention we shall perhaps find an explanation of the other. What tells in retrospect is the series *a*, *b*, *c*, *d*, &c.; what tells in the wearisome present is the intervening t_1, t_2, t_3,..., or rather the irksome and futile reiterations of attention, which leave few definite traces behind. As we have seen elsewhere, the intensity of a presentation does not persist, so that in memory the residuum of the most intense experience of tedium may only be so many *t*'s in a portion of the memory-continuum whose surviving members are

few and uninteresting. But in the actual experience, say, of a wearisome discourse, when the expectation of release is continually balked and attention forced back upon a monotonous dribble of platitudes, the one impressive fact is the hearer's impatience. On the other hand, so long as we are entertained, attention is never involuntary, and there is no continually deferred expectation. Just as we are said to walk with least effort when our pace accords with the rate of swing of our legs regarded as pendulums, so in pastimes—as we expressively call them—impressions that we attend to willingly, succeed each other at the rate at which attention can be most effectively and easily accommodated. Hence this rate has been called 'adequate time' or 'optimal time.' To this the 'indifference-time' mentioned above is obviously related.

This 'time' is a *tempo* that varies with the subject-matter: when effective attention is more difficult this *tempo* is slower than it is when to attend is easy. So Shakespeare says: "Time travels in divers paces with divers persons"—having these concrete experiences in view. But Newton—from the conceptual standpoint—describes time as "flowing at a constant rate[1]." There are good grounds too for supposing that it varies considerably in different species. In our own case we find a close correspondence between our normal pace or pulse and the *tempo* of attention. Assuming the like to hold good generally, as Spencer and von Baer did[2], we should have to admit that a good deal of our pity for the short life of a gnat or May-fly is thrown away. Where we are absorbed in the present without being unwillingly confined to it, not only is there no motive for retrospect or expectation, but there is no feeling that the present endures. "*Dem glücklichen*," said Schiller, "*schlägt keine Stunde.*" As long as each impression lasts it is interesting; but it does not continue to monopolize the focus of consciousness till attention is fatigued by it, because it has become uninteresting. In such facts, then, we seem to have proof that our perception of duration rests ultimately upon quasi-motor acts of varying intensity, the duration of which we do not directly experience as distance in time

[1] For personal reasons I allow myself to say here that the groundwork of this and the previous section was written and privately printed in 1881, and included the above sentence.

[2] Spencer, *Psychology*, § 91; von Baer, *Reden und Aufsätze*, 1864, i. pp. 254 ff.

at all. It is, in a very literal sense, rather our living duration[1] since these acts are ours: their duration is a function of this intensity, which is the only duration that we directly experience. In other words, it is here contended that what, as Locke said, "we call an *instant*,...the time of only one idea in our minds without the succession of another," is psychologically not 'a part in duration' in that other sense in which, as he says, "we cannot conceive any duration without succession[2]."

The Continuity of Time.

§ 5. But, if our experience of time depends primarily upon acts of attention to a succession of distinct presentations, it would seem that time, subjectively regarded, must be discrete and not continuous. This, which is the view steadily maintained by the psychologists of Herbart's school, was implied if not stated by Locke, Berkeley and Hume. Locke hopelessly confuses time as perceived and time as conceived, and can only save himself from pressing objections by the retort, "It is very common to observe intelligible discourses spoiled by too much subtlety in nice divisions." But Berkeley and Hume, with the mathematical discoveries of Newton and Leibniz before them, could only protest that there was nothing answering to mathematical continuity in our experience. And, whereas Locke had tried to combine with his general psychological account the inconsistent position that "none of the distinct ideas we have of either [space or time] is without all manner of composition[3]," Berkeley declares: "For my own part, whenever I attempt to frame a simple idea of time, abstracted from the succession of ideas in my mind, which flows uniformly and is participated by all beings, I am lost and embrangled in inextricable difficulties. I have no notion of it at all, only I hear others say it is infinitely divisible, and speak of it in such a manner as leads me to harbour odd thoughts of my existence....Time therefore being nothing, abstracted from the succession of ideas in our minds, it follows that the duration of any finite spirit must be estimated *by the*

[1] Cf. Bergson on *la durée*, *Évolution créatrice*, 1907, pp. 10 f.

[2] *Op. cit.* II. xiv. 10, xv. 12.

[3] *Op. cit.* II. xv. 9. The 'retort' above quoted will be found in the note to this section in the French translation, reproduced in most English editions.

number of ideas or actions succeeding each other in that same spirit or mind[1]. Hume, again, is at still greater pains to shew that "the *idea* which we form of any finite quality is not infinitely divisible, but that by proper distinctions and separations we may run this idea up to inferior ones, which will be perfectly simple and indivisible...that, therefore, the imagination reaches a *minimum*, and may raise up to itself an idea of which it cannot conceive any subdivision, and which cannot be diminished without a total annihilation[2]."

At first blush we are perhaps disposed to accept this account of our time-perception, as Wundt, *e.g.* did, and to regard the attribution of continuity as wholly the result of after-reflexion[3]. But it may be doubted if this is really an exact analysis of the case. Granted that the impressions to which we chiefly attend are distinct and discontinuous in their occupation of the focus of consciousness, and that, so far, the most vivid element in our time-experience is discrete; granted further that in recollection and expectation such objects are still distinct—all which seems to imply that time is a mere plurality—yet there is more behind. The whole field of consciousness is not occupied by distinct objects, neither are the changes in this field discontinuous. Attention does not move by hops from one definite spot to another, but, as Wundt himself allows, by alternate diffusion and concentration, like the foot of a snail, which never leaves the surface it is traversing. We have a clear presentation discerned as *A* or *B* when attention is gathered up; and, when attention spreads out, we have only vague and more or less confused presentations. To some extent, such confused presentations are always present, and so serve to bridge over the comparatively empty interval during which attention is unfocused. Thus our perception of a period of time is not comparable to so many terms in a series of finite units any more than it is to a series of infinitesimals. When attention is concentrated in expectation of some single impression, then, no doubt, it is brought to a very fine point ('*zugespitzt*,' as Herbart would say); and a succession of such impressions would be represented as relatively discrete compared

[1] *Principles of Human Knowledge*, pt. i. § 98. Italics mine.

[2] *Treatise of Human Nature*, pt. ii. § 1, Green's ed. pp. 334 f.

[3] *Logik*, 1ste Auf. 1880, i. p. 432. In his 2nd ed. (1893, i. p. 486) Wundt, *more suo*, silently swings round and accepts the position here maintained.

with the representation of the scenery of a day-dream. But absolutely discrete it is not and cannot be, for what account could we then give of the intervals[1]? In this respect the truth is rather with Herbert Spencer, who, treating of this subject from another point of view, remarks, "When the facts are contemplated objectively, it becomes manifest that, though the changes constituting intelligence approach to a single succession, they do not absolutely form one[2]."

On the whole, then, we may conclude that our concrete time-experiences are due to the simultaneous representation of a series of definite presentations that were both accompanied and separated by more or fewer indefinite presentations forming a more or less confused background; that, further, the representations have certain marks or temporal signs due to acts or movements of attention, whereby the memory-continuum is formed; that the rate of these movements or 'moments' is approximately constant; and that each moment itself is primarily experienced as part of a peculiar subjective intensity, one that differs from the intensity of feeling in being active.

[1] To maintain such absolute discreteness is to make the common mistake of confusing time as directly experienced with the formal concept of time which ignores protensity, replacing it by infinite divisibility. Experimental psychology—without realising the primacy of this subjective factor—has nevertheless helped to bring it to light. It has shewn that our 'sense' of time-lapse is never determined by succession alone, though always dominated by this so long as it is clearly perceived; and also that our estimate alters with the frequency of this succession, so long as it is distinguishable, but not disappearing when this is replaced by some uniform impression or by what is called 'empty time.' It has shewn also that a comparison is always possible between two intervals, one that is empty and any other, however variously filled. Cf. Meumann, "Beiträge zur Psychologie des Zeitsinns," *Philosophische Studien*, ix. (1894), pp. 264 ff.; xii. (1896), pp. 129 ff. Cf. also above, ch. iii, § 3.

[2] *Principles of Psychology*, vol. i. § 180.

CHAPTER IX

MEMORISING, RHYTHMIZING AND READING

Span of Prehension and Repetition.

§ 1. The movements of attention concerned in the earliest formation of the memory-continuum are mainly non-voluntary, determined that is to say by sensory changes. But we are now in a position to study the further elaboration of this continuum at that higher level where the attention given is altogether voluntary. Such is the case in the process commonly called memorising or 'learning by heart,' and again in the process of reading—topics in which the experimental method of investigation has been especially fruitful and which, partly on this account, are here reserved for a chapter apart.

The learning and retaining of a stanza of poetry say, is obviously a function of many variables, such as the mode of presentation (whether the words are heard only, or heard and seen, or both heard, seen and spoken aloud), the length, the subject's familiarity with the words and ideas used, the number of repetitions, the attention given, etc. Familiarity of course implies previous learning and retaining; the first essential, therefore, in any attempt to study these processes from the beginning, is the exclusion of this factor. Accordingly Ebbinghaus, the pioneer in experiments of this kind[1], devised the new material, which is now regularly employed, namely, closed monosyllables, not themselves words, and strung together promiscuously into lines of fixed length so as never to form words: *bam*, *rit*, *por*, *sig*, *nef*, *gud*, etc., is an instance of such 'senseless verses[2].'

[1] H. Ebbinghaus, *Ueber das Gedächtnis: Untersuchungen zur experimentellen Psychologie*, 1885.

[2] In fact, however, it is practically impossible altogether to exclude old associations. The syllables just given for example suggested to one person: Baboon laughs in

With very slight attention most persons would be able to reproduce three or four such syllables on a single reading or hearing; and by greater concentration six or seven might be so reproduced. This maximum, called sometimes the 'span of prehension,' has been repeatedly made the subject of special inquiry. In idiots it is found, as might be expected, to be in general remarkably low; in school children it increases rapidly between the ages of eight and fourteen, and then remains almost stationary. Individual differences are however small compared with the striking differences that in all cases appear when longer lines make repetitions necessary[1].

The comparatively constant span of prehension is doubtless closely connected with certain other psychical constants, such as the range of the psychical present and of the primary memory-image, the *tempo* of movements of attention, &c. There are isolated investigations of these several conditions, but the subject as a whole still awaits systematic treatment[2]. That it is not wanting in interest is evident when we consider that if our span of prehension were enlarged, a corresponding increase in the variety and range of metre and rhyme in poetry, of 'phrase' in music, and of evolution in the dance would be possible. The limits at present imposed on these and like complexities find their ultimate explanation in the constants just mentioned.

With lines of greater length than seven syllables some repetition is requisite before they can be correctly reproduced. The number of such repetitions was found by Ebbinghaus to increase very rapidly with the number of syllables to be learnt. In his own case, for lines of 12, 16, 24, 36 syllables the repetitions necessary were on the average 16·6, 30, 44, 55 respectively. Thus for a line exceeding in length that of the span of prehension only about five times, he required fifty-five times as many repetitions—if we might regard the single reading of the syllables

order to signify 'good' and called up a picture of an ape eating a banana. *Div, nur* suggested 'divine nurture' to one, and 'diviner' to another.

[1] Cf. J. Jacobs and F. Galton on the "Span of Prehension," *Mind* (1887), xii. 75 ff.; B. Bourdon, "Influence de l'âge sur la mémoire immédiate," *Rev. phil.* (1894) xxxviii. 148 ff.; W. H. Winch, *Brit. Jl. of Psych.* (1904), i. 127 ff.

[2] Cf. Dietze, "Untersuchungen über den Umfang des Bewusstseins u.s.w.," *Phil. Studien* (1885), pp. 362 ff.; L. W. Stern, "Psychische Präsenzzeit," *Ztschr. f. Psychologie* (1897), xiii. 325 ff.; Daniels, "Memory After-image and Attention," *Am. Jour. of Psychology* (1893), vi. 558 ff.

as comparable with a 'repetition.' The 'arithmetical prodigy,' Diamandi, could write down a number of ten digits after learning them for 15″, whereas a number of 20 digits occupied him for 2′ 15″, one of 100 digits, 25′ and one of 200 1 hr. 15′. Thus it is obvious—obvious indeed without any experimentation—that beyond a certain finite and not very great number of elements there is an end to all such memorising. Unhappily the details of Ebbinghaus's experiment conflict with this *a priori* certainty and must be wrong somewhere[1]. Substituting poetry for gibberish of equal amount, Ebbinghaus found that one-tenth the number of repetitions sufficed; the enormous saving thus effected shewing how numerous and intimate are the ready-made associations that 'rhyme and reason' involve. But at one and the same time to memorise five verses even of sense requires more than five times as many repetitions as the memorising of one. Two or three lines of inquiry here present themselves, *e.g.* (1) as to the immediate effects of a series of repetitions; (2) as to retention after an interval, (*a*) as a function of the number of repetitions previously made, and (*b*) as a function of the time; (3) as to the respective effects of more or less cumulating, or more or less distributing, the repetitions, on the number of these required. Let us glance at each in turn.

1. It is at once obvious that beyond a certain point exhaustion of attention renders further repetition for a time futile; thus Ebbinghaus found 64 repetitions at one sitting of six 16-syllable nonsense verses, a task lasting some three-quarters of an hour, "was apt to bring on asthenia, a sort of epileptic *aura*, and the like!" But keeping well within this heroic limit, a certain 'law of diminishing return,' to use an economic analogy discloses itself[2]; though sometimes it may be overlaid by

[1] Thus, while 12 syllables required 16·6 repetitions, and the addition of a second 12, 44 repetitions, *i.e.* 27·4 more, the addition of a third 12 required only 55, *i.e.* only 11 more. At this rate the process should, as the number of syllables increased, become comparatively easier—which seems plainly absurd. This was pointed out by one of Ebbinghaus's early critics (A. Elsas, *Phil. Monatshefte*, 1887, p. 88) and repeated by another (A. Hofler, *Vierteljahrschr. f. wissenschaftliche Phil.* 1887, p. 346). But it was ignored by everybody including Ebbinghaus, Wundt and—I must add—myself!

[2] Thus taking a line of 10 syllables, the number of syllables reproduced correctly and in their proper order, after 1, 3, 6, 9 and 12 'repetitions,' were 2·2, 2·5, 2·8, 3·4, 3·9 respectively, as the averages of a series of experiments with each of eight persons. "The first repetition is undoubtedly the best," assuming, of course, that the subjects

counteracting tendencies. Thus the speedy cessation of early distractions due to difficulties in pronunciation or in adaptation to strange experimental conditions, &c., often leads to a slight improvement consequent on the removal of these hindrances to undivided attention.

But in a given repetition it is noteworthy that all the syllables of a line do not fare alike. The first reading is the best and usually suffices for the reproduction of the second and the last syllable in addition to the first: the intermediate syllables, on the other hand, invariably require many repetitions, as already said, before the whole line is correctly 'learnt.' And yet all these syllables can—for a while—be distinctly recognised long before they can be directly recalled. So they are said to remain 'below the threshold of reproduction,' to which, however, every fresh repetition brings them nearer, till at length they are above it. But while still subliminal they prove to be more or less associated, for the mention of one of these syllables will often ensure not merely its own recognition but also the reproduction of the next. How is it that uniform attention on the subject side leads to so much objective diversity? In dealing with the middle syllables attention—though its 'amount' be uniform—is distributed differently from what it is in the case of the two end syllables. With these there is only one thing to do—either to receive the new or to retain the old; in the middle of the line both these things have to be done, and neither is done so effectually. Thus the initial syllables—which receive more undivided attention—are more deeply 'impressed,' while the final—the attention to which, is not so immediately disturbed[1]—are 'impressed' for longer, than the middle syllables.

2. (*a*) On relearning a line after an interval of twenty-four hours Ebbinghaus found in the case of the same experiments

start with their attention fully concentrated. Some persons naturally do this, many do not; the experimenter has therefore to take special precautions to secure as much uniformity as he can in this respect. Cf. W. G. Smith, "The Place of Repetition in Memory," *Psychological Rev.* iii. (1896), pp. 20 ff. The figures given are unquestionably low, partly, as the writer points out, in consequence of the method employed, but partly, as his detailed tables shew, in consequence of the lax attention of three out of his eight subjects. Cf. too Lipmann, *Zeitschr. f. Psych.* xxxv. (1904), p. 213; Witasek, *ibid.* xliv. (1907), p. 247; Reuther, *Psych. Studien*, i. (1906), Plates 1 and 2.

[1] The pause between two lines being of much greater length than the interval between two syllables.

that there was an average saving of one repetition for every three made the day before. A line of 16 syllables, for example, required some 30 repetitions, and could then be said off correctly. If only 8 repetitions were taken at first, the line being 'under-learnt,' it probably appeared quite strange the next day, yet the *proportional* saving was no less. On the other hand, if an additional 30 repetitions followed immediately on the first, the line being 'doubly learnt,' in spite of the familiarity next day apparent, the *proportional* saving was no greater. We are so far led to infer that the stronger associations effected by many repetitions at one time fall off more rapidly than the weaker associations effected by fewer repetitions at one time. Herbart in his 'psychical dynamics'—influenced probably by physical analogies—conjectured that the 'sinking' or 'inhibition' of presentations generally was proportional to their intensity; the less there was to sink, the slower the sinking became. Recent experiments certainly point in this direction. (*b*) As to retention as a function of the time—we all know that memories fade with time, but not at what precise rate. Ebbinghaus, by a series of prolonged experiments, ascertained the rate to be proportional to the logarithm of the time—a result already implied in that connecting retention and intensity, as Herbart assumed; albeit in inquiries of this kind independent confirmation is always of value.

3. Had the proportional saving just described held good indefinitely, some 100 repetitions of the 16 syllables at one time should have dispensed with any further repetition twenty-four hours afterwards; whereas, in fact, this result seemed never attainable. Beyond a certain degree of accumulation, an ever-diminishing return was manifest, and that apparently short of the stage at which exhaustion of attention began to be felt. But, contrariwise, when the repetitions were distributed over several days, an ever-increasing efficiency was then the result. Thus, for Ebbinghaus, 38 repetitions spread over three days were as effective as 68 taken together. The results of careful experiments by Jost with two different subjects, using G. E. Müller's 'method of scoring' (to be described later on), are still more conclusive[1]. Comparing 8 repetitions on three successive days

[1] A. Jost, "Die Assoziationsfestigkeit in ihrer Abhängigkeit von der Verteilung der Wiederholungen," *Zeitschr. f. Psych.* xiv. (1897), pp. 436 ff.

with 4 repetitions on six, and 2 on twelve, the efficiencies, tested twenty-four hours later, were respectively as 11·5, 35, and 54; and probably, as Jost surmises, the effect of the maximum distribution—single 'repetition' on twenty-four successive days—would have been more advantageous still, securing in fact the superiority of a first impression (cf. 1, above) on every occasion. This result again, is in part explained by the law of sinking already found. For if the sinking were simply proportional to the time, or were independent of the intensity, there would so far be no reason why one mode of distributing a given number of repetitions should be more economical than another. There is, however, another reason for this superiority, less clearly implied, to which we shall come presently[1].

Rhythmizing.

§ 2. Invariably, and almost of necessity, a more or less complex rhythmical articulation becomes apparent as the syllables are repeated, even when—as in the improved methods of G. E. Müller and his *collaborateurs*—they are presented singly and at regular intervals. A series of twelve syllables, for example, would be connected into six trochees, with a caesura in the middle of the verse; while in each half of it the first, and —somewhat more—the last, of the accented syllables would be specially emphasized; thus:

bám fĭs | lúp tŏl | *gén* kĕr || *dúb* năf | mít pŏn | *sáv* nĭz

In trying to suppress this tendency and to repeat the syllables in a monotonous, *staccato* fashion, just as they were presented, the *tempo*, though really unchanged, seemed to be distinctly quickened, a consequence, doubtless, of the greater effort involved. Moreover, the attempt, which was seldom successful, about doubled the number of repetitions required for learning off, thereby shewing how much is gained by this psychical organization of disconnected material. But the gain thus ensured was manifest in other ways. Each foot, whether dissyllabic or trisyllabic, became a new complex unit, the elements to be connected by successive association being thereby reduced to a half or a third, and the whole line seemingly shortened. The

[1] Cf. § 6 below, p. 240.

varied intonation, again, helped to fix the place of each foot in the verse, thus further facilitating the mind's survey of the whole. Such a transformation can hardly be accounted for so long as retention and association are regarded as merely mechanical and passive processes.

Psychical rhythm, upon which we here touch, has also been experimentally investigated at great length, alike in its physiological, psychological and aesthetical aspects. The topic is far too intricate and unsettled for discussion here, yet two or three points may be noted in passing. We are not specially concerned with *objective* rhythms, recurring series of impressions, that is to say, in which there are actually periodic variations of intensity, interval and the like. What is remarkable is that even a perfectly regular succession of sounds (or touches), qualitatively and quantitatively all alike, a series therefore devoid of all objective rhythm, is nevertheless apprehended by most people as rhythmically grouped—provided the rate lies between the limits of about 0·8″ and 0·14″. The slower of these rates leads to simple groups of two, replaced by groups of four or eight as the rate increases; groups of three and six also occur, though less frequently. The average duration of the groups, whether these are large or small, is comparatively constant, ranging between a length of about 1·6″ for 2-groups and about 1·16″ for 8-groups. With slower rates there was no grouping at all and with faster rates 'simply a periodic intensive change in the series[1].' A close connexion of rhythm with the normal *tempo* of attention seems thus clearly indicated.

The subject usually keeps time by taps, nods or other accompanying movements. The pulse and respiration are also implicated. These organic rhythms have even been regarded as the prime source of all psychical rhythm and of its manifold aesthetic effects. Some connexion there is unquestionably. As the decimal system corresponds to our possession of ten fingers, and our movements to the structure of our limbs, so here we may assume that physiological processes fix the limits within which psychical rhythm is possible, but yet may be as little an adequate cause of it or its developments as fingers are of arithmetic, or legs of an Irish jig. In motor rhythms, such as the last, the initiative is obviously psychical, and the respiratory and other periodic

[1] Cf. Bolton's paper (cited on the next page), pp. 214 f.

organic processes simply follow suit. And even sensory rhythms can often be varied at the subject's own choice, or on the suggestion of another; and then again the breathing may be altered in consequence. Familiar instances of such procedure are to be found in the 'tunes' so readily attributed to the ticking of a clock, the puff of a locomotive, the churning of a steamer's screw, and the like.

Psychical rhythm, then, we may conclude, is due to attention or apperception, but the conditions determining this are many, and their relations very complex. If the presentations to be 'rhythmized' (the *Rhythmizomena*, as the Germans say) succeed each other slowly, the length (or shall we say the breadth?) of the 'psychical present' tells one way: the first impression is nearer the threshold when the third appears. If they arrive rapidly, their intensity and duration and the span of prehension tell another way; for it is essential that they retain their individual distinctness, and only so many can be grasped at once. But if the series continue long enough, or be frequently experienced, sub-groups may be treated as individuals; and indeed till some facility is acquired, the subject attending is aware of no rhythm. In the act of attention itself there are phases, in so far as expectation involves preadjustment to what is coming: usually the first members of a tact are predominant, and the rhythm tends to 'fall'; several alternations of accent within a complex rhythmic whole are of course still compatible with this. But it is important to note that, whether simple or complex, the rhythm is an intuited unity as truly as a geometrical figure may be. Unlike a geometrical figure, however, it rarely or never has symmetry. We cannot reverse a tune and obtain an effect comparable with that obtained by reprinting the score backwards in line with the original. We now pass to a question in which the psychological bearing of this fact becomes apparent[1].

But first a new method of dealing with memory-problems must be mentioned, in which the connexion between rhythmizing

[1] The following are among the more important papers on rhythm: T. L. Bolton, "Rhythm," *Am. Journ. of Psychology*, vi. (1893), pp. 145 ff.; E. E. Meumann, "Untersuchungen z. Psychologie u. Aesthetik des Rhythmus," *Phil. Studien* (1894), x. 249 ff., 393 ff.; M. K. Smith, "Rhythmus und Arbeit," *Phil. Studien* (1900), xvi. 71 ff. 197 ff.; *Arbeit und Rhythmus* (1902), by K. Bücher, a well-known economist, bringing out the teleological aspects of rhythm; K. Koffka, "Exp. Untersuchungen z. Lehre v. Rhythmus," *Zeitschr. f. Psych.* (1909), pp. 1 ff.

and memorising has been turned to account by the Göttingen psychologists. The method of Ebbinghaus consisted in—at least, it depended on—ascertaining the repetitions saved in consequence of previous repetitions, when the verse perfectly learnt before, was relearnt some fixed time later. Hence this method is called the learning method or the method of saving. But now, using verses in trochaic measure, let the subject, a given time after a fixed number of repetitions (insufficient for perfect reproduction) be confronted with one of the accented syllables; then let him be asked to name the unaccented syllable that belongs to it. He will answer sometimes rightly, sometimes wrongly, and sometimes be unable to answer at all. This, the new method, is therefore named *die Treffermethode*, the method of 'shots,' or, as it has been called, the scoring method. It enables the experimenter to obtain far more insight into details than was possible before, for the 'misses' as well as the 'hits' are instructive. Moreover, by measuring the time of each answer (*Trefferzeit*) and comparing these times together, much can be learnt. In stronger or more recent associations, for example, the answers are made quicker than in weaker or older ones.

'*Regressive Association.*'

§ 3. Does association work forwards only or does it work backwards also, as the middle link of a chain, when lifted, raises the contiguous links on either side of it? This is the question mentioned above to which we now pass, and it is one of first-rate importance. For empirical psychology must be radically wrong, if it be a fact that—even though attention only moves forwards—association may nevertheless 'run backwards,' as the Germans say. Such is certainly not the case when the forward direction makes sense, but with nonsense verses, if the mechanical analogy is a sound one, such reversal might be expected. For here there are none of the 'obstructing associations' which 'rhyme and reason' imply; and Ebbinghaus actually found in relearning a verse backwards that there was a saving of 12·4 % of the time originally taken up in learning it forwards. Even when relearning backwards and skipping one syllable, the order of syllables, that is to say, being 16, 14, 12...2, 15, 13, 11...1, Ebbinghaus found a saving of 5 %. But the number of his

experiments in this case (four) was too few to give this result much value, as he fully admits. The variation in the time saved was also in both cases suspiciously great, ranging between 8″ and 236″ for mere reversal, and between 15″ and 91″ for reversal with omission of alternate syllables. Still these experiments as a whole might incline us to suppose that association —left to itself, so to say—*can* work in both directions, though the connexions backwards are considerably weaker. But if so, the associations both ways should be alike at least in form—continuous, that is to say, backwards, *d c b a*, as well as forwards, *a b c d*. In that case, however, *d* would revive *e* more frequently than *b*, and *b* more frequently than *a*. Such a connexion between strength of association and proximity is invariable in so-called 'mediate association' when the direction is forwards.

In favour of 'regressive association' there is, in fact, no consistent evidence forthcoming. Quite the contrary. For example, in two or three hundred experiments by Müller and Pilzecker, verses of twelve syllables were repeated a set number of times in anapaestic measure—accented, that is to say, on the 3rd, 6th, 9th and 12th. After a fixed interval the subject, confronted with one of the accented syllables, mentioned any of the other syllables which he called to mind. Now the cases in which the second syllable of a foot (that immediately preceding) was revived were only about *half* as frequent as those in which the first syllable of a foot (the next but one preceding) was revived, not *more* frequent, as we should naturally have expected. Moreover the scoring time (*Trefferzeit*) for the first but remoter syllable was shorter than that for the second and nearer[1]. Such results are incompatible with the theory of continuous backward association, but they are readily explained by the fact that the group of three syllables *had become one complex whole*: it was a single foot in a rhythm. Hence the tendency to reinstate the initial member of the group was stronger than that to reinstate the middle[2]. The saving effected in Ebbinghaus's experiment is also thus explained. In short, the conclusion to which these results seem to point is that they

[1] Müller and Pilzecker, "Experimentelle Beiträge zur Lehre von Gedächtniss," *Zeitschr. f. Psych., Ergänzungsband* i. (1900), § 39.

[2] Cf. above, § 1, p. 225.

immediately involve only relations of coexistence. With temporal order either forwards or backwards they are not concerned: the term 'regressive association[1]' is thus inappropriate. They seem to be cases of redintegration not of pure association at all[2].

Unfortunately, beside the scanty experiments of Ebbinghaus just mentioned there are no others specially devoted to this problem. Müller and Pilzecker, however, bring together what they regard as conclusive evidence of 'genuine regressive association' incidentally furnished by some of their experiments[3]. A large part of this evidence is derived from the 'misses' or 'false cases' yielded by the scoring method as above described. A greater number of these wrong answers, that is to say, than chance would 'explain,' consisted in naming not the syllable following the stimulus-word but the syllable preceding it. In one series of experiments where chance would account for only 2·3 cases there were actually 7: in another the corresponding numbers were 1 and 5. Further evidence is adduced from experiments in which a different method was used. The subject, confronted with an accented syllable, instead of being *directed* to name only the following syllable or what he took to be such, was left *free* to name whatever syllable the stimulus-word first evoked and to add a second, if such occurred. This method, calling for '*free* associations,' required, as it turned out, greater psychological *savoir faire* on the part of the subject than the old one restricted to '*intentional* associations.' In fact of the only two series of experiments dealing at all directly with regressive association—in both of which this method was adopted—one was disallowed because of the subject's incompetence; and even the subject of the other appears to have been new to the work. Anyhow the summary of his answers is as follows (the lines consisting of twelve syllables in trochaic measure): An accented syllable being presented, the following, *i.e.* the unaccented syllable of the same foot, was named first in 50% of the cases. The preceding syllable, *i.e.* the unaccented

[1] Cf. ch. vii, § 3.

[2] With this Müller and Schumann fully agree: cf. their "Experimentelle Beiträge zur Untersuchung des Gedächtnisses," *Zeitschr. f. Psych.* vi. (1894), p. 308 *fin.* Cf. also A. Wreschner, "Die Reproduction und Assoziation von Vorstellungen," *op. cit. Ergänzungsband* iii. (1907), p. 578.

[3] Cf. *op. cit.* § 41, pp. 207–12.

syllable of the previous foot, was named first in 4 % of the cases and second in 6 % or only 10 % in all. The remaining (9) syllables together secured but 13 % of the answers. Clearly then both methods bring to light some sort of connexion backwards as well as forwards: not simply from *a* to *b* but also from *b* to *a*. But is the latter *genuine* regressive association? An examination of the whole situation seems to render such an interpretation exceedingly doubtful.

Well, in the first place the almost invariable recency of this so-called association is remarkable. In the experiments with 'free association' just described the testing began 3′ after the line had been learnt, and the effect of longer intervals was not investigated. But in the earlier experiments, where the subject was restricted to 'intentional association' and the relevant cases were all misses, it was found that in one series of 48 experiments in which the stimulus-words were shewn 20″ after the reading, there were 15 cases in which the preceding syllable was named in mistake: in two other series of 216 experiments in all, tested after an interval of 24 hours, there was only one such case.

In the second place, in consequence of this recency, the line as a whole was in a state of 'preparation' (*Bereitschaft*) such that no syllable was far from the threshold of consciousness. In the terminology of the writers their *Perseverationstendenz*, or readiness to reappear, was still so strong that with every syllable a very slight reinforcement of this tendency sufficed for the syllable's actual reproduction[1]. Further the subject frequently knew the place of the presented syllable in the line, and this knowledge often enabled him to find the syllable wanted. Sometimes, when the whole line was 'firmly imprinted' he would run through it as far as the presented syllable, the accumulating efficiency of revival due to the whole securing what the single syllable could not effect[2]. This resource would obviously be specially available where, as in the cases we are considering, the repetitions had all been recent.

In the third place there were signs in all these cases of a certain embarrassment or *contretemps* akin more or less to what the writers happily styled *Verlegenheitsnennungen*. Thus, in the

[1] Cf. *op. cit.* p. 66.

[2] *Op. cit.* p. 16. Cf. also F. Arnold, "The Initial Tendency in Ideal Revival," *Am. Jl. of Psych.* xviii, 1907, pp. 239 ff.

experiments calling for 'free associations,' the 50% of cases in which the syllable succeeding the one presented was returned first had an average scoring time (T) of 3100 σ; in the 4% of cases in which the preceding syllable was returned first this T was 6500 and in the 13% of other cases it was longer still. In that extra three and a half seconds we may reasonably assume that manifold interchanges, sometimes antagonistic, sometimes complementary, occurred between the 'perseveration-tendencies' of some of the eleven barely subliminal syllables, all of them, in consequence of their recent repeated appearances within the focus of consciousness, integrated into a more or less compact whole. At all events in the experiments calling for 'intentional associations' where the answers were all wrong, evidence of such varied interplay is furnished abundantly by the analysis of such cases which the authors provide[1]. The scoring time in these cases, we may reasonably assume, was as a rule longer than it was in the cases where the answer was right.

Taking all the circumstances concerned into account, then, we may still doubt whether the new facts brought forward in the masterly investigations of Müller and Pilzecker place the existence of a genuine reversal of the temporal order, in which association is first effected, beyond question. The interpretation advocated above when dealing with the facts advanced by Ebbinghaus, seems here also the simplest and best. In both instances we are concerned not with a series but with a *tout ensemble* —the foot in the one case, the line in the other. The very same tendency to unify and organize which has made out of two syllables a single foot has made out of six feet a line: in both cases the syllables, in addition to their originally temporal order, have acquired the relation of part to part in a coexistent whole; they have added to the seriality of the memory-thread the higher dimensions of the ideational continuum. This way of interpreting the facts will account for the comparative frequency of the wrong answers and the free associations that seem at first to point to genuine regressive association. When, for some reason, what we may call the normal response to the stimulus-syllable fails and the consequent perplexity and delay brings the line as a whole into greater clearness, the probability is that the parts specially related to the given syllable will be quickened the

[1] Cf. *op. cit.* §§ 28, 45–7.

most, and among these, when the succeeding syllable fails, the preceding syllable stands next[1].

It may fairly be said that the whole difference between the interpretation here expounded and that of Müller and Pilzecker turns simply on the fact that they sometimes give to 'association' a wider meaning. But that wider meaning, it is here contended, implies a complex of associations or what is better termed redintegration.

'Mediate Association.'

§ 4. A similar examination of the evidence advanced in favour of what is called 'mediate association' seems to justify the same interpretation of the facts. But 'mediate association' is used in two senses. First, and more commonly, it is used of cases in which *prima facie* there is no association at all, where, that is to say, an idea seems to 'rise freely' into consciousness —to use Herbart's phrase—though no mediating suggestion whatever is apparent. Of such an experience we have the stock instance of Hamilton, when, thinking of Ben Lomond, "this thought was immediately followed by the thought of the Prussian system of education." The 'intermediate and unawakened links' that explained 'the anomaly' he succeeded in tracing to a conversation about Prussian schools between himself and a certain German whom he chanced to meet on his last visit to the mountain. This and like instances, it is reasonable to assume were really cases of association, not of an idea reviving spontaneously as the Herbartians maintained. There is then no anomaly about them unless it be this absence of direct evidence. But, where not even indirect evidence is forthcoming, it would be rash too confidently to assert the impossibility of any spontaneous revival of a presentation (*freisteigende Vorstellung*), especially so in view of such facts as 'recurrent sensations[2],' 'perseveration,' and

[1] The characteristic of the call for free association is that the subject is directed to the line as a whole, and we have seen already that when the first or accentuated syllable of a foot was given the last syllable of the preceding foot was named in 10 % of the cases. It was also found that when the second or unaccented syllable was named the first syllable of the next foot was named in 9 % of all the cases. Two comparable adjacencies had comparable strengths.

[2] Cf. ch. vii, § 3.

delirium. Nevertheless if Herbart's 'spontaneous revival' or G. E. Müller's 'perseveration' were to be taken so 'atomistically' as to imply the complete rupture of the continuity of the memory-thread or the ideational tissue, it would be still more rash to assert that it *was* possible. But the mediate association we have here specially to consider is quite different from all this. In relearning verses forwards but omitting alternate syllables Ebbinghaus found a saving in time of 10·8%; by omitting two syllables, the saving effected was 7·0%; and by omitting three, 5·8%. This he explained by assuming that in memorising a series *a b c d e* ... there was formed not only a '*principal*' or primary association of each term with its immediate successor, of *a* with *b*, of *b* with *c*, &c., but also *subsidiary* or mediate associations of each term with all the rest, of *a* with *c*, *a* with *d*, &c.; likewise of *b* with *d*, *b* with *e*, and so on. To these mediate associations he referred the savings obtained on relearning—the more distant associations being naturally the weaker and the saving therefore less. Such a series he rightly regarded as involving not merely a memory-thread but also an ideational 'plexus.' But the two, as we have seen, are of different dimensions.

The simpler process, as such, cannot then yield the more complex any more than a spinning wheel can do the work of a loom. Again mediate *connexion* between the members of the linear series is, of course, implied in its continuity, but this connexion presupposes association and cannot therefore constitute it. When the primary association of *a* with *b* begins, there can be no subsidiary association of *a* with *c* or *d*, or any subsequent member, for these members are not yet present. When this process is merely repeated, we can readily understand that the 'thread' is strengthened, but not that a whole tissue consisting of distinct threads begins to be formed 'associating every term with every other'—a tissue, that is to say, which in a verse of sixteen syllables would involve 105 subsidiary associations altogether in the forward direction alone! But after several repetitions, when the primary associations have begun to be familiar, the subject's attitude may change; and it does, and does so with some persons sooner and more frequently than with others. It is then possible to note various relations between the members of the series beside their serial order. The tendency to do this

distinguishes what Kant called the 'judicious' from the merely 'mechanical' memory. These two processes are not only distinct; they are also incompatible, in so far as an increase of the *tempo*, which favours the more mechanical process[1], is a bar to the more intellectual one. It is true that the rate of learning which Ebbinghaus found 'convenient' was an unusually rapid one—150 syllables a minute. For all that, he could more than double it when learning 'sensible' material; so that at his usual rate there would be time for side glances; and in fact his remarks concerning the sources of error, to which he felt liable, shew that he was not altogether mechanically absorbed[2].

Indeed the ample experimental records now available shew unmistakably that even the least intelligent subjects are something more than mechanical registers. As G. E. Müller, the master in this department of psychology, has said, we should form but a very poor idea of the learning process if we assumed that no associations are actually effected between the different members of a series but such as would result if attention were confined to the one monotonous routine of linking item to item as each filed past. "The subject's activity in relation to the series to be learnt displays far more freedom and spontaneity than that." But the point is that *unless* such further subjective initiative is present nothing more is achieved. As the result of that initiative, however, a supplementary process of 'interrelating' (*Zuordnung*) comes into play, whereby "certain elements of the series, standing far apart, are often associated together, which would never be apprcciably related at all, if the reading were nothing but an uninterrupted transition from one item to the next." This secondary interrelating is the distinguishing feature of Kant's 'judicious memorising' and implies the more complex process of redintegration. We may conclude then by saying with Müller that for experimental psychology it "still remains an open question how far, apart from all interrelating, direct associations between the mediate members of a series can be formed[3]." At present we may fairly say that there is no clear evidence for such 'mediate' association, as Ebbinghaus

[1] Cf. Ebbinghaus, *Grundzüge der Psychologie*, 3rd ed. i. 672 f

[2] *Ueber das Gedächtnis*, p. 58.

[3] Cf. G. E. Müller, "Zur Analyse der Gedächtnistätigkeit und des Vorstellungsverlauf," *Zeitschr. f. Psych. Ergänzungsband* v. 1ster Teil, 1911, pp. 315–7.

assumed, but rather a strong presumption on general grounds against it.

Reading.

§ 5. The synthesis or integration of simple linear associations into complex unities of higher dimensions might be fitly called the principle of psychical organization *par excellence*[1]. We have appealed to it incidentally in the above discussion; but now we have in the recent experimental investigations into the psychology of reading a favourable opportunity of studying it directly on its own account. For this process—unlike the earlier processes of building up our temporal and spatial perception and our intuition of real things—falls entirely within the domain of social intercourse, and is therefore throughout amenable to observation and control.

The earliest stage in the process of reading—that of learning the several letters—may be here regarded as merely a series of simple assimilations[2]. In beginning the next stage, spelling, the child at first takes longer to recognise a monosyllable than to recognise a letter; for the monosyllable is still directly apprehended as a series of two or more letters. But after sufficient practice a short word is recognised directly as a unity, and is then recognised as soon as, or even sooner than, a single letter. But a word of three or four syllables may still have to be painfully spelled. Presently, however, when greater fluency is attained, it is found that a passage of sense, consisting of longer but fewer words is read more quickly and easily than one of equal length consisting entirely of monosyllables. For at this stage words are the units attended to, not syllables[3]. Finally we come to read not by an almost continuous movement of the eyes—as is generally supposed—taking in syllable by syllable or even word by word; but we compass a whole line of print like the present by three or four fixations of the eye, separated by pauses too brief to allow of the recognition of each separate syllable. When, however, this is requisite, as in reading nonsense

[1] Cf. above, ch. iii, § 3.

[2] The letters, that is to say, in reading apart from writing, being recognised merely as wholes.

[3] Cf. M. Beer, "Die Abhängigkeit der Lesezeit von psychologischen und sprachlichen Faktoren," *Zeitschr. f. Psychol.* Bd. lvi. (1910), pp. 271 ff.

syllables for instance, then not only have the pauses to be lengthened, but the eye-stretches must be shortened as well. Yet the amount of print actually in focus and so distinctly perceptible is the same in each case. In reading 'sense' then a portion of what the eye takes in extends beyond the focus of distinct vision. Like the single letters at the first, several words or syllables at the last, are apprehended—in virtue of their general form or of a few salient traits—as a single whole. Indeed adequate apprehension of this sort, in the case of a coherent context, is possible when its distance from the eye exceeds the limits of exact definition altogether. But at the ordinary range of reading, when a portion at any rate of what the *coup d'œil* takes in is distinctly seen, more is read and more quickly. Here the part in the margin of the field of vision is usually mainly to the right of the fixation point, shewing the influence of the prior context in extending the span of apprehension.

The child learning to read begins by reading aloud syllable by syllable. But the spoken syllable and the syllable as heard are already integrated into one complex whole: the new task then is simply to associate this whole with its visual symbols. Both for articulation and for audition, a series of syllables, always remains, as at first, a temporal series. Vision, however, has here the same superiority over movement and hearing as it has elsewhere over movement and touch: it can take in several syllables at once, although they can be heard or spoken only one at a time. At first, of course, this superiority does not count; but eventually it becomes easy to read far faster than one can speak, faster even than one can distinctly hear. There is evidence—perhaps not all that one could wish—to shew that "rapid readers not only do their work in less time but do superior work. They retain more of the substance of what is read than do slow readers[1]." No doubt because, in general, they concentrated their attention more, and being also more intelligent, 'integrated' better than the slower readers. Before proceeding, let us here note that in what is called *endophasia* or 'internal speech' there are three main types of verbal imagery, the motor, the auditory and the visual: words, that is to say, are 'mentally' spoken or heard or seen. For the entirely illiterate

[1] Quantz, "Problems in the Psychology of Reading," *Psychological Review—Monograph Supplements*, ii. (1897), p. 49.

internal speech of the visual sort is, of course, impossible; and it is, in fact, usually absent in most people. It is so not merely because the race as a whole, and they as individuals, mastered speech before beginning to read at all, but also because they speak so much oftener than they read. Usually the motor and the auditory type are combined, the dominance of the motor being specially apparent in the reading of young children and the comparatively illiterate, who either speak aloud or whisper while they read; but this trait becomes less and less marked with increasing culture. Among thoroughly cultured persons a few cases of the exclusively visual type are found and still more of the combined visual-motor[1].

It seems further not unlikely that as moderate practice banishes articulation from reading and as frequent reading leads to an increasing prominence of visual word-imagery, both audition and articulation may for some fade out more or less entirely, and the visual word alone remain prominent. The few investigations that have been made bear out this conjecture: the fastest readers seem to be visualisers[2]. The most perfect kind of integration would in this way be attained. The advantage which vision secures us in taking in the *tout ensemble* of things it seems also to secure in dealing with thought as a whole, when this is visualised in symbols. Herein perhaps lies the secret of Bacon's saying that writing makes an exact man, for in setting out our thoughts in black and white we secure a survey of them that internal audition alone can never give us.

APPENDIX

'Age' and 'Strength' of Associations.

§ 6. A somewhat paradoxical situation is brought to light when the method of saving and the method of scoring are used together. In the experiments by Jost, mentioned above[3], two series of verses, S_1, S_2 were repeated thirty times; after an interval of twenty-four hours S_1 was tested by the first method and S_2 by the second.

[1] Cf. G. Saint-Paul, *Le langage intérieur*, 1904, pp. 200 f.

[2] Cf. W. B. Secor, "Visual Reading: A Study in Mental Imagery," *Am. Jl. of Psych.* xi. (1899), pp. 225 ff.; Quantz, *op. cit.* pp. 46 ff.

[3] § 1, p. 225.

Two new series, S_3, S_4, were then taken: S_3 was repeated four times, and after an interval of a minute tested by the first method; S_4 was then repeated in like manner, and tested after the same interval by the second method. This procedure was renewed day after day—in varying order—till records of twenty cases of both old and new series tested by each method were obtained. It was then found (by the method of saving) that an old series (an S_1) required on an average 5·85 repetitions for relearning, and a new series (an S_3) 9·6. But (by the method of scoring) it was found that a new series (an S_4) yielded 2·7 'hits,' with an average time of about $1\frac{3}{4}$ seconds for each, while an old series (an S_2) yielded only ·9 'hits,' with an average time of $4\frac{1}{2}$ seconds for each. Thus one may be able to reproduce relatively little of a given subject-matter, and yet require only a few repetitions in order to learn it off anew; on the other hand, one may know relatively much, and still find many more repetitions requisite for such complete learning. The 'age' of the associations is then important. Other things being equal, we may conclude that each fresh repetition effects more for older associations than for more recent ones. It might be supposed that the strength of the old associations was more uniform and on the average greater than the strength of the new; so that while none of the old were far below the threshold, few, if any, were above it; whereas more of the new might be above the threshold though the majority had lapsed entirely. And the latter would certainly be the case if the subject of experiment tried to make sure of a few 'hits,' and paid no attention to the rest of the series. Due care was, however, taken that the ends of the experiment should not in this way be defeated. Also, there is ample evidence to show that the supposed greater uniformity in strength of old associations is not, in fact, the rule, We seem left, then, to conjecture that the difference is the effect of the process of assimilation working subconsciously—that psychical aspect of nervous growth which Professor James has aptly characterized by saying that "we learn to skate in summer and to swim in winter." It continually happens that we can recognise connexions that we are quite unable to reproduce. To the diminished 'strength' of an association, as tested by the method of scoring, there may then quite well be an equivalent set-off in more developed assimilation. As a seed germinates it has less latent energy, but this is replaced by growth

in root and stem: similar relations may obtain when an old association is said merely to lose 'strength.' On the other hand —within the range of the primary memory-image—we can often reproduce what after a longer interval we should fail to recognise. We seem warranted, then, in concluding that this conception of 'association-strength' so freely used by G. E. Müller and his co-workers, requires more analysis than it has yet received. The two factors which their methods disclose in it appear to confirm the distinction we have already made between impressions and free ideas. They help us also to understand, further, the superiority of distributed over cumulated repetition, of 'inwardly digesting' over 'cram[1].'

[1] There is a most interesting article by P. B. Ballard dealing with many of the topics of this chapter that I have unhappily overlooked. It is entitled "Obliviscence and Reminiscence"; see *British Jl. of Psychology, Monograph Supplements*, ii. 1913.

CHAPTER X

FEELING

Introductory.

§ 1. Such summary survey of the more elementary facts of cognition, as our plan of exposition called for, is here at an end. So far the most conspicuous factors at work have been those concerned in the formation of what might be termed the ideational mechanism. In dealing with the higher processes of thought we shall have to take still more account of the voluntary activity, which we have seen to be essential even in the lower processes of perception and ideation, and also of the part played by language in perfecting the higher, intellectual, processes. But it seems preferable, before entering upon these topics, to explore also the affective and conative constituents of mind in their more elementary phases, so as to complete in outline our description of mind below what we may call the stage of understanding or reason.

We have found that psychical life consists in the main of a continuous alternation of predominantly receptive and predominantly reactive consciousness. In its earliest form experience is simply an interplay of sensation and movement. At a later stage, we find that in the receptive or cognitive phase ideation is added to perception; and that in the active phase, thought, poetic fancy, &c.—or the voluntary direction and control of the ideational trains—are added to the voluntary direction and control of the sense-organs and of the muscles. At this higher level also it is possible that either form of receptive consciousness may lead to either form of active: sensations may lead to thought rather than to action in the restricted sense; and ideas apart from sensations may prompt to action rather than to thought. There is a further complication still: not only

may either sensations or ideas lead to either bodily or mental movements, but such movements, whether of mind or body, may simply as presentations determine other movements of either kind. In this respect, however, movements and thoughts, either in themselves or along with their sensational and ideational accompaniments, may be regarded as pertaining so far to the receptive side of consciousness. With these provisos, then, the broad generalisation already made[1] may hold, *viz.* that receptive states lead through feeling to active states, and that those which are neither pleasant nor unpleasant, that neither please nor displease, meet with no responsive action.

But at the outset the objection must be met that presentations which in themselves seem to be purely indifferent lead continually to very energetic action, often the promptest and most definite action. To this there are two answers. First, on the higher levels of psychical life presentations that may be indifferent in themselves are yet often indirectly interesting as signs of, or as means to, other presentations that are directly interesting. It is enough for the present, therefore, if it be admitted that all such indifferent presentations are without effect as often as they are *not* instrumental in furthering the realisation of some desirable end. Secondly, a large class of movements—those called sensori-motor and ideo-motor—are initiated by presentations that are frequently, it must be allowed, neither pleasurable nor painful. These, however, we had good reason just now to think, were only an apparent exception to the principle of subjective selection. For they can all be classed among instances of another important psychological principle, already noticed, which we shall have to deal with more fully by and by. This principle is, that voluntary actions, and especially such as either only avert pain or are merely subsidiary to pleasure-giving actions, tend at length—as the effect of habit in the individual and of heredity in the race—to become 'secondarily automatic[2].' Such mechanical or instinctive dexterities make possible a more efficient use of present energies in securing pleasant or satisfying experiences; and, like the rings of former growths in a tree, afford a basis for further advance, as old interests pall and new ones present themselves. It suffices

[1] Cf. ch. ii, §§ 5, 6, pp. 54 ff.

[2] Cf. above, ch. ii, § 5, p. 52; and below, p. 249.

if we may suppose that all such movements were originally initiated by feeling, as certainly many of them were.

Inquiry into its Causes.

§ 2. Of the feeling itself that intervenes between these sensory and motor presentations, there is little to be said. The chief points have been already insisted upon, *viz.* that feeling is not itself a presentation[1], but a purely subjective state; is at once the effect of a change in receptive consciousness and the cause of a change in motor consciousness. Hence its continual confusion either with the movements, whether ideational or muscular, that are its expression, or with the sensations or ideas that are its occasion. For feeling as such is, so to put it, matter of *being* rather than of direct knowledge; and all that we *know* about it, we know either from its antecedents or from its consequents in presentation. Still these antecedents and consequents make an important difference to the entire experience to which they contribute; so that, whenever the feeling they induce is psychologically the most interesting or important characteristic of such experiences, it is often simpler to describe them briefly as *feelings*, and to denote them as severally sensuous, aesthetic, intellectual, moral, feelings; and so forth. But this is no reason for ignoring or denying that pure feeling is a unique and ultimate factor in all experience.

Since this pure feeling, then, ranges solely between the opposite extremes of pleasure and pain, we are naturally led to inquire whether there is any corresponding contrast in the causes of feeling on the one hand, and on the other in its manifestations and effects[2]? To begin with the first question, which we may thus formulate: What, if any, are the invariable differences characteristic of the presentations or 'states of mind' we respectively like and dislike? Or, taking account of the diverse sources of feeling—sensuous, aesthetic, intellectual, active—is there anything that we can predicate alike of all that are pleasurable and deny of all that are painful, and *vice versa*? It is at once evident that at least in the presentations regarded

[1] So Kant: "Dasjenige Subjective an einer Vorstellung was gar kein Erkenntnissstück werden kann ist die mit ihr verbundene Lust oder Unlust." *Kritik der Urtheilskraft*, Einl. VII. Cf. also Titchener, *Feeling and Attention*, 1908, pp. 69–77.

[2] For this see next chapter.

objectively or apart, no such common characters will be found; if we find them anywhere it must be in some relation to the conscious subject, *i.e.* in the fact of presentation itself.

There is one important truth concerning pleasures and pains that may occur at once as an answer to our inquiry, and is often advanced as such, *viz.* that whatever is pleasurable tends to further and perfect life, whatever is painful to disturb or destroy it. The many seeming exceptions to this law of self-conservation, as it has been called, probably all admit of explanation in conformity with it, so as to leave its substantial truth unimpeached[1]. Still the converse is not always true, in particular many things highly detrimental to life—though we may be aware of them—happen quite painlessly. But anyhow this law is too teleological to serve, in the first instance, as a purely psychological principle, and, as generally formulated and illustrated, it takes account of matters quite outside the psychologist's ken. We are not now concerned to know *why* a bitter taste *e.g.* is unpleasant or the gratification of an appetite pleasant, but *what* marks distinctive of all painful presentations the one has and the other lacks, and what contrasting marks it has instead. From a biological standpoint it may be true enough that the final cause of sexual and parental affections, for example, is the perpetuation of the species; but this does not help us to ascertain what common character they have as actual sources of feeling for the individual. From the biological standpoint again, even the senile decadence and death of the individual might be shewn to be advantageous to the race; but it would certainly be odd to describe them as advantageous to the individual: so different are the two points of view. What we are in search of, although a generalisation, has reference to something much more concrete than concepts like race or life, and does not require us to go beyond the consciousness of the moment to such ulterior facts as race or life imply. "Feeling is a *witness* concerning the present situation, but no *prophet* concerning that in the future[2]."

Were it possible, it would be quite unnecessary to examine

[1] See Spencer, *Data of Ethics*, chs. i.–iv.; G. H. Schneider, *Freud und Leid des Menschengeschlechts*, 1883, ch. i. Ebbinghaus, *Grundzüge d. Psychologie*, 3te Aufl. 1911, i. pp. 556 ff.

[2] Payot quoted by Ebbinghaus, *loc. cit.*

in detail every variety of pleasurable and painful consciousness in connexion with a general inquiry of this sort. It will be best to enumerate at the outset the only cases that specially call for investigation. Feeling may arise mainly from (*a*) single sensations or movements; or it may be determined wholly or partially by (*b*) some combination or arrangement of these primary presentations—hence what might be styled the lower aesthetic feelings. We have thus among primary presentations a more material and a more formal cause or ground of feeling. The mere representation of these sources of feeling involves little of moment: the idea of a bright colour or even of a bitter taste rarely has definiteness or intensity enough to produce feeling. But, on the other hand, the ideal presentation of a harmonious arrangement of sounds or colours does not in itself differ essentially as regards the feeling it occasions from the actual presentation. When we advance to the level of ideas more complex and more highly representative—or re-representative, as Spencer would say—than any we have yet considered, we can again distinguish between material and formal grounds of feeling. To the latter we might refer, *e.g.* (*c*) the intellectual and (*d*) the higher aesthetic feelings; to the former (*e*) the egoistic, altruistic, and religious feelings. There is a special class of feelings, which might be distinguished from all the preceding as *reflex*, since they arise from the memory or expectation of feelings but in fact these are largely involved in all the feelings of the last mentioned class, and this brief reference to them will suffice; of such hope, fear, regret are examples. We may now try to ascertain the ground of the pure feeling in each of these various 'feelings.'

a. The intensity and quality as well as the duration and frequency of a movement or a sensation all have to do with determining the feeling to which it gives rise. It will be best to leave the last two out of account for a time. Apart from these —we may note the following points: (i) The pleasantness or painfulness of movements appears to depend solely upon their intensity, that is to say, upon the amount of effort they require, in such wise that a certain amount of exertion is agreeable and any excess disagreeable. (ii) Some simple sensations, such as those of light and sound, are agreeable if not too intense, their pleasantness increasing with their intensity up to a certain point, on nearing which the feeling rapidly changes and becomes

unpleasant or even painful[1]. Other sensations, as *e.g.* bitter tastes, are naturally, that is for most animals, unpleasant, however faint —though we must allow the possibility of an acquired liking for moderately bitter or pungent flavours[2]. But in every case such sensations, if at all intense, produce unmistakable manifestations of disgust. Sweet tastes, on the other hand, however intense, are pleasant to an unspoiled palate, though apt before long to become mawkish, like 'sweetest honey, loathsome in his own deliciousness,' as confectioners' apprentices are said soon to find. On the other hand even the specific sensation called 'sensory pain' does not always lead to unpleasant feeling or 'affective pain'; but when of only slight intensity is characterized as 'piquant' and felt as pleasant[3]. Thus (iii) in fine, while the effect on feeling of some qualities changes with their intensity, the effect of others continues to be pleasant or else continues to be unpleasant, almost regardless of changes of intensity. But once a sensation or movement is painful the painfulness increases with the intensity without any assignable maximum being reached.

A comparison of different cases like the above (which it would be tedious to describe more fully and which are indeed too familiar to need much description) seems to shew (1) that—so far as feeling is determined by the intensity of a presentation —there is pleasure so long as attention can be adapted or accommodated to the presentation, and pain so soon as the intensity is too great for this; and (2) that of the cases where, though the intensity is slight, some sensations are decidedly pleasant and others as decidedly painful—the cases, *i.e.*, where feeling is determined by the quality of a presentation—those which are pleasurable (α) introduce or agreeably increase in intensity certain organic sensations or (β) enlarge the field of consciousness; while those which are painful (α) introduce or disagreeably increase in intensity certain organic sensations or (β) contract the field of consciousness.

As to the first of these points, it may be suggested that in itself any and every simple sensation or movement is pleasurable

[1] Possibly not as simple sensations but in consequence of organic disturbances.

[2] In the case of animals that feed upon bitter plants the liking, it is reasonable to suppose, is congenital: they like their food, though it tastes bitter and not, we should incline to say, because to them it tastes sweet. But who shall decide?

[3] Cf. A. Goldscheider, *Gesam. Abhandl.* 1898, i. p. 411 (quoted by Titchener, *op. cit.* p. 88).

if there is attention forthcoming adequate to its intensity. In the earliest and simplest phases of life, in which the presentation-continuum is but little differentiated, it is reasonable to assume that variation in the intensity of presentation preponderates over changes in quality, and that to the same extent feeling is determined by the former more than by the latter. And, whereas this dependence on intensity is invariable, there is no ground for supposing the quality of any primary presentation, when not of excessive intensity, to be in itself disagreeable; the changes above-mentioned in the hedonic effects of bitter tastes, sweet tastes, or the like tend rather to prove the contrary. This brings us to the second point, and it requires more elucidation.

(α) In dealing with this point we need first of all to call to mind the continuity of our presentations, and especially the existence of a background of 'general sensation' or somatic consciousness as it is variously termed. By the time that qualitatively distinct presentations have been differentiated from this common basis it becomes possible for any of these, without having the intensity requisite to affect feeling directly, to change it indirectly by means of the organic sensations accompanying them, or their so-called 'feeling-tone[1].' The physiological concomitants of these changes of somatic consciousness are largely reflex movements or some equivalent of these—such as alterations in circulatory and respiratory, or in metabolic processes. Such 'movements' are psychologically movements no longer, and are rightly regarded as pertaining wholly to the sensory division of presentations. But originally it may have been otherwise[2]. To us now, these organic reflexes seem but part and parcel of the special sensation whose tone they form, and which they accompany even when that

[1] This very ambiguous, one might almost say amphibious, term is here used in the Herbartian sense, *i.e.* as signifying something objective—the cause of feeling, not the feeling itself consequent on it. Cf. above, ch. ii, § 3, p. 45. Cf. also, Volkmann, *op. cit.* §§ 35, 129; Nahlowsky, *Das Gefühlsleben*, 1862, pp. 13 ff.

[2] As, for example, in the case of such functions as respiration and circulation, both for us normally automatic, and the last beyond immediate control. Nevertheless we are often driven to aid both by taking exercise. For creatures less highly organized such voluntary means may be more indispensable. (Cf. Herbert Spencer's *Principles of Biology*, 1867, ii. pp. 322 ff., 329 fin. ff.; Huxley, *The Crayfish*, 1880, p. 81.) Anyone who has ever compared through a microscope the movements of particles inside a living flea and that of blood corpuscles in the web between the toes of a living frog will have no difficulty in understanding all this.

sensation, so far as its mere intensity goes, might well be deemed indifferent. But perhaps at first the special qualities, that *e.g.* are now unpleasant even when their intensity is minimal, may have been frequently presented with an excessive intensity that would be painful on this score alone[1]. The reflexes that at present pertain to them may then have been psychologically the expression of this pain. At any rate it seems manifestly unfair to refuse either to seek out the primitive effects of the sensations in question and allow for the workings of heredity, or to reckon their organic accompaniments or 'feeling-tone' as now functionally a part of them[2]. The latter seems the readier and perhaps, too, the preferable course. As immediate effects of feeling, organic processes are perhaps never entirely absent from any affective state: they constitute its earliest expression. But regarded as the feeling-tone of specific sensations they are now to be reckoned among the causes of feeling, whatever views we may entertain about their original position[3].

(β) The division of the senses into higher and lower rests largely on the extent to which their specific qualities are differentiated from the general sensibility to which feeling-tone belongs. This differentiation becomes steadily more pronounced as we advance from the lower senses to the higher[4]. The lower senses, in other words, are more intimately connected with the so-called 'physical basis of life.' Accordingly the purely 'algedonic' effects of these senses are experienced before those of the higher senses are appreciable at all, and they are also more intense and

[1] In the lowly organisms that absorb food directly through the skin any bitter juices that came in contact with it might at once produce very violent effects—comparable, say, to scalding; and the reflexes then established may have been continued by natural selection so as to save from poisoning the higher organisms, whose absorbent surfaces are internal and only guarded in this way by the organ of taste. Some light is thrown on questions of this kind by the very interesting experiments of Romanes on the effect of such poisons as caffeine, strychnine, &c. on jelly-fish placed in the water in which these poisons were dissolved. For a full account of these see his *Jelly-fish, Star-fish, and Sea-urchins*, ch. ix.

[2] Hence Volkmann proposed to designate them as 'reflex sensations.' Cf. his *Lehrbuch der Psychologie*, 2te Aufl. 1875, ii. p. 313.

[3] Cf. next chapter.

[4] Hence the old and familiar doctrine, best known perhaps in the Hamiltonian formula: "Perception proper and Sensation proper...though each necessarily supposes the other, are still always in a certain inverse proportion to each other." (Cf *Lectures on Metaphysics*, ii. pp. 94–104.) The elusive character of feeling when we attempt to define it comes out clearly in this exposition.

more urgent than these. *Per contra*, apart from feeling-tone, as here understood, the specific qualities of the lower senses almost cease to be sources of feeling at all, while those of the higher senses remain so still. In connexion with the higher senses we find nothing—apart from accidental associations—analogous to satiety or nausea, and nothing comparable to analgesia: there are colours and tones that always charm and never cloy. Organic reflexes then will not account for the feelings evoked by the higher senses, which are devoid of the conative urgency usually pertaining to those of the lower[1]: they appease no periodic 'appetites' and the sensations, unless of excessive intensity, are accompanied by no 'physical' pain. So different indeed are their effects, that Wundt has latterly gone so far as to maintain that "they can nevermore be compressed within the single dimension of *Lust* and *Unlust*[2]." Certainly not, if *Lust* and *Unlust* are used in the popular sense, which implies appetite and aversion as well as feeling. But psychological terminology should be carefully divested of popular implications. Even our own terms, pleasure and pain, would otherwise be almost equally misleading[3]. Feeling, according to Wundt, is a tri-dimensional manifold. The feelings due to the higher senses, he maintains, are mixed feelings in which the *Lust-Unlust* component is always the least important and not essential at all. The 'warm' end of the spectrum is exciting, exhilarating; the cold end tranquillizing, depressing: high notes dispose us to gaiety, low notes to seriousness. Well, we have agreed with this so far as to recognise a clear difference between what makes a good glass of beer pleasant (to take his own instance) and a dose of castor-oil unpleasant; or between what makes the sound of a silver clarion pleasant and the drone of a Scotch bagpipe unpleasant. But so to restrict the meaning of our leading terms as to take the feeling in the latter instances out of the rubric pleasure-pain altogether is a *Machtspruch* and nothing else, a peremptory decision that even Wundt is not

[1] Though it can be absent. Cf. Drobisch, *Empirische Psychologie*, 1842, p. 175.

[2] *Physiologische Psychologie*, 6th ed., ii. pp. 295 ff.

[3] Not quite, for with us the word 'lust,' which we inherit from our Teutonic ancestors, has lost its original meaning of pleasure—though so used in Chaucer's day—and retains only the meaning of longing or concupiscence. But the German *Lust* means both. So prominent was the latter meaning in Wolff's time that he confused feeling more or less with appetition.

entitled to make, and one moreover that has found neither general acceptation nor experimental verification[1].

Nevertheless, as said, there is a difference—and Wundt has called attention to it—between the lower senses and the higher as grounds of feeling; even though in both cases the presentation itself is either pleasant or unpleasant. What precisely is this difference? The question is a difficult one to answer. In the first place circumstantial associations of all sorts ought to be eliminated: were the effects of these to be taken into account we should be beyond the range of sense altogether. But it is only these invariable accompaniments of the pleasures and pains of the higher senses in ordinary life that would justify Wundt in crediting them with producing gaiety or earnestness of mood (*Stimmung*). L'Allegro and Il Penseroso, mirth and melancholy, are not wooed or loathed at the bidding of mere sense. On the other hand the greater and readier revivability of colours and tones is important: we can thus enjoy in memory the pleasures of music, of scenery and of painting in a way that we cannot enjoy the more 'material' pleasures of taste and smell[2]. It is this superior revivability, no doubt, that makes possible the incidental associations that 'actually' play so large a part in the more emotive effects of the higher senses. If however we restrict ourselves to what is strictly sensory and take account of the effects of certain colours and sounds upon some of the higher animals, upon children and savages, then we must recognise the effects that Wundt describes as exciting and depressing. They were just now summarily described as enlarging or contracting the field of consciousness, perhaps we might have said as raising or lowering 'the spirits.' We are here upon a more objective level[3] than that of the lower senses and bodily comfort or discomfort: we are pleased or displeased in a more 'disinterested,' less 'materialistic' way. If we were only animals and not vegetables as well—in plainer words, if we were clear of all concern in our metabolic processes, we should still enjoy the brilliance of the diamond's lustre and the depths of the gentian's blue. What we enjoy and consume—like Wundt's *gutes Glas*

[1] The masterly criticism of Wundt's tri-dimensional theory of feeling by his old *collaborateur*, Prof. Titchener (*op. cit.* Lect. IV), dispenses us from discussing it here.

[2] Cf. above, ch. vii, § 1, p. 175.

[3] Cf. ch. v, § 7, p. 134.

Bier—we call 'pleasant' or agreeable in the narrower sense: what we enjoy at the most sensuously but not sensually, aesthetically but not organically, we call beautiful.

But although the distinctive characteristics of these two classes of sensory feelings are different there is no sharp line to be drawn between the two. The sense of smell and, to a less extent, the sense of touch is not wholly devoid of what Titchener has called a 'quasi-aesthetic reference[1].' We may then now in a word or two explain what is meant by enlarging and contracting the field of consciousness and by agreeably increasing or decreasing certain elements therein. The difference in point is manifest on comparing the flow of spirits, buoyancy and animation that result from a certain duration of pleasurable sensations with the lowness or depression of spirits, the gloom and heaviness of heart, apt to ensue from prolonged physical pain. Common language, in fact, leaves us no choice but to describe these contrasted states by figures which clearly imply a difference in the range and variety of the presentations that occasion them, and in the quickness with which these succeed each other[2]. It is not merely that in hilarity as contrasted with dejection the train of ideas takes a wider sweep and shews greater liveliness; but as it were at the back of this, on the purely sensory level, certain organic sensations which are ordinarily indifferent acquire a gentle intensity, which seems to quicken and expand the ideational stream; as we see, for instance, in the effects of mountain air and sunshine. Or, on the other hand, these sensations become so violently intense as to drain off and ingulf all available energy in one monotonous corroding care, an oppressive weight which leaves no place for free movement, no life or leisure to respond to what are wont to be pleasurable solicitations[3].

[1] Perhaps even taste is not to be altogether excluded. "I hold as possible," says Volkelt, "that the taste of a noble wine may incidentally be refined (*entstofflicht*) up to the aesthetic level." "Der aesthetischen Werth der niederen Sinne," *Zeitschr. f. Psych.* xxix. (1902), p. 216. Cf. also Bullough, "The Aesthetic Appreciation of Colours," *Brit. Jl. of Psych.* ii. (1908), pp. 459 ff.

[2] This is one among many cases in which the study of a vocabulary is full of instruction to the psychologist. The reader who will be at the trouble to compare the parallel columns under the heading "Passive Affections," in Roget's *Thesaurus of English Words and Phrases*, 1912, §§ 827–843, will find ample proof both of this general statement and of what is said above in the text.

[3] Observation and experiment shew that the physical signs of pain in the higher animals consist in such changes as a lowered and weaker pulse, eduction of the

As regards the duration and the frequency of presentation, it is in general true that the algedonic effect soon attains its maximum, and then, if pleasant, rapidly declines, or even changes to its opposite. Pains in like manner may decline; but more slowly, and without in the same sense changing to pleasures. The like holds of too frequent repetition. Physiological explanation of these facts, good as far as it goes, is, of course, at once forthcoming: sensibility is blunted, time is required for restoration, and so forth; but at least we want the psychological equivalent of all this. In one respect we find nothing materially new; so far as continued presentation entails diminished intensity, we have nothing but diminished feeling as a consequence; so far as its continued presentation entails satiety there is an end to most or all of the agreeable accompaniments in which the pleasurable tone consisted. Yet in another way long duration and frequent repetition produce indirectly certain characteristic effects on feeling, in consequence of habituation and accommodation. We may sometimes get used to a painful presentation in such wise that we cease to be conscious of it as positively disagreeable, though its cessation is at once a source of pleasure. In like manner we come to require things simply because it is now painful to be without them, although their possession has

surface temperature, irregular respiration, dilatation of the iris, and the like. And so far as can be ascertained these effects are not altogether the emotional reaction to pain but in large measure its actual accompaniments, the physical side that we have called its *tone*. The following is a good description of these general characteristics of feeling: "En même temps, il se fait une série de mouvements généraux de flexion, comme si l'animal voulait se rendre plus petit, et offrir moins de surface à la douleur. Il est intéressant de remarquer que, pour l'homme comme pour tous les animaux, on retrouve ces mêmes mouvements généraux de flexion et d'extension répondant aux sentiments différents de plaisir et de douleur. Le plaisir répond à un mouvement d'épanouissement, de dilatation, d'extension. Au contraire, dans la douleur, on se rapetisse, on se referme sur soi; c'est un mouvement général de flexion" (C. Richet, *L'Homme et l'Intelligence*, 1884, p. 10). During the last twenty years or so numerous and minute investigations of the facts here described have been undertaken. By means of elaborate apparatus the pulse curves, respiration curves (both thoracic and abdominal), volume changes, and skeletal movements have all been registered while the person under experiment—the V.P. as the Germans call him —underwent some pleasurable or painful stimulation. The results so far have turned out to be more complicated and more conflicting than was anticipated, so that precise interpretation of details is often difficult. Still in the main what is here said is confirmed. Cf. C. S. Myers, *Experimental Psychology*, ch. xxiv.; A. Lehmann, *Die körperlichen Äusserungen psychischer Zustände*, 3 Theile, 1899–1905; H. Berger, same title, 2 Theile, 1904–7.

long ceased to be a ground of positive enjoyment. This loss (or gain) consequent on accommodation[1] has a most important effect in changing the lower sources of feeling for higher: it helps to transfer attention from mere sensations—where the affective state conditions the conative attitude—to what we may distinguish as interests—where, on the contrary, a conative attitude is the prior fact.

b. We come now to the formal side of sensory feelings. Certain sensations or movements not separately unpleasant become so when presented together or in immediate succession; and contrariwise, some combinations of sensations or of movements may be such as to afford pleasure distinct from, and often greater than, any that they separately yield[2]. Here again we find that in some cases the effect seems mainly to depend on intensity, in others mainly on quality. (i) As instances of the former may be mentioned the pleasurableness of a rhythmic succession of sounds or movements, of symmetrical forms and curved outlines, of gentle *crescendi* and *diminuendi* in sound, and of gradual variations of shade in colour; or the painfulness of flickering lights, 'beats' in musical notes, false time, false steps, false quantities, and the like. In all these, whenever the result is pleasurable, attention can be readily accommodated—is, so to say, economically meted out; and, whenever the result is painful, attention is surprised, balked, wasted. Thus we can make more movements and with less expenditure of energy when they are rhythmic than when they are not, as the performances of a ball-room or of troops marching to music amply testify. Of this economy we have also a striking proof in the ease with which rhythmic language is retained.

(ii) As instances of the latter may be cited such arrangements of notes or of colours as are called harmonious or the opposite.

[1] It has been definitely formulated, but in physiological language, by Bain as the Law of Novelty: "No second occurrence of any great shock or stimulus, whether pleasure, pain, or mere excitement, is ever fully equal to the first, notwithstanding that full time has been given for the nerves to recover from their exhaustion" (*Mind and Body*, p. 51). Cf. also his *Emotions and Will*, 3rd ed. p. 83. This is a principle of wide application: it goes a long way towards accounting for preferences between sensory qualities of the same class: "variety is charming."

[2] This is to some extent an anticipation of what Wundt afterwards called 'the principle of creative synthesis' (*Philosophische Studien*, x. (1894), p. 112). That conception is however to be found still earlier in Lotze's *Metaphysik*, 1879: cf. §§ 268, 271.

Harmony, however, must be taken to have a different meaning in the two cases. When notes harmonize there results, as is well known, a distinct pleasure over and above any pleasure due to the several notes themselves. On the other hand, those that are discordant are unpleasant in spite of any pleasantness they may have singly. Besides the negative condition of absence of beats, an arrangement of notes to be pleasant must fulfil certain positive conditions, sufficiently expressed for our purpose by saying that two notes are pleasant when they give rise to few combination-tones, and when among these there are several that coincide; and that they are unpleasant when they give rise to many combination- and over-tones, and when among these there are few or none that coincide. Too many tones together prevent any from being distinct and become a mere noise. An ingenious writer on harmony, in fact, compares the confusion of a discord to that of "trying to reckon up a sum in one's head and failing because the numbers are too high[1]." A different explanation must be given of the so-called harmonies of colour[2]. The pleasurable effect of graduations of colour or shade—to which, as Ruskin tells us, the rose owes its victorious beauty when compared with other flowers—has been already mentioned: it is rather a quantitative than a qualitative effect. What we are now concerned with are the pleasurable or painful combinations of different ungraduated colours. A comparison of these seems to justify the general statement that those colours yield good combinations that are far apart in the colour circle, while those near together are apt to be discordant. The explanation given, *viz.* that the one arrangement secures and the other prevents perfect retinal activity, seems on the whole satisfactory—especially if we acknowledge the tendency of all recent investigations and distinguish sensibility to colour and sensibility to mere light as both psychologically and physiologically two separate facts. Thus, when red and green are juxtaposed, the red increases the saturation of the green and the green that of the red, so that both colours are heightened

[1] Preyer, *Akustische Untersuchungen*, 1879, p. 59. Preyer also quotes Descartes (*Compendium Musicae*) as saying, "aurium imbecillitas sine labore majores sonorum differentias non posset distinguere" (p. 45). The limit referred to was six.

[2] Cf. Professor Sully's still valuable paper, "Harmony of Colours," *Mind*, O.S. iv. (1879), pp. 172 ff.

in brilliance. But such an effect is only pleasing to the child and the savage; for civilised men the contrast is excessive[1]. Colours less completely opposed, as red and blue, are preferred; then each is a rest from the other, so that as the eye wanders to and fro over their border different elements are active by turns. Red and orange or yellow and sap green, however, are bad, unless graduated, in that both exhaust in a similar manner: they lack variety and yet have no connexion.

c. It will be simplest to pass next to the other formal feelings. The more or less spontaneous working of imagination, as well as that direct control of this working necessary to thinking in the stricter sense, is always productive of pain or pleasure in varying degrees. Though the exposition of the higher intellectual processes has not yet been reached, there will be no inconvenience in at once taking account of their effects on feeling, since these are fairly obvious and largely independent of any analysis of the processes themselves. It will also be convenient to include under the one term 'intellectual feelings,' not only the feelings connected with certainty, doubt, comprehension, perplexity, and so forth, but also what the Herbartian psychologists—whose work in this department of psychology is classical—have called *par excellence* formal feelings —that is to say, feelings which they regard as entirely determined by the form of the flow of ideas, and not by the ideas themselves. Thus, be the ideas what they may, when their onward movement is checked by divergent or obstructing lines of association, and especially when in this manner we are hindered, say, from recollecting a name or a quotation (as if, *e.g.* the names of Archimedes, Anaximenes and Anaximander each arrested the clear revival of the other), we are conscious of a certain strain and oppressiveness, which give way to momentary relief when at length what is wanted rises into distinct consciousness and our ideas resume their flow. Here again, too, as in muscular movements, we have the contrast of difficulty—when 'thoughts refuse to flow' and we work, *invita Minerva*—

[1] An analogous change has been remarked in the case of music:—"Among the ancients we find the octave distinguished as the pleasantest and finest consonance. In mediaeval times the fifth was esteemed the most. Nowadays we are inclined to prefer the third as the interval that sounds sweetest and best" (Stumpf, *Beiträge zur Akustik u. Musikwissenschaft*, 1898, i. p. 31).

and of facility, when the appropriate ideas seem to unfold and display themselves before us like a vision before one inspired. To be confronted with propositions we cannot reconcile—*i.e.* with what is or appears inconsistent, false, contradictory—is apt to be painful; the recognition of truth or logical coherence, on the other hand, is pleasurable. The feeling in either case is, no doubt, greater the greater our interest in the subject-matter; but the mere conflict of ideas[1] as such is in itself depressing, while the discernment of agreement, of the one in the many, is a distinct satisfaction. Now in the former case we are conscious of futile efforts to comprehend together ideas which, the more distinctly we apprehend them for the purpose, prove to be only the more completely and diametrically opposed. We seem able to affirm and mentally envisage some only by denying and suppressing the representation of others; and yet we have to strive somehow to predicate them all and embody them together in one consistent whole. Attention is like a house divided against itself: there is effort but it is not effective, so the field of consciousness is narrowed and the flow of ideas arrested. When, on the other hand, we discern a common principle among diverse and apparently disconnected particulars, instead of all the attention we can command being taxed in the separate apprehension of these *disjecta membra*, they become as one, and we seem at once to have at our disposal resources for the command of an enlarged field and the detection of new resemblances.

d. Closely related to these formal intellectual feelings are certain of the higher aesthetic feelings. A reference to some of the commonplaces of aesthetical writers may be sufficient briefly to exhibit the leading characteristics of these feelings. There is a fairly wide agreement among civilised men as to what is beautiful and what is not, and it is the business of a treatise on empirical aesthetics from an analysis of these matters of fact to generalise the principles of taste—to do, in fact, for one source of pleasure and pain what we are here attempting in a meagre fashion for all. And these principles are the more important in their bearing upon the larger psychological question, because among aesthetic effects are reckoned only

[1] Cf. above, ch. vii, § 5, p. 202.

such as are pleasing or interesting[1] in themselves, apart from all recognition of utility, of possession, or of ulterior gratification of any kind whatever. Thus, if it should be objected that the intellectual satisfaction of consistency is really due to its utility, to the fact that what is incompatible and incomprehensible is of no avail for practical guidance, at least this objection will not hold against, say, the aesthetic principle of *unity in variety*. In accordance with this primary maxim of art criticism, at the one extreme art productions are condemned for monotony, as incapable of sustaining interest because 'empty,' 'bald,' and 'poor'; at the other extreme they are condemned as too incoherent and disconnected to furnish a centre of interest. And those are held as so far praiseworthy in which a variety of elements, be they movements, forms, colours or incidents, instead of conflicting, all unite to enhance each other and to form not merely a mass but a whole. Another principle that serves to throw light on our inquiry is that which has been called the principle of *economy*[2], *viz.* that an effect is pleasing in proportion as it is attained by little effort and simple means. The brothers Weber in their classic work on human locomotion discovered that those movements that are aesthetically beautiful are also physiologically correct; grace and ease, in fact, are well-nigh synonymous, as Herbert Spencer points out, and illustrates by apt instances of graceful attitudes, motions and forms. The same writer, again, in seeking for a more general law underlying the current maxims of writers on composition and rhetoric is led to a special formulation of this principle as applied to style, viz. that "economy of the recipient's attention is the secret of effect[3]."

Perhaps of all aesthetical principles the most wide-reaching, as well as practically the most important, is that which explains aesthetic effects by association. Thus, to take one example

[1] Tragedy can hardly be said simply to please and yet it is absorbingly interesting and yet withal the interest is 'disinterested.'

[2] Cf. Fechner, *Vorschule der Aesthetik*, ii. 263. Fechner's full style for it is "Princip der ökonomischen Verwendung der Mittel oder des kleinsten Kraftmasses." An interesting anticipation of this and other of Fechner's principles will be found in Bonnet's *Essai analytique sur les facultés de l'âme*, 1760, ch. xvii. *E.g.*: "Plus il y a de simplicité dans les moyens, plus l'*Attention* s'exerce agréablement" (p. 227).

[3] *Essays: Scientific, Political and Speculative*, "The Philosophy of Style," "Gracefulness"—differently numbered in different editions.

where so many are possible, the croaking of frogs and the monotonous ditty of the cuckoo owe their pleasantness, not directly to what they are in themselves, but entirely to their intimate association with spring-time and its gladness. At first it might seem, therefore, that in this principle there is nothing fresh that is relevant to our present inquiry, since a pleasure that is only due to association at once carries back the question to its sources; so that in asking why the spring, for example, is pleasant we should be returning to old ground. But this is not altogether true; aesthetic effects call up not merely ideas but ideals. A great work of art improves upon the real in two respects: it intensifies and it transfigures. It is for art to gather into one focus, cleared from dross and commonplace, the genial memories of a lifetime, the instinctive memories of a race; and, where theory can only classify and arrange what it receives, art—in a measure free from 'the literal unities of time and place'—creates and glorifies. Still art eschews the abstract and speculative; however plastic in its hands, the material wrought is always that of sense. We have already noticed more than once the power which primary presentations have to sustain vivid re-presentations, and the bearing of this on the aesthetic effects of works of art must be straightway obvious. The notes and colours, rhymes and rhythms, forms and movements, which produce the lower aesthetic feelings also serve as the means of bringing into view, and maintaining at a higher level of vividness, a wider range and flow of pleasing ideas than we can ordinarily command.

e. When we reach the level at which there is distinct self-consciousness[1], we have an important class of feelings determined by the relation of the presentation of self to the other contents of consciousness. And as the knowledge of other selves advances *pari passu* with that of one's own self, so along with the egoistic feelings appear certain social or altruistic feelings. The two have much in common; in pride and shame, for example, account is taken of the estimate other persons form of us and of our regard for them; while, on the other hand, when we admire or despise, congratulate or pity another, we have always present to our mind a more or less definite conception of self in like circumstances. It will

[1] Cf. below, ch. xv, § 2.

therefore amply serve all the ends of our present inquiry if we briefly survey the leading characteristics of some contrasted egoistic feelings, such as self-complacency and disappointment. When a man is pleased with himself, his achievements, possessions or circumstances, such pleasure is the result of a comparison of his present position in this respect with some former position or with the position of someone else. Without descending to details, we may say that two prospects are before him, and the larger and fairer is recognised as his own. Under disappointment or reverse the same two pictures may be present to his mind, but accompanied by the certainty that the better is not his or is his no more. So far, then, it might be said the contents of his consciousness are in each case the same, the whole difference lying in the different relationship to self. But this just makes all the difference to the contents of his consciousness for him, as we shall at once see if we consider its active side. Even the idlest and most thoughtless mind teems with intentions and expectations, and in its prosperity, like the fool in the parable, thinks to pull down its barns and build greater, to take its ease, eat, drink and be merry. The support of all this pleasing show and these far-reaching aims is, not the bare knowledge of what abundance will do, but the reflexion—These many goods are mine. In mind alone final causes have a place, and the end can produce the beginning; the prospect of a summer makes the present into spring. But action is paralysed or impossible when the means evade us—

> Now drops at once the pride of awful state,
> The golden canopy, the glittering plate—

and a bleak and wintry barrenness is filled with the emptiness of despair. In so far as a man's life consists in the abundance of the things he possesseth, we see then why it dwindles with these. The like holds where self-complacency or displicency rests on a sense of personal worth or on the honour or affection of others.

Summary and Result.

§ 3. We are now at the end of our survey of certain typical pleasurable and painful situations. What we set out to find, it will be remembered, was their respective characteristics when regarded

not objectively but 'in relation to the conscious subject itself.' Now in that duality of subjective and objective which all experience involves, feeling and attention exclusively belong to, and together make up, the subject-side[1]. Our inquiry then might be said to be concerned with the relation of feeling to attention so far as feeling is regarded as an effect. The answer to this inquiry which we seem to have attained is this: There is pleasure in proportion as a maximum of subjective activity or attention is effectively exercised, and pain in proportion as such effective attention is frustrated by restraints, distractions, shocks, or incomplete and faulty adaptations, or fails of exercise, owing to the narrowness of the field of consciousness or the slowness and smallness of its changes. Something must be said in explication of this formula, and certain objections that might be made to it must be considered. First of all the wide meaning here given to attention needs to be borne in mind—the *meaning* rather than the word, for which a better might perhaps be found[2]. In the next place it should be noted that, according

[1] Cf. above, ch. iii, § 2, p. 66.

[2] A reference to what has been already said (cf. ch. iii, § 2, pp. 66–70) might suffice; still, in view of an objection that has been made at this point, some further discussion will not be superfluous. "Suppose his bone to be snatched away from a hungry dog, can his painful feeling be adequately described as due to disconcerted attention and not rather as due to baffled conation." The latter description is obviously preferable as a first approximation to the analysis we are seeking to complete. It would probably satisfy 'the man in the street' as the former description certainly would not. For he is wont to regard himself as active in one way when he voluntarily attends, and in quite another way when striving, say, to appease his hunger. But psychologists nowadays for the most part are seeking to get beyond the old notion of a multiplicity of faculties which popular language still keeps afloat. The unity of the acting subject, it is held, implies some common ground underlying these superficially diverse functions, which moreover, it is thought, are sufficiently differentiated by their several objects. Even the old psychology was prepared to reduce mental faculties or powers to two main classes, the intellectual and the active, as Reid, for example, did. But it is now contended that the priority assuredly belongs to the latter: we are primarily conative and became intellectual, because knowledge proved subservient to action. So far we fully agree (cf. above, ch. i *fin.* p. 28).

But it does not therefore follow, as my critic supposes, that conation is more fundamental than attention. So far as attention is voluntary, conation is more or less implied: we do not voluntarily attend, that is to say, unless we are interested. So far as attention is non-voluntary—*though it is still active*—conation is not implied at all. In other words, experience as a *mutuum commercium* begins with non-voluntary attention to the objects or presentations with which the experient has to do, whereas conation necessarily presupposes this first acquaintance with them. 'Conscious' activity then is so far inclusive of, and yet wider than, conative activity. It is this

to this formula, feeling is determined partly by quantitative, or, as we might say, material conditions, and partly by conditions that are formal and so far qualitative. (1) As regards the former, both the intensity or concentration of attention and its diffusion or the extent of the field of consciousness have to be taken into account. Attention, whatever else it is, is limited—

Pluribus intentus minor est ad singula sensus—

to quote Hamilton's pet adage[1]. Moreover, as we have seen, attention requires time. If, then, attention be distributed over too wide a field, there is a corresponding loss of intensity, and so of distinctness: we tend towards a succession of indistinguishables—indistinguishable, therefore, from no succession. We must not have more presentations in the field of consciousness than will allow of some concentration of attention: a maximum diffusion will not do. A maximum concentration, in like manner, such as the mystic attempts[2]—even if there were no other objection to it—would seem to conflict with the general conditions of consciousness, inasmuch as a single simple presentation, however intense, would admit of no differentiation, and any complex presentation is in some sort a plurality. The most effective attention, then, as regards its quantitative conditions, must lie somewhere between the two zeros of complete indifference and complete absorption. If there be an excess of diffusion, effective attention will increase up to a certain point as concentration increases, but beyond that point will decrease if

'conscious' or subjective activity that is here meant by attention. Whether we talk of 'baffled conation' or of 'disconcerted attention' we mean in each case that the subject's activity is thwarted. Because of this thwarted activity the feeling evoked in each case, it is here maintained, is painful; and no more ultimate ground for that fact seems likely to be forthcoming. There is a difference between the two situations certainly: disconcerted attention in the ordinary or restricted sense for example belongs to the intellectual feelings (*c*), baffled conation belongs rather to what have been called 'egoistic feelings' (*e*); though the inchoate forms of these at the level of the hungry dog have not been noticed. But it is resemblance not difference that here alone concerns us. It was precisely from such manifold differences that we set out in search of a possible common ground of feeling. The feelings connected with conation however were not included among those examined because conation is itself primarily dependent on feeling and as such is dealt with later. Cf. ch. iii, § 1, p. 61 *init.* and ch. xi, § 2, pp. 276 f.

[1] *Lectures on Metaphysics*, i. p. 254.

[2] Cf. Höffding's *Psychologie*, 3rd ed., 1901, p. 65; Nayrac, *Physiologie et Psychologie de l'Attention*, 1906, pp. 158 ff.

this intensification continues to increase; and *vice versa*, if there be an excess of concentration. (2) But, inasmuch as these quantitative conditions involve a plurality of distinguishable presentations or changes in consciousness, the way is open for formal conditions as well. Since different presentations consort differently when above the threshold of consciousness together, one field may be wider and yet as intense as another, or intenser and yet as wide, owing to a more advantageous arrangement of its constituents[1].

The doctrine here developed, *viz.*, that feeling depends on efficiency, is in the main as old as Aristotle[2]; all that has been done is to give it a more accurately psychological expression, and to free it from the implications of the faculty theory[3], in which form it was expounded by Hamilton[4]. Of possible

[1] As it is impossible to say that any distinguishable presentation is absolutely simple, the hypothesis of subconsciousness would leave us free to assume that any pleasantness or unpleasantness that cannot be explained on the score of intensity is due to some obscure harmony or discord, compatibility or incompatibility, of elements not separately discernible. In the case of the sensations of the higher senses the assumption is certainly a tempting one. But though tempting, it is not really a very scientific procedure. If a particular presentation is pleasurable or painful in such wise as to lead to a redistribution of attention, it is reasonable to look for an explanation primarily in its connexion with the rest of the field of consciousness. Moreover, it is obvious—since what takes place in subconsciousness can only be explained in analogy with what takes place in consciousness—that, if we have an inexplicable in the one, we must have a corresponding inexplicable in the other. If the feeling produced by what comports itself as a simple presentation cannot be explained by what is in consciousness, we should be forced to admit that some presentations are unpleasant simply because they are unpleasant—an inexplicability which the hypothesis of subconsciousness might push farther back but would not remove.

[2] Cf. *Nich. Ethics*, x. chh. iv, v.

[3] It is these that make the ponderous critique of J. S. Mill (*Examination of Sir W. Hamilton's Philosophy*, ch. xxv) seem plausible. Most of it becomes pointless when in place of 'free and unimpeded exercise of powers and energies' innumerable we substitute 'subjective efficiency,' and regard feeling not as the state of an organ or faculty but as a state of the self. It is then hardly possible to parody the doctrine as "a theory that only tells us that pleasure is the result of a pleasurable state of the sense and a pleasure-giving quality in the object presented to it."

[4] The following 'dynamical theory'—a physiologically complementary doctrine to that of Aristotle—is advanced by Lehmann. Representing the metabolic process of nervous repair or assimilation by A, that of nervous waste or dissimilation by D, the ratio A/D is what Verworn has named 'biotonus'. Now says Lehmann:—"If during the activity of a central group of neurones, A and D are equal, *i.e.* $A/D=1$, this biotonic state is psychically manifested as pleasure (*Lust*), which increases with increasing values of A and D. But if D becomes greater than A, so that the biotonus

objections there are at least two that we must anticipate, and the consideration of which will help to make the general view clearer. First, it may be urged that, according to this view, it ought to be one continuous pain to fall asleep, since in this state our efficiency is rapidly restricted both as to intensity and range. This statement is entirely true as regards the intensity and substantially true as regards the range, at least of the higher consciousness: certain massive and agreeable organic sensations pertain to falling asleep, but the variety of presentations at all events grows less. But then the capacity to attend is also rapidly declining; even a slight intruding sensation entails an acute sense of strain in one sense, in place of the massive pleasure of repose throughout; and any voluntary concentration either in order to move or to think involves a like organic conflict, futile effort, and arrest of balmy ease. There is as regards the more definite constituents of the field of consciousness a close resemblance between natural sleepiness and the state of monotonous humdrum we call tedium or *ennui*; and yet the very same excitement that would relieve the one by dissipating the weariness of inaction would disturb the other by renewing the weariness of action: the one is commensurate with the resources of the moment, the other is not. Thus the maximum of effective attention in question is, as Aristotle would say, a maximum 'relative to us.' It is possible, therefore, that a change from a wider to a narrower field of consciousness may be a pleasurable change, if attention is more effectively engaged. Strictly speaking, however, the so-called negative pleasures of rest do not consist in a mere narrowing of the field of consciousness so much as in a change in the amount of concentration. Massive organic sensations connected with restoration take the place of the comparatively acute sensations of jaded powers forced to work. We have, then, in all cases to bear in mind this subjective relativity of all pleasurable or painful states of consciousness.

decreases and A/D becomes < 1, then this state is psychically manifested as pain (*Unlust*) which increases the more the less the value of A/D." *Psychophysiologie*, 1912, p. 369.

Does Pleasure differ qualitatively?

§ 4. There is however another and more serious difficulty to face. It has long been a burning question with theoretical moralists whether pleasures differ only quantitatively or differ qualitatively as well, whether psychological analysis will justify the common distinction of higher and lower pleasures or force us to recognise nothing but differences of degree, of duration, and so forth—as expounded, *e.g.* by Bentham, whose cynical *mot*, "pushpin is as good as poetry provided it be as pleasant," was long a stumbling block in the way of utilitarianism. The entire issue here is confused by an ambiguity in terms that has been already noticed: pleasure and pleasures have not the same connotation. By *a* pleasure or by pleasures we mean some assignable presentation or presentations experienced as pleasant—*i.e.* as affording pleasure; by pleasure simply is meant this subjective state of feeling itself[1]. The former, like other objects of knowledge, admit of classification in various ways: we may evaluate them as coarse or as noble, or, if we will, as cheap and wholesome. But while the *causes* of pleasure are manifold, the feeling itself is a subjective state, varying only in intensity and duration. The best evidence of this lies in the general character of the actions that ensue through feeling—the matter which has next to engage us. Whatever be the variety in the sources of pleasure, whatever be the moral or conventional estimate of their worthiness, if a given 'situation' is pleasant we seek so far to retain it, if painful to be rid of it: *caeteris paribus*, we prefer a greater pleasure before a less, a less pain before a greater[2].

[1] Professor Ladd, overlooking this distinction, is guilty of a serious *ignoratio elenchi* in arguing this question 'with a sort of ethical, even religious, atmosphere upon him' as Titchener caustically remarks. Cf. Ladd's *Psychology Descriptive and Explanatory*, 1894, pp. 182 ff.

[2] Hence in the Senate of the University of Cambridge, a member votes by saying *Placet* or *Non-placet* as the case may be. Of the above passage in the text an able writer has said: "This is the *tabula rasa* view of mind applied to conation, as every student of Condillac will recognise. The mind [on this view] has no essential conative character....It must be marked by hedonic experience before action can take place, and its pleasures and pains determine its activity absolutely" (D. Irons, *A Study in the Psychology of Ethics*, 1903, p. xiii). What is here overlooked is just that mutual implication of pleasure and preference, of feeling and conation above mentioned. A subject that is 'determined to activity by its pleasures or pains' must have 'an essentially conative character,' and is so far *self*-determined that its feelings are what

This is, in fact, the whole meaning of preference as a psychological term. Cf. on this point the important note 1 in § 3 of Kant's *Critique of the Practical Reason*, which entirely supports the position here maintained. Wisdom and folly are alike in so far as each prefers the course which the other rejects. Both courses cannot, indeed, be objectively preferable; that, however, is not a matter for psychology. But as soon as reflexion begins, exceptions to this primary principle of action seem to arise continually, even though we regard the individual as a law unto himself. Such exceptions, however, we may presently find to be apparent only[1]. At any rate the principle is obviously true before reflexion begins—true so long as we are dealing with actually present sources of feeling, and not with their re-presentations. To admit this is however psychologically to admit everything; for the further progress of experience can then be genetically explained.

Assuming then that we start with only quantitative variations of feeling, we have to attempt to explain the development of formal and qualitative differences in the character given to the grounds of feeling. But, if aversions and pursuits result from incommensurable states of pain and pleasure, there seems no way of saving the unity and continuity of the subject except by speculative assumption—the doctrine known as the freedom of the will in its extremest form. The one position involves the other, and the more scientific course is to avoid both as far as we can.

The question, then, is: How, if action depends in the last resort on a merely quantitative difference, could it ever come about that what we call the higher sources of feeling should supersede the lower? If it is only quantity that turns the scales, where does quality come in; for we cannot say, *e.g.* that

they are simply because it is what it is. "Any feeling (*affectus*) of a given individual differs from the feeling of another individual just as far as the essence of the one differs from the essence of the other," said Spinoza (*Ethics*, III. prop. 57). An individual subject then can never be conceived as blankly indifferent, but always as 'interested' and purposive, at once receptive and active, that is, as always interacting as a more or less determinant self with a more or less differentiated environment. But cf. above, ch. i, § 4, p. 20, ch. ii, § 5, p. 54. How far I am from holding the hedonic doctrine Dr Irons imputed to me is shewn at length elsewhere. Cf. *The Realm of Ends*, pp. 339–49.

[1] Cf. ch. xi, § 3, pp. 284 f.

the astronomer experiences a greater thrill of delight when a new planet rewards his search than the hungry savage when he finds a clump of pig-nuts? *Tempora mutantur nos et mutamur in illis* contains the answer in brief. We shall understand this answer better if we look at a parallel case, or what is really our own from another point of view. We distinguish between higher and lower forms of life: we might say there is more life in a large oyster than in a small one, other things being equal, but we should regard a crab as possessing not necessarily more life—as measured metabolically—but certainly as manifesting life in a higher form. How, in the evolution of the animal kingdom, do we suppose this advance to have been made? The tendency at any one moment is simply towards more life, simply towards growth; but this process of self-conservation imperceptibly but steadily modifies the self that is conserved. The creature is bent only on filling its skin; but in doing this as easily as may be it gets a better skin to fill, and accordingly seeks to fill it differently[1]. Though cabbage and honey are what they were before, they have changed relatively to the grub now that it has become a butterfly. So, while we are all along preferring a more pleasurable state of consciousness before a less, the content of our consciousness is continually changing; the greater pleasure still outweighs the less, but the 'pleasures' to be weighed are either themselves different, or at least are the same for us no more. What we require then, is not that the higher pleasures shall always afford greater pleasure than the lower did, but that to advance to the level of life on which pleasure is derived from higher objects shall on the whole be more pleasurable and less painful than to remain behind. And this condition seems to be met first by the opposite effects of accommodation and novelty, referred to above[2]. It is impossible for us now to realise the absorbed attention to its present sensations which engrosses that 'blooming, buzzing confusion' that William James called a baby. If such novelty never wore off, interests, that have roots in the past and carry expectations of well or ill

[1] There is here some anticipation of the generalisation formulated by Wundt as 'the principle of the heterogony of ends': "The end objectively attained usually (*regelmässig*) realises more than the end which the experient previously intended." *System der Philosophie*, 1889, p. 337. There is a hint of this already in Aristotle's τυχή

[2] Cf. § 2, p. 255, n. 1.

in the future, would never concern it at all. On still higher levels this condition is again met by the important fact that attention can be more effectively expended by what we may therefore call improvements in the form of the field of consciousness. But when all is said and done a certain repugnance is apt to arise against any association of the differences between the higher and lower feelings with differences of quantity. Yet such repugnance is but another outcome of the common mistake of supposing that the real is obtained by pulling to pieces rather than by building up.

> Do not all charms fly,
> At the mere touch of cold philosophy?

No logical analysis—nay, further, no logical synthesis—is adequate to the fulness of things. For the rest, such aversion is wholly emotional, and is no more rational than the disgust we feel on first witnessing anatomical dissections[1].

[1] "To look at anything in its elements makes it appear inferior to what it seems as a whole. Resolve the statue or the building into stone and the laws of proportion, and no worthy causes of the former beautiful result seem now left behind. So, also, resolve a virtuous act into the passions and some quantitative law, and it seems to be rather destroyed than analysed, though after all what was there else it could be resolved into?" Sir A. Grant, *Aristotle's Ethics*, Essay IV, "The Doctrine of the Mean," i. 210 (2nd ed.).

CHAPTER XI

EFFECTS OF FEELING: EMOTION AND ACTION

The James-Lange Theory of Emotion.

§ 1. We turn now from the objective causes of feeling to the objective effects, the motor reactions or manifestations of the affected subject. We have already seen reasons for regarding as primordial both the diffusive movement and the organic excitement that still follow immediately upon feeling and are always present as a common characteristic in every variety of emotional expression[1]. We have accordingly looked upon this primitive response as the immediate effect of feeling, as psychologists, in agreement with common-sense, have usually done. But the late William James attempted to turn this position upside down. A very similar view was advanced independently and almost at the same time by C. Lange, a Danish professor of medicine; hence the name 'James-Lange theory[2].' This theory then we must examine before proceeding further.

"Common-sense says: we lose our fortune, are sorry and weep; we meet a bear, are frightened and run; we are insulted by rivals, are angry and strike." So W. James begins, but he continues: "The hypothesis here to be defended says that this order of sequence is incorrect: that the one mental state is not immediately induced by the other, that the bodily manifestations must first be interposed between, and that the more rational statement is that we feel sorry because we cry, angry because

[1] Cf. above, ch. ii, § 5, pp. 52 ff.

[2] As a matter of fact the same idea had occurred as early as 1846 to the German anatomist, J. Henle, to whom James expressly refers (cf. Stumpf, "Ueber den Begriff der Gemüthsbewegung," *Zeitschr. für Psych.* Bd. xxi. 1899, p. 68) and apparently also to Czolbe whose view F. A. Lange accepts. Cf. Lange's *Geschichte des Materialismus*, 1877, Bd. II. p. 373.

we strike, afraid because we tremble, and not that we cry, strike or tremble because we are sorry, angry or fearful as the case may be[1]." Thus the sequence denied is the psychological sequence commonly upheld. The sequence maintained is a merely psychophysical sequence. What we regard as active, the primitive subjective response, is not really active at all: we have come to call it emotion or expression, but in fact it is only commotion or impression—nothing but "*sensational* processes due to inward currents set up by physical happenings, the reflex effect of the *exciting object*....The questions now are *causal*: 'Just what changes does this object and what changes does that object excite?' and 'How come they to excite these particular changes, and not others?'[2]" But we have not had to wait for the James-Lange theory to raise these questions, and surely there are none that bring out its defects more glaringly. 'Objects' that determine bodily changes by means of preorganized mechanism and without psychical interposition might fairly be taken to be physical objects; and indeed the whole process, we note, is expressly described as a reflex effect. But only very slovenly physiologists talk of 'objects' exciting reflexes: it is even inexact to say that bare sensations do so. All that reflex action requires is a *stimulus*. "The essence of a reflex action," says Foster, "consists in the transmutation, by means of the irritable protoplasm of a nerve-cell, of afferent into efferent impulses." Let James be confronted first by a caged bear and next by a bear at large: to the one object he presents a bun, and to the other a clean pair of heels; or let him first be thrilled by a Beethoven symphony and then by a Raphael Madonna. Will he now undertake to account, in terms of stimuli and their reflex effects, for the very different results of the similar 'causes' in the one case, or for the similar results of the very different 'causes' in the other?

Such a challenge would certainly be declined, and Professor James would remind us that in his nomenclature "it is the total situation which is the 'object' on which the reaction of the subject is made[3]." But there is just a world of difference between

[1] *Mind*, 1884, ix. pp. 188 ff.; and again, *Principles of Psychology*, 1890, ch. xxv. C. Lange's work (1885) was translated into German under the title *Ueber die Gemüthsbewegungen: eine psychophysiologische Studie*, in 1887.

[2] *Principles of Psychology*, ii. p. 453.

[3] "Physical Basis of Emotion," *Psychological Review*, i. (1894), p. 518 *n.* In this

'object'=stimulus transformed by preorganized mechanism[1] into an efferent discharge, and 'object'=total situation to which the subject *reacts*. The attempt to explain emotion causally on the lines of the former meaning lands us in the conscious automaton theory: this James has elsewhere rejected. The latter meaning, on the other hand, involves the recognition, first of the subject's attitude as essential to the reaction, and next, of this reaction as determined by pleasure or pain, *i.e.* by some 'interest' resting ultimately on these. Such, with scarcely an exception, has always been, and still remains, the analysis of emotion in vogue among psychologists. It brings to the fore a new category, that of worth or value, one wholly extraneous to the physiologist's domain, and repugnant to the mechanical analogies which may be there in place. No doubt such a concept is attained only by reflexion, but the experiences from which it is drawn, the affective states and the conative tendencies of the subject experiencing, must have preceded. From this central standpoint alone the objective situation has a worth which explains the subject's attitude, and here alone can we find the clue which enables us to answer the questions of cause that James propounded.

Now experimental investigations[2] have shewn that such vasomotor and respiratory changes as are prominent in emotional excitement are present also to some extent in all forms of conscious activity. The more unwonted and interesting the situation, the more diffused movements predominate over movements that are purposive; the further assimilation, both on the cognitive and the reactive side, has advanced, the more diffusion is replaced by restriction and adaptation. But the essential point is that both these factors of conscious activity—organic reflexes and purposive reactions—are always present; we cannot, therefore, regard them as distinct and also separate processes, as

reply to criticisms James is supposed to have modified his views: it would be nearer the truth to say that—besides admitting 'the slapdash brevity' in which they were expressed—he has made admissions incompatible with them. So too Professor Baldwin thought. Cf. the *Postscript* to his article in the same volume of the *Psychological Review*, p. 621.

[1] How the mechanism came to be organized in the first instance we are not told; but facts tend to shew that organization is the result of mind, not mind the result of organization.

[2] For a bibliography of these up to date see J. F. Shepard's article "Organic Changes and Feeling," *Am. Jl. of Psychology*, xvii. (1906), p. 559, or Ebbinghaus' *Psychologie* (1911), i. p. 564.

the physiologist, for example, regards the functions of striped, and unstriped muscle. Unless we are prepared to treat *all* activity as reflex—as the physiologist may quite well do, if he keep strictly to his own point of view—it does not seem possible to treat emotional expression as simply so much organic sensation with which the subject's conative attitude has no connexion at all.

However, it soon becomes clear that James never seriously proposed the '*causal* questions' we have considered. His main position is that an emotion is nothing more than a sum of organic sensations; but while seeking to establish this position he was led on to the second and very different statement which we have now in turn to examine. Here, so far from suggesting inquiries as to the 'objects that excite' emotion, his point now is to maintain that in so far as the bodily cause is set up, *be the means what they may*, in so far the emotion is present, even though it be 'objectless.' And here, at length, the contention is quite explicit: Emotions *are* a certain complex of organic sensations, and such complexes *are* emotions: the two are not merely coexistent, they are identical. The exciting object is thus, after all, physiological; that is to say, it is whatever stimulus sets up the sensations. It cannot be psychological, 'the total situation for the reacting subject'; for in this sense the emotion, it is maintained, may be 'objectless.' In support of his position Professor James first of all cites pathological cases as evidence of such objectless emotion[1]. Objectively 'objectless' emotion may quite well be, but that it is ever subjectively 'objectless' these cases are far from proving. They simply shew that the objects were vague and imaginary. It is well known, of course, that organic disturbances are prone to evoke the sort of imagery associated with them in the past. But till this imagery is actually evoked the organic disturbance is not emotional at all. No doubt very trivial occasions suffice to arouse such associations even in sane minds, if they have unsound bodies; but when both mind and body are diseased together, there need be no objective occasion at all; subjective occasions there still are in plenty as a careful inspection of the cases cited will shew. As to emotional excitement induced by intoxication, and so far *groundless*, the most that can safely be said is that the 'object' may be vague,

[1] *Principles of Psychology*, ii. pp. 458 ff.

ill-defined and shifting, but not that it is absent altogether. In tracing the genesis of mental processes, however, we must interpret the abnormal by the normal, not the normal by the abnormal.

James next follows up these accounts of cases in which certain visceral sensations seemed to suffice for emotion, in the absence of any 'reason' for it, with accounts of other cases in which emotional apathy seemed to keep pace with sensory anaesthesia[1], arguing that, according to his theory, a subject absolutely anaesthetic should experience no emotion, although, if not paralytic, "emotion-inspiring objects might evoke the usual bodily expression from him[2]." We have here then the converse or complementary half which is supposed to clinch the whole argument. Some four or five of these apathetic cases are cited: two of them are regarded by the mental pathologists who describe them as adverse to Professor James's theory[3]. Two were cases of 'anaesthesia artificially induced by hypnotic suggestion'; but as James himself says, "of course we must bear in mind the fallibility of experiments made by the method of 'suggestion,'" and certainly these cases seem to lack the simplicity of truth. And of the last case[4] he also candidly observes: "We must remember that the patient's inemotivity may have been a co-ordinate result with the anaesthesia of his neural lesions, and not the anaesthesia's mere effect"—surely the most natural inference. In so far as there was visceral anaesthesia the corresponding element in emotional expression must necessarily have been lacking. But this patient testified to some emotion for all that, though his senses were so dull that he was sure of nothing, and his muscles so feeble that he could scarcely speak or walk. Still, when not asleep he knew that he was miserable and spoke of waking as 'anguish.' The sight of his wife at least momentarily affected him, and he is reported as being 'often afraid' that his daughter might be dead and as saying: "If she should die I believe I should not survive her."

[1] *Psych. Rev.* i. pp. 526 ff. [2] *Principles*, ii. p. 455.

[3] G. H. J. Berkeley, "Two Cases of General Cutaneous and Sensory Anaesthesia without marked Psychical Implications," *Brain* (1891), xiv. pp. 441 ff.

[4] P. Sollier, "Recherches sur les rapports de la Sensibilité et de l'Émotion," *Revue philos.* xxxvii. (1894), pp. 241 ff.—an article written to support the James-Lange theory—which theory, however, the writer afterwards abandoned.

His general apathy detracts nothing from all this but rather makes it more striking. Again in a second and more recent case of visceral anaesthesia[1], emotion was so far from being absolutely abolished that the patient was continually distressed at the loss of its usual sensory accompaniments, and so—as the incompetent reporter naïvely remarks—"at the very time when she complained of not experiencing some emotion appropriate to the circumstances, she gave all the signs of [having] such emotion." In short, so far from being completely apathetic, she was so anxious to be cured of her partial apathy, that she left her home and her family in the hope of being cured of it in hospital. Finally, Professor Sherrington has shewn that even in a dog deprived of all consciousness of visceral sensations—anger, joy, disgust, and fear—still remained as evident as before[2].

To sum up:—The James-Lange theory is psychologically and biologically absurd, a flagrant *ὕστερον πρότερον*: its appeal to pathology is futile in fact, and false in method. Emotion is *always* the expression of feeling, and feeling—for the subject that feels—has *always* some objective ground. Emotion is *never* the reception of impressions, but is always the response to them. This response consists normally in a twofold, more or less diffuse, excitation, which (*a*) alters respiration, circulation and other vegetal processes, and (*b*) braces or relaxes various voluntary muscles in ways characteristic of the so-called sthenic or asthenic emotions—anger or terror, for instance. The James-Lange theory after all has done nothing to shew (analytically) that the motor components are not as essential to emotional expression as the organic, or (genetically) that the organic components are not as truly subjectively determined as the motor are. From first to last it is but one of many instances of physiology misapplied[3].

[1] D'Allonnes, "Rôle des sensations internes, etc." *Rev. philos.* lx. (1905), pp. 592 ff. Appeared after W. James's death.

[2] "Experiments on the Value of Vascular and Visceral Factors for the Genesis of Emotion," *Proc. Roy. Soc.* (1900), lxvi. pp. 390 ff.; and *Nature*, lxii. pp. 328 ff. Further confirmation of Sherrington's work has been recently obtained by an Italian physiologist, G. Pagano. Cf. *L'Année psychologique*, 1914, pp. 483 f.

[3] A brief and effective summary of the psychophysical objections to this theory is given by Lehmann (*Grundzüge der Psychophysiologie*, 1912, pp. 725–728) who incidentally remarks that Lange (his fellow-countryman) has actually, though not explicitly, abandoned it.

Emotional Expression and Purposive Action.

§ 2. We may then safely continue to regard the diffused organic excitement of emotional expression as the effect of the feeling underlying the emotion and not as the cause of the motor excitation to which that feeling leads; in other words we may still look upon the expression of emotion as active not passive. So we may now at length proceed to inquire whether in these manifestations or effects of feeling there is any contrast corresponding to the opposing extremes of pleasure and pain. But first some distinction is called for among the various movements expressive of emotion; for in many of these there is more than the direct effect of feeling regarded as merely pleasure or displeasure. It has been usual with psychologists to confound emotions with feeling, because intense feeling is essential to emotion. Strictly speaking, however, a state of emotion is a complete state of mind, a psychosis, and not a psychical element, if we may so say. Thus in anger, over and above pain, we have a more or less definite object as its cause, and—added to the diffused 'wave of excitement'—we have a certain characteristic reactive display consisting of frowns, compressed lips, erect head, clenched fists, &c. in a word, the combative attitude, as its effect. And similarly of other emotions: the primary effects of feeling are overlaid by what Darwin called 'serviceable associated habits.' The purposive actions of an earlier stage of development, that is to say, become the emotive outlet of a later stage though doubtless somewhat 'atrophied.' In the circumstances in which our ancestors worried their enemies we only shew our teeth. We must, therefore, leave aside the more complex emotional manifestations and look only to the simplest effects of pleasure and of pain, to see if we can discover any fundamental contrast between these[1].

[1] Of the three principles that Darwin advanced in explanation of emotional expression the last seems both psychologically and physiologically more fundamental than the more striking 'principle of serviceable associated habits' which he placed first. His last principle he called 'the principle of the direct action of the nervous system'—a psychologically inappropriate name for what Bain had previously called 'the law of diffusion'—which it is now proposed to call 'the dynamogenic law.' (Cf. James, *Principles*, ii. pp. 372, 379, 381.) But it is questionable if the more definite term is here an improvement. The expression of the asthenic emotions indicates not power but the loss of it, so far as voluntary movements go; and even the reflexes that occur are largely due to the *withdrawal* of the controlling inhibition of the higher

Joy finds expression in dancing, clapping the hands and meaningless laughter, and these actions are not only pleasurable in themselves but such as increase the existing pleasure. Attention is not drafted off or diverted; but rather the available resources seem reinforced, so that the old expenditure is supported as well as the new. To the pleasure on the receptive side is added pleasure on the active side. The violent contortions due to pain, on the other hand, are painful in themselves, though less intense than the pains from which they withdraw attention; they are but counter-irritants that arrest or inhibit still more painful thoughts or sensations. Thus, according to Darwin, "sailors who are to be flogged sometimes take a piece of lead in their mouths in order to bite it with their utmost force, and thus to bear the pain." When in this way we take account of the immediate effects as well as of the causes of feeling, we find it still more strikingly true that only in pleasurable states is there an efficient expenditure of attention. It is needless now to dwell upon this point, although any earlier mention of it would hardly have been in place.

Nevertheless we should fail to realise the contrast between the motor effects of pleasure and of pain if we merely regarded them as cases of diffusion. The intenser the feeling the intenser the reaction, no doubt, whether it be smiles or tears, jumping for joy, or writhing in agony. But in the movements consequent on pleasure the diffusion is the result of mere exuberance, an overflow of good spirits, as we sometimes say, and these movements, as already remarked, are always comparatively purposeless or playful. Hence Darwin's principle of serviceable habits is not exemplified in them. Even the earliest expressions of pain, on

centres. As this is a point of some importance a brief quotation from what one might call a buried scientific classic may be allowed:—"The higher nervous arrangements, evolved out of the lower, keep down the lower, just as a government evolved out of a nation controls as well as directs that nation. If this be the process of evolution, then the reversive process of dissolution is not only a 'taking off' of the higher, but is at the very same time a 'letting go' of the lower. If the governing body of this country were destroyed suddenly, we should have two causes of lamentation: (1) the loss of services of eminent men, and (2) the anarchy of the now uncontrolled people." (I. Hughlings Jackson, *Croonian Lectures*, 1884, Reprint, p. 16.) The immediate reference is to an epileptic seizure but its application here is obvious.

It was in illustration of the law of diffusion that Darwin described the movements expressive of joy and grief, emotions which in some form or other are surely the most primitive of any.

the contrary, seem but so many efforts to escape from the cause of it; in them there is at least the blind purpose to flee from a definite ill: in pleasure there is only the enjoyment of present fortune. We may then fairly say that, though there is no conation without feeling, there may be feeling without conation. If so the analytical distinction between feeling and conation rests upon a real difference. But the inseparable connexion between feeling and attention or conscious activity is not thereby denied: what we recognise is that pain is functionally a draft on this activity, pleasure functionally an enhancement of it. The difference in the latter case betokens primarily reinforcement; in the former it betokens defence. Thus in the end we find the old law of self-conservation so far confirmed[1].

From Plato downwards psychologists and moralists have been fond of discussing the relation of pleasure and pain. It has been maintained that pain is the first and more fundamental fact, and pleasure nothing but relief from pain; and, again, on the other side, that pleasure is prior and positive, and pain only the negation of pleasure. So far as the mere change goes, it is obviously true that the diminution of pain is *pro tanto* pleasant, while the diminution of pleasure is *pro tanto* painful; and if relativity had the unlimited range sometimes assigned to it this would be all we could say. But we must sooner or later recognise the existence of a comparatively fixed neutral state, deviations from which, of comparatively short duration and of sufficient intensity, constitute noticeable states of pleasure or pain. Such states, if not of liminal intensity, may then be further diminished without reversing their pleasurable or painful character. The turning-point here implied may, of course, gradually change too—as a result, in fact, of the law of accommodation[2]. Thus a long run of pleasure would raise 'the hedonistic zero,' while—to the small extent to which accommodation to pain is possible—a continuance of pain would lower it. Still such admission makes no material difference where the actual feeling of the moment is alone concerned and retrospect out of the question. On the whole it seems, therefore, most reasonable to regard pleasure and pain as emerging out of a neutral state, which is prior to and distinct from both—not a state of absolute

[1] Cf. above, ch. x, § 2, p. 246.

[2] Cf. above, ch. iv, § 5, p. 84.

indifference, but of simple contentment, marked by no special active display. It is by reference to such state of tranquillity or *ἀπάθεια* that we see most clearly the superior volitional efficacy of pain upon which pessimists love to descant. "Nobody," said von Hartmann, "who had to choose between no taste at all for ten minutes or five minutes of a pleasant taste and then five minutes of an unpleasant taste, would prefer the last." Most men and all the lower animals are content 'to let well alone.'

To ascertain the origin and progress of purposive action it seems, then, that we must look to the effects of pain rather than to those of pleasure[1]. It is true that psychologists not infrequently describe the earliest purposive movements as appetitive; or at least they treat appetitive and aversive movements as co-ordinate and equally primitive, pleasure being supposed to lead to action for its continuance as much as pain to action for its removal. No doubt, so soon as the connexion between a pleasurable sensation and the appropriate action is completely established, as in the infant imbibing food, the whole process becomes self-sustaining until satiety begins. But the point is that such facility was first acquired under the teaching of pain—the pain of unsatisfied hunger. The term 'appetite' is apt both by its etymology and its later associations to be misleading. What are called the 'instinctive' appetites[2] are—when regarded from their active side—movements determined by some existing uneasy sensation. So far as their earliest manifestation in a particular individual is concerned, this urgency seems almost entirely of the nature of a *vis a tergo*; and the resulting movements are only more definite than those simply *expressive* of pain because of inherited pre-adaptation; on which account, of course, they are called 'instinctive.' Still what one inherits another must have acquired, and we have agreed here to leave heredity on one side and consider only the original evolution.

If none but psychological causes were at work this evolution would be very long and in its early stages very uncertain. At first, when only random movements ensue, we may fairly suppose both that the chance of at once making a happy hit would be small and that the number of chances, the space for repentance,

[1] Cf. above, ch. ii, § 5, pp. 52–55.

[2] The play of a kitten is instinctive but it is not appetitive: it is a case not of craving but of fruition, in other words it is not purposeful but just playful.

would also be small. Under such circumstances natural selection would have to do almost everything and subjective selection almost nothing. So far as natural selection worked, we should have, not the individual subject making a series of tries and perfecting itself by practice, as in learning to dance or swim; but we should have those individuals whose structure happened to vary for the better surviving, increasing, and displacing the rest. How much natural selection, apparently unaided, can accomplish in the way of complicated adjustment we see in the adaptation of the form and colour of plants and animals to their environment. Both factors, in reality, operate at once, and it would be hard to fix a limit to either; though natural selection seems to lose in comparative importance as we advance towards the higher stages of life.

But psychologically we have primarily to consider subjective selection, *i.e.* first of all, the connexion of particular movements with particular sensations through the mediation of feeling. The sensations here concerned are mainly painful stimulations from the environment, the recurring pains of innutrition, weariness, &c., or the pleasurable sensations, due to the satisfaction of these organic wants. This satisfaction, though not a mere 'filling-up' —as Plato at one time contended—is still preceded by pain; but over and above the removal of this it implies, however, a certain surplus of positive good. There seem only a few points to notice. (*a*) When the movements that ensue through pleasure are themselves pleasurable there is ordinarily no ground for singling out any one; such movements simply enhance the general enjoyment, which is complete in itself and so far contains no hint of anything beyond. (*b*) Should one of these spontaneous movements of pleasure chance to cause pain, no doubt such movement is speedily arrested. Probably the most immediate connexion possible between feeling and purposive action is that in which a painful movement leads through pain to its own suppression. But such connexion is not very fruitful of consequences, inasmuch as it only secures what we may call internal training and does little to extend the relation of the individual to its environment. (*c*) Out of the irregular, seemingly aimless, movements that indirectly relieve pain some one may chance to remove the cause of it altogether. Upon this movement, the last of a tentative series, attention, released from the pain, is

concentrated; and in this way the evil and the remedy become so far connected that, when the painful situation recurs, the many diffused movements become less, and the one purposive movement more, pronounced: the one effectual way is at length established and the others, which were but palliatives, disappear. (*d*) When things have advanced so far that some one definite movement is at once 'released' by the painful sensation which it cures or alleviates, it is not long before a still further advance is possible: then we have *preventive* movements. Thanks to the orderliness of things, dangers have their premonitions. After a time, therefore, the occurrence of some warning sensation revives the image of the harm that has previously followed in its wake, and a movement—either like the first, or another that has to be selected from the random tries of fear—occurs in time to avert the impending ill. (*e*) In like manner, provided the cravings of appetite are felt, any signs of the presence of pleasurable objects prompt to movements for their enjoyment or appropriation. In these last cases we have action determined by percepts. The cases in which the subject is incited to action by ideas, as distinct from percepts, of pleasurable objects require a more detailed consideration; such are the facts mainly covered by the term 'desire.'

Desire.

§ 3. By the time that ideas are sufficiently self-sustaining to form trains that are not wholly shaped by the circumstances of the present, entirely new possibilities of action are opened up. We can 'desire' to live again through experiences of which there is nothing actually present to remind us, and we can 'desire' a new experience which as yet we only imagine. We often, no doubt, apply the term to the simpler states mentioned under (*e*) in the last paragraph: the fox in the fable is said to have desired the grapes he vilified because out of his reach. Again, at the other extreme we sometimes speak of a desire for honour, or for wealth, and the like; but such are not single states of mind; they are rather habitual 'pursuits' of general 'ends' in which we are personally interested. Abstractions of this kind belong, however, to a more advanced stage of development than that at which desire begins, and of necessity imply more

complicated grounds of action than we can at present examine[1]. The essential characteristics of desire will be more apparent if we suppose a case somewhere between these extremes. A busy man reads a novel at the close of the day, and finds himself led off by a reference to angling or tropical scenery to picture himself with his rods packed *en route* for Scotland, or booked by the next steamer for the fairyland of the West Indies. Presently, while the ideas of Jamaica or of fishing exploits are at least as vividly imagined as before, the fancied preparations receive a rude shock as the thought of his work recurs. Some such case we may take as typical and attempt to analyse it.

First of all it is obviously true, at least of such more concrete desires, that what awakens desire at one time fails to do so at another, and that we may even be so absorbed in, or so satisfied with, the present as not to be amenable to (new) desires at all. For a particular individual a given x or y cannot, then, be called desirable *per se*[2]; if it is actually desired it is so in relation to some situation then and there presented or contemplated. Of what nature is this relation? (1) At the level of psychical life that we have now reached, very close and complete connexions have been formed between ideas and the movements necessary for their realisation; so that when the idea is vividly present these movements are apt to be nascent. This association is the result of subjective selection—*i.e.* is primarily mediated by feeling—but being once established, it persists like other associations independently of its original ground. (2) Those movements are especially apt to become nascent which have not been recently executed, which are therefore fresh and accompanied by the organic sensations of freshness; so also, on the other hand, those movements which are frequently executed, and therefore readily aroused. The latter fact, which chiefly concerns habitual desires, may for the moment be left aside. (3) At times, then, when there is a lack of present interests, or when these have begun to wane, or when there is positive pain, attention is ready to fasten on any new suggestion that calls for more activity, requires a change of active attitude, or promises relief. Such spontaneous concentration of attention

[1] Cf. below, ch. xvi.

[2] The ambiguity of this term in ethical discussion is well known: as here used, that is psychologically, it means simply what *can* be desired not what *ought* to be.

ensures greater vividness to the new idea, whatever it be, and to its belongings. In some cases this greater vividness may suffice. This is most likely to happen when the new idea affords intellectual occupation, and this is at the time congenial; it is common too in indolent and imaginative persons who prefer dreaming to doing. (4) But when the new idea does not lead off the pent-up stream of action by opening out fresh channels, when, on the contrary, it keeps this directed towards itself while the attitude is one of interested expectation, then we have desire. In such a state the intensity of the re-presentation is not adequate to the intensity of the incipient action it has aroused. This is most obvious when the latter is intended to realise the actual in perception, and the former remains only an idea. If it were possible by concentrating attention to convert ideas into percepts, there would be an end of most desires: "if wishes were horses beggars would ride." (5) But our voluntary power over movements *is* in general of this kind: here the fiat may become fact. When we cannot hear we can at least listen, and, though there be nothing to fill them, we can at least hold out our hands. It would seem, then, that the ground of desire lies essentially in this excess of the active reaction above the intensity of the re-presentation (the one constituting the 'motive,' the other being merely the idea of the 'end' of desire, or the desideratum). Further this disparity would seem to rest ultimately on the fact that movements have, and sensations have not, a subjective initiative. (6) Such impulse or striving to act will, as already hinted, be stronger the greater the available energy, the fewer the present outlets, and, habits apart, the fresher the new opening for activity. (7) Finally, it is to be noted that, when such inchoate action can be at once consummated, desire ends where it begins: to constitute a definite state of desire there must be an obstacle to the realisation of the desideratum—not an absolute one, for then, at the most, we should but long or wish—but *only* an obstacle to its realisation by means of the actions its representation has aroused.

However the desire may have been called forth, its intensity is primarily identical with the strength of this impulse to action. It has no definite or constant relation to the amount of pleasure that may result from its satisfaction. The feeling directly consequent on desire as a state of want and restraint is one of pain,

and the reaction which this pain sets up may either suppress the desire or prompt to efforts to avoid or overcome the obstacles in its way. To inquire into these alternatives would lead us into the higher phases of voluntary action; but we must first consider the relation of desire to feeling more closely.

Instances are by no means wanting of very imperious desires accompanied by the clear knowledge that their gratification will be positively distasteful[1]. On the other hand it is possible to recollect or picture circumstances, known or believed to be intensely pleasurable, without any desire for their realisation being awakened at all: we can recall or admire without desiring. There is then no fixed and invariable connexion between desire and feeling. Yet there are many psychologists who maintain that desire is excited always by the prospect of the pleasure that may arise through its gratification, and that the strength of the desire is proportional to the intensity of the pleasure thus anticipated. *Quidquid petitur petitur sub specie boni* is their main formula. The plausibility of this doctrine here rests partly upon a seemingly imperfect analysis of what strictly pertains to desire, and partly upon the fact that it is substantially true both of what we may call 'presentation-prompted' action, which belongs to an earlier stage than desire, and of the more or less rational action which belongs to a later. In the very moment of enjoyment it may be fairly supposed that action is sustained mainly by the pleasure received and is proportional to the intensity of that pleasure. But here there is no re-presentation and no seeking; the conditions essential to desire, therefore, do not apply. Again, in rational action, where both are present, it may be true —to quote the words of an able advocate of the view here controverted—that "our character as rational beings is to desire everything exactly according to its pleasure value[2]." Yet consider what such conceptions as 'the good,' 'pleasure value' and 'rational action' involve. Here we have foresight and calculation, regard for self as an object of permanent interest—in a word, Butler's 'cool self-love'; but desire in this respect is 'blind, without either the present certainty of sense or the assured prevision of reason. Pleasure in the past, no doubt, has usually

[1] As such an instance may be cited Plato's story of Leontius, the son of Aglaion, in *Rep.* IV. 439 *fin.*

[2] Bain, *Emotions and the Will*, 3rd ed. p. 438.

brought about the association between the representation of the desired object and the movement for its realisation; but neither the recollection of this pleasure nor its anticipation is necessary to desire, and even when present they do not determine what urgency it will have. The best proof of this lies in certain habitual desires. Pleasures are diminished by repetition, whilst habits are strengthened by it; if the intensity of desire, therefore, were proportioned to the 'pleasure value' of its gratification, the desire for renewed gratification should diminish as this pleasure grows less; but, if the present pain of restraint from action determines the intensity of desire, this should increase as the action becomes habitual. And observation seems to shew that, unless either prudence suggests the forcible suppression of such belated desires, or the active energies themselves fail, these desires may in fact become more imperious, although less and less productive of positive pleasure, as time goes on.

In this there is, of course, no exception to the general principle that action is consequent on feeling—a greater pleasure being preferred before a less, a less pain before a greater; for, though the feeling that follows upon its satisfaction be less or even change entirely, still the pain of the unsatisfied desire increases as the desire hardens into habit. It is also a point in favour of the position here taken that appetites, which may be compared to inherited desires, certainly prompt to action by present pain rather than by prospective pleasure.

The higher forms of emotion and action belong to the intellective and self-conscious level, to which we now pass, and we must try to treat of them there in due course[1].

[1] Cf. ch. xvi.

CHAPTER XII

INTELLECTION

Acquisition of Language

§ 1. Desire naturally prompts to the search for the means to its satisfaction and frequently to a mental rehearsal of various possible courses of action, their advantages and disadvantages. Thus, by the time the ideational continuum had become sufficiently developed to furnish free ideas as material for thought, motives were already forthcoming for thinking to begin. It is impossible precisely to determine just when this level was first attained: the advance was too gradual for that. Fitfully, in the excitement aroused by strange and perplexing circumstances, the higher animals give unmistakable signs of intelligence. But thinking—as a permanent activity at least—it may be fairly said, owes its origin to the acquisition of speech.

The elaboration, then, of this indispensable instrument, which more than anything else enables our 'psychological individual' to advance to the distinctly human or rational stage, calls for some preliminary consideration[1]. We start with gestures and vocal

[1] It must here be noted that the higher development of the individual is only possible through intercourse with other individuals, that is to say, through society. Without language we should be mutually exclusive and impenetrable, comparable almost to so many physical atoms; with language each several mind may transcend its own limits and share the minds of others. As a herd of individuals mankind would have a natural history as other animals have; but personality only emerges out of intercourse with persons, and of such intercourse language is the means. But, important for the future development of our 'psychological individual' as this addition of a transparent and responsive world of minds to the dead opaqueness of external things unquestionably is, that development does not cease to be an individual development. The only new point—and it is one to keep in sight—is that the materials of this development no longer consist of nothing but presentations elaborated by a single mind. Still that 'transcendence' of individual experience which subordinates individual idiosyncrasy and isolation to the objectivity and solidarity of

utterances, which—though they are *now* intentional signs—were originally just emotional expressions and nothing more. But some advance became possible so soon as 'the ejective level' of experience was attained[1], so soon, that is to say, as the individual experient could recognise that within the common environment were other individuals of its own kind. Then the "desire of communication," it is supposed, "impelled men to the production of language" and "turned the instinctive into the intentional." But this transition, we may well believe, was a far more gradual process than such deliberate purpose as 'desire to communicate' implies, and also began far below the level of the human animal: in other words, language was neither invented nor discovered, but throughout has been 'evolved.'

An emotional cry, grimace or gesture is frequently significant to others who already know from past experience the situation that called it forth, though itself emitted in entire ignorance of their presence and without forethought at all. Similarly sounds and antics would be significant none the less to others, because they originated as merely instinctive imitations not intended to 'intimate' anything to anybody. Yet these fortuitous advantages, when realised, would sooner or later be turned to account; and spontaneous utterances which proved to possess meaning, would be 'repeated' intentionally, both to convey it to other persons and to extend it to other cases. So sympathy would become suggestive and mimicry symbolic. In this way the deliberate purpose to communicate would find both the means of communicating and communication itself as a fact, already in existence, and not still needing to be produced. Primitive man would slip into speech without knowing it.

But the mutual converse of brute animals seems entirely to rest upon, and never to go beyond, the spontaneous utterance of 'natural signs[2].' Hence such converse is the same for the same species at all times and in all places; whereas human speech varies indefinitely according to time and place, depends on custom and tradition rather than on nature and heredity. Here, then, there

Universal Mind immediately affects the individual only 'in accordance with psychical laws.' We have no need therefore to overstep our proper domain in studying the advance from the non-rational stage to the stage of reason. Cf. above, ch. i, § 3, p. 17.

[1] Cf. above, ch. ii, § 1, p. 33.

[2] Cf. Darwin, *Descent of Man*, i, pp. 53 f.; R. L. Garner, *Gorillas and Chimpanzees*, 1896, ch. vi.

seems to be after all a discontinuity which evolution will not bridge. We are not therefore surprised to find Max Müller and others asserting with great confidence and yet with little reason that "language is our Rubicon which no brute will cross"; that otherwise indeed "there would be no precise point where the animal ended and man began." But such continuity is just what evolution, i.e. epigenesis, implies. To suppose that the brute would remain a brute *after* the acquisition of language, or that man could be man *before* it, is to miss the meaning of evolution altogether. Though all philological detail is doubtless lost in the obscurity of the remote past, the fact of this gradual advance from natural signs to so-called 'conventional signs' is no longer questioned; and its chief features are tolerably clear.

First of all, but needing only the briefest mention, are the biological traits characteristic of the so-called anthropoid apes, the mammals most nearly related to man. Among them, the sociable and leisurely life that abundance of nutritious food and scarcity of enemies make possible is found along with the erect posture, the mobile face and head, the supple hands perfectly focused by both eyes together, and lastly the voluble voice. A diversity of perceptions and movements on the one hand and a facility of emotional expression on the other, elsewhere unparalleled, are thus ensured. Hence no other animals display such activity, agility, imitativeness, curiosity and impressibility —save, of course, man himself, who is still more alert, skilful, observant, inquisitive and emotional.

Passing to psychological traits, perhaps the most fundamental is the one just now mentioned—the experient's ability not merely to recognise its kind in general but to distinguish between different individuals within it[1]. This power, we may well suppose, increases steadily with the progress of organic differentiation; for this at the same time enlarges the material to discriminate and

[1] Ants occupy an intermediate place in so far as they can distinguish members of their own community from those of other communities of their species; but not till the level of the higher vertebrates is reached have we any clear evidence that one individual is recognised as distinct from another—as ewes and their lambs for example recognise each other in a flock. Strictly speaking, everything that truly is at all, is an individual; yet, as Leibniz long ago remarked, "paradox though it appear, it is never possible for us to know exactly the individuality of anything, for individuality involves infinity" (*Nouveaux Essais*, III, iii, § 6). But the very limitation that prevents us from knowing some individuals at all makes our relative discrimination of others adequate for general intercourse.

the means of discrimination. In this respect the human race has advanced so far that every man is recognised as *sui generis* to some extent. In voice, countenance, gait and manner each is so distinctly unique that we say roundly "the style is (that is, indicates) the man." Not only has each his own peculiar way of expressing his feelings but he has also feelings peculiarly his own to express. Because of his curiosity, his sensitiveness and his mobility the occasions for 'utterance' or expression on the part of the primitive man will be numerous; because of his individuality, on the other hand, both the occasions and the utterances will vary somewhat with the man. Different individuals among men, like different species among the lower animals, will be affected by different situations or affected by the same situation in different ways. And as the affections vary so will the responses.

But does not this suggest a boundless exuberance still further removed from any likeness to intelligible discourse than even the narrow limitations of natural signs: could such 'gift of tongues' ever be more than a Babel? That like the legendary Babel it is really an advance beyond the mere babble and gesture of natural man, *Homo alalus*, towards the fuller discourse of rational man, *Homo sapiens*, is what we have now to see. If there were neither general resemblance nor individual constancy in such utterances the case would be hopeless. Some considerable resemblance however is an obvious consequence of the specific organization common to all; and, notwithstanding the seemingly casual nature of each individual's peculiarities there is ample evidence of their persistence, which indeed the mere working of association would lead us to expect. One decisive instance may suffice. The blind deaf-mute, Laura Bridgman, was reported as uttering 'half a score of "noises" designating persons[1]' as well as nearly thirty others 'expressing her own feelings' and all these sounds, it was added, "so far as the data for comparison exist seem neither to have changed in character or in pantomimic accompaniment...for many years[2]."

[1] To herself, of course, the idea of communicating with others in this way could never have occurred to her. For that purpose she used the manual signs by means of which Dr Howe had rescued her from the utter isolation in which the loss of every sense but touch had left her.

[2] G. S. Hall, *Mind*, O. S. iv. 1879, p. 166. Apparently the number of these

It is further noteworthy that the communities of primitive man were very small, consisting at most of a few families who wandered and hunted together, and that, as among the lowest savages and the higher apes now, such a community would have a recognised head, probably the strongest and most sagacious of the older males. Again at this level, as Darwin has pointed out, "the principle of imitation, of which we see only traces in the lower animals," will be an important factor in intellectual advancement; and especially so where there is one superior and commanding individual whom all will specially observe, be most likely to understand and most prone to imitate[1]. The prestige of such a pioneer would, as Tarde has happily pointed out, by holding the rest spell-bound, prevent confusion and make educational progress surer and easier. Finally, even with an average length of life far shorter than our own, the elder, who eventually became a new chief, would usually have had the time as well as the inclination to adopt in the main the ways of his predecessor. Thus linguistic tradition would gradually arise slightly differentiating one small tribe from another, much as public schools nowadays are differentiated by their various slangs[2].

Another feature of primitive human intercourse that stands out clearly is the combination of gestures with variously modulated articulations, which is still most pronounced among the most savage races, and steadily diminishes as culture advances. At the beginning, when gesture predominated, the vocal accompaniments were probably almost entirely emotional, as the excessive modulation seems to shew: only the gestures were meant to be and were in fact significant. But now these positions are almost completely transposed: the 'word' carries the meaning, is the veritable λόγος, the 'action' is only present where the feeling is

sounds was much greater than President Hall supposed. According to Lieber, who observed her for months together when she was much younger, she had then nearly sixty sounds for persons; and once, when asked how many sounds she recollected straightway produced twenty-seven (*Smithsonian Contributions*, 1851, ii. p. 26).

[1] Cf. Darwin, *Descent of Man*, 1871, i. pp. 160 f.; Bagehot, *Physics and Politics*, 1876, pp. 89—102; Tarde, *Les Lois de l'Imitation*, 1900, pp. 83 ff.

[2] "Sagard, en 1631, comptait que, parmi les Hurons de l'Amerique du Nord, on trouvait difficilement la même langue non seulement dans deux villages, mais même dans deux familles du même village." Tarde, *op. cit.* p. 278 *n.*, where still other instances are given.

intense[1]. At the outset that is to say, by motions mainly of the arms and hands—the organs of purposive movement—the most intellectual sense, the sense of sight, was directly appealed to: now by vocalisation movements, primarily the least purposive of any, the sense of hearing, the emotional sense *par excellence*, is directly addressed. Striking as this transformation is, it is readily explained as the result of economic survival. Just because speech, when it *can* be understood alone, relieves the guiding sense and its chief instruments, it was sure to supersede gesture—which engaged them both—provided the vocal utterances of each individual were constant in like situations and were also sufficiently varied and distinct in unlike ones. Both these conditions can be fulfilled even when there is no intention of communication, as the case of Laura Bridgman already mentioned and the records about other deaf-mutes[2] together place beyond all question.

The possession of the vocal apparatus requisite for such articulation and intonation as those of the human voice is not enough; though the main stress has sometimes been laid on this. Thus Herbart maintained that dogs would speak if they could, and Lotze seemingly agreed, though he inclined to attribute the obstacle to defective hearing rather than to imperfect voice. But the parrot, though almost our equal in mere articulation, cannot express by voice as much of what it feels as a dog can. And surely dogs do speak, though their speech belongs to a stage of evolution far below the human or even the simian level. How much farther, say, the chimpanzee would have advanced, if it had been domesticated like the dog and for as long a time, it would be hard to tell. But no doubt the dog has advanced a long way. "The dog in a wild state," it has been said, "only howls; but when he becomes the friend and companion of man,...his vocabulary, if it may be so called, then increases in order to express [*i.e.* in consequence of] his enlarged and varied [experiences and] emotions[3]." And this is the essential point—varied experiences and a characteristic vocal

[1] Thus Helen Keller's teacher reported: "She drops the signs and pantomime she used before, as soon as she has words to supply their place." H. Keller: *The Story of my Life*, p. 317.

[2] Cf. Tylor, *Early History of Mankind*, pp. 72 ff.; Steinthal, "Ueber die Sprache der Taubstummen," *Kleine Schriften*, i. pp. 34 f.

[3] E. Jesse, *Anecdotes of Dogs*, 1846.

response for each. Both are forthcoming in abundance through the curiosity and impressibility of the primitive man. "Von Natur aus ist der Mensch eine Resonanz, die ununterbrochen die erhaltenen Eindrücke wiedertönt: schweigen lernt er erst allmälig[1]." This was the creative onomatopoeia that the Mosaic legend is said to prefigure[2]. For the primitive man, what he calls out, when he sees a thing, comes back to him as the name of the thing, when he sees it again. Even though altogether subjective in origin, it becomes in the course of repeated experiences quite objective in sense. The observation of children bears this out[3]. *Ham* or *mum* (food) is in this respect quite on a par with the directly imitative *bow-wow* or *puff-puff*. Thus things that have no sound of their own to imitate may yet 'ring a sound' out of us, and so get names[4].

We must be content with this brief attempt to sketch the origin of language, and pass now to what for us is the main question: In what way, when it already exists, is language instrumental in the development as distinct from the communication of thought? But first of all, what in general is thinking, of which language is the instrument?

Distinction between Sense and Understanding

§ 2. In entering upon this inquiry we are really passing one of the most 'hard and fast' lines in the old psychology—that between sense and understanding. So long as a multiplicity of faculties was assumed the need was less felt for a clear exposition of their connexion. A man had senses and intellect much as he had eyes and ears; the heterogeneity in the one case was no more puzzling than in the other. But for psychologists who do not cut the knot in that fashion it is confessedly a hard matter to explain the relation of the two. The contrast of receptivity and

[1] Volkmann, *Psychologie*, 1875, Bd. i. p. 329.

[2] Genesis, ii. 19.

[3] Cf. "M. Taine on the Acquisition of Language by Children," *Mind*, O. S. ii. (1877), pp. 252 ff., especially p. 256 *fin.* Taine's article led to another from C. Darwin, *op. cit.* pp. 285 ff., cf. especially p. 293.

[4] Such is the theory of Steinthal which Max Müller parodied in nicknaming it the *ding-dong* theory, but which later and abler philologists have treated with marked respect. Epicurus seems to have anticipated it. Cf. Lange, *Gesch. des Materialismus*, 3te Auf. 1875, i. p. 81.

activity hardly avails; for all presentation involves some activity, and essentially the same activity, that of attention. Nor can we well maintain that the presentations of sense and understanding differ altogether in kind; albeit such a view has been held from Plato downwards. *Nihil est in intellectu quod non fuerit prius in sensu*: the blind and deaf are necessarily without some concepts that we possess. If pure being is pure nothing, pure thought is equally empty. Thought involves a certain elaboration of sensory and motor presentations and has no content apart from these. We cannot even say that the forms of this elaboration are psychologically *a priori*; on the contrary, what is epistemologically the most fundamental is the last to be psychologically realised. This is not only true in fact; it is also true of necessity, inasmuch as the formation of more 'concrete' concepts is an essential preliminary to the formation of others more 'abstract' —those most abstract, like the Kantian categories, &c., being thus the last of all to be thought out or understood. And though this formative work is substantially voluntary, yet, if we enter upon it, the form at each step is determined by the so-called matter, and not by us; in this respect 'the spontaneity of thought' is not really freer than the receptivity of sense[1]. It is sometimes said that thinking is always synthetic even when the thought is expressed analytically, AB is B—and this is true; but imagining is always merely synthetic. And the processes which yield the ideational train are also the processes employed in intellectual synthesis. Moreover, it would be arbitrary to say, from the simple inspection of their content, at what point the mere generic image ceases and the true concept begins—so continuous are the two[2].

No wonder, then, that English psychology has been prone to regard thinking as only a special kind of perception, 'the

[1] Locke, so often misrepresented, expressed this truth according to his lights in the following: "The earth will not appear painted with flowers nor the fields covered with verdure whenever we have a mind to it.....Just thus is it with our understanding: all that is voluntary in our knowledge is the employing or withholding any of our faculties from this or that sort of objects and a more or less accurate survey of them" (*Essay*, IV. xiii. § 2).

[2] The latter may be regarded as implicit in the former; and so it remains in what we call the intelligent behaviour of animals. But it is often unconsciously explicated when we endeavour to describe their 'state of mind' using terms appropriate only to our own conduct, as if, that is to say, their images were actually concepts.

perception of the agreement or disagreement of ideas[1]'—and the ideas themselves as mainly the products of association. Yet this is much like confounding observation with experiment or invention—the act of a cave-man in betaking himself to a drifting tree, when the flood was upon him, with that of Noah in devising and building an ark. In reverie, and often in merely understanding the communications of others, we are comparatively passive observers of ideational movements, non-voluntarily determined[2]. But in thinking or 'intellection,' as it has been conveniently termed, there is always a search for something more or less vaguely preconceived, for a clue which will be known when it is found by helping to satisfy certain conditions. Here again there is a continuous development from the extreme of mere blind trial and error—where the only clue we seek is 'anything, anything, only not this'—towards an opposite extreme where a crucial disjunction 'either...or' can be precisely formulated. At what precise point in this development we agree to say that 'thought proper' begins will depend upon how we define thought. And apparently no psychological definition is as yet forthcoming that is not more or less arbitrary, and, for all that, fails to effect any clear demarcation between thought proper and thought in the wider sense. If we say: "The thinking process may be adequately defined as the *act of knowing* or *of judging of things by means of concepts*[3]," then, as already urged, it is psychologically impossible to tell just where mere ideation ends and conception begins. If, following Max Müller we were to say: No conception without language and no language without conception[4], we should be committed to a hopeless discontinuity, as we have seen above (§ 1). This difficulty in sharply distinguishing between sense and understanding we may now fairly attribute to the fact that there is no sharp distinction —unless, indeed, we go the length of maintaining that in 'sense' we are purely passive and in 'understanding' purely active. When Kant said: "There are two stems of human knowledge,

[1] Cf. Locke, *Essay*, II. xxi. § 5; H. Spencer, *Psychology*, ii. § 308.

[2] On understanding in this sense—understanding what is heard or read cf. Ebbinghaus, *Grundzüge der Psychologie*, 3te Aufl. (1913), ii. pp. 735 ff. Many bibliographical references are given.

[3] Mansel, *Prolegomena Logica*, 2nd ed. p. 22. Cf. Deussen's definition: "Operiren mit Begriffen," *Elemente der Metaphysik*, § 33.

[4] Cf. *Lectures on the Science of Language*, 1880, ii. p. 73.

which perhaps may spring from a common, but to us unknown root[1]," he *may* have had a glimmering of the continuity between the two—sensibility and understanding—which, as genetic psychology claims to shew, actually exists.

But though "it is manifestly impossible to discriminate with any rigour Sense from Intelligence[2]," yet thinking—at our level—may be broadly described as solving a problem[3] —finding an *ax* that is *b*. In so doing we start from a comparatively fixed central idea *a* and work along the several diverging lines of ideas associated with it—hence far the aptest and in fact the oldest description of such thought is that it is *discursive*. Emotional excitement—and at the outset the natural man does not think much in cold blood—quickens the flow of ideas; then, what seems relevant is at once contemplated more closely and so becomes more distinct; while what seems irrelevant awakens no interest, receives no attention and so becomes less distinct. Thus the natural working of association is facilitated in the one pertinent direction and inhibited in all others: one line is opened and all the rest are more or less closed[4]. At first the control acquired is only very imperfect; indeed the actual course of thought of even a disciplined mind usually falls far short of the clearness, distinctness, and coherence of the logician's ideal. Familiar associations are apt to hurry attention away from the proper topic, so that thought becomes not merely discursive but wandering; in place of fixed concepts complete and crystalline—such as logic demands—we may find a congeries of ideas but loosely compacted into some sort of systematic whole, liable to continual modifications and including much that is both irrelevant and confusing.

[1] *Critique of the Pure Reason*, 1st ed. p. 15, M. Müller's trans. p. 13.

[2] Hamilton, *Reid's Works*, p. 878.

[3] Even so, as we have just allowed, there is still a resemblance to the varying efforts persisted in till—may be—success is attained, which characterize conation at the lowest sensory level; in so far, *i.e.* as both processes are tentative. But in the latter there is nothing answering to *b*: there is just a subjective state, the pleasure of success and no more.

This view of the thinking process has a prominent place in the recent so-called experimental psychology of the Würzburg school—a series of books and articles of inordinate length and uncertain value. A discussion of them will be found in Professor Titchener's *Experimental Psychology of the Thought-Processes*, 1909.

[4] Cf. Bain on 'Voluntary Control of Ideal Movements,' *Senses and Intellect*, 4th ed. pp. 591 f.; *Emotions and Will*, 3rd ed. pp. 369 f.

Thought and Language

§ 3. Thus, while it is certain that thought begins without language, just as arts begin without tools, yet language enables us to carry the thinking process enormously farther. In the first place it gives us an increased command of even such comparatively concrete generic images as can be formed without it. The name of a thing or action becomes, for one who knows the name, as much an objective mark or attribute as any quality whatever can be. The form and colour of what we call an 'orange' are perhaps even more intimately combined with the sound and utterance of this word than with the taste and fragrance which we regard as strictly essential to the thing. But, whereas these physical attributes often evade us, we can always command the nominal attribute, in so far, that is, as this depends upon movements of articulation. By uttering the name (or hearing it uttered) we have secured to us, in a greater or less degree, that superior vividness and definiteness that pertain to images reinstated by impressions: our idea approximates to the fixity and independence of a percept. With young children and uncultured minds—who, by the way, not uncommonly 'think aloud'—the gain in this respect is probably more striking than those not confined to their mother-tongue or those used to an analytical handling of language at all realise[1]. When things are thus made ours by receiving names from us so that we can freely manipulate them in idea, it becomes easier mentally to bring together facts that logically belong together; and so to classify and generalise. For names set us free from the cumbersome tangibility and particularity of perception, which on the one hand is limited to just what is presented here and now; and on the other includes *all* that is thus presented.

In the next place—as ideas increase in so-called generality—they frequently diminish in definiteness: they not only become less pictorial and more schematic, but they become more unsteady as well, for they arise from a number of concrete images only related as regards one or two constituents, and not 'assimilated' as the several images of the same thing may be. The

[1] Ruskin, in his *Fors Clavigera*, relates that the sight of the word 'Crocodile' used to frighten him when a child so much that he could not feel at ease again till he had turned over the page on which it occurred.

mental picture answering to the word 'horse' has, so to say, body enough to remain a comparatively steady object when under attention from time to time; but that answering to the word 'animal' is perhaps scarcely twice at all alike[1]. The relations of things could thus never be readily recalled or effectively controlled if the names of those relations, which as words always remain concrete, did not give us a definite hold upon them—make them comprehensible. Once these 'airy nothings' have a name, we reap again the advantages a concrete constituent affords: by this means whatever is relevant becomes more closely associated, and whatever is irrelevant is abstracted from, and is left out of account.

Yet again—when what answers to the logical connotation or meaning of a concept is in this way linked with the name, it is no longer necessary that even this 'matter or content' should be distinctly present in consciousness[2]. It takes time for an image to raise its associates above the threshold; and their presence there means a proportionately greater demand upon attention. There is thus a manifest economy in what Leibniz happily styled 'symbolic,' in contrast to 'intuitive' thinking. For our power of efficient attention is limited, and with words for counters we can, as Leibniz remarked[3], readily perform operations involving very complex presentations, and wait till these operations are concluded before fully realising and spreading out the net result in sterling coin. But this simile must not mislead us. In actual thinking there never is any complete separation between the symbol and

[1] Both might be what Kant called a schema; but in any case that of 'animal' would be much more diagrammatic—or more of a 'monogram,' to use Kant's word—and not pictorial at all. Cf. Huxley's figures to represent the contrast between the invertebrate and the vertebrate forms (*Comparative Anatomy*, 1864, p. 59). Such schematism Kant thought was to be attributed ultimately to an art hidden away in the depths of the human soul and never likely to be disclosed. When the control of the ideational tissue that language affords is duly taken into account, however, it is questionable if there is any special mystery here at all. Cf. *Critique of the Pure Reason*, M. Müller's trans. p. 125.

[2] It is enough if it be 'implicitly apprehended' without being apprehended 'explicitly,' to use Professor Stout's terminology. As at the animal level the concept was implicit (or latent) so here, at the rational level, it is the idea that is implicit (or subconscious). This, as said in the text, is a manifest advance. Cf. note above.

[3] Cf. *Opera*, Erdmann's ed. p. 80. Too often, no doubt, we are content to traffic with words alone and so far to justify the smart saying of Hobbes: "Words are the counters of wise men and the money of fools." *English Works*, Molesworth's ed. 1839, iii. p. 25.

the ideas symbolized: the movements of the one are never entirely suspended till those of the other are complete[1]. "Thus," says Hume, "if, instead of saying, that in war the weaker have always recourse to negotiation, we should say, that they have always recourse to conquest, the custom which we have acquired of attributing certain relations to ideas still follows the words and makes us immediately perceive the absurdity of that proposition[2]." How intimately the two are connected is shewn by the surprises that give what point there is to puns, and by the small confusion that results from the existence of homonymous terms or phonetic ambiguity.

Thought and Ideation.

§ 4. The question thus arises—What are the properly ideational elements concerned in thought? Over this question psychologists long waged fight as either nominalists or conceptualists. The former maintained that what is imaged in connexion with a general concept, such as *triangle*, is some individual triangle 'considered merely as triangular'; whereas the latter maintained that an 'abstract idea' is formed embodying such constituents of the several particulars as the concept connotes, but dissociated from their specific or accidental variations—for example, a triangle that 'is neither oblique nor rectangle, neither equilateral, equicrural, nor scalenous; but all and none of these at once[3].' As often happens in such controversies, each side saw the weak point in the other. The nominalists easily shewed that there was no distinct 'abstract idea' representable apart from particulars; and the conceptualists could as easily shew that a particular presentation 'regarded in a particular light' is no longer merely a particular presentation nor equivalent merely to a crowd of presentations. The very thing to ascertain is what this consideration in a certain light implies. Perhaps a speedier end might have been put to this

[1] Cf. above on Subconsciousness, ch. iv, § 7, pp. 96 f. We must return to this topic again directly. Cf. p. 299 *fin.*

[2] *Treatise of Human Nature* (Green and Grose's ed.), pt. i. § vii. p. 331.

[3] Cf. Locke, *Essay*, IV. vii. § 9; Berkeley, *Principles of Human Knowledge*, Introd. § 16; Hume, *op. cit.* § 7; J. S. Mill, *Examination of Hamilton's Philosophy*, ch. xvii. On the whole question cf. especially Meinong, *Hume Studien*, i.

controversy if either party had been driven to define more exactly what was to be understood by image or idea. Such ideas as are possible to us apart from abstraction are, as we have seen, revived percepts, not revived sensations; they are complex total re-presentations made up of partial re-presentations, which may figure in other totals[1]. Reproductive imagination is so far but a faint revival of previous actual percepts; constructive imagination but a faint anticipation of possible percepts not as yet experienced. In either case we are busied with elementary presentations only as complicated or synthesized to what are tantamount to intuitions in *form*—though in fact, as tested by movement, &c., actual intuition is absent: Macbeth cannot clutch the imagined dagger, though seen in form 'as palpable' as that he is actually drawing. The several partial re-presentations, however, which make up an idea might also be called ideas, not merely in the wide sense in which every mental object may be so called, but also in the narrower sense as secondary presentations, *i.e.* as distinguished from primary presentations or impressions. But such isolated images of an impression, even if possible, would no more be comparable to intuitions than the mere impression itself would be: taken alone the one would be as free of space and time as is the other. The ideational elements concerned in thought are obviously not images in this sense, for if they were, the whole work of perception would be undone.

In the case of what are called 'concrete' as distinct from 'abstract' concepts[2] the idea answering to the concept often differs but little from an intuition, and we have already remarked that the generic image (*Gemeinbild* of German psychologists) constitutes the connecting link between ideation and conception. But even concerning this it is almost useless to ask what does one imagine in thinking, *e.g.* of triangle or man or colour. We never—except for the sake of this very inquiry—attempt to fix our minds in this manner upon some isolated concept; in actual thinking ideas are not in consciousness alone and disjointedly, but as part of a context. When the idea 'man' is present, it is present in some proposition or question, for example, Man is the paragon of animals; In man there is nothing great

[1] Cf. above, ch. vii, § 1, pp. 169 *fin.*, 170; § 4, p. 199 *fin.*

[2] If this rough-and-ready distinction, unscientific though it is, may be allowed.

but mind; Is man immortal? and so on. It is quite clear that very different constituents out of the whole complex 'man' would be prominent in our minds in dwelling on the first of these from those that would be called up by reflexion on the second or the last. Further, what is present to consciousness when a general term is understood will not only differ with a different context, but also change as we dwell upon it. Again we may either analyze its connotation or muster its denotation, as the context or the cast of our minds may determine. Thus what is relevant is alone prominent; and the more summary the attention we bestow the less the full extent and intent of the concept are displayed. To the nominalist's objection, that it is impossible to imagine a man without imagining him as either tall or short, young or old, dark or light, and so forth, the conceptualist might reply that at all events percepts may be 'clear' without being 'distinct,' that we can recognise a tree without recognising what kind of tree it is; and that, moreover, the objection proves too much: for, if our image is to answer exactly to fact, it must represent not only a tall or a short man, but a man of definite stature—one not merely either light or dark, but of a certain precise complexion. The true answer rather is that in conceiving as such we do not necessarily imagine *a* man or *a* tree at all, any more than—if such an illustration may serve—in using the equation to the parabola we necessarily visualise a parabola as well.

In the case of so-called 'abstract concepts' one word may be *directly* symbolical of a complex of words; that is to say, if we ask for its meaning we are not referred to the reality signified, but receive a verbal definition or are sent to a lexicon. Another word again may represent a complex of such complex words and so on repeatedly. Thus with every such advance, in spite of the 'narrowness of consciousness,' language enables us to enlarge our command; but at the same time the command becomes continually more indirect. The realities signified are soon as much out of sight as are the goods or bullion ultimately concerned in the actual transactions of the clearing-house. As these never go beyond values so thought, so far as symbolic, never goes beyond the relevant meanings. Language does not abolish the narrowness of consciousness, and therefore, as often as attention is taken up with the general and abstract, it cannot at

the same time envisage the concrete and particular. So far then those psychologists are justified who like to talk of 'imageless thought.' The defect of that phrase lies, however, not so much in its seeming paradox as in its tautology. All thought, strictly speaking, is imageless; for all thought is concerned with propositions sought or found, in other words with problems, suppositions or assertions: it is 'intentional' not presentational. But on the other hand all thought is concerned, primarily or ultimately with images (or impressions), that is to say with such of their relations as are relevant to its immediate problem[1].

The facts just described are also sometimes spoken of as 'the condensation of thought[2].' This again is not a happy phrase: it ignores altogether the gradual development which is the essential point. Let us try to ascertain more exactly the nature of this process. Suppose we tell an intelligent child of eight that the three angles of any plane triangle are equal to two right-angles. If, however, the child is ignorant of geometry this proposition and most of the terms in it will seem meaningless. Yet after proper training for a week or two he will understand the whole and see that the proposition is true. For the relations involved are few and simple and but little removed from immediate intuition. But say to him, for example: The maintenance of justice is the supreme end of the law. Then we must wait for years before he will be able adequately to appreciate and intelligently to endorse that and similar propositions: so we realise the force of the old adage that one cannot put old heads on young shoulders. In other words the so-called 'condensation of thought' takes time; and *time is in general a measure of the development such condensation implies.* What exactly is the nature of this development, we ask? It consists in the gradual transformation—we might even say, 'transfiguration'—of the ideational continuum or tissue effected by means of language as a social instrument, whereby the ideational tissue is organized into higher and higher forms, implying a steadily increasing complexity in the ideational structure which is their basis, yet, notwithstanding this, a unity and simplicity of function which is

[1] Cf. Dugas, *Le Psittacisme et la Pensée symbolique*, 1896, liv. ii.; Ribot, *L'Évolution des Idées générales*, 3me éd. 1909, chh. iii., iv.

[2] Lazarus, *Das Leben der Seele*, 2te Aufl. 1878, ii. pp. 229—43.

akin to intuition. Accordingly we commonly speak of the facility at length attained as insight, tact or penetration.

The individuality of a concept, then, which is elaborated in this wise out of the ideational tissue is not to be confounded with the sensible concreteness of an intuition either distinct or indistinct; and 'the pains and skill' which Locke felt were required in order to 'frame' what he called an abstract idea are quite unlike the pains and skill that may be necessary to decipher what is faint or discern what is fleeting. The material 'framed' consists no doubt of images, if by this is meant that in thinking we work ultimately with the ideational continuum; but what results is never merely an intuitive complex. The concept or 'abstract idea' first emerges when a certain specific relation is established among the constituents of such a complex; and the very same intuition might furnish 'content' for different concepts as often as a different *geistiges Band* was used to connect it. The stuff of this bond, as we have seen, is usually the name; and this raises above the threshold of consciousness, *if necessary*, those elements of the concept which are relevant to the particular context. Conception, then, is not identical with imagination, although the two terms are still often, and were once generally, regarded as synonymous. The same ultimate materials occur in each; but in the former these materials start with and retain a sensible form; in the latter a higher form is imposed on this which is distinguished as 'intelligible.'

General Character and Growth of Intellection

§ 5. The distinctive character of this intelligible form or synthesis lies then in the fact that it is selective[1]. In this respect it differs from the synthesis of association, which unites together whatever occurs together. It differs also from any synthesis, though equally voluntary in its initiation, which is determined merely by subjective preference, inasmuch as intellection is concerned wholly and solely with objective relations. Owing to the influence of logic, which has long been in a much more forward state than psychology, it has been usual to resolve intellection into comparison, abstraction, and classification, after

[1] As the very word 'intelligence' etymologically implies.

this fashion: $a+b+c+m$ and $a+b+c+n$ are compared, their differences m and n left out of sight, and the class notion $a+b+c$ formed including both; the same process repeated with $a+b+c$ and $a+b+d$ yields a higher class notion $a+b$; and so on. But our ideational continuum is not a mere string of ideas of concrete items, least of all such concrete items as this view implies. Not till our daily life resembles that of a museum porter receiving specimens will our higher mental activity be comparable to that of the curator who sorts such specimens into cases and compartments. What we perceive is a *world* of interrelated things, the centres of manifold changes, affecting us and apparently affected by each other, amenable to our action and continually interacting among themselves. Even the individual thing, as our analysis of perception has attempted to shew, is not a mere sum of properties which can be taken to pieces and distributed like type, but a whole combined of parts very variously related[1].

To understand intellection we must look at its actual development under the impetus of practical needs, rather than to logical ideals of what it ought to be. Like other forms of purposive activity, thinking is primarily undertaken as a means to an end, and especially the end of economy. It is often easier and always quicker to manipulate ideas than to manipulate real things; to the common mind the thoughtful man is one who 'uses his head to save his heels.' In all the arts of life, in the growth of language and institutions, in scientific explanation, and even in the speculations of philosophy, we may observe a steady simplification in the steps to a given end or conclûsion, or—what is for our present inquiry the same thing—the attainment of better results with the same means. The earliest machines are the most cumbrous and clumsy, the earliest speculations the most fanciful and anthropomorphic. Gradually imitation yields to invention, and the natural fallacy of *post hoc, ergo propter hoc* to

[1] "The 'marks' of a concept are not generally coordinated as all of equal value but rather...are related to each other in the most various ways, assign to each other diverse ranks (*Anlagerungen*), and so mutually *determine* each other.... An appropriate symbol for the structure of a concept is not the equation $S=a+b+c+d...$, but at best the expression $S=F(a, b, c...)$, indicating merely that $S, a, b, c...$ must be connected in a manner precisely assignable for each particular case, but extremely variable for different cases, in order that the value of S may be obtained." Lotze, *Logic*, § 28 *fin.*

methodical induction. Thus what is essential and effective comes to be realised and appreciated and what is accidental and inert to be discarded and fall out of sight. In this way man advances in the construction of a complete mental clue or master key to the intricacies of the real world, but this key is still the counterpart of the world it enables him to control and explain.

To describe the process by which such 'insight' is attained as a mere matter of abstraction, the result of association (as Bain came near to doing), deserves the stigma of 'soulless blunder' which Hegel applied to it[1]. Of course if attention is concentrated on X it must *pro tanto* be abstracted from Y, and such command of attention may require 'some pains and skill.' But again, to see its essential feature in this invariable accompaniment of thinking is much like the schoolboy's saying that engraving consists in cutting fine shavings out of a hard block. The essential thing is to find out what are the light-bearing and fruit-bearing combinations. Moreover, thinking does not begin with a conscious abstraction of attention from recognised differences in the way logicians describe. The actual process of generalisation, for the most part at all events, is much simpler. The same name is applied to different things or events because only their more salient features are perceived at all. Their differences, so far from being consciously and with effort left out of account, often cannot be observed when attention is directed to them: to the inexperienced all *is* gold that glisters. Thus, and as an instance of the principle of progressive differentiation already noted[2], we find genera recognised before species, and the species obtained by adding on differences, not the genus by abstracting from them[3]. Of course such vague and indefinite 'concepts' are not at first logically general[4]. They do not become so till certain common elements are consciously noted as pertaining to the things or situations the concepts denote; though in other respects such things or situations are qualitatively different, as well as numerically distinct. Actually then, thinking may be said to start with the analysis of this

[1] Cf. Bain, *Senses and Intellect*, 1894, pp. 541 ff.; Hegel, *Encyclopaedie*, iii. 1845, p. 334, § 456, Zusatz.

[2] Cf. ch. ii, § 4, p. 50.

[3] Cf. ch. vii, § 2, p. 190.

[4] Cf. Lotze, *Logic*, "On the First Universal," §§ 14, 15.

potential generality secured by the association of a generic image with a name[1].

Thought as analytic.

§ 6. The process of thinking may thus be psychologically more completely described as (1) an analysis, and (2) a re-synthesis, of the material already furnished by the ideational trains, a re-synthesis into a new whole of a higher order—one wherein both the whole and the parts are concepts. The logical resolution of thought first into hierarchies of concepts arranged like Porphyry's tree; then into judgments uniting such concepts by means of a logical copula; and finally, into syllogisms connecting such judgments through a middle term—all this is the outcome of later reflexion upon thought as a completed product—reflexion undertaken mainly for technical purposes and entirely presupposing all that psychology has to explain. Thus the logical theory of the formation of concepts by generalisation (or abstraction) and by determination (or concretion)—*i.e.* by the removal or addition of defining marks—assumes the previous existence of the very things to be formed, for these marks or attributes—*X*'s and *Y*'s, *A*'s and *B*'s—are themselves concepts already. Moreover, the act, whether it be one of generalising or of determining is really an act of judgment; so that the logician's account of conception presupposed judgment, while at the same time his account of judgment presupposed conception. But this is no evil; for logic did not essay to exhibit the actual genesis of thought but only an ideal for future thinking[2].

Psychologically, the judgment is first[3]. The growing mind, we may suppose, passes beyond mere perception when some striking peculiarity in what is at the moment noticed is a bar to its definite recognition. A deer-stalker, say, is not instantly

[1] So far the material of thought is always general, is freed, that is, from the local and temporal and other defining marks of percepts. Cf. ch. vii, § 4, p. 200.

[2] I have referred to logic as it was in the past, for nowadays logic is commonly regarded not as a normative science but rather as a mathematical one.

[3] In keeping with this many philologists maintain that language begins with what they call holophrastic speech: a single utterance signifying the presence of a whole situation.

recognised as a man, because he is crawling on all fours; or a scarecrow looks like one, and yet not like one, for, though it stands on two legs, it never moves. There is thus a pause and no 'naming': the conflict of ideas[1]—quadruped or biped, clown or boggard—inhibits this step. Recognition, that is to say, under such circumstances is a judgment that presupposes some analysis, more or less explicit. But of more account are the further judgments accompanying this or involved in it and connecting the new fact with one or other of the competing ideas. As already said, though actually complex, generic images are not explicitly known as complexes when they first enter into judgments such as these. As to the subject of such judgments, they are but the starting-point for predication—It crawls; It does not move; and the like. Impersonal judgments, according to many philologists, are in fact the earliest. Impersonal judgments are however a very controversial topic. Sometimes they are only grammatically impersonal: the subject, that is to say, is itself definite and is also definitely present in thought. It is only replaced by an 'It' for brevity's sake or the more to emphasize the predicate, as, *e.g.*, in the words 'It is finished' when a play, or it may be a life, is over. But in the genuine impersonals, which the philologists have in view, no *definite* subject is contemplated. "I do not doubt," says Lotze, "that anyone who is asked what he means by 'It,' when he says 'it rains,' or 'it thunders,' can easily be driven to say, 'the rain rains' or 'the thunder thunders'.... If he then uses several expressions of this sort one after another, he does not indeed deliberately say that the indefinite pronoun means the same in all these cases. But he would certainly, if he understood himself rightly, give this answer rather than the former. This 'It' is, in fact, thought of as the common subject ...it indicates the all-embracing thought of reality, which takes now one shape, now another[2]." Sigwart regards this interpretation as too 'artificial[3],' though it does not seem in the end to differ very widely from his own[4]. Anyhow we have good reasons for regarding it as genetically sound. The indefinite 'It' is just our presentational continuum, and a good deal of psychology and epistemology, if not metaphysics, gathers like a cloud about it. Psychologically the same sort of indefiniteness

[1] Cf. ch. vii, § 5, pp. 202 f.
[2] Lotze, *Logik*, § 49.
[3] Sigwart, *Die Impersonalien*, 1888, p. 55 *n.*
[4] Cf. *op. cit.* p. 45.

clings to the impersonal judgments cited above: they are but further stages in the progressive differentiation of experience, and we may reasonably suppose that by means of them our generic images have been partially analyzed, and have attained to something of the distinctness and constancy of logical concepts.

Yet such analysis is rarely complete: a certain confused and fluctuating residuum usually remains behind. The psychological concept merges at sundry points into those cognate with it—in other words, the continuity of the underlying ideational tissue still operates; only the ideal concept of logic is in all respects *in se ipso totus, teres, atque rotundus.* Evidence of this, if it seem to any to require proof, is obtainable on all sides, and, if we could recover the first vestiges of thinking, would doubtless be more abundant still. Even now children and untutored persons on the strength of an acquaintance with some of the objects denoted by a term proceed to conjecture its meaning, taking this too narrowly, or perhaps too widely, but never being able exactly to define it. Again, when this meaning is very complex, one part of it is ignored at one time and another at another time. To these facts we may trace many of the confusions and inconsistencies of loose thinkers who are fond of 'roughly speaking' and talk much of 'sort of,' 'thereabouts,' and 'it.' For so long as the affairs of common life can be carried on effectively there is no call for more accuracy of discrimination than suffices for the avoidance of frequent and gross mistakes. And even when the level of culture is attained, it is generally the endeavour to defend false ideas that leads to ideas that are truer and more precise. In thought as elsewhere we find struggle for existence and survival of the fittest[1].

The second phase or 'moment' of the process of thinking, the synthesis in new forms of what has been analyzed and discriminated, calls for lengthier treatment and is best reserved for a new chapter.

[1] Cf. Waitz, *Lehrbuch der Psychologie*, 1849, p. 522; Volkmann, *Lehrbuch der Psychologie*, 1875, ii. p. 244, Anmerk. 2.

APPENDIX

'Apperception': Intellective Systems.

§ 7. It is perhaps desirable to take some notice now of a term that occupies a prominent place in the treatment by many psychologists of what we have here called intellection. By some this has been regarded as primarily a subjective or self-conscious process, by others as merely an objective or ideational one. In point of fact we have seen reason for holding it to involve both; the one process being the cause, the other its effect. The term *apperception*, which we are now to consider, was introduced by Leibniz without any precise definition but mainly in the first sense, that is to say, to denote self-consciousness together with such other 'reflexive acts' as self-consciousness implies[1]. Kant followed suit. Apperception is for him the self-consciousness that appropriates all my experiences as mine: in particular, it is the spontaneous activity that differentiates understanding from sense, nay, it is understanding itself. But precisely wherein the objective effect of this activity consisted was a question that Leibniz hardly considered at all. Even Kant contented himself with a general description of it as always a synthesis in some form or other, a synthesis resting ultimately on the 'transcendental unity' of the conscious self[2]. So far no case was made out for the need of apperception as a special term at all; and but for Herbart it would probably never have had a place in our psychological terminology. He it was who first inquired how apperception is related to the presentations in which it is concerned.

Starting from the Leibnizian position Herbart proceeded to distinguish between the self that is conscious and the self that is presented, just as Kant had done before him. It is this presented self that is related to other presentations in reflexion, internal sense or apperception. But this relation is neither the only nor the earliest result of a process, which is essentially nothing but a certain interaction of presentations. So we reach the second of the one-sided extremes referred to above; and here apperception entirely changes its meaning. What is that

[1] Cf. *Principes de la nature*, &c., § 4 as quoted above p. 93, and also § 5.

[2] Cf. § 15 of the Deduction of the Categories, *Critique*, 2nd ed.

interaction which the term apperception as used by Herbart is now to denote? We must go back a little to see. Empirical psychology Herbart rightly maintained must be analytical at the outset; but, unfortunately, the most fundamental analysis of all—that which yields the duality of subject and object, as commonly understood—he treated as pertaining not to experience but to metaphysics. The whole business of empirical psychology he therefore confined to the interaction of presentations and its incidental consequences: "in the soul there are only presentations (*Vorstellungen*); out of these all that is to be in consciousness must be constructed (*zusammengesetzt*)[1]." In short, for Herbart psychology was just a new ideology or presentationism, a theory of psychical statics and dynamics applied to, rather than derived from, experience. The conative activity commonly attributed to the subject of experience Herbart transferred to presentations: these tend always to adjust, rank and incorporate themselves into larger, compacter wholes, that in turn may repeat the process. This is the Herbartian apperception, of which the Leibnizian apperception is not the cause but the effect. We find an analogue to all this among human beings in the gradual progress from the 'state of nature' to that of civilised society. So close was the analogy between the two for Herbart that he devoted over thirty pages to its illustration[2]. But in the essential point the analogy obviously fails. We cannot talk of presentations *per se*, and if we could, still we could not regard them either as objects or as subjects[3]. Nevertheless, for Herbart, new presentations, series of presentations or entire masses of them were at first material for some older presentation, series or mass, whose function was that of appropriating them—assimilating, and organizing or systematizing[4] them, as the case might be[5].

[1] *Psychologie als Wissenschaft, neu gegründet auf Erfahrung, Metaphysik und Mathematik*, 1825, § 125, Hartenstein's ed., ii. p. 190.

[2] *Op. cit.* ii. pp. 18–51. It is worth remarking too that M. Fr. Paulhan, in his book entitled *L'Activité mentale et les Éléments de l'Esprit* (1889), starting from the same analogy, has worked out independently under the title of 'systematic association' a theory closely resembling Herbart's doctrine of apperception.

[3] Cf. Lotze, *Metaphysik*, § 273, for an important criticism.

[4] In the last and highest form of apperception, the 'masses' of which Herbart speaks would have been better described as 'systems,' for he recognises that they are always organized more or less. They are so described by Professor Stout; cf. his *Analytic Psychology*, 1896, ii. p. 114.

[5] Cf. *op. cit.* ii. § 125, pp. 190f.

The last form of this process has been described above as constituting a further elaboration, a sort of 'transfiguration' of the ideational continuum[1]. It also includes the most interesting and important of the facts covered by the Herbartian theory; and those moreover most in need of a technical name. We have got used to perception and conception as the names for processes resulting in percepts and concepts; but are obviously debarred from using 'intellects' on this analogy. Appercepts might be the Herbartian term, and one might be tempted—for the sake of the impressive alliteration—to talk of the four psychological A's, attention, assimilation, association and apperception. But in the way stands Herbart's doctrine that the progressive advance in cognition that characterizes the last three is explicable without the first. Moreover, apperception with him covers all the remaining processes—is indeed at bottom just a more or less complex assimilation, more or less modified by preliminary inhibitions. And this is a fact that damages his whole doctrine. So far as his apperception has any pretension to be an *independent* process, so far it is 'mechanical'; it rests, that is to say, on the working of a preformed ideational basis. It is then no equivalent for intellection. So far as it is a process requiring subjective initiative and control, the mechanical interaction of presentations will not account for it.

The few psychologists who still employ the term apperception lay the chief stress on the subjective side, mean by it, in fact, just the active concentration of attention that constitutes the 'focus of consciousness' and ensures definite apprehension. But these psychologists are also given to describing those combinations of ideas that presuppose association as apperceptive. In other words, they try to unite the Leibnizian and the Herbartian apperceptions notwithstanding the diversity between them[2]. This seems a clear case of falling between two stools. For attention may be concentrated for other ends than thinking —as in recollecting, skilful performance, &c. Thinking then cannot be characterized by what is merely one of its essential conditions but not the only one. *Mutatis mutandis*, the same may be said of the interaction and combination of ideas:

[1] Cf. § 4 above, p. 301.

[2] So, for example, Wundt. Cf. his *Phys. Psychologie*, 6th ed. vol. iii. (1911), pp. 307 f., 543 ff.

thinking involves them but they do not suffice to constitute it. The one *sine qua non* of thought—selective control of ideas in order to solve a problem—is so far left out altogether.

Having, however, admitted the want of a technical term for what the Herbartians call an apperceptive system and having disapproved of their term, it behoves us, if we can, to find a better. 'Intellective system' at once suggests itself. This at all events does not lose sight of what seems the salient characteristic of these systems from the standpoint of psychology, *viz.* that they are all the result of a subjective selection of what is relevant to a meaning or intention—a result synthesizing and fitting together *disjecta membra* that have first to be found. Such a result is systematic only because it is due to an interest in, and a search for, system. But according to Herbart, it is a result that comes about whether or no, simply through the interaction of the presentations concerned; and according to his modern representatives seems to come about provided attention is specially restricted to a part of its field. They cannot mean this, of course[1]. What they mean is rather—and it is true enough—that when such systems are *already formed*, and especially when they are well organized, and colligated by an appropriate terminology and nomenclature, they may become as ideational wholes amenable to the working of association and inhibition, like other ideas. Most of the detail of Herbartian expositions falls under this head. Such detail has proved especially helpful to the application of psychology to education for which the Herbartians have long been distinguished; but it involves nothing new in principle. The processes otherwise described as classifying, diagnosing, explaining belong here, as when we ask *What is this?* or *Is this it?*[2]. The new is adjusted to and further develops the old.

Once *formed* and familiar, the subsequent ideational working of these systems involves nothing new in principle. Still their very '*mass*' and complexity affect their relations to each other

[1] Wundt, in fact, when he comes to the treatment of his 'apperceptive combinations,' finds it needful to supplement his original 'concept of apperception,' as merely implying the entrance of a presentation into the focus of attention, with a certain 'relating (*beziehende*) function' which itself implies volition and purpose. This it is, he holds, that discriminates thinking from mere association. Cf. *op. cit.* pp. 544 f.

[2] Cf. Steinthal's division of apperceptions into identifying, subsuming, harmonizing, creative (*op. cit.* § 200–15). The last is obviously quite out of line with the rest.

in a way that throws a new light on the progress of experience. The greater this mass and the better such systems are compacted and organized as unitary wholes, the more each appropriates to itself by a sort of differential 'attraction' any new experiences that are germane to it, and *pro tanto* inhibits any that are not. The greater the diversity of the subjective interests that sustain them, the more remote and isolated two such systems tend to be. In short, the further we advance into this region of conceptual 'constellations,' the more we leave behind the continuity and instability of mere ideation. Adapting Descartes' comparison of the soul to a spider seated at the centre of its web we may represent man as constructing his own microcosm as a house of many mansions, each a 'universe of discourse,' into one or other of which he enters (*sich einstellt*, as the Germans say) as his interests or circumstances determine. The same things may chance to present themselves in each, but their aspects and importance will not be the same. In one they may awaken many memories and images, in another none at all or wholly different ones: here they may be welcomed and entertained, there repulsed or ignored. Subjective selection then is the clue to the structure of each one's intellectual domain, as it is also to that of the 'ideational tissue,' the memory-train, the sensory differentiations, successively elaborated out of the primary presentational continuum which we conceive as all that the psychological subject has confronting it when experience begins.

CHAPTER XIII

FORMS OF SYNTHESIS

The Bias towards Formal Logic in Psychology.

§ 1. If we agree that it is through acts of judgment, which successively resolve composite presentations into elements, that concepts first arise, it is still very necessary to inquire more carefully what these elements are. On the one side, we have seen logicians comparing them to so many letters, and on the other, psychologists enumerating the several sensible properties, *e.g.* of gold or wax—their colour, weight, texture, &c.—as instances of such elements. In this way formal logic and sensationalist psychology have been but blind leaders of the blind. Language, which has enabled thought to advance to the level at which reflexion about thought can begin, is now an obstacle in the way of a thorough analysis of it. Children or savages would speak only of 'red' and 'hot,' but we of 'redness' and 'heat.' They would probably say, "Swallows come when the days are lengthening and snipe when they are shortening"; we say, "Swallows are spring, and snipe are winter, migrants." Instead of "The sun shines and plants grow," we might say, "Sunlight is the cause of vegetation." In short, there is a tendency to resolve all concepts into substantive concepts; and the reason of this is not far to seek. Whether the subject or starting-point of our discursive thinking be actually what we perceive as a thing; or whether it be a quality, an action, an effectuation (*i.e.* a transeunt action); whether it be a concrete spatial or temporal relation, or finally, a resemblance or difference in these or in other respects—it becomes in every case, by the very fact of being the central object of thought, *pro tanto* a unity, and whatever can be affirmed concerning it may so far be regarded as its property or attribute. It is, as we have seen, the

characteristic of every completed concept to be a fixed and independent whole, as it were, crystallized out of the still-fluent matrix of ideas. Moreover, the earliest objects of thought and the earliest concepts must naturally be those of the things that live and move about us; hence then, this natural tendency, which language by providing distinct names further strengthens, not only to personify things, but to 'reify' every element and relation of things which we can single out: in other words, to concrete our abstracts[1]. It is after thinking has reached this stage that logic begins. Yet ordinary—so-called formal—logic which concerns itself not with thinking but only with the most general structure of thought as a product, is debarred from recognising any difference between concepts that does not affect their relations as terms in a proposition. As a consequence it drifts inevitably into that compartmental logic or logic of extension which knows nothing of categories or predicables, but only of the one relation of whole and part qualitatively considered. It thus pushes this reduction to a common denomination to the utmost: its terms, grammatically regarded, are always names and symbolize classes or compartments of things. From this point of view all disparity among concepts, save that of contradictory exclusion, and all connexion, save that of partial coincidence, are at an end.

Of a piece with this are the logical formula for a simple judgment, *S* is *P*, and the corresponding definitions of judgment as the comparison of two concepts and the recognition of their agreement or disagreement[2]. Even if it be possible to represent every judgment as a comparison, yet the term is strictly adequate only to judgments of one kind and affords but a very artificial description of others. But for a logic mainly concerned with inference, in the sense of explicating what is implicated in any given statements concerning classes, there is nothing more to be done but to ascertain relations of inclusion or exclusion; and the existence of these, if not necessarily, is at least most evidently

[1] See Wundt, *Logik*, 2te Aufl. (1893), i. p. 123 f., where this process is happily styled 'die kategoriale Verschiebung der Begriffe.'

[2] Cf. Hamilton: "To judge (κρίνειν, *judicare*) is to recognize the relation of congruence or of confliction in which two concepts, two individual things, or a concept and an individual, compared together, stand to each other" (*Lectures on Logic*, i. p. 225).

represented by spatial relations. Such representation obviously implies only a single ground of comparison and therefore leaves no room for differences of category. The resolution of all concepts into class concepts and that of all judgments into comparisons thus go together. On this view if a concept is complex it can only be so as a class combination; and, if the mode of its synthesis could be taken account of at all, this could only be by treating that too as an element in the combination like the rest: —iron is a substance, &c., virtue a quality, &c., distance a relation, &c., and so on. There is much of directly psychological interest in this thoroughgoing reduction of thought to a form which makes its consistency and logical concatenation conspicuously evident. Of the so-called matter of thought, however, it tells us nothing. And, as said, there are many forms in that matter of at least equal moment, both for psychology and for epistemology; these formal logic has tended to keep out of sight[1].

If we are still to speak of the elements of thought, we have just seen that—in dealing with the thought-process—we must extend this term so as to include not only the sensory elements we are said to receive[2] but several distinct modes in which this so-called matter is combined. Of these we may note (1) the forms of intuition—conceptual Time and Space; (2) certain formal (mathematical and logical) categories—as Unity, Plurality, Number, Difference, Likeness, Identity; (3) the real categories—Substance and Attribute, Cause and Effect, End and Means; and (4) the so-called axiological categories of Value or Worth —the exact determination of which is not here in place. These various modes cannot be obtained by such a process of abstraction and generalisation as logicians and psychologists alike have been wont to describe. Primarily they are not concepts more *general* than all others in the sense in which animal is more

[1] It has generally been under the bias of such a formal or computational logic that psychologists, and especially English psychologists, have entered upon the study of mind. They have brought with them an analytic scheme which affords a ready place for sensations or 'simple ideas' as the elements of thought, but none for any differences in the combinations of these elements. Sensations being in their very nature concrete, all generality becomes an affair of names; and, as Sigwart has acutely remarked, "Sensationalism and Nominalism always go together" (*Logik*, 2te Aufl. i. p. 342 *fin.*). History would have borne him out if he had added that a purely formal logic tends in like manner to be nominalistic.

[2] Cf. ch. v, §§ 4, 5, pp. 115 ff.

general than man. To understand this we must fall back on the distinction that Kant was led to make between formal and transcendental logic[1]. In his exposition of the latter he brings to light the difference between the 'functions of the understanding' in synthesizing—or, as we might say, organizing—percepts into concepts and the merely analytic subsumption of *abc* and *abd* under *ab*—*a*, *b*, *c* and *d* being what they may. Unlike other concepts, categories or, as Kant—from the epistemological standpoint called them—pure or *a priori* concepts, do not in the first instance signify *objects* of thought, but these *functions* of the understanding in constituting objects. In fine, they all imply special synthetic processes and correspondingly special products. The *general* characteristic of these products is what we have first of all to note.

Objects of Higher Order: their Analysis and Genesis.

§ 2. By transposing a tune from one key to another we may obtain two entirely diverse aggregates of notes, and yet the melody may remain unchanged. On the other hand, by varying the order of the notes two distinct tunes may result from the same collection of tones. Sense furnishes merely the parts: whence, then, this identity of the whole in spite of their diversity, this diversity of the whole in spite of their identity? From the sameness or difference of the several 'intervals,' it is replied. But the answer is insufficient. The tune is a unity, not a mere series, and, further, with every interval the same problem recurs. For the interval, too, is a whole, though a simpler one: it does not necessarily change with a change of its constituents, nor remain the same as long as their distance is unaltered. Feelings and 'associations,' again, cannot account for the result, inasmuch as such accompaniments are not invariably present. Moreover, they obviously presuppose the melody; but they do not produce it. Of such complex wholes or combinations—as distinct from mere aggregates or collections—there are many forms; as, for example, geometrical figures and patterns, motions and other changes, numbers, logical connexions, in fact—relations generally. In view of this variety it seems to strike the unprejudiced as wild to expect that 'the progress of psychophysics' may disclose an

[1] Cf. *Critique*, Pt. II. Introduction, M. Müller's trans. pp. 44–54.

explanation of such combinations conforming to the old scholastic maxim, *Nihil est in intellectu quod non fuerit prius in sensu*, as sensationalists interpret it. Yet hopes of such a *generatio aequivoca* are entertained[1]! Meanwhile the 'old psychology,' at any rate, is content to regard such complex wholes as 'new presentations'—the products, that is to say, not of a quasi-mechanical interaction of their constituents, but of intellectual synthesis.

What is here said of the combinations whereby the items of an aggregate are construed as parts of a whole[2] holds equally of the comparisons whereby such items are related, as like or unlike, compatible or incompatible. Before either combination or comparison is possible, such items or particulars must be 'given.' But it is conceivable that they should be given and no intellectual synthesis ensue; such a consciousness has been happily named *anoetic*[3]. Whether or no it actually exists is another matter: it is a conceivable limit, and has the theoretical usefulness of limiting conceptions generally. But relative *anoesis* suffices here. Suppose, then, we have: (*a*) *item*, a sound; *item*, ditto; *item*, ditto; or (*b*) *item*, blue; *item*, green. The sensationalist, from Hume onwards, has complained that he does not find in the one case a further item: *total three*; nor in the other a further item: *unlikeness*. After vainly seeking the living whole among the dead particulars, he next surmises that they generate it by their conjoint action! But whence this notion of 'action'; and how, if such *disjecta membra* suffice, do they so often fail of their effect, so that we cannot "see the wood for the trees"? Combinations and comparisons then, we conclude, are not given, but 'grounded' on what is given, and is thus their *fundamentum*. Hence Meinong, who has studied the psychology of intellection with especial care, has called the new presentations, due to this process of 'grounding' (*Fundiren*), 'objects of a higher order,' or

[1] Cf. *e.g.* F. Schumann, "Zur Psychologie der Zeitanschauung," *Ztschr. f. Psychologie*, xvii. 130, 136. According to him the presentations of combination and relation are the direct effect of the presentations of their constituent *fundamenta*, and the assumption of any intellectual process of comparing, distinguishing, or 'grounding' is superfluous.

[2] Parts of the wider whole of the presentational continuum, of course they always were; but as differentiations within that primordial whole they are 'items' relatively to each other: otherwise there could be no differentiation at all. Obvious as this should be, it is nevertheless sometimes overlooked. Cf. above, ch. iv, § 2, p. 78.

[3] G. F. Stout, *Analytic Psychology*, 1896, i. 50 f.

ideal objects[1]. They have validity in respect of the particulars on which they are grounded, but not reality as data existing for perception alongside of such particulars.

The reader will here be reminded of Hume's distinction between knowledge and probability. His four philosophical relations, "which, depending solely upon ideas, can be the objects of knowledge and certainty—resemblance, continuity, degrees in quality and proportions in quantity or number"—are objects of higher order and *ideal.* "The other three, which depend not upon the idea, and may be absent or present even while *that* remains the same[2]"—namely, identity, the situations in time and place, and causation—are thus obviously not the result of grounding or *noesis* merely, are not ideal but *empirical,* and have, that is to say, existential import. In fact, the second of these, the situations, though they imply synthesis in the wider sense in which all complex perception does, do not involve intellectual synthesis at all: are—as immediately intuited—neither ideal complications nor ideal relations. And since such temporal and spatial situations enter into both the other two—numerical identity and causation—the mixed, *a posteriori character* of these is obvious. Whatever be the defects of Hume's psychology, his classification of relations is so far sound, and its epistemological importance can hardly be overrated. It is accordingly to be regretted that the one vague term 'relation' does not allow us to make these distinctions more precise. The German language, with the two terms *Verhältniss* and *Beziehung,* can do more.

Forms of Intuition.

§ 3. Among the forms of synthesis above enumerated Space and Time as forms of intuition were mentioned first of all. We have seen earlier[3] that the intuition of the 'external world' is

[1] A. Meinong, "Ueber Gegenstände höherer Ordnung u.s.w.," *Ztschr. f. Psychologie* (1899), xxi. 182 ff.; *Gesammelte Abhandlungen,* 1913, ii. 377 ff.; in this he was, however, anticipated by Lotze: see his *Metaphysik,* § 268, and also above, ch. vii, § 6, pp. 204 f. Special mention must also be made of an earlier paper by C. v. Ehrenfels ("Ueber Gestaltqualitäten," *Vierteljahrsschr. f. wissensch. Philosophie,* 1890, pp. 249 ff.), round which the whole subsequent discussion of this topic centres. Cf., too, Stout, *op. cit.* bk. i. ch. iii.

[2] *Treatise of Human Nature,* Green and Grose's edition, i. pp. 372 *fin.*, 375 *fin.*

[3] Ch. vi. § 6, pp. 163 ff.

formally constituted by the temporal and spatial relations of the particular presentations of which it consists. From this concrete experience of filled time and space we advance in thought to the concepts of empty, pure or absolute time and space and their several implications. This advance presupposes the lower level of spatial and temporal percepts as its foundation. These are possible without it: it is impossible without them. But what we attain is not merely perceptual time and space with only the filling left out. Perceptual time is not uniform and perceptual space has not three homogeneous dimensions: nor is either indefinitely extended or indefinitely divisible. The straight line and the circle of geometry are ideal constructions to which the actual only approximates: they are not merely abstract terms. As Locke would have said, they are archetypal not ectypal; and so have suggested that conceptual reconstruction of the world, which has been the dream of science since the days of Descartes. Here space and time come first, and the order of science inverts the order of existence, the higher objects precede the lower. It was from this standpoint that Kant discussed space and time as forms or *a priori* conditions of intuition, without which there could be, as he supposed, no perception of an external world at all. But psychology may claim to have shewn that Kant's so-called pure intuition of space and time as ideal construction is conceptual and not perceptual, not the presupposition of experience, but a very complex result of it, found only where the intellectual level is attained. For all that, this synthesis—just because it is 'creative,' archetypal, constructive—differs widely from all other forms of synthesis. So far it gives ground for Kant's distinction of forms of intuition from categories or forms of thought. It also justifies his rejection of the rationalistic conception of mathematics as merely logical, and the disastrous confusion between philosophical and mathematical methods to which it led[1]. This identification of mathematics with logic and philosophy with mathematics involved the dogmatic assumption that both mathematics and philosophy were independent of experience. The empirical philosophers who had no difficulty in refuting this assumption nevertheless also failed, owing to their sensationalist psychology, to account even for the synthesis

[1] Cf. *Critique of the Pure Reason*, 1st edition, pp. 713 ff.; M. Müller's trans.

that spatial and temporal percepts entail; and they erred again in assuming that mathematical concepts are simply abstracted from these.

But long before any definite mathematical concepts were formed, the human mind passed beyond the level of spatial and temporal perception. This step was taken, and we might even say, the foundation of science was laid, when the idea of a measure or standard was realised. And here it is important to remember that, although this idea was the result of intersubjective intercourse, its realisation was due to the nature of things. Had there been no rigid, freely movable bodies, had there been no independent isochronous series of events, the objective measurement of space and time as mere continuous quantity would have been impossible[1]. So closely are thought and experience intertwined.

Formal Categories: (a) Mathematical.

§ 4. In passing from forms of intuition to categories as 'forms of thought' we pass from the domain of presentational continuity to syntheses which yield the discrete and relations of various forms of this to each other. But the transition is still gradual in so far as the simplest of these categories, those we have called mathematical—such as Unity, Plurality, Number,—depend primarily on intuition[2]. To begin with that which is the most fundamental and formal of all[3]—How do we come by the concept of Unity, the type of all that is discrete? "Amongst all the ideas we have," says Locke, "as there is none suggested[4] to the mind by more ways, so there is none

[1] Cf. Helmholtz, "The Origin and Meaning of Geometrical Axioms," *Mind*, O.S. vol. i. (1876), pp. 319 and *passim*; E. H. Rhodes, "The Scientific Conception of the Measurement of Time," *Mind*, O.S. vol. x. (1885), pp. 347 ff.

[2] Cf. ch. vi, § 1, p. 142.

[3] On this account Professor Stout writes to suggest that Unity should be described as 'super-relational.' It is certainly superior to all other relations inasmuch as every synthesis is a unity; and Kant clearly recognised this in saying that the transcendental unity of apperception is the supreme principle of all use of the intellect. But if it be true that there is no relating without unifying, it is equally true that there is no unifying without relating. Cf. Meinong's able article "Zur Psychologie der Complexionen und Relationen," *Zeitschr. f. Psych.* ii. (1891), p. 254.

[4] *Suggestion* is a favourite term with Locke, as it was with Berkeley; and doubtless those are right who regard this usage as an indication that neither Locke nor

more simple than that of unity, or one. It has no shadow of variety or composition in it; every object our senses are employed about, every idea in our understandings, every thought of our minds, brings this idea along with it[1]." All the same, to assign a sensible origin to the concept of unity would certainly be a mistake—one of the class of mistakes already more than once referred to, which consist in transferring to the data of sense all that is implied in the language necessarily used in describing them[2]. The *term* 'a sensation,' for instance, no doubt logically implies the idea of unity, but the bare *sensation* as received 'brings along with it' nothing but itself: as said in the second section, it is 'anoetic.' And, if we consider sensory consciousness merely, we do not receive a sensation, and then another sensation, and so on *seriatim*; but we have always some continuous change of sensations even when these are qualitatively sharply differentiated. Differentiation, in other words, never proceeds so far as to disintegrate the presentational or objective continuum itself[3]. Again, if unity were an impression of sense and passively received, it would, in common with other impressions, be unamenable to change. We cannot see red as blue, but we can combine many (parts) into one (whole), or *vice versa* resolve one (whole) into many (parts)[4]. Unity, then, is the result of an act the occasions for which, no doubt, are at first non-voluntarily determined; but the act is still as distinct from them as is attention from the objects attended to. It is to that movement of attention already described in dealing with ideation[5] that we must look as the

Berkeley was as crassly 'sensationalist' as some commentators, T. H. Green *e.g.*, liked to suppose. Cf. *The Intellectualism of Locke*: an Essay by T. E. Webb, 1857, pp. 102 ff.

[1] *Essay concerning Human Understanding*, II. xvi. § 1.

[2] To avoid which mistake the term 'particular' or 'item' has been here employed.

[3] Cf. above, ch. ii, § 4, p. 49.

[4] Berkeley was less sensationalist than Locke here. "It ought to be considered," he says, "that number (however some may reckon it amongst the primary qualities)... is entirely the creature of the mind....According as the mind variously combines its ideas, the unit varies....We call a window one, a chimney one; and yet a house, in which there are many windows and many chimneys, has an equal right to be called one; and many houses go to the making of one city....Whatever therefore the mind considers as one, that is a unit," *Essay towards a New Theory of Vision*, § 109. Cf. also Sigwart, *Logik*, § 68.

[5] Cf. above, ch. vii, § 3, pp. 196 f., § 6, pp. 204 f.

proximate source of this category. When there is little or no difference between the field and the focus of attention—when, *i.e.*, spontaneous acts of attention[1] are almost or altogether absent —unifying is an impossibility, whatever the impressions that may be 'there.' On the other hand, as voluntary acts of concentration become more frequent and distinct, the variegated continuum of sense is shaped into intuitions of definite things and events. Also, when at length words facilitate the control of ideas, it becomes possible to single out special aspects and relations of things as the subjects or starting-points of our discursive thinking. The forms of unity are then manifold: every act of intuition or thought, whatever else it is, is an act of unifying.

It is obvious that the whole field of consciousness at any moment can never be actually embraced as one. Whatever becomes the focus of consciousness is thereby unified and so leaves an outlying field; so far unity may be held to imply plurality. But it cannot with propriety be said that in a simple act of attention the field of consciousness is analysed into two distinct parts, *i.e.* two unities—*this* (now attended to) and *the other* or the rest (abstracted from). For the not-this is then but the rest of a continuum and not itself a whole; it is left out but not determined, as the bounding space is left out when a figure is drawn. To know two unities we must take one and one together. Herein comes to light the difference between the unity which is the form of the concept or subject of discourse and the unity of a judgment. The latter is of necessity complex; the former may or may not be. Even if it is, the complexity of the two is different. If the subject of the judgment is not only clear but distinct—*i.e.* not merely defined as a whole but having its constituents likewise more or less defined—such distinctness is due to previous judgments. At any future time these may of course be repeated; such are the analytical or explicative judgments of logic. As the mere subject of discourse, however, a concept, even when complex, is a single unity simultaneously apprehended; the relation ascertained between it and its predicate or some other term constitutes the unity of a judgment, a complex unity, which is comprehended only when its parts are apprehended distinctly and together, as related in a certain way.

[1] Cf. above, ch. iii, § 3.

The mention of unity and complexity leads us naturally to Number. This we may here understand in its usual denotation, *viz.* as exclusive of none and one, an *Anzahl*, to use a useful German word. It was in this sense that Euclid defined number as a plurality of unities taken together: this implies that plurality is an earlier—and so to say, mediating concept. Whether this is true of all numbers without exception may well be questioned, but it is certainly true of nearly all. Many wonderful stories are told of feats of 'counting' accomplished by some of the higher animals, and even by some of the lower—if instinctive 'counting' may be regarded as such. Yet even if we believed all of these stories, instead of doubting them all, we might still maintain that prior to any *general* conception of definite numbers or *quotities*[1], there was in most cases only a more or less indefinite perception of Plurality as more or less many, but not as just so many. When a hen continues clucking till all her chickens are gathered under her wings, she does so, not because she can count, but rather because she feels an uncomfortable void till they are all there. If, however, the struggle for existence has reduced her brood to three, she is perhaps sufficiently aware of the difference between two and three to know that one is missing. Throughout human experience at any rate the concept of a 'pair or couple,' he and I, this and that, is always present and distinguished from 'many' as implying three or more: this much the existence of singular, dual and plural inflexions shews. As to the statement that there are savage races that cannot 'count' beyond two, this is about as exact as the statement that the most advanced races cannot count beyond ten. The only statement that seems warranted is that there are races who use a rude dyadic system of numeration whereas we use a decadal one, and that they do not carry even this simple system very far. Why they do not we shall see presently.

Usually to ascertain the number of some finite aggregate that we are 'taking together,' we have, it is said, to 'count,' and

[1] A useful word, running on all fours with *quality* and *quantity*, suggested by Cournot (*Traité de l'Enchaînement des Idées fondamentales*, 1861, i. p. 21). The application of number to quantity is entirely conventional, not part of the concept of number as such. At the same time it necessitates a distinction worth remarking, though it does not here concern us further than to prevent confusion—the distinction between one as a number and a standard unit as a quantity.

this involves a succession of movements of attention. Hence the view widely held and attributed even to Kant that time as a 'form of intuition' is the basis of arithmetic. But counting does not make number: strictly speaking if it is to be described as 'consisting in the colligation of separate acts of attention (*Denkacte*) to [form] *complex unities*' it does not even ascertain number[1].

We cannot get beyond plurality in this way except by assuming what we propose to find: five acts of attention are, no doubt, five; but how much the wiser are we for that? Counting, then, will not help us to define number and is in no way essential to it. As in other cases, things meet us half way and furnish 'the occasion' which evokes from us the 'idea': any series of discontinuous presentations will do—the fingers of the hand, the beads on a string, the strokes of a clock-bell, or the call of the cuckoo. We may know two without *successive* acts of attention; and knowing two, we may know three at once, as one more than two. But 'the narrowness of consciousness' soon puts a limit to this direct intuition of number and explains why the savage's grasp of number is so restricted. Within this limit, however, simultaneous (spatial) plurality that persists for a while, as in the instances first given, is a better provocative than a successive (temporal) plurality, as in the last; for over that attention has less control. We can often directly observe when such a plurality becomes 'more' or 'less' by one, though we do not know 'how many' it is. So we may be said to know $n+1$, even when we only know n as 'this plurality[2].' The less this n is, however, the more striking a difference of one becomes. Now experiments shew that an aggregate of objects when not exceeding *six* can usually, and when not exceeding *five*, can always, be identified at once as so many, *i.e.* without being first resolved into smaller groups[3]. Altogether, then, psychology does not

[1] Wundt, *Logik*, 2te Aufl. 1893, i. p. 521; cf. Russell, *The Principles of Mathematics*, 1903, p. 114.

[2] It is here that Herbart began his psychology of number: Es entstehen die grösseren Zahlen nicht aus der Eins, sondern gerade umgekehrt die Eins aus der Mehrheit...Der eigentlich wissenschaftliche Begriff der Zahl...[ist] kein andrer als der des Mehr und Minder...Die bestimmten Zahlbegriffe bilden sich allmälig aus *Psychologie als Wissenschaft, u.s.w.* 1850, § 116.

[3] The Braille alphabet for the blind is based on such immediate recognition of six raised dots: the attempt has been made to extend the number to eight, but apparently

countenance any of the views that connect number primarily with temporal intuition or derive the cardinal numbers from the ordinals—views to which philology also seems to be equally opposed.

Number we have so far regarded as an object of a higher order of the first grade. But we can repeat the process: having synthesized one, one, one into one-three, we can, without losing sight of the quotity of this new one, group three of these as a three of a higher order—3^2 as we now symbolically express it. So the start is made towards systematic numeration by means of gestures and finally of symbols. The crowning achievement in this direction we owe to the Hindoo who devised the simplest possible representation of these ascending unities of higher and higher order by means of the symbol o and a series of ranks for n^1, n^2, n^3..., &c., 10, 100, 1000, &c. It is upon this spatial intuition of symbols—'symbolic construction' as Kant called it—rather than on temporal intuition that the science of arithmetic rests.

Formal Categories: (b) Logical.

§ 5. We now come to certain formal categories often regarded as a class apart—those, *viz.* that result from reflective comparison and are supposed to be the domain of the old formal logic or logic of predication[1]. This logic, as we have seen, by throwing the form of synthesis into the predicate[2] reduces every judgment to a dual relation of S and P, and every syllogism to a dual relation of S and M, M and P. But, if we at all regard the matter synthesized, it is certain, for example, that "It is an explosion" is less complex than "The enemy explodes the

without success. When three figures or a monosyllabic word forms the aggregate the whole can be read off as quickly as a single figure or letter, although here the characters and their order have both to be noted—a more complex process surely than that of merely recognising a group of five or six. Cf. Wundt, *Physiologische Psychologie*, 6te Aufl. iii. pp. 430 f.; H. A. Nanu, *Zur Psychologie der Zahlauffassung*, 1904.

[1] "Concepts, Judgments and Reasonings are all equally products of the same faculty of Comparison." Hamilton, *Lectures on Logic*, i. p. 117. Cf. Mill's *Logic*, I. v. § 6; Bain's *Logic*, i. p. 8.

[2] Disregarding, that is to say, differences of category. Cf. above, § 1, p. 315.

mine." The first answers one question; the second answers three. As regards the more complex judgment, both the process of ascertaining the facts and also the language in which it is expressed shew that the three elements concerned in it are not synthesized at once. Suppose we start from the explosion—and changes or movements are not only apt to attract attention first, but, when recognised as events and not as abstracts hypostatized, they call for some supplementing beyond themselves—then in this case we may search for the agent at work or for the object affected, but not for both at once. Moreover, if we find either, a complete judgment at once ensues: "The enemy explodes," or "The mine is exploded." The original judgment is really due to a synthesis of these two. And, when the results of former judgments are in this manner taken up into a new judgment, a certain 'condensation of thought' ensues. Of this condensation the grammatical structure of language is evidence, though logical manipulation—with great pains—obliterates it. Thus our more complex judgment would take the form—"The enemy is mine-exploding" or "The mine is enemy-exploded," according as one or other of the simpler judgments was made first. An examination of other cases would in like manner tend to shew that in judgment the synthesis is always—in itself and apart from implications—a binary synthesis, which formal logic represents by the formula S is (or is not) P. Wundt, to whom belongs the merit of first explicitly stating this 'law of dichotomy or duality[1]' as the most striking characteristic of discursive thinking, strictly so-called, has contrasted it with mere association. This, as running on continuously, he represents thus—$A^{-}B^{-}C^{-}D^{-}$ ...; the synthesis of thought proper, on the other hand, he symbolizes by forms such as the following:

$$\widehat{AB};\ \widehat{AB\ CD};\ \widehat{AB\ CDE};\ \text{\&c.}$$

Thus, Socrates is a philosopher; the philosopher Socrates discovered a method; the philosopher Socrates discovered the dialectical method; &c. The point is that the one thing

[1] Wundt, *Logik: eine Untersuchung der Principien der Erkenntniss, u.s.w.* (2nd ed. 1893), i. 59 ff.; *Phys. Psych.* iii. p. 547. It is however incidentally recognised by Boole. *An Investigation of the Laws of Thought*, 1854, pp. 49–51, 112, 117.

attended to in such acts of 'apperception' is the synthesis of two ideas, and of two ideas only, because, as only one movement of attention is possible at a time, only two ideas at a time can be synthesized[1]. In the simple 'association' whereby the memory-continuum is produced, attention moves from *A* to *B* and thence to *C* without any relation between *A* and *B* being attended to at all, although in the process they must acquire relations, that of sequence, *e.g.* at least.

Quite a number of categories are discussed by one author or another as categories of comparison[2]. We need concern ourselves only with the three already mentioned, (*a*) Likeness and Difference and (*β*) Identity.

(*a*) When we say that two 'contents' are similar, and when too they admit of analysis, we can, if need be, enumerate certain elements as the ground of their partial likeness, and certain others as the ground of their partial diversity. We might further say that, abstracting from these last, we can regard the points of resemblance as constituting a general class, to which the two contents belong as specific instances. But at this point a question of some psychological interest arises, and we must digress for a moment to consider it. How is either comparison or abstraction possible when the two resembling contents appear as simple, and so far unanalyzable? Instances, of course, are

[1] In fact, as already said (ch. xi, § 2), there is no original thinking—as distinct from merely following the thoughts of another—that is ever entitled to be called strictly logical and methodical throughout. The ideational trains are only imperfectly controlled: we find what Wundt calls 'an intermixture of apperceptive and associative processes and a continual transition from one to the other' (*op. cit.* iii. 548). Actual thinking is always more or less rhapsodical and heuristic—to talk of a *method* of discovery, as Jevons did, tends to rob 'method' of all meaning. On the other hand, strictly formal logic is not concerned with thinking as a process but only with thought as a product—perhaps even that is saying too much. Logic, if it is to be brought into connexion with psychology, must be regarded, like ethics, as a normative science. But then it will not enact as a rule what is a necessity of nature. Accordingly the only law of duality that logic recognises is quite distinct from this one of Wundt's which, by the way, he does not assert to be logical. This is a matter which may puzzle some and tempt others to speculation. Anyhow what is mainly relevant here is this: The logical laws of contradiction and excluded middle (to both of which the title 'law of duality' has been given) allow of *no* restriction, whereas Wundt's law is not true of mathematical intuition nor probably of that higher intuition which though one in itself takes many propositions to explicate. Cf. on all this however F. H. Bradley's criticism, *Mind*, O.S. xii. 1887, p. 381 *n.*

[2] Cf. *e.g.* Hegel's *Logik*, II. ch. ii.; v. Hartmann, *Kategorienlehre*, pp. 197–215.

familiar to every one: thus we call red and orange colours, and say they resemble each other more than do red and blue[1]. In presence of this question logicians and psychologists are apt to be at loggerheads. The logician maintains that both abstraction and resemblance (as distinct from qualitative identity) imply complexity; and surely here he cannot be gainsaid. Yet there are the facts: reds and blues of sorts and a whole scale of degrees of likeness and unlikeness; but no constituent parts, no assignable marks of identity or diversity, are forthcoming, such as we find when we class sugar and salt together as solid or soluble, and pronounce them like in colour and unlike in taste. Here the logician's symbols $a + b + c$, $a + b + d$, have their counterparts: there—for the percipient's consciousness at all events—they have not. We cannot 'consider and attend to either the sameness or the differences in' red and blue, as we can to the like or the unlike properties in salt and sugar. None the less it would be hasty to conclude that colours or any given sensations are simple. We are often struck by the resemblance of complex wholes—two faces, say—long before we can discern the exact points of likeness. Still, so long as there is no perceptible complexity in the individual presentations there can be no analysis, and, therefore, no abstraction or comparison based upon it. Can we find elsewhere the complexity that generalisation and comparison are supposed to imply? Though colour may be regarded as a general term applicable alike to red, green and blue, just as animal is a general term applicable alike to bird, beast and fish, it would be a mistake to assume that there is a like process of comparison in each case, because for the second also we can now frame a 'general term.' We seem bound to distinguish between consciously logical or 'noetic' processes and processes that are unconsciously logical or 'hyponoetic,' as we may perhaps call them. In the former the subjective aspect is left aside; in the latter it cannot be. The only common mark we can psychologically assign to colours is that they are all seen, and to tones —as the element of notes and noises—that they are all heard. So often as we talk of tasting tastes, smelling smells, feeling

[1] Hume long ago called attention to this. "'Tis evident, that even different simple ideas may have a similarity or resemblance to each other; nor is it necessary that the point or circumstance of resemblance should be distinct or separable from that in which they differ" (*op. cit.* i. p. 328 *n*).

touches, language leads us to bear witness to this fact. When the sunset red changes to the twilight grey, I still see; but when the thunder follows the lightning there is a double change, though not an absolute one: from seeing I pass to hearing, but I am sentient still. And if progressive specialisation be the order of experience then the 'general' sentience precedes the specialisations seeing, hearing, &c.; and, again, the 'universal' colour the differentiations, red, green, blue, &c.[1] Such 'first universals,' then, are not reached by abstraction, but are given in the fundamental continuity of experience; therefore their subsequent differentiation admits neither of the definition nor the classification applicable to discrete complexes, which are the material of logical comparison only. When red is pronounced liker or nearer to yellow than it is to green, this is because a smaller change is experienced in the transition from red to yellow than in that from red to green, and because in the latter yellow is reached and passed before green appears[2]. Proximity and resemblance are, then, so far one and the same; also both are equally relative, admit of the same indefinite gradation, and have the same limit in *zero*, regarded either as coincidence or identity. Thus the concept of 'distance between' answers to what we have called a hyponoetic relation, and this is plainly distinct from the analysis of discrete complexes, with which, as said, noetic comparison is alone concerned: the one implies and the other excludes the notion of continuity and change—a fact which helps still further to distinguish the two[3].

Difference, said Hume, "I consider rather as a negation of relation, than as anything real or positive. Difference is of two kinds, as opposed either to identity or resemblance. The first is called a difference of *number*, the other of *kind*[4]." The truth seems rather to be that difference in Hume's sense of numerical difference is really distinctness and is so far an element in all relations as all imply distinct correlatives. To this extent

[1] Cf. above, ch. v, § 3, pp. 108 ff.

[2] Assuming, of course, that the change is the simplest or directest possible, *i.e.* a change of 'colour proper' without change of saturation.

[3] Cf. Lotze, *Logik*, § 14; Meinong, *Hume-Studien*, ii. 1882, pp. 52 f.; *Ges. Abhandl.* ii. 51 f.; Stumpf, *Ton-psychologie*, i. 1883, pp. 116 ff.; and the controversy between F. H. Bradley and W. James, "The Doctrine of Simple Resemblance," *Mind*, N.S. ii. 1893.

[4] *Op. cit.* i. p. 323 *fin.*

even identity—or at least the recognition of it—rests on difference, namely that form of difference which is essential to plurality. But absolute difference (*i.e.* diversity) of kind may be considered tantamount not, indeed, to the negation, but at least to the absence of all formal relation. That this absolute diversity—or disparateness, as we may call it—affords no ground for relations becomes evident when we consider (1) that, if we had only a plurality of presentations absolutely different, we should have in this sense no consciousness at all[1]; and (2) that we never compare—although we distinguish—presentations which seem absolutely or totally disparate, as *e.g.* a thunderclap and the shape of a brick, or the notion of free trade and that of the Greek accusative. All actual comparison of what is qualitatively different rests upon at least partial likeness. This being understood, it is noteworthy that the recognition of unlikeness is, if anything, more 'real or positive' than that of likeness, and is certainly the simpler of the two. We are never entitled to say that we perceive equality or exact likeness; but only that we are unable to perceive any difference. If another can, we credit him with the finer sense or better training. Here we have what Meinong has happily termed 'the prerogative of difference[2]' which is the ground of the principle of differentiation so closely connected with all mental advance[3].

In the comparison of sensible impressions—as of two colours, two sounds, the lengths or the directions of two lines, &c.—we find it easier in some cases to have the two impressions that are compared presented together, in others to have first one presented and then the other. But, either way, the essential matter is to secure the most effective presentation of what their difference is. In every case it is something positive and, like any other impression, may vary in amount from bare perceptibility to the extremest distance that the continuum to which it belongs will admit. Where no difference or distance at all is perceptible there we say, there is—for us—likeness or equality. Is the only outcome, then, that when we pass from *ab* to *ac* there is a change in consciousness, and that when *ab* persists there is none? To say this is to take no account of

[1] Cf. above, ch. iv, § 2, pp. 75 f.

[2] *Ueber die Erfahrungsgrundlagen unseres Wissens*, 1905, § 22.

[3] Cf. above, ch. iv, § 2; ch. v, § 3.

the operations (we may symbolize them as $ab \rightarrow ac{:}\delta$, $ab \rightarrow ab{:}o$) whereby difference or its absence is recognised. The change of presentation (δ) and absence of change (o) are not here what they are as merely passive occurrences, so to put it: they are objects of a higher order, the results of comparison. This is evident from the fact that in the former there is positive presentation and in the latter no presentation at all. The relation of unlikeness, then, is distinguished from the mere 'position' or fact of change (1) by the voluntary concentration of attention upon *ab* and *ac* with a view to the detection of this change as *their* difference, and (2) by the act, relating them to this difference, in that they are judged unlike to that extent.

The type of comparison is such superposition of geometrical lines or figures as we have *e.g.* in Euclid I. iv.: if they coincide we have concrete equality; if they do not their difference is a line or figure, as the case may be. All sensible comparisons conform essentially to this type. In comparing two shades we place them side by side, and passing from one to the other seek to determine not the absolute shade of the second but its shade relative to the first—in other words, we look out for contrast. We do not say of one "It is dark," for in the scale of shades it may be light, but "It is darker"; or *vice versa.* Where there is no distance or contrast we simply have not *two* impressions, and, as said—if we consider the difference by itself—no impression at all. Two coincident triangles must be perceived as one. The distinction between the one triangle thus formed by two coinciding and the single triangle rests upon something extraneous to this bare presentation of a triangle that is one and the same in both cases. The marks of this numerical distinctness may be various: they may be different temporal signs, as in reduplications of the memory-continuum; or they may be constituents peculiar to each, from which attention is for the moment abstracted, any one of which suffices to give the common or identical constituent a new setting. In general, it may be said (1) that the numerical distinctness of the related terms is secured, in the absence of all qualitative difference, solely by the intellectual act which has so unified each as to retain what may serve as its individual mark; and (2) that they become related as 'like,' either in virtue of the active adjustment to a change of impression which their partial assimilation defeats; or in virtue of an

anticipated continuance of the impression which such assimilation confirms.

In the case of complexes there are some noteworthy peculiarities distinguishing the comparisons that lead to the detection of differences, where the resembling elements preponderate, from the converse cases leading to the detection of agreement, where the differing elements preponderate. Suppose the one case symbolized by *DBLWPRT*, *DBLZPRT*, and the other symbolized by *AQSFXVB*, *DHJVTYK*. In the former the only change is that from *W* to *Z* and in the other all is different except *V*. What first impresses is difference, and in the former case the common elements make the one difference more impressive: in the latter case the many differences engross attention so that the one resemblance is easily overlooked[1]. In the history of science and the arts there are numerous instances of important 'fruit-bearing' similarities remaining undetected for ages till the patient pondering of some intellectual genius evoked 'the flash of similarity through the dense medium of diversity' as Bain used to say. Stock instances, such as Newton and the falling apple, Watt and the lid of his mother's kettle, Goethe and the phyllotaxis of flower and leaf, Oken and the homology of skull and vertebrae, will readily occur[2].

(β) It is in keeping with the above analysis that we say in common speech that two things in any respect similar are so far the same; that, for example, the twin sons of Aegeon (in *The Comedy of Errors*)—

> the one so like the other,
> As could not be distinguish'd but by names—

had the same complexion, the same features and the same stature, just as we say they had the same mother. This ambiguity in the word 'same,' whereby it means either indistinguishable resemblance or individual identity, has been often noticed, and from a logical or objective point of view justly complained of as 'engendering fallacies in otherwise enlightened understandings.' Yet apparently no one has inquired into its

[1] Cf. for further exemplification of the above the long but interesting papers of Ranschburg (*Zeitsch. f. Psych.* xxx. 1902, 39 ff.) and Aall (*ibid.* xlvii. 1908, 1 ff.).

[2] These and many more are described at length by Bain. Cf. his *Senses and Intellect*, 4th edn. pp. 523 ff. and elsewhere.

psychological basis, although more than one writer has admitted that the ambiguity is one 'in itself not always to be avoided[1].' It is not enough to trace the confusion to the existence of common names or to cite the forgotten controversies of scholastic realism. We are not now concerned with the relations of thoughts to things or with logical analysis; but merely with the analysis of a psychological process. Here however the tendency to confound thoughts and things has been and is a frequent source of psychological confusion. Some only realise with an effort that the thought *of* extension is not extended; no wonder, then, if it should seem 'unnatural' to maintain that the thought of two things as like does not *consist of* two like ideas. Assuming, however, that both meanings of identity have a psychological justification, it will be well to distinguish them and to examine their connexion. Perhaps we might term the one 'presentational or material identity' and the other 'numerical or individual identity'—following the analogy of expressions such as 'different things but all made of the same stuff,' 'the same person but changed beyond recognition.' Thus there is unity and plurality concerned in both cases; and herein identity or sameness differs from singularity or mere oneness, which so far entails no logical relation. But the unity and the plurality are different in each case, and each is in some sort the converse of the other. In the one, two different individuals at least partially coincide and may perhaps be distinguishable only by extrinsic marks—eventually local signs; in the other, one individual has become at least partially different and may perhaps be identified only by extrinsic marks—eventually temporal signs. The unity in the one case is an individual presentation, in the other it is the presentation of an individual.

In presentational identity the unity is that of a single presentation, whether simple or complex, which enters as a common constituent into two or more others. It may be possible, of course, to individualise it, but as it emerges in a comparison it is a single presentation and nothing more. On account of this absence of individual marks this single presentation is what logicians call 'abstract'; but this is not psychologically essential.

[1] Cf. J. S. Mill, *Logic*, bk. i. ch. iii. § 11, and *Examination of Hamilton*, 3rd ed. ch. xiv. p. 306 *n.*; also Meinong, *Hume-Studien*, ii., 138 f., *Gesam. Abhandlungen*, ii. 131 f.

It may be a generic image on which reduplication and obliviscence have entailed the loss of individual marks; but it may equally well be a particular presentation, like red, to which such marks never belonged. We come here from a new side upon a truth which has been already expounded at length, *viz.* that presentations are not given to us as individuals but as changes in a continuum. Time and space—the instruments, as it were, of individualisation, which are presupposed in the objective sciences—are psychologically later than this mere differentiation.

The many vexed questions that arise concerning individual identity are metaphysical rather than psychological. But it will serve to bring out the difference between the two forms of identity to note that an identification cannot be established solely by qualitative comparison; an *alibi* or a breach of temporal continuity will turn the flank of the strongest argument from resemblance. Moreover, resemblance itself may be fatal to identification when the law of being is change.

Real Categories.

§ 6. As regards the real categories, it may be said generally that these owe their origin in large measure to the anthropomorphic or mythical tendencies of human thought—*τὸ ὅμοιον τῷ ὁμοίῳ γινώσκεσθαι*. The formation of these concepts depends primarily upon the facts of what in the stricter sense we call 'self-consciousness'—implying intersubjective intercourse—and secondly upon certain spatial and temporal relations among our presentations themselves. On the one hand, it has to be noted that these spatial and temporal relations are but the occasion or motive—and ultimately perhaps, we may say, the warrant—for the analogical attribution to things of selfhood, efficiency and purpose, but are not directly the source of the forms of thought that thus arise. On the other hand, it has to be noted also that such forms, although they have an independent source, would never apart from suitable material come into actual use. If the followers of Hume err in their exclusive reliance upon 'associations naturally and even necessarily generated by the order of our sensations' (J. S. Mill), the disciple of Kant errs

also who relies exclusively on 'the synthetic unity of apperception.' In fact we are on the verge of error in thus sharply separating association and the unity of apperception; if we do so momentarily for the purpose of exposition it behoves us here again to remember that mind grows and is not made. The use of terms like 'innate,' '*a priori*,' 'necessary,' 'formal,' &c., without further qualification, leads only too easily to the mistaken notion that all the mental facts so named are alike underived and original, independent not only of experience but of each other; whereas but for the forms of intuition the forms of thought would be impossible—that is to say, we should never be *self*-conscious at all if we had not previously learnt to distinguish occupied and unoccupied space, past and present in time, and the like. Again, it is equally true that if we could not feel and move as well as receive impressions, and if experience did not repeat itself, we should never attain even to this level of spatial and temporal intuition. Kant shews a very lame and halting recognition of this dependence of the higher forms on the lower both in his schematism of the categories, and again in correcting in his Analytic the opposition of sense and understanding as respectively receptive and active with which he set out in his Aesthetic. Still, although what are called the subjective and objective factors of real knowledge advance together, the former is in a sense always a step ahead. We find *again* without us the permanence and individuality, the efficiency, and the adaptation we have found *first of all* within. But such primitive imputation of personality, though it facilitates a first understanding, soon proves itself faulty and begets the contradictions which have been one chief motive to philosophy. We smile at the savage who thinks a magnet must need food or the child who is puzzled that the horses in a picture remain for ever still; but few consider that underlying all common-sense thinking there lurks the same natural precipitancy[1]. We attribute to extended things a unity which we know only as the unity of an 'enduring' subject; we attribute to changes among these extended things what we know only when we act and suffer ourselves; and we attribute further to them in their changes a striving for ends which we come to know only because feeling in our case begets appetition and aversion. In asking what they

[1] Cf. next chapter, § 6, p. 359 f.

are, how they act, and why they act thus and thus, we naturally tend at first to assimilate things to ourselves, in spite of differences which lead us by and by to find a gulf between mind and matter. Such instinctive analogies have, like other analogies, to be confirmed, refuted, or modified by further knowledge, *i.e.* by the very insight into things which these analogies have themselves made possible. That in their first form they were mythical, and that they could never have been at all unless originated in this way, are considerations that make no difference to their validity —assuming, that is, that they admit, now or hereafter, of a logical transformation which renders them objectively valid. This legitimation is, of course, the business of philosophy; we are concerned only with the psychological analysis and origin of the concepts themselves.

i. What we may call the perceptual or objective factors in the category of Substance and Attribute have been already described under the heading 'Intuition of Things[1].' Along with these, certain subjective factors were also noticed, which only become quite explicit at the conceptual level; though no sharp line can be drawn between the two levels. These factors are (1) the unity and permanence more or less characteristic of what are entitled to be called things, and (2) this distinction between the things and their properties itself. In definitions of substance sometimes the first of these is prominent, sometimes the second: a substance is an entity that subsists of itself; or it is that which supports attributes, that in which they inhere or to which they belong. The source and paradigm of the first definition is, we believe, to be found in our personality; and here we begin by assimilating the external objects with which we interact to this: we 'personify' them, that is to say[2]. But the second is to be traced immediately to the subsequent objective analysis of these things, as already described: here we end by assimilating ourselves to them as a something which is the support of qualities: that is to say we 'reify' ourselves. Hence the materialism of primitive thought—"the spirit does but mean the breath"—hence too the dualism that superseded it by regarding mind and matter as disparate

[1] Cf. ch. vi, § 6.

[2] The absence of the neuter gender from most, if not all, primitive languages is perhaps worth mention.

and independent, but otherwise coordinate substances. It is from this standpoint that Locke's classical discussion of 'our ideas of substances' began[1]. As is well known all he could find was 'the confused idea of something' supporting or owning the qualities perceived—an idea that seemed to be rather an infirmity of thought than to be grounded in experience[2]—a mere metaphor that involves an indefinite regress, and means—in the case of mind and matter alike—simply 'we know not what.'

It was from such an analysis that Locke thought himself entitled to draw the extraordinary conclusion that "sensation convinces us that there are solid extended substances; and reflection that there are thinking ones[3]." With incomparably better logic, Hume, who accepted Locke's premisses, concluded that according to them the idea of substance is devoid of any validity at all beyond that of 'a collection of particular qualities' in the case of body, and a 'bundle of perceptions' in the case of mind. J. S. Mill, so far following Hume, in like manner concluded that in both cases we are only directly warranted in talking of 'a permanent possibility'—of sensations in the one case, of feelings, &c. in the other. The two nevertheless, he admitted, were not altogether on a par. 'The fact of memory' (and so of expectation) made an essential difference. But then both Hume and Mill were helpless when confronted with the implications of such terms as 'collection' and 'permanence'—those objects of a higher order that no kind of sense will explain: so Hume turned sceptic and Mill agnostic[4]. But Berkeley was here a better psychologist than either Locke or Hume and saw clearly what they—at the outset—had quite overlooked. "I know," he said, "that I *myself* am not my ideas, but somewhat else, a thinking, active principle that perceives, knows, wills, and operates about ideas. I know that I, one and the same self, perceive both colours and sounds...that I am therefore one individual principle, distinct from colour and sound; and for the same reason from all other sensible things and inert ideas. But, I am not in like manner conscious either

[1] Locke's fundamental error here, as we have already seen (ch. i, § 3, p. 15) lay in his assumption of an internal sense coordinate with the external senses.

[2] Cf. *Essay*, II. xxiii. §§ 2, 3.

[3] *Loc. cit.* § 29.

[4] Cf. especially Hume, *Treatise*, Green and Grose's ed. pp. 559 f., Mill, *Examination of Hamilton*, 3rd ed. pp. 253–7.

of the existence or essence of matter....There is therefore upon the whole no parity of case between Spirit and Matter[1]." This breach in the Cartesian dualism, that grim Bastille of modern philosophy, Berkeley effected for good and all; and herein, of course, he is to be honourably associated with his senior contemporaries, Malebranche and Leibniz.

We may take it as established then that the self or subject as 'thinking, active principle' or spirit is the source of this concept of substance. We have now to inquire how subject and substance came to be differentiated. "It is worth our consideration," said Locke, "whether active power be not the proper attribute of spirits, and passive power of matter. Hence may be conjectured that created spirits are not totally separate from matter, because they are both active and passive[2]." These remarks Leibniz was prepared to greet with cordial approval, "provided the word *spirit* is understood so generally as to include all souls or rather...all entelechies or substantial unities that have any analogy with spirits[3]." This was precisely the line taken by primitive thought. In proportion as permanence, individuality and function were present things were regarded as if they were animated: to the wild Indian it is as natural to talk of his trusty bow as to talk of his trusty horse; so he gives the one a proper name just as well as the other. But when he sets to work to make a bow or other implements a new concept is sure sooner or later to emerge. He takes a piece of lancewood: this is hardly a definite thing; for he might fashion it not into a bow but into a spear-shaft or a tent-pole, or he might even chop it up for fuel. He regards it then not as a specific thing, but simply as *materies* or mother-stuff, the possibility of many things and as such more permanent than any thing; for the individuality, the definite form and the functions that thing connotes are but 'accidents' for this pure *ἄπειρον*. Of such stuff things are made, but stuff itself is not a thing: it is at most only, as Aristotle would have said, a contributory cause of things; if with any propriety we can still call that a cause, which implies only permanence, potentiality and passivity. We are here then at one of Locke's extremes, subject or spirit as such,

[1] *Third Dialogue between Hylas and Philonous*, Fraser's ed. i. p. 329.

[2] *Loc. cit.* § 28.

[3] *Nouveaux Essais*, II. xxiii. § 28.

being at the other. So long as we can assume a self with its implication of determinate activity, continuity of kind with other selves is conceivable; when we cannot, we have only 'permanent possibility of sensation' left, implying indeed some objective reality, which if it be not due to one or many other subjects, must be utterly beyond our ken. Even the permanence of this matter or substance, which its very indeterminateness implies, is as different from the permanence of mind or spirit as death is different from life. The one is the abstract permanence that is incompatible with change, the other the real 'endurance' that is essential to it; the one presupposes empty time, the other gives it a content.

However hypothetical this permanent possibility may be, we commonly attribute our sense-data to it. What, then, precisely, we have next to inquire, is meant by this correlative term 'attribute' applied to these objective factors; how do we come by it; and what occasion have we for the attribution? Sometimes in place of attribute we find the term 'quality,' or even 'accident' used. But these terms are by no means synonymous. "The term *attribute*," said Hamilton, "is a word properly convertible with *quality*, for every quality is an attribute, and every attribute a quality; but in our language, custom has introduced a certain distinction in their application. Attribute is considered as a word of loftier significance, and is, therefore, conventionally limited to qualities of a higher application. Thus, for example, it would be felt as indecorous to speak of the qualities of God, and as ridiculous to talk of the attributes of matter[1]." We may fairly regard this distinction as more than a mere convention of the British mind, to which indeed it is by no means exclusively confined. Why is it fitting to speak of the attributes of persons, but of the qualities of matter? The reason, if a valid one, marks a further differentiation between subject and substance. The reason seems to be that personality implies property or possession and that materiality does not. So long as we find even the minimum of personality we find an individual owner, a subject that has or 'enjoys' an experience that belongs exclusively to it. Spirit and stuff may both alike be *logical* subjects, but the one really has attributes, the other has not: the essence of the one is to assert itself, the essence of the other is to have no self to

[1] *Lectures on Metaphysics*, i. p. 151.

assert. And how come we to predicate even qualities of it if all we can predicate is to be called an accident? Sense-data and their relations are severally accidents for us, but they cannot be accidents simply. As immediately experienced they imply nothing beyond their own objectivity. Their order and regularity do however suggest something beyond, some ground for their co-existence and succession. Hence the concept of things; but in the descent from things to stuff—in proportion as the analogy with an active subject fails—so far from finding this ground in its purity we lose it altogether.

ii. The mention of ground leads us naturally to Causality or the relation of Cause and Effect. To begin, we must distinguish three statements, which, though very different, are very liable to be confused. Perceiving in a definite case, *e.g.* that on the sun shining a stone becomes warm, we may say: (1) "The sun makes the stone warm." This is a concrete instance of predicating the causal relation. In this there is, explicitly at all events, no statement of a general law or axiom, such as we have when we say: (2) "Every event must have a cause"—a statement commonly known as the principle of causality. This again is distinct from what is on all hands allowed to be an empirical generalisation, *viz.*: (3) "Such and such particular causes have invariably such and such particular effects"—often called the law of causation. With the two latter psychology is not directly concerned at all: it has only to analyze and trace to its origin the bare conception of causation as expressed in (1) and involved in both those generalisations. Whether only some events have causes, as the notion of chance (or the 'fortuitous') implies, whether all causes are uniform in their action or some capricious and arbitrary, as the unreflecting suppose—all this is beside the question for us.

One point in the analysis of the causal relation Hume may be said to have settled once for all: it does not rest upon or contain any immediate intuition of a causal nexus. The two relations that Hume allowed to be perceived (or 'presumed to exist'), *viz.* contiguity in space of the objects causally related and priority in time of the cause before the effect, are the only relations directly discernible. We say indeed "The sun warms the stone" as readily as we say "The sun rises and sets," as if both were alike matters of direct observation then and there.

But that this is not so is evident from the fact that only in some cases, when one change follows upon another, do we regard it as following from the other: casual coincidence is at least as common as causal connexion. Whence the difference, then, if not from perception? Hume's answer[1], repeated in the main by English psychologists since, is, as all the world knows, that the difference is the result of association, that when a change α in an object A has been frequently observed to precede a change β in another object B, this repetition *determines* the mind to a transition from the one to the other. It is this determination, which could not be present at first, that constitutes 'the third relation betwixt these objects.' This 'internal impression' generated by association is then projected; "for 'tis a common observation that the mind has a great propensity to spread itself on external objects."

The subjective origin and the after-projection we must admit, but all else in Hume's famous doctrine seems glaringly at variance with facts. In one respect it proves too much; for not all constant sequences are regarded as causal, as according to his analysis they ought to be. Again, in another respect it proves too little, for causal connexion is continually predicated on a first occurrence. The natural man has always distinguished between causes and signs or portents; but there is nothing to shew that he produced an effect many times before regarding himself as the cause of it. J. S. Mill has indeed obviated the first objection epistemologically by adding to constant conjunction the further characteristic of 'unconditionality.' This, however, is a concept that cannot be psychologically explained from Hume's premisses, unless perhaps by resolving it into the qualification that the invariability must be complete and not partial, and then the second objection still applies. 'Unconditional' is a word for which we can find no meaning as long as we confine our attention to temporal succession. It will not do to say both that an invariable succession generates the idea, and that such invariable succession must be not only invariable but also unconditional in order to generate it. We may here turn the master against the disciple: "The same principle," says Hume, "cannot be both the cause and the effect of another, and

[1] *Treatise of Human Nature*, Bk I. pt. iii. § XIV. "Of the Idea of Necessary Connexion." Green and Grose's ed. vol. i. pp. 450 ff.

this is perhaps the only proposition concerning that relation which is either intuitively or demonstratively certain[1]." Unconditionality is then part of the causal relation and yet not the product of invariable repetition.

Perhaps the source of this element in the relation will become clear if we examine more closely the so-called 'internal impression' of the mind, which according to Hume constitutes the whole of our idea of power or efficacy. To illustrate the nature of this impression Hume cites the instant passage of the imagination to a particular idea on hearing the word commonly annexed to it, when "'twill scarce be possible for the mind by its utmost efforts to prevent that transition[2]." It is this determination, then, which is '*felt*' internally, not perceived externally[3], that, according to Hume, we mistakenly transfer to objects and regard as an intelligible connexion between them. But, if Hume admits this, must he not admit more? Can it be pretended that it is through the workings of association among our ideas that we first feel a determination which our utmost efforts can scarce resist, or that we feel such determination under no other circumstances? If it be allowed that the natural man is irresistibly determined to imagine an apple when he hears its name or to expect thunder when he sees lightning, must it not also be allowed that he is irresistibly determined much earlier and in a much more impressive way when overmastered by the elements or by his enemies? But, further, such instances bring to light what Hume's 'determination' also implies, *viz.* its necessary correlative, effort or action. Even irresistible association can only be known as such by efforts to resist it. Hume allows this when he says that his principles of association "are not infallible causes; for one may fix his attention during some time on any one object without looking farther[4]." But the fact is, we know both what it is to act and what it is to suffer, to go where we would and to be carried where we would not, quite apart from the workings of association. And, had Hume not confused two inquiries, our present one concerning the origin of the idea of causation and the very different one concerning the ground of causal *inference*, *i.e.* of the law of causation, it could never have

[1] *Op. cit.* p. 391.
[2] *Op. cit.* p. 393.
[3] Cf. *op. cit.* p. 398.
[4] *Op. cit.* p. 393.

occurred to him to offer such an analysis of the former as he does.

Keeping to the former and simpler question, it would seem that when in ordinary thinking we say A causes this or that in B we project or analogically attribute to A what *we* experience in acting, and to B what *we* experience in being acted on; and the structure of language shews that such projection was made long before it was suspected that what A once did and B once suffered is liable to be done and suffered in the same circumstances again. The occasions suitable for this projection are determined by the temporal and spatial relations of the objects concerned, which relations are matter of intuition. These are of no very special interest from a psychological point of view, but the subjective elements we shall do well to consider further. First of all, we must note the distinction of immanent action and transeunt action; the former is what we call action simply, and implies only a single thing, the agent; the latter, which we might with advantage call *effectuation*, implies two things, a patient as well as an agent. In scientific language the agent in an intransitive act is called a *causa immanens* and so distinguished from the agent in effectuation or *causa transiens*. Common thought, however, does not regard a mere action as an effect at all; and on reflexion we find it, in fact, impossible to resolve action into effectuation. But the things with which we ordinarily deal are complex, have many parts, properties, members, phases; also as experience advances we become increasingly aware of such complexity. Then there is apt to ensue a continual shifting of the point of view from which we regard any given thing; so that what was and in one aspect still is one thing comes in another aspect to be regarded as many[1].

So it comes about that, when regarding himself as one, the natural man speaks of himself as walking, shouting, &c.; but, when distinguishing between himself and his members, he speaks of raising his voice, moving his legs, and so forth. Thus no sooner do we resolve any given action into an effectuation, by analytically distinguishing within the original agent an agent and a patient, than a new action appears. Action is thus a simpler notion than effectuation and inexplicable by means of it.

[1] Cf. ch. vi, § 6, p. 164 *fin.* These diverse attitudes might be called respectively, the *historical* and the *scientific*.

It is certainly no easy problem in philosophy to determine where the resolution of the complex is to cease, at what point we must stop, because in the presence of an individual thing and a simple activity. At any rate, we reach such a point psychologically in the conscious subject, and that activity in consciousness we call attention. If this be allowed, Hume's critique of the notion of efficacy is really wide of the mark. "Some[1]," he says, "have asserted that we feel an energy or power in our own mind; and that, having in this manner acquir'd the idea of power, we transfer that quality to matter, where we are not able immediately to discover it....But to convince us how fallacious this reasoning is, we need only consider that the will, being here consider'd as a cause, has no more a discoverable connexion with its effects than any material cause has with its proper effect....The effect there [too, *i.e.* in 'the empire of the will over our mind'] is distinguishable and separable from the cause, and could not be foreseen without the experience of their constant conjunction[2]." This is logical analysis, not psychological; the point is that the will is not considered as a cause and distinguished from its effects, nor in fact considered at all. It is not a case of sequence between two separable 'impressions.' We cannot really make the indefinite regress that such logical distinctions as that between the conscious subject and its activity implies. Moreover, our activity as such is not directly presented at all: we *are*, being active; and further than this psychological analysis will not go[3]. There are, as we have seen, two ways in which this activity is manifested, the receptive or passive and the motor or active in the stricter sense[4]: our experience of these we project in predicating causal relation.

[1] Hume here has Locke and Berkeley specially in view. On the particular question, see Locke, *Essay*, bk. II. c. xxi. §§ 3–5.

[2] *Op. cit.* p. 455.

[3] In an article (*Mind*, 1886, p. 317) Mr F. H. Bradley created some stir by declaring that "the present use of these phrases [active, energy] is little better than a scandal and a main obstacle in the path of English psychology." In *Mind* for 1902 and 1903 he has made important contributions towards clearing up the supposed confusion, and the subject is still being debated. But the main contention of the text, that activity is for psychology at all events ultimate and unanalyzable, seems still to await refutation. A brief notice of some of the diverse views obtaining will be found in my address, "The Problems of General Psychology," *Philosophical Review* (1904), pp. 608 ff.

[4] Cf. ch. ii, § 6, p. 57.

But two halves do not make a whole; so we have no singly complete experience of effectuation, for the simple reason that we cannot be two things at once. We are guided in piecing it together by the temporal and spatial relations of the things concerned. Hence, perhaps, some of the antinomies that beset this concept. In its earliest form, then, the so-called 'necessary' connexion of cause and effect in a concrete instance is perhaps nothing more than the physical effort we experience in making or forcing a thing to 'behave' as we want. The process which as we first observe it seems one event—occurring in one place at one time—we afterwards analyze into two processes or events—one pertaining to the agent, the other to the patient, or more exactly into a case of their interaction. Afterwards when any two events have frequently recurred in the same temporal order —even though not contiguous in space—we are prone to conclude that they are causally connected, although there is no suggestion of physical constraint. Then emerges the very different 'necessity' postulated when we talk of natural laws, due primarily, as Hume supposed, to the strength of expectation or to our primitive credulity. Finally, when upon the basis of such associated uniformities of sequence a definite intellectual elaboration of such material supervenes, the logical necessity of reason and consequent finds a place, and *so far as deduction is applicable* cause and reason become interchangeable ideas. Science then finds it can dispense with the anthropomorphism of the causal category, but the place of this in concrete experience is thereby in no way impugned.

iii. As regards the category of End and Means—its anthropomorphic character is still more evident. There are no definite spatial and temporal relations belonging to it as such, that remain as distinctive objective factors, with which positive science could deal when its subjective factors are eliminated. So far Kant was justified in denying to it the rank that he accorded to the two other real categories—Substance and Cause. But important as this difference may be epistemologically, the fact—on which Kant strenuously insisted—that this category is indispensable to us as a clue to the understanding of organized beings and "first obtains objective reality from a consideration of such beings" is sufficient to justify its recognition here. Even if it be but 'a peculiarity of our intelligence,' still that is enough

for us[1]. The psychological interest of this category lies, however, elsewhere, *viz.* in connexion with the characterization of things as having worth or value and we may therefore defer any further reference to it till we attempt to treat of that[2].

[1] Cf. Kant's *Critique of the Judgment*, §§ 65, 67.
[2] Cf. below, ch. xvi.

CHAPTER XIV

BELIEF, CERTAINTY AND FAITH

Psychological Topic Defined.

§ 1. There are psychological and there are epistemological discussions innumerable concerning belief and certainty. It is important to keep the two discussions distinct and yet they are almost invariably blended; for psychology and epistemology themselves are only gradually getting out of each other's way, and the fact that they often use the same terms renders such differentiation difficult. Moreover they have both used the same terms because both alike relate to experience, though from different standpoints or under different aspects. We have come upon these differences several times already[1] and so without further exposition here, we may seek at once to clear the way for our psychological inquiry.

Belief is sometimes used in a wider, sometimes in a narrower sense, the one including certainty, the other excluding it: the wider belonging to the psychological, the narrower to the epistemological standpoint[2]. Epistemology has constantly to distinguish between belief and knowledge as differing in *kind*, since belief is always, and (scientific) knowledge is never, a private and personal matter. Psychologically, however—for the individual that is to say—his belief and his knowledge (or certainty) differ only in *degree*. Certainty is then regarded as the upper limit of such personal belief: it may be represented by unity, lower degrees being represented by fractions, as in the 'odds' of betting transactions, for example. But epistemology also contrasts knowledge with probability in a similar

[1] Cf. ch. i, § 3, p. 18; ch. ii, § 1, pp. 29 ff.; ch. vi, § 3, p. 144; ch. xii, § 2, p. 293.

[2] The two Mills, for example, adopted the former, Locke and Bain, the latter, usage.

fashion, save that the difference is then referred not to the psychological causes of belief but to its logical grounds. With these the epistemologist is exclusively concerned; the psychologist, however, not at all. His business is primarily with the believing, together with its causes and effects, as subjective, not with the grounds of the belief itself, as objective: what interests him is a living process, not a logical structure. Despite this wide difference the one term 'certainty' is often applied to both; though they are distinguished as respectively subjective certainty and objective certainty: so we say indifferently 'I am certain of' and 'It is certain that.' Such phraseology is often convenient; yet where scientific exactness is important it is to be avoided, and there are better terms available. At all events psychology is not interested in objective certainty or *truth* as such, but only in subjective certainty or *conviction*. Truth belongs entirely to the universe of propositions: certainty implies a complete state of mind. In this state propositions enter not as true or false but simply as believed or not believed. Whether propositions are believed or not is to be ascertained not by considering *them* but by observing the feeling they produce and the active attitude to which such feeling leads. How far there are exceptions to this generalisation sufficing to disprove it, or even, when carefully examined, to limit it, remains to be seen[1].

Direct (Objective) Grounds of Belief.

§ 2. Meanwhile it is at least safe to say that the most numerous and what we may call the typical cases of belief as such involve merely subjective factors, whereas these are absent altogether from that ideal of knowledge which is the lodestar of epistemology: there objective factors are the sole determinants. Yet even in the most subjectively conditioned belief[2] objective factors are the *immediate* determinants, 'objective,' that is to say in the psychological, yet far enough, it may be, from objective in the epistemological, sense. We may begin then by examining first of all the cases in which the characteristics of belief are clearest, the cases, that is, where the objective situation before the subject is such that he may, and if challenged would, say: "I am certain."

[1] Cf. § 2, p. 353. [2] Cf. § 4, p. 355.

In all such cases we find an absence for the particular subject of any alternative or option: I am certain is equivalent to I am convinced—metaphorically, I am overcome and forced to assent[1].

Here Spencer's 'inconceivability of the opposite' comes in; and had he been content to claim for this, not 'the highest possible logical justification of knowledge,' but only the strongest possible psychological justification of belief, a great deal of rather aimless controversy might have been avoided. But then belief must not be resolved into indissoluble association, as James Mill, and Spencer too, maintained[2]. Association will not account for the certainty of simple perception. If dazzled by the sun I say "It is light," the psychological necessity accompanying this assertion, though it is confined to a single instance, is more absolute and immediate than that which is present when I say "Unsupported bodies fall," a proposition which I and my ancestors before me have verified innumerable times and never found to fail. Spencer oddly enough allowed all this: the certainty, he tells us, is one and the same, for 'the union of subject and object' is absolute in both. There is, however, a difference in respect of time: assertions like the first he calls '*temporarily* absolute,' assertions like the last, '*permanently* absolute.' And yet the former assertions are, he holds, the more impressive; for in these cases "the predicates...not only invariably coexist with their subjects, but they invariably coexist with them in such ways that they cannot be overlooked"; whereas in the latter "the invariable coexistence predicated is often inconspicuous, and may be overlooked[3]." The truth here adumbrated can be more simply and definitely stated:—The certainty of sense is fundamental, whilst the certainty of thought, as concerned with objects of a higher order, presupposes sensory *fundamenta*. These psychologically secondary cases of certainty are impossible without those primary cases, which are not only experienced first but experienced also independently. Here with the subject

[1] Cf. the article 'Gewissheit' in Eisler's *Wörterbuch der phil. Begriffe*, where the following among many similar definitions are quoted: "*Certitudo nihil aliud est quam determinatio intellectus ad unum*," Aquinas; "*Die Gewissheit ist mit dem Bewusstsein der Nothwendigkeit verbunden*," Kant.

[2] James Mill, *Analysis of the Human Mind*, J. S. M.'s ed. i. ch. 11 (cf. the editor's note, i. pp. 402 ff.; Herbert Spencer, *Principles of Psychology*, 2nd ed. ii. § 430, p. 419.

[3] *Op. cit.* ii. § 425, pp. 403 f.

confronted and determined by the immediately given or presented objective—here at the very outset of experience, before association begins—we have that complete state of mind in which all the *factors* of belief are found in Descartes' *Cogito* filled out: I am and It is[1]. Here, then, where as yet reflexion and doubt are alike impossible, we have the *fons et origo* of certainty.

And were there no such psychologically primary certainty, it is hard to see how there could ever be any absolute certainty at all. Certainty determined wholly by 'invariable succession' could obviously never be more than expectation, and expectation is not yet actual presentation. We may indeed safely go further and say that there is—'objectively' at all events—no such certainty and that '*subjectively*,' the certainty of the most confident expectation will scarcely compare with the certainty of actual fact. The probability that depends on invariable succession is of the form $m + 1/m + 2$ (m being the number of such successions so far). Theoretically it must always be at the mercy of a negative instance; for such an instance involves no contradiction. In attempting to account for the axioms of logic and mathematics in this fashion, Spencer forgot that the 'perpetually-repeated experiences' which make us so confident that, *e.g.*, unsupported bodies will fall, greatly exceed in number those in which we have found things which are equal to the same thing to be equal to each other. And if we carry back the series to include the experiences of our savage and our brute ancestry, the disparity will be greater still. If then "it be a fundamental law that connexions of ideas become strong in proportion as they are repeated[2]"—and this, *caeteris paribus*, we may safely allow—the axioms of exact science should be less convincing than many empirical inductions. But Spencer, of course, had to admit that actually it is far otherwise. These axioms are *a priori* for the individual, he allows; but still he contends that they are *a posteriori* for the race[3]. And then the objection just urged applies. There is, however, a further and perhaps more serious objection:

[1] It is important to note, however, that we are not now directly concerned with the interpretation to be put on these implicit existential propositions, the dual 'positions' of all experience.

[2] *Op. cit.* ii. § 433, p. 426.

[3] *Op. cit.* ii. § 430, p. 414, i. § 208, pp. 465 ff.

irrational animals have no sense of the axioms of equality or generally of objects of a higher order at all. Not till the brute level is passed are there any individuals to whom 'these data of intelligence' can appeal, and then the single 'direct comparison' makes them as certain or convinced as they are by the dazzling sunlight, which they immediately perceive. In fact, Spencer himself says, "we immediately see [or intuit] that the alleged relation is as alleged[1]"; and, we may add, the more clearly we see that the single case suffices the less we think of seeking confirmation by repetition. 'Seeing is believing' holds for objects of a higher order as well as for the sensory objects which they relate. Seeing is believing, and all talk of a further criterion of 'subjective certainty' seems as meaningless as to ask for a criterion of hunger or any other immediate experience.

But besides present 'matters of fact' and immediately intuited 'relations of ideas' there is still one important class of experiences wherein belief may amount to certainty, viz. the memories[2] of what as 'matters of fact' are past. The epistemological problems of memory-judgments are interesting as well as difficult. From this standpoint no memory-judgment—nor indeed, any judgment concerning 'matter-of-fact'—can lay claim to that 'objective certainty' or truth that belongs to the self-evident relations of ideas[3]. I am at this moment personally as certain that I breakfasted on porridge this morning as I am that it is now broad day or that twice two are four. But from the universalistic standpoint—in view of the frequent fallibility of what is taken to be memory—while I still maintain that I am certain, yet I am bound to admit that *others*, though they may fully recognise my *bona fides*, are justified in holding that I may be mistaken and in seeking, if it is worth while, for further confirmation of what I say. But from the nature of the case no confirmation is possible that does not assume the validity of memory, either directly—as in the demand for other testimony—or indirectly—as in the appeal to the constancy of nature. All this, however, would be beyond the purview of psychology save for

[1] *Op. cit.* ii. § 428, p. 412.

[2] More precisely, the reminiscence or recollection; for, of course, mere retentiveness yields no memory-judgments, but only recognition. Cf. above ch. viii, § 1, p. 207.

[3] Cf. the interesting discussion in Meinong's *Ueber die Erfahrungsgrundlagen unseres Wissens*, 1906, § 18.

the one fact of obliviscence: this fact shews that memory and perception are not on a par. Reminiscence and obliviscence are inversely related in such wise, that one might be tempted to say: Reminiscence is only perfect where obliviscence is *nil*, that is, where what is remembered is just ceasing to be present. The present for experience, however, is comparable not to a point but to a line and a line too of very varying length—comparatively short for certain facts, such as those of the so-called 'specious present[1]'; comparatively long for others, such as those of the temporal and spatial order—over and done with to be sure for perception, but retained in the memory continuum. If this is intact, it constrains us, as much as perception constrains us, to recognise a present reality, the reality of the past[2]. In spite of the notorious deceptiveness of memory in many cases and the impossibility of *proving* it true in any case, this constraint or conviction is, we find, as complete in those instances of distinct memory as it ever is in perception. Such a position is perhaps logically (*i.e.* formally) indefensible. It might seem then as if nothing better than scepticism were left[3]. But after all it does not follow that such subjective certainty is never right; and in fact, if it never were, experience such as ours would be quite inexplicable.

Certainty, then, we find may in all cases be described as a subjective attitude to which we are objectively constrained: we have to assent, even if we do not consent, much as a criminal is convicted, though he should plead 'not guilty.' But precisely in those cases where certainty is most certain, if the expression may be allowed—where, in other words, it is most immediate—we are least aware of it, ordinarily not aware of it at all. I do not say I am certain that I had porridge for breakfast, that it is now daylight, and that two and two equal four; on the other hand statements, which it would be natural for me in this way to certify, would be statements that I might have doubted or that I had previously to ascertain or verify. Then my certainty

[1] Cf. ch. viii, § 3, p. 214.

[2] It is the unique wonder of experience to be big with the future and laden with the past: it dwindles as its range in time diminishes, and disappears as this shrinks to the instantaneous.

[3] And a very wide-reaching scepticism it would be, as we may gather from the fact that Descartes found even a chain of reasoning untrustworthy unless God guaranteed the evidence of memory!

is said to be explicit; otherwise it is said to be implicit, inasmuch as the subjective factors, though they are there, are not definitely evoked. Among such implicit or indifferent beliefs we may include all those that now make up the stock of what we call our common sense and common knowledge, so long as nothing leads us to doubt them; for till then they are regarded so entirely from the universalistic standpoint, that they lose all personal colour; they are either truths *known* by 'the light of nature' or facts *known*, or at least accepted, by everybody.

Effect of Belief.

§ 3. The immediate cause of all belief as a 'state of mind' being then the objective situation, we have now to try to analyze its effect in detail. As regards feeling, in the case of implicit or indifferent beliefs the effect may be *nil*: no one is affected by the fact that fish are cold-blooded or by the truth that the first three numerals are primes. But in the explicit acquisition of a belief there is always at least one feeling, due immediately to the belief, as such, *viz.* the formal feeling of satisfaction[1]: this, like Othello, we crave the more the more momentous the issue. Frequently we can even say with Clough:

> It fortifies my soul to know,
> That though I perish, Truth is so.

To be rid of suspense and uncertainty is, so far, always at least a relief, and often the prelude to a great deal more, to which we must turn presently. As regards action, much has been written about the effect of belief upon it; and yet all that is of essential importance is very simple and very obvious. A sane man, and even an insane one, unless his disease is apathy, acts as he believes. He may indeed venture to act in cases where he is uncertain, but his venture is always backed by some belief and never diametrically opposed to all his beliefs. Of course we may believe with complete certainty without at once acting or even resolving to act later; yet the efficacy of such belief, always holds good potentially, and will shape our actions whenever it is relevant. Bain indeed went too far in maintaining that 'action is

[1] Cf. ch. x, § 2, p. 257.

the *basis* of belief' yet he was right in saying that "preparedness to act is the sole, the genuine, the unmistakable *criterion* of belief[1]." "Faith without works is dead" we say and we distrust a man who has not the strength of his convictions. This strength or intensity of conviction, however, is not to be confounded with the certainty of belief: it is the practical consequence of—the 'confidence' begotten by—this certainty, and therefore presupposes it. But if the subject, who is convinced, were merely a 'logical ego' and nothing more, these secondary emotional and practical consequences of belief, which make it a living fact, a complete 'state of mind,' would be non-existent.

Indirect (Subjective) Causes of Belief.

§ 4. So far we have considered mainly 'the cases in which the characteristics of belief are clearest,' where, that is to say, complete certainty is attained by a subject facing the situation with an 'open mind' without *parti pris*, his emotional demeanour following upon conviction instead of anticipating it. But in most cases we believe without being certain and again in the most important of these cases we are neither impartial nor disinterested. On a jury or as a scientific inquirer a man may maintain the 'detached' attitude that we symbolize by allegorical statues of Justice, may be intent only on 'ascertaining' the real 'weight' of the evidence and blind to its specious appearances. Such 'deliberation' even if inconclusive will at least be fair. But in his own personal concerns it is hard for a man to divest himself completely of private standards of estimation. Here accordingly feeling and volition come forward in a new *rôle*—not this time as effects of a belief he already has but as causes of a future belief that he wants—or perhaps that some one else wants him—to have. With tell-tale *naïveté* common speech ascribes the acquisition of such belief not to conviction, but to persuasion[2]: it is a result such as rhetoric, 'that powerful instrument

[1] *Emotions and Will*, 3rd ed. 1875, pp. 506, 505. Italics mine. In a note to his *Mental and Moral Science*, 3rd ed. 1872, pt. i. App. p. 100, Bain admits a change of view on this point and speaks of belief as "a fact or incident of our intellectual nature, although dependent as to its energy upon our Active or Emotional tendencies." But he made no change in the text and left his original statements unaltered not only as quoted above but also in the second edition of Jas. Mill's *Analysis*, 1878, i. p. 375.

[2] The etymology of the word itself emphasizes the seductiveness of views that gratify our prejudices.

of error and deceit'—as Locke called it—can achieve, when logically it may be unattainable. But now, though certainty be out of the question, the belief we want is always a possible one. People never believe that black is white or that two and two make five, but they are often confident that it won't rain, although the clouds are low and the glass is falling. It is this region of the possible, as distinct from the actual or the necessary, that imagination[1] sets before us; and it is by means of this 'ideational mechanism' that our inclinations can bias our belief. This process we have now to consider.

It is obvious, from what we have already seen, that the process must be indirect. A man may wish to believe, he cannot—strictly speaking—will to believe; though he may deliberately set about deceiving another he cannot avowedly and straightway set about deceiving himself. He may indeed pretend or profess to believe without believing; but if he verily does believe, his belief must be *bona fide*, founded on what he takes to be fact, not on what he knows to be fiction. This granted, we have to note, first of all, the power that imagination has, when we attend passively and exclusively to its working, to impose upon us with all the air of complete reality. This power we continually experience in our dreams and can observe in others who are hypnotized. The vividness, the circumstantiality, the common-sense of matters-of-fact seem then to be all present; for there are then no opposing percepts to pale this phosphorescent light of imagery that only looks substantial in the dark; and the *alibis*, the anachronisms, the absurdities, do not then obtrude which are manifest the moment that we awake. Emotion rarely contracts attention or inhibits its freedom of movement so much at once; yet it does so sometimes in sudden 'fits' of overmastering passion. But gradually it may achieve an imposture equally great and far more permanent. What is continually ignored lapses at length into oblivion, while what at first appeared only 'specious' and 'plausible' becomes in the end an obsession, a 'fixed idea' that needs *must* be believed. The result, so far as the working of the ideational mechanism is concerned, is essentially the same in the case of the man blinded by passion or desire as in that of the man hypnotized or demented. Both alike may be described as cases of fascination,

[1] Cf. ch. vii, § 2, p. 178.

and were, in fact, so described by Renouvier. In both belief is constrained by the complete abeyance of all option: in both it is as if the men were 'bewitched[1].'

The way in which such a spell may be wrought by our own 'passional nature' is in the main extremely simple, though the complexity in detail is great. Most people attend by preference to what for *them* are pleasurable situations and to the pleasurable aspect of a situation, if its features are mixed[2]. We are apt to contrast this as the 'fair' side or as the 'right' with the other as its 'shady or seamy side,' forgetting how entirely subjective such a characterization is. But we have only to compare the utterly diverse but equally one-sided estimates of the same situation by persons of opposite temperaments or conflicting interests to realise this lack of genuine objectivity in both—to compare, for example, the outlook on the world of Schopenhauer and Leopardi with those of Leibniz or Hegel, or the views of landlords and shipowners on the question of free-trade. In a word, personal bias—*Quot homines tot sententiae*, as Terence expressed it—is fundamentally just subjective selection uncontrolled. To follow it blindly and exclusively is to live according to nature, after it is possible to live according to reason[3]. The brute is perforce confined to its own subjective standpoint, man only achieves humanity as he advances to the 'trans-subjective' and begins to share in Universal Mind[4], and 'to prove all things.' To do this, says Renouvier, "he must learn to doubt....The

[1] Renouvier accordingly in his powerful analysis of these facts includes them all under the common heading of *vertige mental*. (*Traité de Psychologie rationnelle*, 2nd ed. chh. xi. and xii.) Locke had, however, anticipated him. Treating of the association of ideas, not as many have done, 'to explain knowledge but with the opposite intent of accounting for human errors' (Fraser's note), he traces to this 'very same root' not only what is commonly called madness but "the sort of madness there is scarce a man so free from, but that if he should always...argue or do as in some cases he constantly does, [he] would not be thought fitter for Bedlam than for civil conversation," *Essay*, II. xxxiii. §§ 1, 3, 4.

[2] This preference, of course, may be abnormal; grief, anger, jealousy often make the bitter sweet. A 'moody' mind like Jacques 'loved melancholy better than laughing.' This unconscious bias has probably been exploited overmuch by the Austrian neuropathologist, S. Freud.

[3] This transition is a very gradual one. The thinking of the primitive man is a tissue of prejudices and superstitions shaped mainly by his emotions and desires. Ribot has dealt with this in a very interesting way: cf. his articles entitled "La Logique des Sentiments," *Rev. phil.* June and July 1904, republished 1905.

[4] Cf. above, ch. xii, § 1, p. 286*n*.

ignorant man doubts little and the fool does not doubt at all. ...If men only knew how to doubt, there would be no fools among them, *intellectually speaking*[1]." The nature of the remedy is the best evidence of the source of the disease.

But the remedy, since we are *not* merely intellectual, is itself mistaken for an evil, when the real evil is simply the uncertainty—there in any case—that doubt only leads us to recognise. Impatient of an uncertainty that we are anxious but impotent to resolve, we are tempted to suppress our doubts by emulating the fatuous procedure attributed to the ostrich. So the volitional rather than the emotional bias comes then to the fore: we wish to believe, but doubt bars the way. A strange vicious circle here discloses itself that might well seem fanciful if it were not so notorious in fact. Doubt, that has proved to be a prophylactic against error, is itself subjected to the very regimen that has fostered the disease. The classic instance, of course, is that of Pascal. A disciple of Descartes, who had made doubt the foundation of method, he was himself a profound sceptic. Like Descartes he regarded the association of ideas as depending on the body, which for Descartes was an automaton, and which he himself called 'the machine.' He was well aware that this mechanism of habit and custom—which provided that *consécution des bêtes*, noted by Leibniz as adequate to the narrow environment of the brute,—was also the source of prejudices and superstitions innumerable among men. And yet he counselled those who would fain be 'cured of infidelity' to ply this machine:—"Do everything just as if you believed, use the holy water, have masses said, &c. *Naturellement même cela vous fera croire et vous abêtira*[2]." Thus to stifle doubt has seemed to thousands sound advice. But such *ignava ratio*, as Kant would have called it, rests as we may presently see on a psychological confusion—the confusion of credulity (*Aberglaube*) with belief (*Glaube*) and of both with faith.

[1] *Op. cit.* vol. ii. p. 39.

[2] *Pensées*, Brunschvicq's ed. 1900, No. 230, p. 441, Nos. 246, 247, p. 448.

Faith and Moral Certainty.

§ 5. Though intimately connected, faith and belief are not altogether the same, nor do we use the two terms indifferently. When belief is the more appropriate term, the stress is on the *cognitive* side of experience, on the 'objective situation': when it is more appropriate to speak of faith, the stress is on the *conative* side of experience, on our 'subjective attitude.' In the one we are constrained, more or less completely, to assent to what is there: in the other we strive to achieve what as yet is not there. In the one, facts convince *us*, the seen and actual hem us in: in the other, we—reaching beyond towards the ideally possible—create *them*. When the facts are such as were, are or will be, apart from or even in spite of us or our efforts, we say we know: when they are such as are not and would not be apart from us and without our efforts, then in proportion as we are confident of bringing them to pass, we say we have faith. The annals of human enterprise in every department of life teem with examples of the power of faith in this sense.

But a difficulty will at this point certainly suggest itself; for it is obvious that religious faith, for example, is not supposed to create its objects, or to maintain that apart from it God would not be at all. To clear up this difficulty, if we can, we must look closer into what we have hitherto been content to contrast as objective situation and subjective attitude—the theoretical and the practical sides of experience, as we otherwise say. Now we have from the first regarded experience not as simply passively moulded by circumstances but as also actively shaped by our own endeavour towards self-conservation and betterment. We might call the one natural selection—giving the term a wider than its ordinary meaning: the other we call subjective selection—selection, that is to say, within the possibilities that nature leaves open. And to this our subjective attitude belongs. The most that the theoretical contemplation of nature yields is the possibility of things divine—the impossibility of such things it does not claim to prove[1]. It is this open possibility, which

[1] There is no complete theoretical solution, to the doubts and uncertainty that hence arise, and which Pascal accordingly advises us to stifle.

Kant effectively disclosed, that leaves 'room for faith.' Within this theoretical gap faith creates the belief in God and all the corollaries to this belief. But it is a belief not beset by doubts: it claims to be certain, but on moral grounds. It is not a certainty that is intellectually enforced but one that is morally achieved. Starting from what can be, religious faith asserts that here it is, because it ought to be. In a word it is not the objective situation, the world or nature, but a particular subjective attitude towards this situation—with all the moral ends and aspirations which that attitude implies—which gives rise to religious faith in a transcendental Ideal, as Kant called it. That alone assures the religious man of the realisation of all his moral ideals. So far then religious faith is psychologically in line with all lesser faiths: as I have said elsewhere it is "foreshadowed in the upward striving that is the essence of life[1]."

The Genesis of Belief and Knowledge.

§ 6. Religious faith we have seen does not arise from (theoretical) belief but gives rise to (doctrinal) belief, in simpler words creeds only attempt to formulate faith, they do not make it. The result we may generalise: belief including knowledge is not the source but the outcome of faith. It is the *agenda* of practical enterprise that promote progress, knowledge only registers the *acta*. Bain's able exposition of our topic is substantially in agreement with this, though less definitely expressed, "The leading fact in Belief, according to my view of it," he says, "is our Primitive Credulity. We begin by believing everything: whatever is, is true....The supposition underlying belief is that we are *working to a lead, following out some end*, by the means that experience suggests[2], and that, so long as we are successful, we raise no questions as to truth and falsehood: we believe without knowing it...[our] state of mind is practically one of unbounded confidence....The *pristine assurance is soon met by checks*; a disagreeable experience leading to new insight....The unconsciousness of an open way is

[1] *The Realm of Ends*, 2nd ed. 1912, p. 448. Cf. also Lecture XIX on Faith and Knowledge.

[2] But does not entirely warrant, I would say.

exchanged for consciousness; *we are now said properly to believe* in what has never been contradicted[1]." So then pristine confidence exploring a seemingly open way comes first; and thus, whether our enterprise succeed or fail, we gain some knowledge; whereas if we never ventured and never strove we should never learn[2].

[1] *The Emotions and the Will*, 3rd ed. 1875, pp. 511 f. Italics mine.
[2] Cf. above, ch. vii, § 2, p. 187.

CHAPTER XV

PRESENTATION OF SELF, SELF-CONSCIOUSNESS, SUBJECTIVE BEING.

Taking individual experience as defining the scope of psychology, we began our study with our own experience, since other experience can be intelligible only in terms of this. The first and most fundamental fact yielded by the analysis of this experience we have found to be its reference to a subject or self that *has* it. The knowledge of this fact we call self-consciousness, meaning thereby not the consciousness that we attribute to every self but the consciousness of this consciousness; a consciousness to which only some experients attain, to which we have only gradually attained. It is attained when besides knowing, feeling and acting, we also know that we know, know that we feel and know that we act when in short we can say "I know myself," or as the French more aptly say, *je me connais*. The self-known we call the empirical Ego or the *Me* and distinguish from the self-knowing, the *I*, which Kant was wont to call the pure Ego. We have then before us a three-fold inquiry, the lines of which are closely intertwined: first as to the content and gradual elaboration of the presentation of self as experience develops; then as to that reference of other presentations to self, which self-consciousness makes possible; and finally, the meaning and justification of the existential proposition "I am," that seems in the light of it all to become explicit.

The Empirical Self and the Pure Self.

§ 1. To realise the extreme complexity of the empirical Ego, the self as presented, it is worth while to recall statements, such as we may any day hear continually, though they may seem

ridiculously devoid of any psychological bearing. For example: Though I weigh ten stone, I feel as light as a feather. I lost my legs in battle, but I can still run twenty miles an hour—thanks to my motor. I am working incessantly day and night with five hundred extra hands. I am ragged. I am hungry. I am sad. I am a soldier, a cripple, a pensioner, &c.; I am a merchant, a magistrate, a railway director, &c. I am an orphan, a pauper, a stone-breaker, &c. Yes, we may reply to these and innumerable like statements, but who exactly are *you*? The answer would be, I am L. M., born on a such a day at such place, the son of A. and B. M., about whom I have been telling you all these things. 'Things about self,' various zones of more or less varying circumstances and self as their fixed centre of reference and interest, and as such the same throughout—this is all that we should have ascertained so far. Yet these circumstances, we may observe, are peculiar in three respects: they imply property, a serial order, and above all those unique and immediate changes we call feeling and conation. Property has here a very wide range. *L'état c'est moi*, said Louis the XIVth, and—as Lipps has remarked—the meanest of his subjects might have said the same: "this is mine own, my native land," we can all say to ourselves and feel. Nay, we may claim the whole objective world as ours; since it is 'given' to us and we receive or apprehend it, use it or abuse it. Whatever affects me, whatever my action can affect is in some sense mine. So I talk of my world, my country, my rights and duties, my body, my soul; and, when asked to whom all these belong, to answer that they belong to myself is not altogether meaningless in so far as this wondrous concept too implies a possession, by which I am affected and which I affect. But this concept of the pure Ego, of the real Self, is *in order of time* rather where the series ends than where it begins; for as experience advances the zonal series extends both outwards and inwards, so to say[1]. The clue to this seemingly rampant egoism is to be found in the ends or interests of Self—which have no set bounds—or, it may be, in the means that are instrumental to these: in other words the ultimate

[1] It is only in civilised communities that clothes are essential to presentability and have a philosophy, or at least a psychology of their own. (Cf. W. James, *Psychology*, i. p. 292; Lotze, *Microcosmus*, bk. v. ch. ii. § 4, Eng. trans. i. pp. 592-5). In a state of nature there are no goods, no duties and no rights.

explanation of possession lies in feeling and will. What I 'enjoy' is mine and what I want I make mine, as soon as the means to do so are within my power.

The concept of self we just now found underlying and to a great extent shaping the rest of our intellectual furniture. Precisely on this account it is difficult to analyze it and ascertain the conditions of its development[1]: to do so completely is indeed impossible. In any attempt to do so at all, we must carefully distinguish between the presentation of self and that reference of other presentations to it which is often called specially self-consciousness, 'inner sense,' or internal perception. Concerning all presentations whatever, that of self no less than the rest, we can reflect: "This presentation is mine; it is my object; I am the subject attending to it." The presentation of self, then, is one presentation among others, the result, like them, of the differentiation of the original continuum. But it is obvious that this presentation must first be developed somewhat before other presentations can be related to it. On the other hand, it is only in and by means of such relations that any true concept of self is attained. We begin, therefore, with self simply as an object perceived or imagined, and end with the concept of that object—albeit greatly transfigured—as the subject or 'myself'

[1] A large, though certainly diminishing, school of thinkers would entirely demur to such a proposal. "This personality," says one, "like all other simple and immediate presentations, is indefinable...it can be analysed into no simpler elements; for it is revealed to us in all the clearness of an original intuition" (Mansel, *Metaphysics*, p. 182). Such an objection arises from that confusion between psychology and epistemology which we have met already several times before (as, *e.g.* in the case of space, and of unity). The fact is that a concept logically 'simple and immediate,' in such wise as to be underivable from others, and therefore indefinable, may be—we might almost say will be—psychologically the result of a long process of development. The more abstract a concept is, *i.e.* the more fundamental in the epistemological structure, the more thinking there has been to reach it. The most complex integrations of experience are needed to furnish the 'ideas' of its ultimate factors. Such ideas, when reached, have *intellectually* all the clearness of an original intuition, no doubt; but they are not therefore to be confounded with what is psychologically a simple and immediate presentation. It was in this last sense that idealists like Berkeley and Kant denied any immediate presentation of self as much as sceptics like Hume. The concept of self is psychologically a product of thought, not a datum of sense; hence, while Berkeley called it a 'notion' Hume treated it as a philosophical fiction. Kant, 'waked from his dogmatic slumber' by Hume, mediated between the two: for Berkeley the notion was ontological, for Kant it was at least 'logical': it gives rise to an 'idea of the reason,' which however—though grounded in 'the firmest faith'—is not theoretically demonstrable. Cf. *Critique of the Pure Reason*, 2nd ed. pp. xxiv-xxxi of the original.

that knows itself. Self has, in contradistinction from all other presentations, first of all (*a*) a unique interest and (*b*) a certain inwardness; further it is (*c*) an individual that (*d*) persists, (*e*) is active, and finally (*f*) knows itself.

After this general characterization of the varied content of the empirical self we may now attempt to describe it more fully and at the same time genetically. In view of frequent misunderstanding, we need carefully to bear in mind that we are now immediately concerned not with the subject of experience but with the differentiation and development of what we have called the 'presentation' of it to which advancing intelligence leads[1]. We are concerned, then, not with the subject (I) that is conscious, but with the object (Me) of which it becomes conscious.

The earliest, and to the last a most important, element in this presented self—what we might perhaps term its root or material element—is that variously styled the vital sense, coenaesthesis, or somatic consciousness. This largely determines the tone of the special sensations and enters, though little suspected, into all our 'higher feelings.' If, as sometimes happens in serious nervous affections, the whole body or any part of it, should lose common sensibility, the whole body or that part is at once regarded as strange and even as hostile. In some forms of so-called 'depersonalisation[2],' in which this extreme somatic insensibility and absence of zest leave the intellect and memory unaffected, the individual doubts his own existence or denies it altogether. Ribot cites the case of such a patient, who, declaring that he had been dead for two years, thus expressed his perplexity: "J'existe, mais en dehors de la vie réelle, matérielle, et, malgré moi, rien ne m'ayant donné la mort. Tout est mécanique chez moi et se fait inconsciemment." "Je sais bien ...que ces bras, ces jambes, &c., doivent être les miens," said a patient of Solliers, "mais je ne le sens pas. Par le raisonnement je m'en rends compte, mais si je n'écoute que mon sentiment, je n'en suis pas sûr[3]." It is not because they accompany

[1] K. Oesterreich, for example, in his valuable work, *Die Phänomenologie des Ich in ihrer Grundproblemen*, i. 1910, notwithstanding its title, seems in many of his criticisms to have overlooked this point.

[2] A term first used by L. Dugas (*Rev. phil.* xlv. 1898, p. 502) to replace the old and less appropriate '*folie du doute.*'

[3] T. Ribot, "Bases affectives de la Personnalité," *Rev. phil.* xviii. 1884, p. 149; P. Sollier, *Le Mécanisme des Émotions*, 1905, p. 149.

physiological functions essential to the efficiency of the organism as an organism, but simply because they are the most immediate and most constant sources of feeling, that the massive but ill-defined organic sensations are from the first the objects of the directest and most unreflecting interest. Other sensations obtain at the outset but a mediate interest through subjective selection for the sake of those that are immediately interesting: but they never become so intimately and inseparably identified with self, never have the same inwardness as 'the sense of embodiment[1].'

This brings us naturally to our next point. As soon as definite perception begins, the body is distinguished as an extended thing from other bodies, and such organic sensations as can be localised at all are localised within it. At the same time the actions of other bodies upon it are accompanied by pleasures and pains, while their action upon each other is not. The body also is the only thing directly set in motion through the reactions of these feelings, the purpose of such movements being to bring it near to the things for which there is 'appetite' and to remove it from those towards which there is 'aversion.' It is thus not merely the type of occupied space and the centre from which all positions are reckoned, but it affords to us and to others an unfailing and ever-present 'double' of the actually feeling and living self, to which all other things are external, more or less distant, and some of them at times absent altogether. In the body then we find first of all a certain measure of the individuality, permanence and inwardness, that belong to the self[2]. We may call this (i) *the sensitive and appetitive self.*

But with the development of ideation there arises within this bodily self what we may call an inner zone of self, having still more unity and permanence. We have at this stage not only an intuition of the bodily self doing or suffering here and now, but also memories of what it has been and done under varied circumstances in the past or even hopes as to what it will do and become in the future. External impressions have by this

[1] How complete this identification is, the customs and beliefs of primitive races plainly shew. Cf. O. Flügel, "Das Ich im Leben der Völker," *Zeitsch. f. Völkerpsych.* xi. 1880, pp. 44–8.

[2] Cf. above, ch. vi, § 6, pp. 165 f.

time lost in novelty and become less absorbing, while the train of ideas, largely increased in number, distinctness and mobility, diverts attention and often shuts out the things of sense altogether. In all such reminiscence or reverie what—since it has no time or place mark—we might call a generic image of self is the centre; and every situation remembered or imagined derives all its interest from being a constituent or aspect of this compacted whole. So, apart from present perceptions and bodily appetites, new desires may be quickened and old emotions stirred again when all that is actually present is dull and unexciting. But desires and emotions, though awakened by what is only imaginary, invariably entail actual organic perturbations, and with these, of whatever kind they may be, the generic image of self comes to be intimately united. Hence arises a contrast between this inner self which the natural man locates in his φρήν, or midriff—the chief seat of these emotional agitations—and the whole visible and tangible body besides[1]. We might perhaps call this inner self (ii) *the imagining and desiring self.* There are persons habitually in a state of so-called psychasthenia or apathy, who lead listless, inert, mechanical lives because the normal emotive results of ideation and memory are greatly enfeebled. Such cases Dugas proposes to call cases of 'impersonalisation' and to distinguish from others in which the personal synthesis is lacking altogether. These latter we may regard as cases of depersonalisation in a higher form: in this the inner self is regarded as no longer self at all but seems as strange as the body did in the lower form described above. "Je ne suis pas moi-même," said a patient of this sort. "Qui suis-je? Je suis drôle, *ce n'est pas moi qui suis dans mon corps*, il y en a un autre." Again another: "Il me semble que je n'y suis pour rien, ce n'est pas moi, qui pense, qui choisis les sujets de ces pensées, c'est quelque chose qui pense en moi, et je me borne à sentir[2]." A counterpart to this seeming foreignness of the 'inner self' is

[1] Hence the wide-spread belief among primitive peoples of the soul as a sort of mannikin inside the man. Cf. Frazer, *The Golden Bough*, 2nd ed. i. 247.

[2] Here the inner self begins to appear not simply as a stranger but as an enemy. Distressing and frightful 'fixed ideas' seem the work of some wicked will, and the patient, as in olden times, thinks of diabolical possession. Yet, it is worth noting, all this is but an exaggeration of the common experience that leads us all to say not 'I think' but 'methinks,' when, that is, our thoughts seem to unfold themselves while we merely passively observe them.

the peculiar state aptly described as ecstasy (ἔκστασις). Here it is the outer self, not the inner, that seems absent altogether. As St Catharine of Genoa tells of her experiences in such states, "she never saw anything with her bodily eyes nor heard anything with her bodily ears" and that "during the rapture the body was perfectly powerless[1]."

This 'inner body[2]' or vestment of the self, inaccessible to the higher senses and only vaguely localised, does not admit of much ideal representation, yet, when actually present, the organic sensations, of which it is made up, exert a powerful and often irresistible influence over other ideas. They have each their appropriate train; and so, as from time to time our emotions vary, each heightens in turn those traits which it originally wrought into the complex and still loosely compacted idea of self, suppressing to an equal extent all the rest. Normally there is a certain equilibrium to which they return, and which, we may suppose, determines the so-called temperament, *naturel* or disposition, thus securing some tolerable uniformity and continuity in the presentation of self. But even within the limits of sanity great and sudden changes of mood are possible, as, *e.g.* in hysterical persons or those of a 'mercurial' temperament, or among the lower animals at the onset of parental or migratory instincts. Beyond those limits—as the concomitant apparently of serious visceral derangements or the altered nutrition of parts of the nervous system itself—'complete alienation' may ensue. A new self seems to arise, not only distinct from the old and devoid of all save the most elementary knowledge and skill that the old possessed, but even opposed to it in tastes and disposition—obscenity, it may be, taking the place of modesty and cupidity or cowardice succeeding to generosity or courage. And as one mood may succeed another in sane persons of unstable character, so—when the limits of sanity are passed—one or more of sundry so-called 'multiple personalities' may succeed another in turn, each severally strange to, and perhaps quite unknown by, the rest. Whereas the trains of ideas attendant on different moods are partially exclusive, but not sufficiently so to sunder the sense of personal identity

[1] Cf. F. von Hügel, *The Mystical Element in Religion*, 1908, ii. pp. 50 and 44.

[2] The reader interested in modern speculations as to this is referred to I. H. Fichte's *Psychologie*, 1864, i. pp. 35–68.

completely, in cases of multiple personality this limit of complete fission is reached. Each of these personalities is comparable also to one 'intellective system' or 'universe of discourse[1]' sundered from the rest: within this the subject is for the time confined. Yet all alike have been elaborated by that same subject and rest upon the same basis of elementary presentations, memories and ideas. There is no evidence whatever to contravene this position[2].

The most convincing illustrations of the psychological growth and structure of the presentation of self on the lower level of sensation and ideation are furnished by these melancholy spectacles of minds diseased.

They are also continually exemplified on the higher level of intellection to which we must pass next. There is, in fact, as we have frequently had to notice, no sharp line between perception and ideation, between ideation and intellection. So bodily or organic disturbances affect the ideational processes, and ideational disturbances in turn affect the intellectual processes. Regarded from that higher level therefore the abnormalities we have just considered are often described as 'dissociations of personality[3].' But, inasmuch as their immediate causes lie in ideational derangements due to what we may call affective and emotional disorders, it seemed fitting to notice them before advancing further in the investigation of the genesis of the empirical self.

Passing then to the level of intellection, we come at length upon the concept which every intelligent being more or less distinctly forms of himself as a person, M. or N., having such and such a character, tastes and convictions, such and such a history, and such and such an aim in life. The main instrument in the formation of this concept, as of others, is language, and especially the social intercourse that language promotes. Up to this point the presentation of self has shaped that of not-self, —that is to say, external things have been interpreted more

[1] Cf. above, ch. xii, § 5.

[2] Cf. Oesterreich, *op. cit.* pp. 500 ff.

[3] The most interesting—certainly the most accessible account of such a case is that of Sally Beauchamp given by Dr Morton Prince in his book entitled *The Dissociation of Personality* (1903). Cf. also Ribot, *Les Maladies de la Personnalité*, 3rd ed. 1889: also Boris Sidis and S. P. Goodhart, *Multiple Personality*, 1905.

or less ejectively. Now however the order is in a sense reversed: the child while observing, understanding and imitating advances to a fuller knowledge of the self within by means of what is first discernible in other persons without[1]. The rise of conscience as a social product has been admirably portrayed by Adam Smith. Having observed the characters and conduct of other people, we begin presently to examine our own. "We suppose ourselves the *spectators* of our own behaviour, and endeavour to imagine what effect it would, *in this light*, produce upon us. This is the only looking-glass by which we can, in some measure, with the eyes of other people, scrutinize the propriety of our own conduct[2]." Conscience is but a higher phase of self-consciousness, to which indeed it was once generally equivalent, as it is still in French, for example. So far *avant l'homme est la société*; it is through the 'us' that we learn of the 'me.' Collective action for common ends is of the essence of society, and in taking counsel together for the good of his family or his tribe each one learns also to take counsel with himself for his own good on the whole; with the idea of the common weal arises the idea of personal happiness as distinct from momentary gratification. The 'extra-regarding[3]' impulses are now confronted by a reasonable self-love, and in the deliberations that thus ensue activity attains to its highest forms—the forms of thought and the forms of volition.

In the former we come upon a distinctly active manipulation of ideas as compared with the more passive spectacle of simple ideation or of memory. Thereby emerges a contrast between the thinker and these objects of his thought—including among them the mere generic image of self, from which is now formed this concept of self as a person. In the latter, a similar, even sharper, contrast accompanies the exercise of what is somewhat

[1] *Persona* means literally a mask, and a man does not wear a mask or play a part in relation to himself, but his relations to other people and theirs to him are very naturally conceived in this wise: all the world is then a stage. His demeanour is of one character for friends, of another for strangers. He romps in the nursery though he rules in the house. He deports himself like a hero on the battlefield and behaves like a craven at the dentist's. He is critical and exacting in the presence of his colleagues in affairs, credulous and affable among his companions on a holiday. In a word, the parts he plays vary as his social environment changes.

[2] *The Theory of Moral Sentiments*, pt. III. ch. i. Bohn's ed. pp. 163 f.

[3] A term of Bentham's is here used for Butler's 'particular affections towards particular external things.' Cf. his Sermon xi, "Upon the Love of our Neighbour," para. 7.

misleadingly termed 'self-control,' *i.e.* control by this personal self of appetites and desires or 'the various natural affections'—to use Butler's phrase—which often hinder it as external objects hindered them. In a word, relatively to *this thinking and willing self* (iii), even the inner self of ideation and desire becomes an outer one, no longer strictly self but merely the exclusive property of self, we might even say, the creation of self.

This reasoning, self-regulating self as such is not however commonly regarded as in any way localised. The *effort* of thinking and concentrating attention upon ideas is now no doubt referred to the brain; but this reference is only comparable with the localisation of other efforts in the sense organs or the limbs. Again whenever we think or will, we also feel, are never entirely indifferent, and feeling and volition entail always some emotional resonance or bodily affection; but this too we come to regard as the effect of our feeling, its outward expression. If we speak of this latest phase of self as *par excellence* 'the inmost self,' such language is then mainly figurative. The whole ideational mechanism and the 'desires' to which it prompts are regarded not merely as objects present to, and so distinct from, the self, but as themselves inextended objects. Into thinking and willing as such—though objects are still implied—strictly spatial relations then do not enter at all.

So we come at length within sight of what, for us at any rate, is ultimate—the duality of subject and object in that relation of presentation, which is the presupposition of all other experienced relations, temporal, spatial or what not. This duality, though *last* in the order of knowledge, we have had to regard as the indispensable condition of all actual experience however simple, as first therefore in the order of existence[1]. It is this subject of experience that we call the *pure Ego or Self* (iv). How is this related to the thinking and willing self just discussed? In that we have already noted two zones or aspects, one connecting the man more with society, the other more with self. As a member of society each one plays many parts—has many social selves or *rôles*, and so he comes first to conceive himself as the actor that sustains or impersonates them all. The utterances of persons make up the social drama and only from this has he learnt to know

[1] Cf. ch. ii, § 2, pp. 35 ff.

himself as personal at all[1]. But before he can act, the man has often to think and will, to plan, compose and rehearse any new part he is striving to play. In thus deliberating, devising and deciding, he comes next to realise his inmost self as at that moment shaping a definite advance in his own career. In the course of his life many such moments recur. In none of them is he a mere functionary: there is here no stage and he does not act. Rather he is autonomous and creates or enacts. The relation between his social selves and 'this spiritual self,' as some call it, *viz.*, that it is central to them all, such also is the relation between the concrete moments of that self and the subject or pure Ego: this is central to all of them. It is the thinker of all our inmost thoughts, the doer of all our very deeds—no longer any presentation of self, but the self that has these and all other presentations. But is it known? This question leads us to our second inquiry: the discussion of this should make the issue clearer.

'Internal Perception' or Self-Consciousness.

§ 2. If we agree to symbolize 'external perception' by $Sp O$; if further we agree that the self or subject which we are conscious of, the empirical Ego or *Me*, is but a complex presentation, as just now described; if finally we continue to maintain that neither feeling, the one capacity, nor attention, the one faculty, of the pure Ego or *I* is directly presented, then we may symbolize so-called 'internal perception or reflexion' as $Ip \begin{cases} M \\ p' \\ O' \end{cases}$. The relation of p' to p and the relation of M to I are what we have now to consider. A great variety of concrete experiences is covered by the term $Mp'O'$. This we have just seen to hold of the complex M, and it is obviously true of O', as representing various differentiations of O. As instances of the diversity in the case of p', the following may suffice: I am conscious of *sceing* the lightning, of *hearing* the thunder, of *remembering* the morning's news, of *imagining* a tropical forest, of *enjoying* music, of *enduring* toothache, and so forth. Finally, if we for the

[1] See note 1, p. 369, above.

moment include feeling among 'operations,' we might say with Locke that *p'* here answers to the "perception of the operations of our own mind within us, as it is employed about the ideas it has got; which operations, when the soul comes to reflect on and consider, do furnish the understanding with another set of ideas which could not be had from things without[1]."

It has been, however, often maintained that the difference between consciousness and reflexion or so-called 'internal perception' is not a real difference: that, on the contrary, to know and to know that you know are "the same thing considered in different aspects[2]." But different aspects of the same thing are *not* the same thing, for psychology at least. Not only is it not the same thing to feel and to know that you feel; but it might even be held to be a different thing still to know that you feel and to know that you know that you feel—such being the difference perhaps between ordinary reflexion and psychological introspection[3]. The difficulty of apprehending these facts and keeping them distinct seems obviously due to the necessary presence of the earlier along with the later; that is to say, we can never know that we are feeling without actually feeling. Still the converse need not be true. How distinct the two states are is shewn in one way by their notorious incompatibility, the direct consequence of the difference in attitude (or *Einstellung*) that they require. Whatever we have to do that is not altogether mechanical is ill done unless we lose sight of ourselves while

[1] *Essay*, II. i. § 4.

[2] Hamilton, *Lectures on Metaphysics*, vol. i. p. 195, but cf. the whole passage from p. 192 on. But James Mill, *Analysis*, i. p. 224, hardly allowed that there was even a difference of aspect; he is corrected, however, by both his editors (pp. 227 and 230).

[3] It has been thought a fatal objection to this view that it implies the possibility of an indefinite regress; but why should it not? If it were impossible to feel without also knowing that you feel or to know without also knowing that you know, and if further this so-called regress really meant not progress in experience but antecedent conditions of its existence, the objection would be serious. We may reach the limit of *our* experience in reflexion, or at most in deliberate introspection, just as in space of three dimensions we reach the limit of our experience in another respect. But there is no absurdity in supposing a consciousness more evolved and explicit than our self-consciousness, and advancing on it as it advances on that of the unreflecting brutes. In fact, might it not be said that 'conscience' or *reflective* social consciousness is an advance upon mere self-consciousness (cf. ch. xvi, § 2); and might there not be, higher still, a God-consciousness, as the veritable limit of all? By way of illustration, cf. E. Récéjac, *Essai sur les fondements de la Connaissance Mystique*, 1897, pp. 40 ff.

doing it. This mutual exclusiveness receives a further explanation from the fact so often used to discredit psychology, *viz.* that the so-called introspection, and indeed all reflexion, is really more or less retrospective. It is not while we are angry or lost in reverie that we take note of such states, but afterwards, or by momentary side glances intercepting the main interest, if this be not too absorbing. In retrospect, time-distance and consequent diminished intensity make it possible to attend at once to more, when represented, than could be compassed at once, when first presented. There is a sort of 'angular magnitude' involved. Thus, when close to, so to say, the objective and the subjective factors of a complete *psychosis* cannot be in the same focus, perhaps not even in the same field, of consciousness: in retrospect there is a sense in which they may be. The German word for remembering, *Erinnerung*, bears testimony at once to the change of attitude and to the retrospective tendency involved in 'internal perception.' The attempt to identify consciousness and self-consciousness, and so to make *all* experience imply reflexion, being then abortive, we may now resume our inquiry.

We have to ask concerning the subjective factors—symbolized as Mp'—what exactly it is that, at the self-conscious level, we are said to 'perceive'? Perception implies a sensory basis, and as we have found no warrant for the assumption of a special inner sense[1], all that we can be said to *perceive* answering to subjective factors, must, it would seem, be something pertaining not directly to the subject but to the organism and its environment[2]. This we have found to be true of M as the presentation of the sensitive and appetitive self. It is true also of the p' relating this zone of M with its objective differentiation O'. The animal and the infant at first are doubtless quite unaware of their sense-organs in perceiving the external world; but the fact soon forces itself on our notice when in concentrating attention we become conscious of the muscular adjustments involved in looking, listening, or otherwise sensorially discriminating what

[1] Cf. ch. i, § 3, p. 15.

[2] But so far there is little justification for calling this perception 'internal': the term qualifies not the perception but the percept. It also, however, implies a reference to the self, as the synonymous term 'reflexion' shews. Such reference is really a synthetic judgment; what is literally perceived I attribute to myself as my act or state. Cf. above, ch. xiii, § 6, pp. 339 f.

is before us. This is especially the case when owing to fatigue, functional defect, or intensity of stimulus any further activity is for the time painful. Here the pain felt prompts the reference of *p'* to M or the bodily self. Recollecting, expecting, imagining, and again thinking and willing, are operations pertaining to the inner zones of self: these likewise are accompanied by peculiar motor presentations. The latter may be distinguished as partly direct, partly expressional. As we are aware of one sort of strain in listening and of another, differently localised, strain in looking, so in striving to recollect or imagine, to solve a problem or to resist the devil, we are aware of yet another sort of strain again differently localised. The tension is perhaps no longer strictly muscular[1], and is not so definitely localised as are the adjustments of sense-organs, though it is still vaguely located within the head; rather, however, as a sense of direction than as one of definite position[2]. As instances of the emotional accompaniments of these direct manifestations we have the knitting of the eyebrows, which, as Charles Bell said, "unaccountably, but irresistibly, conveys the idea of mind" and again, the firm closure of the mouth, which, as Darwin said, "tends to give an expression of determination or decision to the countenance[3]." To be sure we do not think by corrugating the eyebrows or resolve by clenching the teeth; but the one helps us when we are trying to see under certain difficulties, and the other when making some great physical exertion. Still these 'serviceable associated

[1] Cf. above, ch. iii, § 2, p. 67. Fechner, however, thought otherwise. Possibly the sensations in the scalp to which he refers, were secondary effects. Cf. W. James, *Psychology*, i. p. 436 *n*.

[2] The following description by Fechner is still perhaps the best: "If I try to get a remembered or fancied scene before my mind as distinctly as possible, I have a feeling of strain entirely analogous to that experienced in striving accurately to perceive something that is seen or heard. But this entirely analogous feeling is localised quite differently. In apprehending as precisely as possible objects (or after-images) actually presented the strain is distinctly forwards, and in turning the attention to another sensory region the direction only varies from one sense-organ to another, leaving the rest of the head unaffected. In the operations of memory or imagination, on the contrary, the strain seems to be entirely withdrawn from the external organs of sense and to occupy that part of the head filled by the brain. If, for example, I wish very vividly to recall a place or a person, the image will be more vivid, not the more I strain attention forwards but the more I, so to speak, retract it backwards." *Elemente der Psychophysik*, 1860, ii. pp. 475 f., 2nd ed. (1907), p. 469. Cf. also N. Ach, *Ueber den Willensakt und das Temperament*, 1910, pp. 237 ff.

[3] Cf. *The Expression of the Emotions*, 2nd ed. 1890, pp. 232 ff., pp. 246 ff.

habits,' as Darwin called them[1]—associated serviceable habits, it would seem more correct to say—point clearly to the continuity between the higher operations and the lower, and serve to bring out the fundamental sameness of the activity concerned throughout, that activity which we have called attention[2]. This, however, we have maintained, is not presented. How then do we know it: in talking of it at all, are we not merely concreting an abstraction? And if the activity is not known, what about knowing the agent? This is the crux of our whole problem. But first a word about feeling.

When feeling is intense, its attendant marks, like the planets nearest the sun, are especially difficult to observe; so the psychology of feeling, as we have seen, began late and still remains obscure[3]. Still the gradual subsidence of feeling compared with the rapid change of movements of attention makes it possible to note the varied 'expressions' of affective states when the situation that produced them is past. Moreover those manifestations are commonly of special interest to others, and from childhood onwards are closely observed and soon understood: we know, in fact, that they are largely instrumental in developing language as a social medium and so in raising the individual to the level of full self-consciousness[4]. All that is directly observable then, either in ourselves or in others, are the respective characteristics of pleasurable or painful situations as they affect the empirical self or M. Such situations lead us to adopt a corresponding emotional and conative attitude[5], and also to assign a new property to the objects concerned, a property that does not belong to them *qua* objects—that, namely, of being pleasing or displeasing, agreeable or disagreeable and so 'good or bad.' The so-called 'internal perception' of feeling, then, is not a perception of the feeling itself, which is supposed to be its direct object. It is rather, as in the case of attention and its operations, a reference of its objective accompaniments to the appropriate zone of the empirical self. But in these accompaniments

[1] Cf. ch. xi, § 2, p. 276.

[2] The main difference is that the tension of the higher operations of thought and volition is referred, along with their emotional accompaniments, not to the bodily but to the inner self.

[3] Cf. above, ch. ii, § 2, p. 40; § 3, pp. 41 f.; § 6, p. 56.

[4] Cf. above, ch. xii, § 1.

[5] Already described at length in chh. x and xi above.

of feeling as a purely passive state there is but little analogous to those strains or tensions, more or less localised, observable in the case of subjective activity: we find only secondary or expressional effects. Here therefore the crucial question recurs with renewed insistence: Is 'pure feeling' anything more than an abstraction: do we really know either it or the subjective activity with which it is conjoined? If not, how can we know the pure Self that is supposed to feel and to act?

Subjective Being.

§ 3. In our attempts to consider this question it will be advisable first to bring together the results we have attained in a form that will best exhibit the difficulty to be met. Recalling then the characteristics of self already enumerated it will help us forward to note the increasing definiteness of these traits as experience advances from the lower level of perception to those highest moments of self-consciousness in which conscience approves or condemns our aims and acts. To begin with what we have called 'inwardness.' At the perceptual level it answers to the contrast of the animated organism and its environment. At the ideational level, where coming events seem to cast shadows before them because past events have left traces behind, a new environment—a pictorial world of things past and things possible —allures the self to withdraw into it from the actual and there to 'ruminate,' day-dream and desire. Finally at the social level, reason, controlling the wild vagaries of fancy and the blind impetuosity of desire, focuses the generic image of self into the conceptual identity of a self conscious of itself as a person, and capable of saying 'I am.' For *pari passu* with the advance in inwardness there has been also an advance in unity, first from the extended body to the inner man, and then from this to the autonomous I that thinks and wills—'from exterior to interior, from interior to superior.' At the same time activity, at first impelled by appetite, then solicited by desire, manifests itself at length as free self-determination.

These salient features of developing self-consciousness may, it is hoped, suffice to shew what appropriateness there is in the figure by which the 'form of consciousness' has long been

symbolized, that namely of lines converging inwards towards, or diverging outwards from, a centre having a circumferential area, which is the source of the one set of lines and the goal of the other. That area we call the Ob-ject or *der Gegen-stand*, the pre-sented or *das Vor-gefundene*. The centre, to which all its lines belong, is the Subject or Ego. What, we have now to ask, is the meaning and the justification of the existential proposition 'I am' which this ideal construction is supposed to evoke? We began with self represented by concentric objective zones, sensory, ideational, personal, spiritual, and end with a *focus imaginarius*, as Kant called it. This 'idea of the reason' suggested by the structure of experience, is not only devoid of all 'content' in fact, but is necessarily so devoid from its very nature as limiting concept—like its analogue the point, that which has position but neither parts nor magnitude. This concept of the pure Ego, or I, in other words is the limit to which the empirical Ego points. What does this limit mean? The empirical Ego, or *Me*, is altogether an *objective* construction, or intellective system. It is also the supreme one; for all other syntheses or systems—all forms of knowledge whatever—are related to it, in so far as they are all mine, all the result of my 'acts': hence Kant's transcendental unity of apperception. Still this *Mine* (O') and that *Me* (M) are polar opposites that advance in definiteness together, through the mediation of the processes we have symbolized by p': so we got our Mp'O'. But if all knowledge whatever is included in this supreme whole and if the differentiation of subject-knowledge and object-knowledge is itself the result of a gradual development falling within it, what can be the meaning of talking of a 'pure subject' to whom it is all presented?

The psychological answer to this question is in the main very simple, however far it may fail of being speculatively adequate. Though at this level all knowledge may be, all experience is not, covered by the formula Mp'O'. That formula does not symbolize experience but only the knowledge possible at a certain level of experience. It is our gradually elaborated concept of experience as *known*. To represent experience as *real* more is required. We must indicate the being which all knowing presupposes. Then the formula $Sp \begin{cases} M \\ p' \\ O' \end{cases}$, will represent a later stage of that

experience which as minimal we have represented[1] as S*p*O. We have found the latter to be primary, ultimate and universal, the former to be secondary, penultimate and occasional; in other words, we have found presentation of the object (O) to be immediate and indispensable to experience: whereas *presentation* of the subject (in M*p*'O') is only mediate or retrospective and, even when possible, never essential to experience.

But S*p*O, it will be replied, is just M*p*'O' when M is carried to the limit and all its previous content transferred to O. Just when it is credited with *having* all—even itself—S *is* nothing. Self-consciousness began with the contrast of body and environment—a contrast which psychology, as little as biology, can ever really transcend. So long as we keep within this empirical domain both terms of our duality are objective or presented[2], and so long we may reasonably talk of a relation of one to the other. But it seems highly artificial so to talk, when the whole content of consciousness is assigned to O, and S has become a mere *focus imaginarius*—a psychological fiction like the physicist's fiction 'centre of force.' We thus seem committed to the contradiction of a relation with only one known term. This objection looks formidable and perhaps dimly forebodes a difficulty we have still to surmount: anyhow, as it stands, it misses the point. For it should be remembered that we are trying to deal with a singular case, where therefore general statements are apt to break down, as with Locke's poor Indian philosopher in a closely analogous one. The question here is not as to the relation of terms in a proposition but as to a communion of beings in reality—which at length gives rise to the proposition. The reality is experience. We allow that it is a unity but it is at once a unity that implies a duality and a duality that implies a unity. O to be known must surely be and S to know must surely also be. Again, O, as known, implies a knower; and S, as knowing, implies a known. Both these factors of experience then are real, but only one is 'known,' *in so far as known connotes object.* But experience is wider than knowledge; hence the inappropriateness of

[1] Cf. above, ch. ii, § 6, p. 56.

[2] Nay, it will be said perhaps, both are corporeal or at least implicate body, for we have in fact no knowledge of disembodied life or experience. No doubt, but the implication is very different in the two cases. Though S always has *a* body, we do not find that it ever is body. The inability of so conceiving it has always been the crux of materialism.

consciousness as a name for it, a term strictly denoting only knowledge, and *that* mediate knowledge. The objection we are combating is largely due to this most equivocal term and falls to the ground when that equivocation is exposed[1].

It would come nearer to our crucial question if the objection just considered were amended by asking with what right we make an intellectual abstraction the subject of an existential proposition. There is certainly no such right, and the psychologists who substitute the abstract 'consciousness' for the concrete conscious subject, alone forget this. The I of the 'I am,' the sole text of the 'rational psychology' that Kant criticized and equally the I of the 'I think' of Descartes' *Cogito ergo sum*, if taken as a *res completa*, is an abstraction. But that pure subject or Ego which we reach in our analysis of experience at its rational level stands for no abstraction so long as we are content to distinguish it without attempting to separate it from its objective complement, the non-Ego[2]. When in some supreme issue a man affirms himself saying, like Caesar crossing the Rubicon or Luther entering Worms, 'I will,' to tell him then that this I of which he speaks is *itself* an utter abstraction, because our *concept* of it is the limit of a long process of intellection—surely this would be outrageous.

At any rate, it may be rejoined, the I in such a case is the empirical Ego that figures in history, not some ideal or transcendental Ego that is never to be found and will never be missed[3]. Plausible as such a defence might appear to the man in the street, it is nevertheless partly demonstrably false, partly false in fact. To identify *I* and *Me* is logically impossible, for, *ex vi terminorum*, it is to identify subject and object[4]. Moreover it is the I—not the Me—that, as feeling and acting, is essential to any experience, whilst the Me is essential only to some. Again the attempt to discredit the concept of the pure Ego or experient

[1] Cf. above, ch. i, § 5, pp. 21 f.

[2] Cf. Herbart, *Psychologie als Wissenschaft u.s.w.* § 29.

[3] Cf. W. James, *Principles of Psychology*, 1890, i. pp. 360 ff.

[4] An appeal to the 'law of identity' might perplex some (cf. F. H. Bradley's *Appearance and Reality*, ch. ix. On Self, and elsewhere) but would not really help. We may say $I \equiv I$ and $Me \equiv Me$. But as soon as we say $I = Me$, as in the French *je me connais*, already cited, we have two terms asymmetrically related and therefore on the principle of the identity of indiscernibles, the *I* cannot *be* the *Me* nor the *Me* the *I*. At the same time the objective *Me* is impossible without the subjective *I*.

subject by confusing or ignoring the wide difference of meaning between transcendental and transcendent is an attempt that can only impress the ill-informed. We do not maintain that the subject transcends experience, but on the contrary that it is always immanent in experience. This necessary immanence—the fact that experience without an experient is unintelligible—is just what transcendental here implies. The concept of a synthesizing subject, that is to say, is epistemologically *a priori*. To call Kant's transcendental unity only "substantialism grown shame-faced, and the Ego only 'a cheap and nasty' edition of the soul" is a blunder simply[1].

The objector may, however, persist: Is it then pretended that there is no difficulty in maintaining that this pure subject is immanent in experience while yet maintaining that it is never a direct object of experience? And we can only repeat: There would certainly be a difficulty if we maintained that the subject of experience could ever be the direct object of its own experience[2]. At the same time it is noteworthy that Kant, who made this logical impossibility clear, did admit a difficulty. "The whole difficulty," he said, "lies in this, how a subject can internally intuite itself; only this is a difficulty common to all theories alike[3]." But then Kant is speaking as an advocate of an inner sense and of theories which accept this position. The question is whether there is a like difficulty for those who, rejecting that doctrine, regard self-consciousness as an intellectual process possible only at the social and rational level of experience.

It may be held that Kant's difficulty does remain, changed in form but essentially the same. How the I can appropriate the Me as a presentation of itself is now the difficulty, even if the account here given of the content and the genesis of this presentation is sound. We are confronted, it might be said, with a

[1] Cf. W. James, *op. cit.* i. p. 365.

[2] Cf. Kant, *Kritik*, 1st ed. p. 346, M. M.'s trans. p. 301 (better rendered by Watson, *Selections*, p. 148), and especially his *Fortschritte der Metaphysik*, written ten years later, Hartenstein's ed. of his works, viii. pp. 530 f., to which Dr G. Dawes Hicks has referred me.

[3] *Op. cit.* 2nd ed. p. 68. Later on Kant professed himself at a loss to know why people saw so much difficulty (see footnote at the end of § 24). Nevertheless the trouble it gave him is well known and his failure to remove it widely admitted. Cf. B. Erdmann, *Kant's Kriticismus*, 1878, pp. 212 ff.

problem like that raised by Locke's doctrine of external perception. How can you talk of ideas as copies if you cannot compare them with the originals? asked Berkeley and Reid. Similarly here we have to ask: What justification is there for calling the Me a 'reflexion' of the I if this, the subject of experience, is, as knower, precluded from being immediately known? But no, the cases are not similar. There the impression was a 'sense-datum' passively and privately received, here reflexion yields an 'intellective system,' a 'notion' as Berkeley termed it, actively and socially achieved. There the 'original' was another being: here it is my own being. The existence of that might be denied, but the existence of this is indubitable; for if the existential proposition I am were false it could not be asserted. The I is known reflectively in the Me because the Me has been synthetically constructed by it, much as an artist paints his own portrait by means of a mirror. The mirror for self-consciousness is the social medium, and as this is perfected the portraiture improves. But the entire process from first to last—the cross lights of social intercourse, where each, as

> ...eye to eye opposed
> Salutes each other with each other's form,

and the power 'to behold itself by going from itself,' the outward advance that becomes an inward revealing—all has depended not alone on what was 'given' to the self but also on what it has itself done.

We conclude then that we know *intellectually* what we are as experients: into the empty 'form of consciousness' our being fits. Such empirical knowledge falls far short of the metaphysical doctrines which the old so-called rational psychology claimed to establish. On the other hand epistemologically it is worth far more. Psychology without a soul—as the 'rational psychologists' described soul—is quite possible but not psychology without a self, a being that in its acquaintance and intercourse with objects—that is, directly or indirectly, with other selves—feels and acts. Let the substantiality of this being be interpreted how it may, the actuality of it is past question and therefore never questioned[1]. It is here at length that being and knowing

[1] The defect of the doctrine of W. James, already quoted (cf. ch. ii, § 2, p. 39*n*.), which transfers this actuality to the thought and recognizes a *cogitatur* but no *cogito*, maintaining that "the thoughts themselves are the thinkers is the final word of psychology"

meet and our original assumption is justified[1]. This, moreover, is the only kind of being that we can understand; and two things seem clear. First, we cannot, if we call this being a substance, use this term in the sense in which we use it of matter[2]; for we cannot conceive the self as actual at all, if we imagine it as experiencing nothing[3]. Inertia, if applicable to what we call matter, is at least not applicable to what only *is* as it lives and acts. In a word, if we call this being a substance we must give that term the meaning that Leibniz gave it and not that given to it by Descartes and Spinoza. Secondly, we cannot call this actuality of the subject of experience, phenomenal. The reactions of A are indeed phenomenal for B who perceives them and whom they affect. So we come to describe experience as reciprocal interaction or *mutuum commercium*. This implies two agents and not merely two kinds of phenomena—one external, the other internal—whatever that may mean[4]. Of what nature the agency is to which we owe our sense-data is a problem but to suppose that we ourselves are only phenomenal and resolvable into sense-data is after all impossible; for how then do we come to talk of the phenomenal as distinct from the real? But when we know both it is possible perhaps to talk of 'degrees of reality'; not, however, if we deny our own reality altogether.

(cf. above, ch. ii, § 2, p. 39 *n.*), is surely now apparent without detailed comment. is, in fact, inconsistent as well as absurd since James accepted Herbart's exposition of apperception to which his own is diametrically opposed (cf. his *Principles of Psychology*, ii. pp. 107–11). If however any reader desires further comment, I find I have already supplied it: see a 'critical notice' of James's Textbook of Psychology, *Mind*, 1892, p. 537.

[1] Cf. above, ch. ii, § 2, p. 35.

[2] Cf. above, ch. xiii, § 6, pp. 338 ff.

[3] Cf. Lotze, *Metaphysik*, § 307 *fin.*

[4] Cf. above, ch. i, § 3, pp. 14–16.

CHAPTER XVI

CONDUCT: VALUE, CHOICE AND FREEDOM

General Survey.

§ 1. The development of intellection and self-consciousness —with which in the last three chapters we have been exclusively occupied—is in reality accompanied by a corresponding development of the affective and active side of mind[1]. To describe in detail all the various sources of feeling and desire that arise in the course of this further advance—all the new interests, emotions, and sentiments called into being by intersubjective intercourse—is altogether beyond the scope of a brief systematic essay like the present. But at least a general survey of this highest or rational level of affection and action is indispensable. To gain any oversight over a domain of such complexity, there is one fact to be kept steadily in view: as the causes of feeling become more ideational and more 'internal,' lie more among the possibilities of the future and less among the actualities of the present, so our personal attitude or action changes in like manner[2]. We have noted this correspondence already at the lower level at which desires emerge, and we have seen too that desire, in prompting to the search for means to its realisation, is the *primum movens* of intellection[3] whereby the haphazard gropings and failures of sense are largely avoided. And now—in keeping with what has just been said—we have to notice that

[1] This we left last at what we may call the middle or ideational level: cf. above, ch. xi, § 3, pp. 281 ff.

[2] Cf. above, ch. x, § 4, pp. 268 f.

[3] Cf. above, ch. xii, § 1 *init.*, § 2 *fin.*

intellect does much more than devise and contrive in unquestioning subservience to the impulse of the moment, like some demon of Eastern fable: even the brutes, whose sagacity is mostly of this sort, are not without traces of something like self-control. But 'understanding and reason' gradually widening the horizon of human experience both in time and space, bring within its purview more and more of the trans-subjective, and also reveal with ever increasing distinctness its own inmost springs. Thus, like the divine *νοῦς*, they continuously transfigure and recreate the whole. So, awakening to consciousness of himself, his senses cease to be mere blinkers or clogs, and 'the solitary irrational[1]' emerges—like the perfect insect from its cocoon—amenable to deeper sources of feeling and capable of higher forms of action in the world of social and civic life. The advance is slow and the way is long; but, as said already, the barest reference here must suffice.

First of all, when—as we say—'motives conflict' or when the evils of hasty action recur to mind, deliberation concerning the 'ends' to which the motives tend precedes the mere search for ways and means of achieving them, or at least predominates over this. Again, in moments of leisure, the more imperious cravings being stilled, besides the rehearsal of successes or failures in the past, there come anticipations extending farther and farther into the possibilities of the future. Such ventures also furnish occasions for deliberation over the projects they suggest. So at length we attain (1) concepts of wider interests, such as property, knowledge, art. Then, both social intercourse and self-consciousness having advanced, we also come by (2) concepts of the welfare or perfection of self, as well as concepts of the claims of others and of duties towards them. Finally we formulate (3) maxims or practical generalisations concerning these various ends and the best means for their realisation. Thus, instead of 'behaviour' determined largely by the *vis a tergo* of instinct or habit, we have 'conduct' shaped by what is literally prudence or foresight, the pursuit of ends that are not esteemed desirable till they are judged to be worth what they will cost, conduct determined by ends that are judged to be 'binding' because

[1] So I think we may call him before 'the countenance of his fellow' becomes transparent through speech; and spirit greets and quickens spirit. Cf. above, ch. xii, § 1, p. 286 *n.*

worthy *per se*[1]. The result in such a case is a decision, resolve or volition.

Summarizing its salient features then, we find the domain of conduct, broadly speaking, is that of future possibilities; so far, that is, as these may be determined by the subject's initiative—the result (in general) of prior deliberation. Now in contrast to the 'theoretical consideration of things' deliberation invests them with 'characters' that do not strictly belong to them as merely 'things'—*i.e.* out of relation to 'persons'—at all. Such 'characters[2]' constitute the axiological categories of worth or value, the good or its opposite in some sense or other. Further, deliberation leads to practical maxims or 'imperatives' as Kant called them, either hypothetical or categorical, as the case may be. It also brings to the fore the teleological categories, which though—unlike the axiological categories—concerned with the qualities and relations of things as such, nevertheless regard these so far only as they can be 'instrumental' to ends[3]. Finally we have the individual *fiat* or decision which we speak of as our deed or will. We must now try to elucidate and correlate these various traits so as to exhibit human conduct and its development as a psychological whole, in which self and not-self, feeling, volition and intellection are all concerned.

[1] In restricting the term *behaviour* to the lower, and reserving the term *conduct* for the higher, of the two levels of conative activity here described, some may think a liberty is being taken with two words generally regarded as synonymous. Herbert Spencer, for instance, has said: "Opening the window to air the room, putting on an overcoat when the weather is cold, are thought of as having no ethical significance. These, however, [and other similar instances given] are all portions of conduct." (*The Data of Ethics*, 1879, p. 5.) For all that, reasons for our suggestion are not wanting. In the first place, writers on comparative psychology talk almost invariably of 'animal behaviour' while writers on ethics speak as generally of 'human conduct.' Moreover conduct etymologically implies guidance or direction towards an end (cf. *conduce*): so we speak of conducting an army, an orchestra, or a business. No doubt both terms are applied to human beings but, as Webster remarks, "behaviour respects our manner of acting in particular cases, conduct refers to the general tenor of our actions." As to the former we may compare a man with an animal and say he behaved like an owl: as to the latter we should hardly so compare him unless his conduct were irrational, when we might perhaps say he behaved like an ass.

[2] The term, so far as I know, was first used in this sense by Avenarius: cf. his *Kritik der reinen Erfahrung*, 1888, i. p. 15.

[3] In this way we come by the notion of the 'organic.'

Value.

§ 2. The concept of Worth[1] or Value, more precisely the Good in the domain of conduct—so far as this is distinct from the True or the Beautiful, which are good in other domains—is here cardinal and ultimate. We have then first of all to analyze this concept and to ascertain how we come by it. Like presentation, it implies the duality of subject and object which all experience presupposes. There is, however, a certain antithesis between the bare recognition of an object and its subsequent valuation. We might say the object takes the lead in the first and the subject in the second: in the first we are confronted by a 'situation' which we can only indicate or describe, being so far merely cognitive; in the second we are affected, and so assume an attitude, become conative. And then it is that, as already said, we come presently to assign to things a 'character' connoting nothing inherent in them but just our estimation of them[2]. The world we theoretically contemplate and *describe* we now enjoy, utilise and *appreciate*.

As to the source of this category of value, the opinions of psychologists are somewhat divided; some, with Meinong refer it to feeling, others, with von Ehrenfels, to desire. No doubt what is desirable is always valuable and what is valuable always desirable; that, however, settles nothing as to the relation of

[1] Worth, though in itself the preferable term, if only as a means of distinguishing between psychical (and especially ethical) estimation on the one hand and economic worth or exchange value on the other, is defective owing to its lack of derivatives answering to *valuable*, *evaluation*, &c. Moreover it was a theory of value elaborated by Austrian economists that led certain psychologists (also Austrian) to investigate its psychological presuppositions. Very naturally, therefore, English writers (*e.g.* Dr J. S. Mackenzie), who had the choice of both terms, used value not worth.

[2] How intimately these two aspects of the world are connected is shewn by the very unconscious way in which we ordinarily intermingle the terminology of appreciation in what is meant to be only descriptive. To speak, for example, of charming scenery or a beautiful voice is not strictly to describe. But we find even science talking of 'the noble metals' and calling water-cress, Nasturtium *officinale*, and a certain lily, Lilium *speciosum*. All this may help to remind us that all thinking is primarily pragmatic: we cannot even now separate what it is nevertheless important to distinguish, the world of description and the world of appreciation.

Cf. above, ch. ii, § 6, p. 57; ch. v, § 8, p. 138; ch. xiv, § 4, p. 356. Cf. also W. M. Urban's article, "Appreciation and Description," *Philosophical Review*, xiv. (1905), pp. 641 ff.

desire to feeling. But if, as a matter of fact, desire presupposes feeling whereas feeling does not necessarily imply desire, then surely Meinong is right. And after a long controversy this is the conclusion of the majority of psychologists. Feeling is genetically prior to desire and therefore suffices to make an object valuable (positively or negatively) for any subject that is affected by it. When too, the feeling is one of contentment and satisfaction, there may be a lively sense of positive value, though there can then be no conation, in so far as that implies discontent and dissatisfaction. Nevertheless conduct and indeed all behaviour is shaped throughout by reference to what is wanted —*i.e.* by appetite and desire—rather than by what is attained, and for the present sufficing[1]. Thus, in an exposition of conduct, the connexion of value with purpose is the important fact though its ground in feeling is the key to its meaning, with which we here begin.

What exactly is this meaning? In the language of economics, value, as we have seen, is a price affixed to objects as being for us what we call 'goods or commodities,' things, services, &c., that we can use and enjoy. The judgment here implied is a value-judgment or appreciation. Wherever there is feeling there is value—either positive or negative—though it may be below the self-conscious level, and then the fact can neither be affirmed nor communicated. Such simple appreciation is comparable in this respect with simple apprehension: in both cases the full objective recognition that explicit judgment requires waits the dawn of self-conscious reflexion. Man and brute alike enjoy their food, but man, less absorbed in its consumption, recognises it *as* food and regards it *as* 'good.' Even when the perception is explicit the appreciation need not be; but apart from the objective recognition it *can* not be. In the complex of both we have explicit valuation in its simplest form. But it is not the pleasure afforded by the food that we value but the food, because it affords the pleasure.

The continuity of things and the subject's limitations, 'the length of his tether'—to use Locke's now classic phrase—restrict every experient to a certain definite area or 'environment': no creature, for example, can enjoy every kind of food or avail itself of every form of locomotion. More or less

[1] Cf. above, ch. xi, § 2, p. 279.

subjective selection there will be, but always a circumscribed selection, *viz.* of that within its range, which as we say is of 'interest' to the given experient. A certain constancy or at least continuity of these interests in objects is thus implied, since the subject is a determinate experient striving for self-conservation and betterment. This, the domain of conation, is obviously amenable to a development correspondent to, and concurrent with, that which we have already described—in terms of perception, ideation and intellection—as the domain of cognition; inasmuch as the same plastic processes are concerned in both. "The value of an object" then, we may say with Meinong "consists (*besteht*) in the fact that a subject takes, could take or at least reasonably should take an interest in that object[1]." The main outline of this development on the intellectual level, we must next try to trace[2].

Such development is still conditioned by the impulses and desires of the lower levels: regardless of these it cannot advance. The bare necessaries of life, the satisfaction of natural appetites —daily bread and offspring—are the first concerns for man and brute alike: self-preservation comes before self-betterment. Again blind 'extra-regarding[3]' desires, or 'propensions,' as

[1] Fourth International Congress of Philosophy at Bologna, *Logos*, iii. 1912, p. 9. At the same time, so long as we are concerned with tracing the development of conduct, we must hold that only that has value for a given experient which he actually values. His parents may see that education has value for the whining schoolboy, but he himself does not value it, as long as he creeps unwillingly to school.

[2] A possible difficulty must, however, be anticipated. Having previously referred value to feeling as its source, we now say that it is constituted by interest. Are these two positions identical: if not, what is the difference between them? They are identical in so far as feeling is essential both to value and interest. But the interest implies more than feeling, and feeling alone would not suffice for the development of values or of conduct. The further factor over and above feeling, which interest involves, is activity, the conative attitude, which is clearly distinct from feeling, however little it is independent of it. It is through activity that subjective selection becomes possible (cf. ch. ii, § 4, pp. 50 f.), or that higher sources of feeling arise that may be preferred to lower (cf. ch. x, § 2, p. 255, § 4, pp. 267 f.). And after all activity is the cardinal fact of life: only in terms of activity have we been able to get any clue to the facts of feeling regarded as an effect (cf. ch. x, § 3, p. 262). The attempt to connect value with feeling exclusively leads to hedonism, which the connexion of value and interest refutes. This what is called 'the fundamental paradox of hedonism' clearly shews. To get pleasure you must forget it and aim not at it but at something else; in other words you must have objective interests, and these presuppose activity.

[3] Cf. above, ch. xv, § 1, p. 369, *n.* 3.

Butler called them, are presupposed in the 'self-love and benevolence' of the higher level, which also they tend to override. Regarded as a process of intellection, this advance beyond the perceptual and ideational levels of behaviour, so far as it is effected, we call valuation or better evaluation; that is, not the simple appreciation implied in 'good' or 'bad,' but the comparative appreciation implied in 'better' or 'worse.' The rudiments of a sort of 'hedonic calculus,' as it is not very happily called, the small child, domestic animals, and even some wild ones, appear to acquire[1]. The lack of language is, however, a pall of darkness which isolates the brute, that—with no heritage but instinct—can never become more than sagacious. On the other hand, the transparency of the social medium into which the child is born, enables it, as it grows, gradually to appropriate the accumulating wisdom of the race and to become at length φρόνιμος. It is the whole of this progress, actually achieved in a long succession of generations, that we suppose our 'psychological individual' to accomplish[2]: time was when he bartered his bed in the morning—to quote an instance of Mill's—for the breakfast of which he had more immediate need, time will be when he will scorn delights and live laborious days to attain some far-off end. Like the analogous theoretical advance, so this begins with what is only 'psychologically objective[3]'—temporary and individual values: permanent and universal values, the axiologically objective, it reaches last of all. But as with the epistemologically objective, so again here: genesis and development is all that psychology has to consider. The sanctions of ethics like the grounds of knowledge are beyond our province[4].

What, however, we have specially to remember when regarding valuation as an intellectual process is that, whereas

[1] Cf. Bentham's estimate of pleasures according as they are '*intense, long, certain, speedy, fruitful, pure.*' The child and the dog that learn not to steal and the fox that learns to avoid the trap have made a beginning with this scale.

[2] Cf. above, ch. xiii, § 1, p. 286*n*.

[3] Cf. above, ch. i, § 3, p. 18.

[4] Evil doing on the other hand, as well as erroneous thinking are within it, but are hardly of psychological interest save as they indirectly aid the exposition of normal development. The reasoning of a madman, it has been said, often shews more intelligence than the fallacies of a fool: in like manner the conduct of the consistent egoist or the deliberately bad man may illustrate *savoir faire* better than the actions of one more amiable, but less stable, in character.

theory starts from fixed *data*, 'what is,' practice starts from the *agenda* to which these prompt, 'what ought to be.' As the experient advances, past *agenda* are not merely repeated but new ones continuously arise. Thus while intellection is the source of system both for theory and for practice, the two systems are very unlike. Both depend indeed, as already said, on the same fundamental plasticity—differentiation, retention, and assimilation. The one, like Aristotle's σοφία, is comparable to the organized structure that subserves life and at the same time presupposes it: the other like Aristotle's φρόνησις, represents the creative synthesis, that is the function of life itself. Values are the elements of this synthesis here, and so-called 'value-movements' (*i.e.* either new valuations or revaluations) indicate its progress. Many of these, as, *e.g.* 'the innocent diversions of fashion' are unimportant save as illustrating the law of novelty[1] and emphasizing the distinction just made. It is only where there is life that Nature 'fulfils herself in many ways, lest one good custom should corrupt the world.' Far more important are the value-movements connected with the teleological categories of Means and Ends, which as already said, at this level come prominently to the fore, and lead to a distinction of values as instrumental values (*Wirkungswerte*), and intrinsic values (*Eigenwerte*). More important still is the rise among the latter of individualistic and social values and the ideals towards which they point. Each of these we must consider in some detail.

i. Looking broadly at the results of human activity directed to the attainment of novel ends, two features stand out. In the first place, where these activities are successful and yet such that they have to be frequently repeated by the individual and by the race, there facility and dexterity gradually replace the clumsy and bungling attempts of earlier efforts[2]. Individual differences there will, however, be; and in consequence, those who are most proficient in any pursuit or occupation may come to enjoy it for its own sake—which the less proficient are not likely to do. Hence, for the former, such means—instead of having only a utility-value—may become intrinsically valuable, that is to say, no longer or not merely drudgery, but also more or less pleasurable in themselves. Specialisation or division of labour

[1] Cf. above, ch. x, § 2, p. 255*n.*, § 4, p. 258.
[2] Cf. above, ch. vii, § 2, p. 180.

leading to increased complexity and perfection of the social organism as a whole and more life and fuller for its members generally—in a word the progress of civilisation—such is the result of this psychologically simple fact—a result which we must leave to the sociologist to describe in detail[1]. One such detail—and not the least important—of this form of value-movement we may, however, be allowed to mention—the pursuit of knowledge[2] first for its utility and then for its own sake. Psychologically regarded, this development is the direct outcome of what we have called 'subjective selection[3]' and intersubjective intercourse.

The other feature we have to note depends upon a peculiarity of final causation as distinct from real, *viz.*, that it is, so to say, an inverse process only possible in imagination, not in fact. The so-called 'final *cause*' or end is desired provided the means to its accomplishment can be found. But while still only a desirable end and merely conceived, it is beset more or less with the uncertainty that pertains to the future, and the means tentatively employed for its realisation, even if they succeed, are almost certain to produce consequences more or less unforeseen. This is what Wundt has happily described as 'the heterogony of ends[4].' The history of 'inventions' and 'discoveries'—and they are numberless—affords the clearest illustrations of this principle. Its working however underlies simpler forms of experience where the means to ends are immediately available and premeditation almost or altogether uncalled for—as in the beginnings of human intercourse. The origin of language, already discussed[5], is a case in point, and in discussing presently the development of moral sentiments we shall find another still more impressive[6].

[1] Cf. Herbert Spencer, *First Principles*, § 161.

[2] As distinct from the mere curiosity excited by novelty—*Wissbegier* as distinct from *Neugier*. Cf. W. James, *Principles of Psychology*, ii. pp. 429 f.; K. Groos, *Die Spiele der Menschen*, 1899, pp. 184–9.

[3] There are, no doubt, cases in which this 'transvaluation' spells degeneration rather than development. That of the miser is often cited as one. But it is not proficiency or reputation that leads to hoarding: frequently it begins in an excess of prudence or of fear. The miser is seldom a financial expert nor is the financial expert usually a miser.

[4] *System der Philosophie*, 1st ed. pp. 337 ff. But cf. Hegel, *Philosophie der Geschichte*, p. 30, where the same idea is clearly stated.

[5] Cf. above, ch. xii, § 1, pp. 285 f.

[6] Cf. below, p. 393.

ii. The value-movements that we have specially to consider in passing to intrinsic values are those that give rise to gradations of rank. In the case of individual or egoistic, as distinct from social or altruistic values, the advance consists in the explicit recognition of the value of the self as paramount[1]. That every subject always *has* a value for itself, few, we imagine, will care to dispute; but till this value is *recognised*, it cannot be used in evaluation. Even then, if it were the only value recognised, it would be really valueless; for a subject without objective interests would be itself of no interest[2]. I must always have objective interests; but till I know myself I cannot recognise these interests as mine; prior to that all my interests are on a level. Not till I know myself can I organize them into a more or less consentient whole and lessen the danger of sacrificing this whole to some of its members. Self-interest, the value of self, thus becomes the standard by which its other specific interests are evaluated. Herein its higher rank and authority consists: from it emanate the imperatives, obedience to which constitutes the virtues of temperance and prudence. But this subordination of particular ends to itself implies that self is its own end—an end consisting not merely in what it is and has but still more in what it can become and acquire. As the idea of self becomes more 'inward' so do its ends; we then begin to entertain corresponding ideals of self which we strive more or less earnestly to realise. These furnish a still higher standard on which in turn our estimate of our own worth depends. To a very large extent, no doubt, the ideals of one person are suggested by the actual achievements of another: imitation and emulation frequently determine the selection; but the essential lack of finitude, the limitless possibilities of a reasoning being are the primary incentive[3]. We may for the

[1] To some a difficulty may here perhaps suggest itself. How, it may be asked, if feeling is a subjective state occasioned by some object, can the subject be itself an object that can affect itself? Obviously only if the subject can be an object for itself. Under what circumstances this is possible, we have already tried to determine. (Cf. above, ch. xv, §§ 2, 3, pp. 375 ff.; cf. also Lipps, *Vom Fühlen Wollen und Denken*, 1902, pp. 175 ff.)

[2] This implication or duality of subject and object is, as already said, overlooked on the practical side by hedonism as much as it is on the theoretical side by presentationism.

[3] It is a sad truth, no doubt, that the lives of many are stagnant, and unprogressive

present however allow this large topic—which would soon carry us beyond our province—to lead us instead to the last of the value-movements we have agreed to consider. This will bring us back to it once more.

iii. In treating of altruistic or social values from the standpoint of psychology our sole concern is with these values as they come to be appreciated and evaluated by the individual: with their ethical or jural aspects which presuppose the psychological, we have no call to meddle. The new fact that meets us here is the subordination of self-interest to what is held to be higher—the interest of some social group of many selves objectively of equal account. The state, the church, the family, regarded as an 'over-individual' unity—a sort of self writ large—is now accorded the predominance over members whose respective interests have to be organized to promote its own, just as the self-interest of the individual is held to be sovereign over its several impulses and desires. From the objective standpoint the parallel here is obvious: it has been drawn out in detail again and again from the days of Plato onwards. But from the subjective standpoint of psychology there is, strictly speaking, no such parallelism at all. Here there are no lesser selves inside a greater: it is one and the same self, that regulates its separate interests and also subordinates its self-interest. Hence has arisen a problem, as ancient at any rate as the book of Job—the 'problem of egoism,' as Meinong has called it[1]. To look at this problem for a moment may help us forward.

Voluntary behaviour, it is said, is never determined by external springs of action. Mutual dependence, more or less intimate is indeed universal, and to the extent of this dependence *Ego* has always an interest in *Alter*. Any action consequent on such dependence is however, obviously egoistic, implicitly or explicitly. Can we, without assuming a breach of continuity, imagine this limit to be transcended? Yes, said Schopenhauer, but it is a mystery which only metaphysics can explain: all *individuation* is merely phenomenal. *Alter* and *Ego* are really one, as the Vedantists taught: thus and not

or actually decadent. But 'the psychological individual' is our study, and with it development, not degeneration, is normal.

[1] *Psychologisch-ethische Untersuchungen zur Werth-theorie*, 1894, §§ 15, 32.

otherwise is altruism intelligible[1]. Yes, said James Mill, for *altruism* is merely phenomenal, the result of an inseparable association of pleasurable ideas with the ideas of certain individuals or groups of individuals. According to Bain this result is a sort of 'fixed idea' that arises from our being detained, engrossed, fascinated, by 'the mental states' of those with whom we live, so that "we are constrained to follow these out as if they were our own[2]." Perhaps we can find a solution mid-way between the 'mystery' and 'metaphysics' of the former and the shallow psychology of the latter of these attempts. But first a word as to terms.

Granted that in a sense all conduct is egoistic, nevertheless the whole world has for long with one accord stigmatized as selfish certain lines of conduct and the dispositions they display, while certain others have been approved as unselfish, the rest being regarded as neutral. Whether then the term egoistic be applied to all these kinds of conduct or be confined to the first there is clearly some difference between selfish and unselfish conduct, even when moral considerations are left aside. It is with this *differentia* that we are now concerned. It points to an ambiguity in the word egoistic, which can be expressed at once in the terminology of value. Generically, all conduct *is* egoistic in the sense that all value implies a valuing *subject* or *Ego*. Specifically, unselfish conduct *is not* egoistic in the sense that the *object* immediately valued is the good of the *Ego*: on the contrary it is the good of the *Alter*[3].

We may now try to trace the value-movements through which an individual may come to prefer humanity to himself. Here again the parallel fails; but this time on the objective side. Society itself is always egoistic and never comes to recognise ends higher than its own. But for the individual, on the other hand, a certain subordination of private to public ends is present from the first, so that without any definite contract or utilitarian calculation society and 'morals' have arisen and advanced together. Thus the individual, while gaining in security, gets

[1] "Ueber das Fundament der Moral," *Sämmtliche Werke*, Frauenstädt's ed. 1877, iv. pp. 209, 271.

[2] James Mill's *Analysis of the Human Mind*, ii. pp. 216 ff.; Bain, *Emotions and Will*, 3rd ed. pp. 121 f.

[3] Cf. Butler's Sermon xi, "Upon Love of our neighbour," para. 7.

'accustomed' to constraint; his outward acts, at all events, must not injure the common weal in which he shares. Yet for all that he may never *spontaneously* deny himself or sacrifice his personal ends for the good of others. The most punctilious observance of custom may never get beyond 'eye service.' But the individual himself, who has been tended and cared for throughout his childhood, grows up accustomed to expect from others what he comes presently to find that they expect from him. So he comes to see himself as others see him, when he is praised or blamed for acts that he has long been ready to approve or disapprove in them. In a word his self-consciousness becomes conscience: he seems to hear two voices within his breast and one speaks with the authority of law: it is his 'tribal self.' Still this new voice is but an echo: it announces nothing new. All that society enforces is outward regimen and this is all that the primitive conscience demands. The jural conscience that custom begets then can never account for the '*vivre pour autrui*': that rises higher than duty[1].

At the same time its roots lie deeper. The simplest social organism is a community of families—a clan or tribe. It is held together primarily indeed by 'economic' interests of *mutual* service and defence. Not only so, however, but being linked up by family ties as well, a clan is permeated by such kindliness as kinship implies. Both in etymology and in fact friendship and love have a common source[2]. The affable converse, the fondling and frolic of home life have their counterpart in the festal convivialities, dancing and games for which the poorest and rudest tribes find some leisure. These are at once the fruits of fellow-feeling and a powerful means of promoting it[3]. How often, if ever, within the narrow limits of a primitive tribe a man would lay down his life for his friends or—what is still harder perhaps—would lay out his life for them, we do not know. But since the human horizon has widened, there have appeared from time to time 'moral inventors' as Ribot calls them, who—having outgrown the limitations of the tribal self—have

[1] In this respect it might rank from the human standpoint as supererogation: the law does not demand it.

[2] Cf. the Sanskrit *pri*, German *Freund*, Greek φίλος, Latin *amicus*.

[3] Cf. Ribot, *La Psychologie des Sentiments*, 1896, pp. 284-90. K. Groos, *Die Spiele der Menschen*, 1899, pp. 511 ff.

proclaimed the common brotherhood of men, secured the tacit recognition of 'over-individual' values by all and inspired some with a genuine 'enthusiasm of humanity[1].'

The value-movement of which this is the culmination is not, it is important to insist, due to selfish or utilitarian calculation of any sort[2]. Nor can it be accounted for by any association of ideas that presupposes an already developed self-love or egoism. The lack of historical insight that referred the origin of language and of society to deliberate convention or contract also vitiates all these associationist theories. Intersubjective intercourse alone transforms the experient into a person: till then only 'extra-regarding' impulses are operative. Some of these instinctively promote self-conservation, others as instinctively promote race-conservation. Whatever fault we may find with Spencer's talk of a merely 'physical' altruism, he seems at least to have been right in maintaining "that [implicitly] from the dawn of life altruism has been no less essential than egoism" and that the two have been and "are evolving simultaneously[3]." The altruistic instincts lead on to sociality and this begets personality, but such 'creative synthesis' is not reversible. "The origin of our moral notions and sentiments lies hid in those obscure regions of hypothetical history where conjecture has free scope": this is all that Sidgwick thought it safe to say[4]. But this one point at least can hardly be questioned—that spontaneous sympathy or 'good-will' was the ground-root of all. Writers on morals would have recognised this fact sooner and more generally if genetic psychology had been studied more. Anyhow among the English moralists affiliated to Shaftesbury its importance was clearly seen[5]; and perhaps we

[1] Cf. Green, *Prolegomena to Ethics*, 1883, p. 231; also his Introduction to Hume's *Treatise on Human Nature*, ii. p. 71.

[2] "It is...as the adult and not as the germinal form of Morality that Utilitarianism may most reasonably claim the acceptance of Common Sense." Sidgwick, *The Methods of Ethics*, 6th ed. p. 456 *fin.*

[3] *Data of Ethics*, § 75. But if so—then comparing its origin with its fruits so far—we have surely here again a striking instance of the heterogony of ends, of doing better than we know. (Cf. above, ch. x, § 4, p. 268.)

[4] *Op. cit.* p. 456.

[5] Two instances may suffice: Hutcheson describes sympathy as the sense "*cujus vi super aliorum conditione commoventur homines, idque innato quodam impetu*" (*Philosophiae moralis Institutio*, 1745, i. p. 1; and Hume refers to it as "the chief source of moral distinctions," contrasting it as a 'natural' virtue with justice as an 'artificial'

should not be far wrong in taking this to be the truth in the famous saying with which Kant opened his *Ground-work of Ethics*:—"there is nothing in the world which can be termed absolutely and altogether good, a good will alone excepted." It is 'good-will to men,' the *caritas humani generis* that St Paul described as 'the fulfilling of the law.'

But now it may be asked, if spontaneous sympathy—as a spring of unpremeditated acts of benevolence—existed before egoistic reflexion began, how is it that, since then, it alone among our primitive and purely 'extra-regarding' impulses has not been entirely subordinated to the interest of self? No doubt its ardour often is seriously abated—compare, for example, the generous warmth of youthful affection with the cautious worldly wisdom of maturer years. Still with the advance of time the sentiments of the average man have become more 'humane[1]' and his kindly feelings have taken a wider range, embracing even the lower animals. For a fact so noteworthy there must be a psychological explanation. How is it that an 'extra-regarding' propensity which egoism should tend to suppress has, on the contrary, tended to suppress it? The process of self-conscious development seems to afford the only and at the same time a sufficient answer to this question. We have already seen that the consciousness of self is first evoked through acquaintance with other selves and is perfected in proportion as this acquaintance becomes more intimate. But the entire process is twofold: not only a differentiation but also a unification. It is on the second side of the process that we find the development of what Hegel called 'objective spirit'—the realm of history, of law and of morals—the realm wherein whatsoever things are true, beautiful and good are to be realised. It is here then that 'the limitless possibilities of a reasoning being,' of which we have already spoken[2], open out, and ends that far transcend those of merely 'individual' value can be pursued. Were he to sacrifice those higher ends to these a man would lose in dignity in his own

though not arbitrary virtue which alone would "never be capable of inspiring men with an equitable conduct towards each other." *Treatise of Human Nature*, Green and Grove's ed. ii. pp. 371, 258, 261).

[1] Surely the fact that this word has become a synonym for sympathizing, kind, benevolent, teaches us much, recalling Terence's line: *Homo sum, humani nihil a me alienum puto.*

[2] Cf. above, p. 392 *fin.*

eyes and also in the eyes of his fellows. If, however, he does not sacrifice the higher, he may have or seem to have to sacrifice *self*. But there is no contradiction and in reality no mystery in this, if such self-sacrifice is the realisation of the highest and inmost self. Who that remembers their last words would think of pitying Wolfe dying on the Plains of Abraham or Nelson dying on board the *Victory*; but who does not admire them[1]? In such self-sacrifice the greater and higher is still preferred to the lower and less and the value of the self lies just in this choice and is thereby enhanced. But what, we have next to inquire, are we to understand by choice?

Choice.

§ 3. Having attempted to describe in barest outline[2] the development of the intellective system to which the special domain of conduct pertains we are now confronted by a task that still more immediately concerns us as psychologists. After more or less deliberation in view of the interests which this system appraises, the decision what to do at length ensues. This process we have now to analyze. For our psychological individual, of course, the two processes, the intellectual process of evaluation and the volitional process of forming a decision, proceed *pari passu*. Still for expository purposes it seemed clearly advantageous, as far as possible, to deal with them apart. Moreover we may plead, that as in biology so in psychology, *mutatis mutandis*, palingenesis is, broadly speaking, a fact: social heredity, that is to say, at least will not be questioned. A child nurtured in a civilised community grows up accepting intellectually the prevalent sentiments concerning manners, morality and honour almost as naturally as he accepts his mother tongue. The spirit of the ordinary man is in the main the spirit of his age.

[1] I have tried to deal with this topic from a wider standpoint in *The Realm of Ends*, 2nd ed. 1912, pp. 119–29. Psychologically we ought not to overlook the fact that this practical transcendence of the subjective may be displayed in less worthy forms: it shaped the life of Cecil Rhodes as well as that of John Howard. Even in Milton's Satan most people on this account see something to admire.

[2] To have attempted more would, as already said, have occupied space disproportionate to our main purpose. Valuable suggestions towards a fuller treatment will be found in Lecky's *History of European Morals*, 5th ed. vol. i. pp. 130–60.

A large part of conduct, then, is comparable with routine, determined, that is to say, by dispositions or habits engrained by early education, which—however important—have become a 'second nature and involve no deliberation.' Again one often has to deliberate as to means when there is no question as to the end itself; the only question being to find the best way of attaining it. With all this we have in general no concern save when convenience and principles conflict; then the question does become one of ends and the choice between convenience and conscience may await the result of deliberation. Such questions about ends are of two kinds: either they relate to ends the same in rank or, as in the instance just mentioned, to ends that differ in this respect. As examples of the former we may suppose such alternatives as (*a*) a day's fishing or a day's shooting, (*b*) the army *v.* the navy as a career, (*c*) philanthropic work either to promote the education of the young or, instead, to alleviate the lot of the aged poor. As examples of the latter we may take the choice of Hercules between pleasure and wisdom, the choice of Lucrece or Regulus between life and honour, the choice of John Howard between the enjoyment of an ample fortune and self-denying labours for prison reform. Within these limits there is ample scope for the analysis of choice.

First of all, however, we must be clear as to the difference between valuation and 'motivation'—to use Schopenhauer's term. The connexion is so intimate that, in spite of all that has been said, the two are often confounded. Both presuppose feeling; but, whereas valuation is concerned with the object or situation that causes the feeling, motivation is concerned with the actions to which the feeling prompts. The subject is the real ground of both, of the first as affected, of the second as active. The complete experience, then, where choice is concerned, may be described as 'affective-volitional': it admits of this analysis into aspects or phases but not of separation into independent halves. We may distinguish valuation and motivation in conduct as readily as we distinguish sides and angles in a triangle, but in neither case can we resolve the whole into two separable parts[1]. But if the two aspects are identified, because they are inseparable, the result is psychological error, the practical consequences of which are serious. One such error is that of

[1] Cf. above, ch. x, § 4, p. 266 *n.* 2.

regarding deliberation as concerned with motives rather than values, and another is that of regarding motives as comparable to forces "which act upon the mind as weights do upon a balance" rather than as "all the dispositions which the mind can have to act voluntarily...not only the reasons [the *pros* and *cons*] but also the inclinations [and disinclinations] arising from passions," &c.[1] Motives, then, being really tendencies to act[2], conative, that is to say, rather than affective, all that deliberation presupposes is their inhibition till a decision is forthcoming. But this inhibition in turn implies a motive, as well as a decision, usually taken promptly, the consequence as already said of previous experience together with the development of a higher and more inward zone of the self. If this is true, it is a further error to represent motives as conflicting *inter se* while the subject passively watches the struggle and awaits the result: the phrase 'conflict of motives,' though it may often suffice for descriptive purposes, is a metaphor that has strictly no psychological warrant. We have allowed ourselves to talk of a conflict of ideas, it may be urged, and surely motives when deliberation and choice are in question, are impossible without ideas. True, but we have also found that contrary ideas conflict only as possible predicates of the subject of one judgment[3]. Then indeed it is a case of '*either* this *or* that'; but it is the logical subject that really determines its predicate, not *vice versa*. Often and often the '*I* will this' vanquishes the '*I* wish that' in circumstances where, such intervention apart, the latter tendency is the stronger; just as it is often the plaintiff, *prima facie* the weaker, in a suit, who wins, not the defendant who is *prima facie* the stronger. As Höffding has happily said: "The real Ego is the *Ground-motive*[4]": this it is which in such cases restrains the precipitancy of the impulsively stronger motive, and perhaps eventually stifles it.

[1] Cf. Leibniz's fifth letter to Clarke, *Op. omn.* Erdmann's ed. p. 754, quoted by Hamilton, *Reid's Works*, p. 610 *n.* "It is to philosophize very crudely concerning mind, and to image everything in a corporeal manner, to conceive that actuating reasons are something external, which make an impression on the mind, and to distinguish *motives* from the *active principle* (*principio actionis*) itself." L. P. Thümmig, Wolff's favourite scholar, in reply to Clarke after Leibniz's death. Cf. Hamilton, *loc. cit.* p. 611 *n.*

[2] On dispositions as tendencies, cf. above, ch. iv, § 7, p. 97.

[3] Cf. above, ch. vii, § 5, p. 203.

[4] *Psychologie*, 3rd German ed. 1901, p. 437.

We may now return to the two forms of choice between ends that we began by distinguishing. Between the deliberation that in each of them precedes the choice there is this marked difference: in the second form, where the ends differ in rank, it is usually and naturally the motives favouring the lower ends which are stronger and more urgent; for these ends are nearer and, so to say, more tangible. Hence, not appetite but self-interest it is that prompts to deliberation, when *e.g.* the not too eupeptic *bon vivant* is led to choose cold mutton instead of lobster salad for his lunch; nor is it the love of money which urges the man that maketh haste to be rich to compare the value of his wealth with the value of his good name. Further the process of evaluation which common language, in calling it deliberation, assimilates to the testing of weights in a balance—though that may suffice for the first form, where the ends to be compared are of the same denomination—must now be represented by some other simile. Otherwise we shall fail to realise the meaning to be assigned to difference of rank. We may, however, get a hint of this meaning, if we change the figure, substituting a steelyard for the pair of scales. With a steelyard we have to take account of position as well as mass: for in virtue of the former a pound may more than counterpoise a hundredweight, though with a balance it cannot. In the simpler forms of choice the values are commensurable, for they relate to satisfaction in the same zone of self—bodily, personal, social, as the case may be.

It is noteworthy that in these cases the alternatives may be so evenly balanced that one is almost in the plight of the famous ass of Buridan; at any rate—even in matters of moment, if there is no time for suspense—the most trivial circumstance may determine the choice. When, however, the values compared appeal to different levels of the self, a choice of that sort is unknown. Yet, notoriously, it sometimes happens, and it is always psychologically possible, that—in spite of approving the higher—a man may follow the lower; whereas, on the other hand, when there is no difference of rank, no one knowingly prefers the less to the greater. But does a man in the first case, we are then led to ask, deliberately *prefer* the lower to the higher? Even to raise the question at once leads us to suspect that the two cases are not at all the same. Is there then complete discontinuity between the two? Not that either, as—

repeating the question—we shall presently see. Did the man really prefer the lower to the higher? No, says the impartial spectator, he was 'overtaken in a fault'; as with the famished Esau only the momentary clamour of hunger was heeded, which the future birthright could do nothing to still. No, says the man himself, in acting as I did, I was not my true self; as with Esau, my want but not my will consented. Nevertheless both society and the man himself condemn the deed, as the penalty imposed by the one, and the remorse so often felt by the other, plainly attest. How then explain all this accusing and excusing? Unless there is continuity between the two, the lower self, as such being innocent, cannot be blamed; and the higher self, if guilty, cannot be excused. That in fact there is personal continuity between the two—and, within the limits of sanity, conscious continuity—we have already seen; and that in consequence there is continuity in the development of values or value-movements we have also seen[1]. In view of these facts let us continue to examine the two forms of choice and preference.

The simpler has been called 'analytic' or 'axiomatic' because where values admit of quantitative comparison it is obvious that the greater will be preferred before the less. The more complex form, on the other hand, has been called 'synthetic,' because here the preference cannot be regarded as implicit in the alternatives themselves, as it might be when to ascertain the greater of two commensurables is the sole point in question[2]. The preference of the higher, in this second instance, is the result of a new act of subjective selection. It is still true of the 'harder' choice, that it gives the subject greater pleasure, *i.e.* greater satisfaction, than the rejected alternative would have given. But there was a time when it did not and could not do so, and it only does so now because the subject has developed. Psychologically we may call the value assigned higher, because the subject in assigning it is at a higher level. Again we speak of this value as having a *positional* superiority in deliberation because, despite its inferiority in respect of intensity and urgency, it is sustained by the inhibitory control of the higher self over the

[1] Cf. above, ch. xv, § 1, pp. 364, 367, 368; and § 2 above, pp. 388 f.

[2] This terminology is due to H. Schwarz, *Psychologie des Willens*, 1900, p. 290. But the distinction was made already by Fonsegrive, *Essai sur le libre arbitre*, 1887, pp. 441 ff.

momentary impulses of the lower[1]. This, we may say, is the analogue of the ratio, in our simile of the steelyard, between the two arms of the lever. The longer arm corresponds to the greater complexity, the wider range in time and space, of the ends embraced in self-interest as compared with, say, the immediate but passing episodes of the bodily life. It is these that tell on the shorter arm, representing the fixed and finite limits of the lower self. Or again this ratio may correspond to the still greater complexity and still remoter reach of many great 'impersonal' ends, contrasted with which personal interests, objectively regarded, are comparatively limited[2]. As we may imagine a balance converted into a more and more efficient steelyard by the gradual lengthening of one arm, so we may represent the development of the second form of choice. This is the psychological meaning of 'higher' as applied to motives. It answers to an intellectual but not necessarily to a moral advance. Developed intelligence, a growing ideality of motives, and consistency of conduct may characterize bad men as well as good. Hence those moralists are too hasty who attempt to provide ethics with a scientific basis by ranking motives on a positional scale that is merely psychological[3].

Since the values submitted to deliberation when the choice must be synthetic, differ in kind, any difficulty in deciding can, as already said, never be due to a quantitative equality and so be settled by chance or 'toss-up.' When the validity of the higher value is admitted, any hesitancy about the decision is ascribed to 'temptation.' Either we shrink from the more heroic course or we are allured by that which is momentarily the more captivating. The reverse is hardly possible: accordingly we never speak of being enticed by the higher or of flinching from the lower. To hesitate, still more to succumb to temptation, evinces, we say, a weakness of disposition: we assent and yet do not consent. So long as the call for action is not immediate, we may not only approve but even resolve; and yet, when the testing moment comes, though the issues are

[1] Cf. above, p. 277 *n.*

[2] Cf. Spencer, *Data of Ethics*, § 42, pp. 105 *fin.*–9; Stout, *Manual of Psychology*, 3rd ed. p. 707.

[3] This both Spencer and Martineau did or came very near doing. Cf. Sorley, *Ethics of Naturalism*, 2nd ed. 1904, pp. 278 ff.; Sidgwick, *Lectures on Ethics*, 1902, pp. 351 ff.

tremendous, we make 'through cowardice the great refusal.' In contrast to Celestine V to whom these words were supposed to apply, we have at the other extreme Luther making his very different refusal in the presence of Charles V: "So I believe: here I take my stand and I cannot do else."

We conclude, then, that there are always two factors in choice—valuation and motivation, neither of which can be zero, though in synthetic choice either may vary independently, inasmuch as the 'ratio' between alternative values may differ widely from that between the corresponding motives[1].

Freedom.

§ 4. There is still, however, a question concerning choice to be considered that has divided mankind since thinking began and seems likely long to divide it—the endless controversy as to a so-called 'freedom of will.' So far as this question concerns psychology we have no need to avoid it. To talk in this connexion of will is, indeed, to lapse into the confusions of the old faculty-psychology. As Locke long ago urged: "The question is not proper, *whether the will be free*, but *whether a man be free*[2]." In the absence of external constraint, when a man does what he likes, we say he is 'externally free'; but he may still be the slave of every momentary impulse, and then it is said that he is not 'internally' free. The existence and nature of this internal freedom is the problem. But as such freedom is held to imply a certain sovereignty or autonomy of self over against bodily appetites or blind desires, there can obviously be no question of its existence till the level of self-consciousness is reached and maxims or principles of action are possible. The young child, the brute and the imbecile, even when they do as they like, have not this freedom; though they may be said to act *spontaneously*, that is without constraint, they cannot be said to act *voluntarily* in this higher sense. A resolutely virtuous man will have more freedom of this higher sort than the man of good moral disposition who often succumbs to temptation; but it is equally true that the hardened sinner has more of it than one still deterred in his evil ways by scruples of conscience. A man is internally

[1] Cf. above, ch. xi, § 3, pp. 281 ff.

[2] *Essay concerning Human Understanding*, II. xxi. 21: cf. §§ 18 ff.

free, then, whenever the ends he pursues have his whole-hearted approval, whether he say with Milton's Satan, "Evil be thou my good," or with Jesus, "Thy will be done." The recognition of freedom in this sense does not, however, commit us to allowing the possible existence of a *liberum arbitrium indifferentiae*, sometimes called 'absolute indeterminism'; for that would seem to differ in no respect from absolute chance or caprice. We come nearest to this 'contingent choice,' when, being 'free from' external constraints, we are 'free to' take either of two courses, which, however, are indifferent because of their triviality, or practically indistinguishable because of their identity, in value Then it is that we feel sure we could have chosen differently when, in fact, we have not deliberately chosen at all—an experience, however, that is possible only in the analytical form of choice. In sharp contrast with this we may consider such an experience as that of Luther at the Diet of Worms just now mentioned. So far from feeling free to act otherwise, Luther declared "*Ich kann nicht anders*," that is to say, Being what I am I must do as I do. There is nothing indeterminate here unless it be the situation for the outside observer: to him both the alternatives with which Luther was confronted appear objectively possible. In a similar situation Galileo recanted and what Galileo did Luther seemingly might have done, and would have done, had the temptation to which Galileo succumbed overmastered him. But, as it was, his decision, however optional from the outsider's standpoint, was for Luther himself a case of determination—determination in defiance of the threat of death that his enemies without held over him. Was he then free? Not absolutely free certainly, since he was forced to choose, but free in the sense that the decision was made by him and not for him. It was a case of determination, indeed, but it was self-determination. And this, for psychology at any rate, is all that internal freedom means[1].

Self-determination is often interpreted as if it meant merely freedom from constraint but involved no freedom to initiate. A man, it is said, may be free to act as he likes but he is never

[1] For the 'presentationist' psychology, of course, 'self-determination' is either unmeaning or has to be explained away (cf. Bain, *The Emotions and the Will*, 3rd ed. 1875, pp. 491 f.). But as in the last chapter, so here, it has not seemed necessary in view of what has been said earlier, to take the presentationist view into account.

free to like as he likes. His actions disclose his character, but character is nothing but nature modified by circumstances; and however much they may continue to modify it, it remains nothing but the resultant of these two. *Operari sequitur esse,* when all is said and done—a proposition just as applicable to a man as it is to a stone. This, the 'determinist' as distinct from the 'libertarian' view of conduct, may be disposed of—so far at least as we are here concerned with it—by three or four brief remarks. (1) Whether or no metaphysics can tell us all about the real *essence* either of men or stones, certainly psychology cannot. So far as psychology goes, a man's nature is his character, that by which he is 'individuated,' whether it be called 'original' or 'acquired.' In psychology this distinction is entirely relative, a question simply of earlier or later, with no hint of first or last. Every man shares with others the specific nature that we call human; but this nature is equally entitled to be called the character that our psychological individual in the course of experience has gradually acquired. But no man shares with others the particular character that, together with his human nature, constitutes his concrete personality. The psychological individual in short—with whom we have been hitherto concerned—may be regarded as the type that covers all concrete individuals—so far as these are normal—but exhaustively represents none. (2) But analytic psychology, we repeat, knows nothing about absolute origin; and cannot, therefore, talk of the *nature* of an experient who as yet has not begun to experience, or to be conditioned by circumstances, which is what all experience means. Precisely in this respect, a man, like all other experients, differs from a stone or thing; and in this wide sense we may say that experients or persons have a different nature from things. Persons literally work or strive (*operari*), things are only metaphorically said to do so: persons are not inert, merely passive or indifferent; they are active, interested and directive. It is appropriate therefore to talk of circumstances in their case but not in the case of inanimate things. (3) Circumstances, anyhow, carry a different meaning in each case: to deny this is to beg the question and to ignore plain facts. A weather-cock may be described as the mere sport of circumstances, a man is always more. He is *not* merely "a pipe for Fortune's finger to sound what stop she

please." For him circumstances are often but *occasions*. They may call for resource, test his strength or his principles, but often he turns them into opportunities for progress or at the worst he may struggle and defy them. Even if he succumb to a sudden temptation or to an overmastering passion he is not left unchanged. He may fall a second time more easily, he may, however, be wiser for his bitter experience; which, will depend on his character. But there are no such crises for things inert: for the living, life is full of them. So far from a man's character being determined entirely by circumstances it is circumstances that receive their character from him: otherwise they have no character at all. To him pertains the standard by which their values are appraised; and to him the motives they may occasion owe their strength[1]. (4) It is true of brutes that they

> can like, but not distinguish too,
> Nor their own liking by reflection know.

But it is not true of man as a rational being. Raised to the transsubjective standpoint through intercourse with his fellows, he has within his reach the gift to see himself as others see him, he has in conscience a standard by which to estimate even himself; he can by taking thought add to his mental, and still more to his moral, stature; he may now have an ideal and he can determine *proprio motu* to strive to realise it.

What that ideal is depends largely upon his present or 'acquired character,' *i.e.* upon what he has become in the course of experience. To study this process, the formation of character, in detail is beyond our pale; though so far as it is continuous with what lies within this, we shall attempt presently to discuss it somewhat further. Meanwhile we may claim on empirical grounds to have found that psychological freedom is not only negative but positive, not mere freedom from constraint but freedom to initiate, to turn circumstances to account, even—thanks to the πού στῶ that reason affords—so to deal with oneself.

[1] This question is discussed at greater length in *The Realm of Ends*, 2nd ed. 1912, pp. 283–291, and in consequence greater brevity has seemed permissible here. Cf. also K. Joël, *Der freie Wille*, 1908.

CHAPTER XVII

GENERAL SYNTHESIS OF MIND, AND THE CONCRETE INDIVIDUAL

The topic with which we began this essay in psychology was a general *analysis* of Mind, understanding by mind 'the subject of experience *plus* its experience.' The analysis was called general because it took 'no account of the specific differences between one concrete experience and another[1].' The topic—with which the essay is to close—the formation of character—pertains to a general *synthesis* of Mind, understood in the same sense; though the emphasis in this connexion will have to be on the experient rather than on the experience. The word 'character' usually means 'an outward and visible sign.' It would seem therefore to point to the objective structure, the so-called 'contents of mind'; here, however, 'characteristics' seems the more appropriate term. Psychologically 'character' is commonly held to imply 'the inward and spiritual' ground to which that structure ultimately owes its form—the synthesizing subject manifested in the synthesis, that is to say.

Actually, of course, all synthesis must be concrete and particular, both as regards function and structure. It seems fitting, however, partly as a final retrospect, partly as opening out further problems, to consider synthesis in *general* without immediate reference to any actual synthesis such as the phrase 'formation of character' naturally suggests. Accordingly we shall try first to describe as much as we can know of the becoming of our psychological individual: he can hardly be said to have a particular character any more than anthropologically he can be said to have a particular physiognomy. Then in taking leave of him altogether we must glance at the problems he has enabled us for a time to evade, problems that

[1] Cf. above ch. i, § 5, pp. 24 f.; ch. ii, § 2, p. 39, § 6, pp. 55 f.

beset 'the formation of character' when we find concrete individuals confronting us. Thus a long digression seems advisable before we can resume our exposition as we left it in the preceding chapter[1].

General Synthesis.

§ 1. Here all the distinguishable processes that constitute experiencing, which in earlier chapters have been dealt with for the most part separately, have now to be considered together as constituting a single whole. To this end we may attempt first to portray this synthesis as it presents itself to the psychological observer no longer trammelled by the exigencies of exposition, that is to say, as one continuous temporal process. What we have called plasticity is then the proximate fact: and what we observe might be described as psychogeny or psychical ontogeny. Differentiation, retentiveness, and assimilation—or correlation, as we may now say, since the total assimilation is complex—are alone *directly* implied[2]. But these are not all: the underlying agencies at work, on the one hand subjective selection, on the other environmental influences—natural and social—will also have to be considered. We can, however, provide no first chapter to this Genesis; for where our ultimate analysis ended, the synthesis had already begun; a complete account of it is therefore impossible. As we have had frequently to remark, the very beginnings of things are beyond us, stationed as we are *in mediis rebus*[3]. Moreover synthesis as a direct process precedes analysis, which is an indirect one; though

[1] But after all what is proposed is not so much to make a digression; rather it is to effect a transition, the transition, that is, from 'general psychology'—to which this essay is in the main confined—to 'special or individual psychology,' a new and almost unexplored domain, at which we shall hardly be able even 'to glance.' To make good its essential conformity with our general psychology is about all we can attempt. Cf. below, ch. xviii, §§ 4, 5.

[2] The reader may here be reminded of J. S. Mill's Ethology or 'the science of the formation of character' deduced as a bundle of corollaries from 'the general laws of mind' as these were expounded by James Mill, Bain and himself. Nothing of the sort is however intended in this place, as will presently appear. For a criticism of Mill's Ethology the writer may refer to an article of his in *The International Journal of Ethics*, July, 1891.

[3] A truism, we may note by the way, that even Herbert Spencer came at length to recognise. Cf. his *First Principles*, 6th ed. 1900, appendix A. pp. 513 f. and the criticism, *Naturalism and Agnosticism*, 4th ed. 1915, note VI, pp. 595 f.

analysis be first in the order of knowledge, synthesis is first in the order of existence.

The proximate fact for the psychological observer is, however—this much, at least, we may safely say—a unity that is differentiated. But, though differentiated, it is not disintegrated. On the contrary, the further the differentiation proceeds the more apparent becomes the solidarity and consentience, the work of synthesis *within the whole.* In studying this synthesis, the analogies that guided Herbert Spencer in treating the same topic are the best we have; and psychology is much indebted to him on this score. Biology, that is to say, not organic chemistry with its 'compound radicals,' on which Mill relied, will furnish the most apposite illustrations of the development of the mind or experience of the psychological individual[1]. Between the advance from the egg to the chicken and that from the child's mind to the man's, the parallel, *mutatis mutandis,* is very close. At the beginning pronounced homogeneity, plasticity, potentiality, rather than defined features; at the end pronounced heterogeneity, structure, actuality—disclosing a person with unique traits. Yet first and last an indivisible unity. The gradual delineation and correlation of those traits in their entirety—as the manifestation of character *in genere* so to say—is what we must now endeavour briefly to follow.

In this endeavour our main aim will be to make clear what hitherto has been and could be, only imperfectly indicated; *viz.* that *at every step* the subjective and the objective aspects, function and structure, the experient and the experienced, mutually mould and modify each other. But in the analytic study the objective results were the more obtrusive, whereas—as just now said—in the synthetic the subjective process is paramount. Here it is 'the good, which every soul pursues' that is the supreme clue to all the intricacies of psychical development. Apart from this, mere *knowledge* of good and evil—if it were possible—would be valueless: the one would entice as little as the other would intimidate; in fact, desire or aversion, hope or fear—all motives to exertion—would be non-existent or meaningless. For interest alone begets knowledge, though knowledge awakens new interests and discovers the

[1] Cf. Spencer, *Principles of Psychology,* pt. iii. General Synthesis, especially ch. xi.

means to their satisfaction. So—as 'it goes cycling on'—the range of experience continuously extends, its 'contents' becoming at once more diversified, more harmonized, more unified. If we contemplate this process from the subjective side, we may wonder—like Darwin[1] in an analogous case—how an individuality of such unsearchable complexity should emerge 'from so simple a beginning' as subjective preference. If we contemplate it from the objective side, we may wonder how so much order and system could be evolved out of the bewildering variety of impressions with which the world confronts us[2]. The explanation lies (1) in the steady subjective orientation towards the good, tentative, and erring indeed but none the less persistent; and (2) in the plasticity of the objective continuum. There is, then, a single agent on the one side and a continuous 'field' before it on the other: the one we may call the *primum movens*, the other the material condition, of psychogeny[3].

Both are essential, but the presentationist (or associationist) recognising only the latter assumes all the shaping of the plastic material to be determined from without. "The *persistence* of the connexion between the states of consciousness is proportionate to the *persistence* of the connexions between the agencies to which they answer," said Herbert Spencer[4]. Such a position, though it be false, is after all not surprising. For not only, as I have said elsewhere, does presentationism account (proximately) for some nine-tenths of the facts, or better perhaps for nine-tenths of each fact[5]; but, since these nine-tenths are all that are presented, it may seem that the *onus probandi* rests on others of shewing that these are not the whole. The presentationist's services to psychology have, however, been greater than he knows. The more he has succeeded in making the structure of the nine-tenths clear the more he has unintentionally brought to light the fact that this presentational structure implies a subjective function. This fact the common sense of mankind including the great majority of psychologists since the days of Aristotle has recognised. It is true that an *epistemologically*

[1] *Origin of Species*, last sentence.
[2] Cf. Waitz, *Lehrbuch der Psychologie*, 1849, pp. 679 f.
[3] Cf. above, ch. ii, § 1, p. 31.
[4] *Op. cit.* pt. iv. ch. ii. The Law of Intelligence, § 183.
[5] Cf. the article "Modern Psychology," *Mind*, 1893, p. 80.

objective factor—an environment—emerges at the transsubjective level out of the fundamental 'duality of subject and object.' But this objective factor will not explain the diversity of individual experiences any more than the soil and climate of a garden-plot will account for the diversity of the plants it contains.

The Subjective Factor.

§ 2. (i) What first concerns us then is the genesis of this experience regarded as an organic whole—the self-made property of our psychological individual—regarded *structurally* that is to say. Such development, we have repeatedly urged, is not correctly described as if it were merely a definite arrangement, merely an 'organization' of an originally confused medley of 'elements[1].' That would be the psychological equivalent of the abiogenesis, to which distinguished biologists like Sir Edward Schaefer and Professor Loeb still cling[2]. As bioplasm, not a concourse of atoms, is for the present the limiting term for biology, so we may speak of psychoplasm[3], and not a 'manifold of sensations' or 'mind-stuff' as our present limit in empirical psychology. Of the more ultimate nature of either plasm, of the precise relations of one to the other, or of the relation of life in the physiological sense to experience or life in the psychological sense, on all these points, we certainly know little and need for the present say nothing[4]. But the analogy between biogenesis and psychogenesis is both indisputable and striking: we have several times been led incidentally to note it. Genesis in both cases implies a unity that is shaped from within—a conception, be it observed, that is essentially non-mechanical[5].

[1] Cf. above, ch. iv, § 2, pp. 77 f.; ch. vii, § 2, pp. 183 f. On monadistic lines, however, an interpretation approximating to this may perhaps be justified, but it goes far beyond our psychological facts: it is a speculative 'first chapter' in place of the psychological one, which we have had to admit to be lacking.

[2] To say that facts to support them are not yet forthcoming is as true to-day as it was when Huxley as President of the British Association said so in 1870. Cf. the Address "Biogenesis and Abiogenesis," *Collected Essays*, viii. pp. 229–271.

[3] Using this term to replace the more unwieldy 'plastic, psychologically objective, continuum' used above.

[4] Cf. below, § 4, and § 47 on the Relation of Body and Mind in the *Ency. Brit.* article, vol. xxii, pp. 600 ff.

[5] Cf. Driesch, *The Problem of Individuality*, 1914, also *Science and Philosophy of the Organism*, 2 vols. 1907–8.

To describe psychical ontogeny as fully as our knowledge allows we ought to start from the elementary *psychosis* or *Seelenaugenblick*—to use Rehmke's expressive term—tabulated in our analytic summary[1]. But—if we do not forget how much we are leaving behind—it will suffice for our present purpose to observe this evolution within the limits of a human lifetime; for to these limits the concrete individual is confined. This may be briefly done.

Between the behaviour of small children and the conduct of men there is one striking contrast: life is mostly play for the one, it is mostly work for the other. The child at first is altogether 'bird-witted'—to use Bacon's phrase: its attention is ever flitting from one momentary impression to another. It finds but it does not seek; and so at first its one objective connexion is that of its 'memory-thread.' There is as yet scarcely a trace of recognition of either order or meaning; for these, like the patterns in a kaleidoscope, depend on repetition. There are also few signs of preference or purpose—save, of course, of the instinctive sort[2]: for any others await the acquisition of familiarity and facility, and this again takes time. But a man at length and intent upon success in his career, the child that was is now too absorbed to give much heed to 'things in general': between him and them there now intervenes a strictly personal environment gradually defined and selected as the psychogeny itself has progressed. The flimsy clouds of glory that lay about him in his infancy, in taking a soberer colouring, have taken also a stabler form. If the reality that closes upon him is less of a fairy palace it is more of a home; for the child, as father of the man, has shaped himself a tabernacle out of those 'shadowy recollections' that now seem but a dream. Gradually the constituents of the memory-thread have become more complicated as perception has advanced; and also more coherent as, through reduplication and comparison, this thread has been elaborated into ideational tissue. Thenceforward inherent congruity begins steadily to predominate over merely contingent or 'contiguous' association. Generic images are converted by degrees into concepts; and, as the command of language increases, the ideational tissue is at once condensed and transfigured into new and higher

[1] Cf. above, ch. ii, § 6, p. 56, and note.

[2] These belong to the earlier stages which we have agreed to leave behind.

forms of thought or fancy. So stable intellective systems, directly or indirectly subserving practice, are elaborated and correlated. In short, restriction and organic structure have replaced the primitive 'diffusion or irradiation': a microcosm more or less perfect and complete now manifests the subject that has shaped it, and the place which this occupies in that larger world from which it now sharply distinguishes itself.

If the plastic continuity of this long process debars us from describing it as a mere 'organization' of a quasi-atomic aggregate or sensation-manifold, determined by certain quasi-mechanical laws; if also its uniqueness compels us to recognise the subjective factor as formative throughout; then may we not interpret it as the genesis of a psychical organism, a gradually articulated system, implying correspondingly coordinated functions? As we say that the child when born is possessed of a viable physical organism, may we not say that as he advances towards adolescence he becomes possessed of a mental organism making him 'viable' as a person in a society of persons?

(ii) What next concerns us—and this will justify our interpretation—is to regard this genesis in the light of the subjective activity, which, as we have maintained, it *really* implies, tc regard it *functionally* that is to say. From first to last the growing structure just summarily described—we must now note—is the work of the subject so surely as feeling and attention, or in one word, interest, is essential to mental synthesis in any form. There must be material to synthesize, of course: we cannot synthesize what is not 'given.' But we do not synthesize merely on the ground of presentation. Differentiation implies some concentration of attention; but effective synthesis implies interest as well. The mere surprise or 'shock' that non-voluntarily determines a momentary notice, unless accompanied or immediately followed by either pain or pleasure, leads to nothing[1]. So far this 'shock' answers simply to the receptive movement of attention as

[1] Cf. above, ch. x, § 1, p. 244. But to describe this state as one in which feeling is 'neutral' or indifferent and yet to identify it with excitement, as Bain did, is surely bad analysis. Plenty of people go in search of excitement, but does anyone hanker after feeling that is neutral or indifferent? In *Mind*, O.S. vols. xii.-xiv. there is a full discussion of this topic led off by Bain himself. The reply of Professor Sully (xiii. pp. 248 ff.) is especially good. How little the non-voluntary movements of attention have to do with psychical life—though we may regard them as awakening it—is shewn by the almost universal neglect of this topic by psychologists.

distinct from the active. If it prove to be uninteresting—neither hurtful nor helpful—it is soon ignored, however startling it may have been at first; as we may see, for example, in the readiness with which animals 'get used' to trains. If, however, it prove to be interesting, there is always reaction: something positive is learnt and something actual is done. These two complementary processes, ignoring on the one side, selecting on the other[1], become more pronounced the more—with advancing experience—the subjective initiative increases. So the objective differentiation progresses on *subjectively* determined lines. This is for psychology the first and fundamental fact: to lose sight of it is to miss the essential meaning of experience[2].

But on the one hand we dislike change and on the other we seek it. These differences must be explained or reconciled. Obviously aversion to all change would tend towards a stationary state, while the exclusive pursuit of change, were it possible, would put an end to all continuity. *Stability and progression, in a word, are correlative conditions of psychical, as they are of all other, evolution.* The changes that we dislike, then, are such as frustrate what is done; whereas those that we seek are such as may further what is still to do. The one implies the interest of self-conservation, the other that of self-betterment. So long as all goes well, the latter may predominate, for it means more and fuller life; only in the contrary case does the former become paramount, for then the life we already have is threatened. It is thus easy to see how, normally, as experience advances, increased familiarity and facility within its present limits—just because there it has become chiefly routine, our 'dead selves'—prompt us to gaze into the future for the ways and means of advance to 'higher things.'

We are then at the ideational level, and the one thing we have to notice there is that the subjective selection we have found shaping experience at the perceptual level is still more evident at this, and becomes increasingly evident the further the ideational synthesis proceeds. Already reduplications of the

[1] We may note here a certain converse relation between subjective selection and natural selection: the one rejects by positively selecting, the other selects by positively rejecting. Nature eliminates the unfit, leaving the fittest to survive, experients select what interests them and are indifferent to all beside.

[2] Cf. above, ch. i, § 4, p. 20 *fin.*; ch. iii, § 3, p. 72 *fin.*

memory-thread had led to preperceptions and, if the situation meant anything to the subject, to an appropriate motor attitude or response. So far to provide was not merely to foresee but also to prepare. But when from such experiences free ideas at length emerge, they too are gradually synthesized by the subject in seeking how to bring things nearer to the heart's desire—not primarily then for the sake of theory but entirely for the sake of life. In other words the synthesis here as earlier is a working synthesis, specification for action, 'instrumental,' organic anyhow, even when defective. And if effective—we may add by the way—assuredly true as well; and not true because it is useful but useful because it is true. Here, as elsewhere, the distinction between psychological order and logical order is important. To identify the two in this case seems to be the mistake of some pragmatists; but to insist on the genetic priority for experience of the teleological and practical is certainly a merit.

It may be remarked by anticipation, that even at the higher level, to which we are presently to pass, the pursuit of truth 'for its own sake' as we say, which is then possible, is also essentially conative and practical. We try and fail and try again. We have to devise means, which we call methods and hypotheses; and the entire process is sustained by subjective interest. In spite of its special character—in that what we seek is certainly not personal advantage—the pursuit of truth even more than simpler conations depends on subjective selection. The interest in it is not less keen, if more disinterested, than the pursuit of useful knowledge merely as a means, to attain which the efforts of its pursuit are secondary. But presently, for some at any rate, the pleasure of the pursuit converts this too into an end in itself. The end as well as the means being then intrinsically valued, we realise so far the ideal of subjective activity.

To realise this ideal completely—'so that every power find sweet employ'—becomes the goal of human endeavour at the intellectual level, and brings subjective selection more than ever to the fore. For the realisation of ideals, since they actually are not but only are to be, obviously presupposes that the subject selects, pursues, and—may be—achieves them. Again 'synthetic preference,' which is possible only at this level, is, as already said, due entirely to subjective selection.

Here psychogeny, so far as the psychological individual is

concerned, is for us at an end: the superman dwells in the realm of fancy not of fact. But the comparative study of concrete individuals opens up an enormous field, so great is the diversity, and so many the grades of development within the limits of the human type. It is in this connexion that we commonly talk of character, and under this head we are to try presently to study psychogeny a little further. Before taking leave of the psychological individual, we have, however, still to glance at the other factor which his psychogeny involves besides subjective selection, *viz.* the objective factor which—somewhat stretching the term—we might regard as the analogue of natural selection.

The (epistemologically) Objective Factor.

§ 3. By objective factor three distinct things might be meant: the presentational continuum, *i.e.* the psychoplasm which experience differentiates and organizes; or the physical world as science conceives it, to which our bodily organism pertains; or the world in which we live, the world of nature and history as common sense understands it. The last of these is the epistemologically objective factor just now referred to—the world that each one comes to know and distinguish from himself and his psychical organism, only after attaining the transsubjective level. With this we begin. It includes all that we commonly describe collectively as circumstances whether physical or social; whatever, in other words, is an antecedent condition or occasion, on the psychological side, of the successive syntheses that differentiate and articulate what we call the psychical organism. Some circumstances betoken the accomplishment of our purposes, some are due to the purposes of others interested on our behalf. The increase in the number and worth of such circumstances may be the surest index of the world's progress. Meanwhile circumstances for the most part remain independent of the several activities of particular individuals and are—so far as they are concerned—contingent, if not fortuitous. And, for us now, this independence is the primary fact: it holds good of all circumstances *as they stand*, whatever their origin. This is just what objectivity means psychologically as well as epistemologically. Regarding circumstances in this light and from the transsubjective level, it would seem we were entitled to say that

their presentation is, directly or indirectly, the material from which is selected whatever is synthesized.—Nevertheless the distinction between natural and social environment is vital: to attempt to discuss them together further would only confuse.

The part which the natural environment plays—to begin with that—is directly and in the main negative. We may call this strictly natural selection; but—as already said—it does not like subjective selection actively construct or synthesize: it does not itself promote either conservation or betterment. It only restrains; it may do this, however, so severely as not only to arrest, but—so far at least as we can see—to terminate the subjective process altogether. This contrast is so important and so wide reaching—applying both to biological and to psychological ontogeny—as to justify a moment's reflexion even in an essay on psychology. It is fundamentally the contrast with which we are nowadays familiar as the contrast between the mechanical and the historical. The more rigorously the concatenation of the essentially changeless and inanimate system of the former is specified, the more manifest the creative functions of life and mind become. In the one there is no novelty, in the other no repetition[1]. To quote the fine concluding sentence of Darwin's *Origin of Species* just now referred to[2]: "There is grandeur in this view of life.....that, whilst this planet has gone cycling on according to the fixed law of gravity, from so simple a beginning forms most beautiful and most wonderful have been, and are being evolved." And as we contemplate the social and intellectual evolution of mankind—the most recent of these forms—our wonder at the vastness of the advance 'from so simple a beginning' still steadily grows. During all this long history, with its ever accelerating though devious progress, not a single physical law has ever changed. The whole stupendous drama of *l'élan vital*, as Bergson calls it, has nevertheless inserted itself into this —abstractly regarded—purely mechanical framework, producing a pattern which it cannot account for; but there it is to be accounted for somehow.

As to the social environment, here again we find what we may call a negative or restrictive element—the counterpart of the stability which is practically absolute in the abstract physical system.

[1] Cf. W. James's posthumous work, *Some Problems of Philosophy*, 1911, ch. ix.

[2] § 1, p. 411 above.

Some stability is essential to any plasticity; but absolute stability would be fatal: it is as impossible to mould water as to mould adamant. The laws and customs of society—what we may call its routine—tend to be no respecters of persons (as distinct from classes): they simply leave—what society conceives as—the fittest to survive, and are often at least as pitiless as nature itself. But in reality society has none of the impassivity of nature. So far from being blankly impervious, its very essence is intercourse: on the extension and increasing intimacy of this its whole progress depends. Sorrow is halved and joy is doubled by the sympathy and friendship that intercourse begets. In the social environment, again, there is no complete inertia, no bare conservation of energy, no law of diminishing return. Capitalisation, unknown to the brutes, is here a mighty factor. The human infant comes into the world as helpless as the callow lark nestling between two clods; but it is screened from the severity of nature by the succour and security of a home. It has too as its heritage—much of which it appropriates betimes—the accumulated tradition of ages, a form of palingenesis more wonderful than any that the fledgling bird can shew.

But the social environment is endlessly diversified; and the human infant has no more choice than a seed as to where its lot shall be cast: it may be on good ground, it may be in stony places, it may be among weeds. Which, seems a matter of allotment, not of selection; and yet the difference in the character acquired may be profound—a difference, in fact, that has led many to maintain, like the socialist, Robert Owen, that a man's character is made for him and not by him. But this extreme determinism is amply refuted by our general synthesis, unless this is hopelessly unsound. Moreover, the very existence of society presupposes individual diversity and cannot therefore account for it. A multitude of qualitatively identical units, if such were ontologically possible, might aggregate but could not associate.

Besides the natural and social environments, however, a new factor here emerges, which is more intimately concerned with individual diversity than either of them, and which goes far to explain whatever diversity they, later on, may be able to effect. This factor, moreover, seems to be neither psychologically

subjective nor epistemologically objective[1]; and yet, if it does not constitute character, character seems frequently to be conditioned by it even more than by either physical or social circumstances. To this factor, thus intimately connected with the concrete individual, we must now turn.

The Concrete Individual and Heredity.

§ 4. "Life is eight parts cards and two parts play: the unseen world is made manifest to us in the play." So said Samuel Butler, the author of *Erewhon*[2]. The cards are the seen 'hand,' the circumstances of the natural and social environments: the real hand that plays is unseen, proximately and for psychology it is the concrete individual. That this unseen hand always counts for something is shewn in the varied handling by different players of the same cards[3]. Innumerable such unique personalities collectively constitute and animate that over-individual organization we call society; unless counting for something severally they could count for nothing collectively. But as already said organization implies differentiation as well as unification, as far back as we can go.

What now can we say about this 'unseen hand,' the concrete individual? It figures on the tree of Porphyry but in truth logic never reaches it, and even the more concrete tree of Darwin, the phylogenetic tree, fails to get so far. We find such individuals indicated by *name* on so-called genealogical trees; but we find nothing more: taken alone these trees give us no hint either of logical order or of natural classification[4]. If, however, we ignore

[1] In the sense, that is to say, of §§ 2 and 3.

[2] *The Note-books of Samuel Butler*, 1915, p. 11.

[3] Yet it probably rarely counts for as much as Butler supposed. "If we call to mind how little on the average each of us acquires by himself alone and independently of others, how much of what he knows and believes is common property, one almost gets the impression that any distinctive individuality we possess may really belong only to our bodies not to our minds. As for the ideas and thoughts that animate us, they seem like the breath our lungs inspire, drawn from a common atmosphere and returned to it again. And yet on closer inspection the decisive significance of individuality shews itself even here; not only in the extent, but still more in the variety of the material selected and the originality with which it is made to enlarge and enrich the common fund." Sigwart, "Die Unterschiede der Individualitäten," *Kleine Schriften*, 1881, ii. p. 232. Somewhat condensed.

[4] History, which has been called 'idiographic' may deal with concrete individuals, but not science, if it is to remain 'nomothetic.'

the complications—the continual anastomoses—that pedigrees display, and regard these as merely prolongations of an ultimate phylogenetic branch or species, as, in fact, anthropology does, we may then get some conception of the series to which the concrete individual is the limit. The phylogenetic tree differs from all real trees in that every branch and every twig has some specific characteristics of its own, differentiating it from the other branches or twigs. But it resembles the logical tree in that the characteristics increase as we pass from a branch to its twigs—in the language of logic, intension increases as extension decreases.

Returning now to concrete individuals and their pedigrees, we observe that, alike in bodily and in mental traits, each individual resembles the lineage of his own, more than that of an alien, stock; and the closer the kinship, the greater the resemblance. According to the anthropologist, he has first racial, then tribal, then family characteristics. So as we go on ascending from the general human nature which is common to all, we come to characteristics steadily increasing in definiteness, and yet differing *inter se*, till at length we reach some concrete individual or other entering upon life. Here the so-called characteristics will attain a maximum: shall we call the whole 'nature' or 'character'? Hardly nature, at least as science commonly understands the term: for that excludes, while this involves, idiosyncrasies. "*Nicht als Gattungswesen, sondern individuell bestimmt tritt der Mensch in das Leben ein.*" The receptive, retentive, emotive and active 'capacities or potentialities' even of twins are never quite the same, and sometimes are very different. Again we can hardly call this whole 'character,' unless it turn out to pertain to the subject itself[1]. In that case, for those who believe in 'pre-existence,' and many do, it might answer to 'original' character in this sense. But there is a third possibility: it may be something distinguishable from the subject itself, by which the subject is somehow conditioned. In that case it might be classed with the subject's circumstances, if anything so nearly central could be called a circumstance. The subject, we allow, must always be determinate (*bestimmt*); still after all psychology can talk of

[1] 'Characteristic' is a descriptive term; but character, as here used, refers always to the personality described. Many persons have like characteristics but no two have the same character.

original nature or character only in a relative sense[1]. Even if we accept the pre-existence hypothesis the question is merely thrown back.—It is here that the biological facts of parentage and birth lead many to revert to the continuity of the growing tree and to perpetrate that confusion of metaphors that connects idiosyncrasies with 'inheritance'—confusion, we may say, for we do not ordinarily conceive inheritance as congruent in any way either with 'origin' or with 'nature.' The psychological side of this biological problem we must now try to unravel.

In legal affairs 'heir' and 'inheritance'—or, to be precise, 'hereditament'—are correlative terms implying two utterly distinct and contrary entities. The one, in the eyes of the law, is always a person, the other is always a thing—in the wide sense, whether visible and tangible or not—which the person comes to possess. Now the relation of person and property—of which this is a special case—is fundamental for psychology, and so far all is clear[2]. But in biological expositions of 'heredity,' if we press certain obvious questions, we find this clarity has gone: it is no longer possible clearly to distinguish the heir from the heritage. It is peculiar to biology that what is inherited is *never* a thing; it is always a likeness to themselves *said* to be 'transmitted' or 'bequeathed' by forbears to their descendants[3]. The plain fact is simply that 'like begets like.' The rest is mostly metaphor or analogy. Parents commonly bequeath their property to their children, and parental characteristics, it is supposed, may surely be regarded as their property. But the analogy is very superficial. Parents can divest themselves of legal property and yet leave it intact: they cannot so divest themselves of personal traits. Again, the legal relation is threefold, involving two parties and the property that changes hands. As to the so-called 'genetic relation' or biological heredity, however, the outstanding fact is simply the continuity of a single genetic process. The fertilized ovum or zygote, with which the process begins, is continuous backwards with the ancestral germ-plasm and continuous forwards with the gradually differentiating embryo. This eventually appears as a viable organism resembling those of its

[1] Cf. ch. xvi, § 4, p. 406. [2] Cf. above, ch. xv, § 1, p. 362.

[3] Cf. the definitions cited in Professor J. Arthur Thomson's *Heredity*, 1908, pp. 15 f. It may suffice to quote the briefest and last:—"Heredity.—The transference of similar characters from one generation of organisms to another."—R. H. Lock.

parents and in a less degree those of their parents and of all the earlier links in this ever-lengthening chain.

For this process heredity is but a name, and a good enough name too, if the superficial analogy it implies is not pressed. If it is, we soon find that the vital distinction between the individual inheriting and the property inherited has disappeared. This perhaps need not—and certainly does not—disconcert those biologists who concern themselves only with the organism as merely an external object, or perhaps as 'a mere link in the species,' and who are content to waive ultimate questions about individuality and life. But, from the psychological standpoint, if we try to face the correlative problem we are forced to look deeper and to be more critical[1].

We enter upon this investigation by provisionally assuming in accordance with our previous discussion, that there are two forms of heredity, the one with which the biologist deals and this which he leaves to the psychologist[2]—who usually leaves it alone. The main fact well-ascertained by the biologist—and indeed known to everybody—is the resemblance, due to continuity and propinquity, between the organisms of parents and those of their offspring—a resemblance tempered always, it must be remembered, by more or less variation. A like resemblance and variation the comparative psychologist also finds on the mind side. But here the ambiguity of the term 'mind'—commonly so little heeded—at once complicates the inquiry. If by mind the living subject or experient were meant[3], then a continuity such as the biologist finds between parental and filial cells, so far from being an ascertained fact concerning this subject and any other subject, seems rather to be inconceivable even as a possibility[4]. The 'origin of a soul,' however, as we have allowed,

[1] Cf. above, ch. ii, § 2, pp. 36 f.

[2] Cf. Ribot, *L'Hérédité: Étude psychologique*, 1873, pt. iii. ch. iii. Here Ribot distinguishes the two as respectively physiological and psychological, but in the many subsequent editions he dropped this distinction and recognises only what he calls 'biological heredity.'

[3] Cf. above, ch. i, § 3, p. 13.

[4] There are many who also fully recognise the inconceivability, but who regard it not as telling against the supposition that the subject of experience is really generated along with the body, but rather as discrediting the reality of this subject altogether. That for them is an unverifiable hypothesis which the facts of heredity deprive of any scientific value. Cf. Ribot, *L'Hérédité*, 1st ed. 1873, pp. 374–84; also above, ch. ii, § 2, p. 36, and ch. xv, § 3, pp. 378 ff.

is altogether beyond our ken. But if it be due to generation at all, at least we may fairly say that physiological generation will not suffice to account for it. Nevertheless certain theologians and philosophers, commonly known as 'traducianists' or 'generatianists' thought otherwise[1].

On the other hand, if mind is taken to mean the psychologically objective 'content' of experience, originally 'given' as the presentational continuum, or psychoplasm as we may now call it; then, indeed, some connexion between this and the bioplasm or germ plasm, which *is* continuous with the parental stock, is no longer inconceivable. We have even some important facts to go upon, that seem psychologically at all events to point to the nature of this connexion. Of these facts more presently. Meanwhile, we have to observe that this second meaning of 'mind,' as *datum*, *ob-jectum*, *Gegen-stand*, *Vor-gefundene*, in so far as it recognises that duality of subject and object which experience everywhere implies, brings back the distinction of person and property that heredity, strictly taken, involves. For what is said to be inherited is a *peculium*. Also the implication of heredity, as biologically used, has vanished: the continuity of subjects running parallel to the continuity of organisms here perplexes us no longer. The subject, on this view, is only *called* an heir because his 'mind' or psychoplasm, like his body or bioplasm, may shew, as it develops, considerable resemblance to that of his parents.

But if the subject or 'soul' has no actual continuity with the parents of its so-called inheritance, when and how did it come to be, and how did it come into possession of this *peculium* or property? It was created by God and its place in the universal order allotted to it directly or indirectly by divine interposition—such was the answer of the theologians and philosophers, who opposed the traducian doctrine, and so were called creatianists. We seem here only to have exchanged one difficulty for another; and

[1] The controversy between the traducianists and the creatianists was at the outset entirely theological and turned mainly upon views concerning 'original sin'! Among philosophers the idea of pre-existence as a third possibility has been widely entertained. The contradictions implicit in traducianism have often been pointed out even by writers not disposed to dogmatize farther. Cf. W. Wollaston, *The Religion of Nature delineated*, 1722, § xv. 15; Lotze, *Medicinische Psychologie*, pp. 164 ff.; *Microcosmus*, Eng. trans. i. pp. 390 ff.; Rehmke, *Lehrbuch der allgemeinen Psychologie*, 1894, pp. 139 ff.

naturally we ask which is the less. The creatianist doctrine, as it stands, obviously exceeds the limits of scientific inquiry. But at least it involves no contradiction and recognises the two cardinal principles of psychology as we understand it, the individuality of the experient and the duality of experience. We have not to commit ourselves to its piecemeal occasionalism or to its improbable and unverifiable assumptions before rejecting the generatianist doctrine with its materialistic implications and its psychological solecisms.

We might then conclude *a priori* that all that can be said to be psychologically—as distinct from physiologically and sociologically—heritable is merely the psychoplasm that the subject elaborates not the 'psyche' or subject itself. That 'souls' or subjects are creatures we may well believe, if we believe in creation at all. But how we could ever come by the idea of creation save from the standpoint of our own reality we have yet to learn. Still this is a problem altogether beyond the purview of psychology[1]. It only remains for us, then, in this place to consider somewhat further the connexion of the two forms of heredity, the physiological and the psychological, in order to ascertain how far facts bear out this *a priori* conclusion.

We began this discussion by insisting on the analogy between psychogeny and ontogeny, speaking of a psychoplasm as the analogue of bioplasm, the one being elaborated into a psychical organism just as the other is elaborated into a physical organism. The relations of these two organisms, of mind[2] and body as we ordinarily say, lie for the most part beyond the scope of psychology proper. But there is one relation, specially important, in which psychological facts point to more than mere analogies between the two, *viz.* the facts covered by terms such as use, wont, habit, aptitude, accommodation and the like. The gradual acquisition of facility and familiarity, as a consequence of subjective selection or adaptation, directly or indirectly determines a gradual modification of structure and a gradual automatism of function in the body itself. Even in skeletons the anatomist finds evidence of this relation,—peculiarities in the legs of shoemakers, tailors and jockeys, for example, which

[1] I may perhaps be allowed to refer the interested reader to my own attempt to deal with it in *The Realm of Ends*, 2nd ed. 1912.

[2] Mind as 'the psychologically objective content of experience' that is.

only the vocations of the men themselves will explain. Such subjectively determined adaptation of its bodily 'organs' to its own ends implies of course, that the subject had a definite organism which, as we say, was 'given' beforehand. For the biologist the organism given to the concrete individual is continuous with the organisms of his ancestors, is, in fact, a more differentiated stage of the bioplasm from which the chain of ancestral organisms began. Similarly for the psychologist the organism given is a more differentiated stage of the psychoplasm with which the psychological individual began. There is then a progressive and we may safely say a parallel differentiation on both sides[1]. But there is also *interaction*, in so far as it is the subjective adjustment to an interesting environment that adapts the biological organism specially to this.

If now generation after generation the characteristics thus 'acquired' by the parental organisms also modified the germplasm that is continuous with the filial organisms—if, in other words, acquired characteristics are inherited—the broad difference between the organisms of two generations would be this:—What were *functional* modifications in the earlier would be *structural* modifications in the later: that would be 'given' to the one which was acquired by the other. The concrete individual in that case might be regarded as if descended from a certain psychological individual who, as what Galton called a mid-parent, replaced the two parents from whom he actually descended. What is psychologically 'inherited,' the psychoplasm, would then be *proximately* determined through the bioplasm, which from generation to generation has persisted continuously, though developing ceaselessly. But *ultimately* it would be determined by the ancestral experience, to which this development was primarily due. In a word, habit in the individual life would be the ground of heredity in racial life[2]. This is the connexion between the two plasms and so between the two heredities just now referred to as psychophysically probable[3].

[1] Cf. above, ch. ii, § 4, p. 50.

[2] This view is sometimes called 'The mnemic theory of heredity.' Cf. the writer's *Heredity and Memory*, 1913.

[3] To say more would be unseemly in view of the present attitude of the bulk of biologists to the question concerning the heredity of acquired characteristics. On the other hand, to say so much seems justified in view of the trend of opinion during the last quarter of a century or so. Weismann who was then supposed to have vanquished

But there are still some further points of importance to notice.

Even if use and habit be the key to heredity, yet it lags enormously behind them[1]. The repetitions that will suffice to make 'use a second nature' or a habit automatic for a lifetime are very far from sufficing to ensure heredity for future generations. Yet unless the facility and familiarity acquired in a single lifetime are transmitted in some—it may be, almost infinitesimal—degree, there could obviously never be any transmission at all. Still the point is that ages may elapse before the effect is perceptible. And meanwhile in consequence of environmental changes it may gradually disappear; or again, it may be neutralised by the amphimixis or blending of bi-parental characteristics; or it may become latent—as in what is called atavism—for one or more generations. Transmissibility, rather than actual transmission, is, then, the meaning of the so-called 'law of heredity.' Thus the physical or mental traits in which a child perceptibly resembles its parents—one or both—are always such as they have themselves inherited, and never—apart from imitation and the effects of a similar environment—traits which they have themselves by use or disuse first acquired. The shoemaker's son, unless he follows his father's trade, has not a shoemaker's lap[2]; and if he shews his 'father's' fondness for argument 'or his mother's' love of music, it is because both he and they have inherited them from common forbears. In any case the resemblance is only partial and may be less striking than the variation. Here are sundry justifications for our assertion that pedigree alone will not bring us to the concrete individual. On the whole, then, facts—which have been recently impugned only because the physiological process involved has not been discovered—seem so far to confirm our *a priori* conclusion that what is

Lamarck and to have corrected Darwin has ended in discrediting himself on the main issue by his arbitrary, complicated, and often inconsistent speculations, despite his important work in detail. Cf. Delage and Goldsmith's *Les Théories de l'Évolution*, 1909, chh. ix. and x.; and for a fuller treatment, Delage's larger work, *Structure du Protoplasma et les Théories sur l'Hérédité*, 1895.

[1] Cf. Sir F. Galton's explanation of 'original sin' on these lines, *Hereditary Genius*, p. 349.

[2] Yet "races that habitually squat and sit tailor-fashion on the ground have adaptive peculiarities in the hip, lower limbs and foot-joints before birth." Hartog, *Problems of Life and Reproduction*, 1913, p. 190.

inherited is not individuality or character but the tendency to develop certain ancestral characteristics, in a word a particular *Anlage*, as the Germans say. So much for the present[1].

Meanwhile it is no easy matter precisely to define this term[2]. What is meant is something too central to be described as circumstantial in the sense in which the physical and social environment are so described, and yet not central enough to be identified with the subject that has this *peculium* and is conditioned by it[3]. Where then do we find this intermediary and how are we to describe it? Though Leibniz, who wrote almost always either in Latin or in French, did not himself use the word *Anlage*, what he called 'the special point of view of each monad[4]' gives us a very good preliminary clue to it. This for him had nothing spatial about it, although he *illustrated* it by a reference to perspective: the 'point of view' of a monad is its body. But this again refers not to the body as *extended*, as *materia secunda*, that is to the physical aspect of the organism. What is meant is the psychical or 'intentional' aspect of the body as the medium of intercourse with the objective world, the natural and social environment. Hence Leibniz maintained that a soul without a body would be a soul without relation to other monads: it would be, as he picturesquely describes it, like 'a deserter from the general order[5].' *Anlage* then would be this intentional aspect of the body as it is for the concrete experient when—so far as we can trace it—his experience begins. It would be psychoplasm, but *psychoplasm as modified by heredity* and as thereby more or less predetermining the concrete individual's position in the world.

[1] Cf. next ch. §§ 2 and 3, pp. 434 ff.

[2] Certainly the proposal of Baldwin's *Dictionary* to regard it as equivalent to 'rudiment' is both lexically and logically inexact. It overlooks the potentiality, it overlooks the references to the *Anlegende* and it overlooks the contrast with *Umstände*, which *Anlage* implies. "Disposition and predisposition" again "are [not only] too vague to be really adequate," as Professor Titchener has already said (*Am. Jl. of Psych.* vii, 85 *fin.*): they are also liable to bias further investigation. To adopt the word itself as a technical term seems then the best course. And this, I feel bound to say—though perhaps the present is hardly the time to say it—is by no means the only case in which the short-comings of our own psychological nomenclature can be better supplemented from the German than it can be by words of Latin or Greek origin, as Professor Titchener proposes (p. 79).

[3] Cf. above, § 3 *fin.*

[4] *Monadology*, § 57.

[5] *Op. cit.* § 72. Latta's edition, p. 258 f. and note 115.

Anlage thus seems to present the subject of experience in a new light. So long as we were dealing with the psychological individual there was no call to talk of *Anlage* but only of psychoplasm. Now, however, in dealing with concrete individuals this need is obvious; and the difference is important. This *Anlage*, like experience generally, more or less inhibits development in some directions while more or less facilitating it in others. And yet it is not itself experience, for of the elaboration or synthesis that it implies the concrete individual, to whom it belongs, knows nothing; but that which is not experience for any experient is not experience at all. So, though in itself complex, as implying previous synthesis, yet for the concrete individual concerned it is simple, for what he has not synthesized he cannot *psychically* analyze[1]. Hence we sometimes call it instinct[2]. It is anything but a *tabula rasa* in itself: it is such, however, for the concrete individual; for his experience—so far as we know—begins with it.

[1] Cf. above, ch. v, § 2, note 3, p. 105.

[2] Cf. above, ch. iv, § 1, pp. 74 f.; ch. vii, § 2, pp. 181 f.

CHAPTER XVIII

THE CONCRETE INDIVIDUAL AND CHARACTEROLOGY

Questions of Method.

§ 1. After all we have yet to find the concrete individual as psychology conceives him: find him 'all in all' we never can. Yet he is no mere concept. Self-consciousness assures us of his reality more immediately than we are assured of any reality besides. I am certain *that* I am, but as to *what* I am—there is much I do not know. It is indeed a commonplace which none dispute that no man stands revealed fully and all round either to himself or to others; for as Leibniz has well said, "l'individualité enveloppe l'infini[1]." Still, with equal truth it may be rejoined that we find only concrete individuals—a fact, however, which merely brings out the difficulty. Whatever we know about other concrete individuals has been acquired by comparing one with another, and thus can only be stated in general terms. But no formulation of general terms is ever adequate to concrete reality; nevertheless such generalities are all the material we commonly have. Unscientifically, it may be, but with great sagacity and acumen, the human race has already accumulated an embarrassing wealth of such material. "The proper study of mankind is man," and it is the study which mankind has longest and most ardently pursued.

To transform this practical *Menschenkenntniss* into a psychology of the individual is the problem. But if we cannot find the concrete individual, as psychology conceives him, how, it may be asked, is this problem to be solved? On the other hand, if we find only concrete individuals, is there really any problem at all: what, in fact, is *Menschenkenntniss* but just mankind's acquaint-

[1] *Nouveaux Essais*, III. iii. § 6. Cf. the whole passage.

ance with man? To dispose of this objection as satisfactorily as may be would involve an excursion into logic, which would be here quite out of place[1]; but psychology itself—in the principle of progressive differentiation—points to a shorter way that will amply suffice. This principle, as we have already seen, entails that knowledge must begin with general distinctions and can only later advance to those more special[2]. For the first step, to recognise an individual as belonging to a kind, a 'diagnostic definition'—the simpler the better—is all that is required; and when we talk of finding only concrete individuals, recognition of this sort is all that is implied. To find the concrete individual conceived as the limit of a series of progressive differentiations, we may, then, set out from concrete individuals defined by class marks, but this process of 'determination'—which is logically the same throughout—will never enable us to reach any one of the class as it actually is.

The only clue we have through this seeming *impasse* is to be found in the 'general psychology,' analytic and genetic, which we just now left behind. That does *not* start from the individual defined by class marks, but from the individual as known to himself. Into the 'schema' thus provided—if only the schema is sound—every concrete individual ought to fit; and the more the schema was thus filled out, the more definite would be the place assigned to each and the more trustworthy the schema itself. Thus general and special psychology would become mutually complementary. But to this end it would be needful to replace casual and unsystematic comparison of *characteristics* by a comparative method enabling us to deal with individuals as persons, as having a *character*. The special or individual psychology thus obtainable might perhaps be called a branch of 'comparative psychology'; but in view of the restricted use of that term, which is now in vogue—as dealing, that is to say, not with persons but with kinds—we need one more distinctive. Characterology, first used fifty years ago[3], seems useful; at any rate it is coming to be generally used; and so, though at present unfamiliar to English ears, we may venture to adopt it.

[1] C. F. Sigwart's *Logic*, ii. § 77.

[2] Cf. above, ch. xii, § 5, p. 304.

[3] By Julius Bahnsen, a well-known pessimist and disciple of Schopenhauer, in a work entitled *Beiträge zur Charakterologie u.s.w.* 1857.

But many, who fully recognise the difficulty we have just indicated, refuse or neglect to accept the solution we have suggested. At this point, in fact, a divergence of method, akin to that which has presented itself at every stage throughout our preceding exposition[1], here reappears in a very crucial form—the divergence, that is, between presentational or atomistic psychology, psychology without a subject[2], and the psychology with one, which we have striven to uphold. Since the experient subject is neither immediately presented (to an internal sense) nor mediately accessible (through a finite analysis) it is impossible—so it is argued—to do more than classify characteristics, for these are all that we can ever observe or infer. But in comparing characteristics only the resemblances or differences among these can be ascertained. What we want, however, is to account for them: that for us is what characterology means. It seeks not merely to analyze, but to discover the subject synthesizing which the analysis implies. The methods we are criticizing, though seemingly direct, are really inverse methods, attempts to determine a cause by what are largely its effects. Their continual references to psychical *structure*, to psychical *elements*, or to compounds of these of varying degrees of complexity—implying not a fundamental unity but rather an ultimate manifold of presentational units; the stress laid on *laws* coordinating or subordinating such elements of character, or on *laws* of association and inhibition by which these are supposed to be built up—as if generalisations could effect anything; even the adoption of the phraseology of the old *faculty-psychology*, sense, intellect, emotion and will—as if no cardinal function were to be found in psychical life: all these, more or less distinctly betray a failure to recognise the subjective centrality and unity essential to any experience.

It is just this central unity of experience that makes a direct method possible in psychology to an extent that is not possible in the natural sciences. There experiment—the advance from cause to effect—has a very limited range. In psychology—so far as the subject is active—*all* experience is experiment. It is only our prevalently objective attitude—ever 'on the outlook'—that has led to the naturalistic bias in psychology and the consequent

[1] Cf. above, ch. i, § 6, pp. 24 ff.

[2] More exactly the psychology which ignores the subject that it everywhere implies. Cf. above, ch. i, § 5, p. 23.

inversion of its basal standpoint, the introspective. But from this standpoint alone do we reach the idea of real centrality; then we grasp that transcendental, synthetic, 'unity through apperception,' which is the key to all the categories, and the supreme principle of knowledge. If we let this go, or rather—for we cannot really let it go—if we ignore it, we may analyze and correlate without end, but all individuality is gone for ever. Such ignoration is part of the method of the natural sciences, and the more characterology adopts it, the more it belies its name[1].

[1] Perhaps the greatest sinner in this respect is Fr. Paulhan (*Les Caractères*, 2me éd. 1901), who is however an avowed presentationist. For an able criticism of Paulhan's standpoint see Fouillée's *Tempérament et Caractère*, 4me éd. 1901, pp. 122—130. But the latest—and the most logical outcome—of such inverse methods is the insistence of some, who employ them, on a sharp distinction between the scope of characterology as here defined and the scope of their own investigations. These are not concerned with characterology, or individual psychology, but with 'differential psychology.' According to Dr Stern, the leading exponent of this new psychology (*Ueber Psychologie der individuellen Differenzen*, 1900; *Die Differentielle Psychologie in ihrer methodischen Grundlagen*, 1911) our standpoint—though he has maintained elsewhere that it is not only valid, but vital to a true *Weltanschauung* (L. W. Stern, *Person und Sache, System der philosophischen Weltanschauung*, i. 1906)—is here to be ignored as a purely philosophical position beyond the scope of empirical science. Well, obviously that depends upon how 'empirical' is defined, and also upon what the science is. If the science be that of individual experience, and if every experience implies the duality of subject and object—in other words, if our standpoint is the right one—it is hard to see how such an epistemological dogma can be sustained. On the other hand, if our standpoint is wrong, it is hard to see how such a dogma can be attained. There is a vast deal of truth in epistemology that it is beyond the province of psychology to question; but, at least, we must agree with Professor Stumpf "that nothing can be true in epistemology that is false in psychology." ("Psychologie und Erkenntnistheorie," *Abhandl. der bayer. Akad.*, 1891, Offprint, p. 18.)

It is, however, not so much with Dr Stern's inconsistency—which is remediable—as with his admission that the comparative method, worked on the lines of a presentational or atomistic psychology, does not lead to characterology, that we are concerned. That is the important truth for which we are contending. How far, in that case, 'differential psychology' is entitled to be called psychology at all is very questionable. It certainly formulates methods, 'experimental and statistical,' which have brought together a mass of rather miscellaneous anthropological and psychological items. These it essays to measure—or at least, to graduate—and partially even to correlate. Such results, as they stand, can, however, hardly be called psychology, though they may be useful to a psychologist who knows how to interpret them—an ability, by the way, which many of the 'exact' inquirers who have accumulated them entirely lack. Yet with such material, Dr Stern, at any rate, believes that—in the distant future—it will be possible to construct what has been called a psychogram of the concrete individual. More or less incomplete this psychography must be, he allows; but at least its ideal is idiographic, not nomothetic, as that of general psychology, in a sense, may be said to be. It might be thought that after all psychography was only characterology under

Temperament.

§ 2. In attempting then psychologically to envisage the concrete individual and the gradual unfolding of his character, we take it to be our first business to enframe him *within* our schema; to regard him, that is to say, not merely as our psychological individual, but as a particular 'person' entering upon life at the human level. So regarding him—in place of referring only to the duality of subject and object, self and not-self—we have distinguished *three* factors as involved in the genesis of his experience, himself, his environment and his *Anlage*—to repeat them in the order of our previous discussion. The last of these is now, however, the first to be considered; for it is only as *angelegt* that any concrete individual is for us there. And the first thing we have to do is to recall what we have already noted, *viz.*: the intermediate position of this factor as a sort of 'middle term' between the other two[1]; for this position, a fertile source of difficulties elsewhere[2], is here beset with a special ambiguity. How far we can resolve this remains to be seen. Certainly we could not go very far without trenching upon metaphysics; but, at any rate, we cannot wholly ignore this ambiguity and simply pass on; for the extent to which we can psychologically resolve it must affect our whole exposition. If *Anlage*, as we concluded just now[3], is only the psychoplasm which the concrete individual has to elaborate, then, however much he is conditioned by it, he must still be and ever remain distinct from it. But when we

another name. But by no means: it is utterly different. Psychography is described as "that method of investigating individuality which sets out not from the unity but from the manifoldness (*Mannigfaltigkeit*) of the characteristics (*Merkmale*) present in the individual and arranges them according to psychological aspects (*Gesichtspunkten*)" (*op. cit.* 1911, p. 327). All *possible* characteristics thus arranged would furnish 'the general psychographic schema' which is the essential basis of every special investigation. A bare description of this schema occupies some twenty pages of Dr Stern's book. The preparation of the schema itself has already begun under the auspices of an Institute for Applied Psychology, of which Dr Stern is the Director, and a *Museum für Seelenkunde* is desiderated to enshrine and exhibit its results! Surely a better *reductio ad absurdum* of a strictly naturalistic method in '*der Erforschung der Individualitäten*' than this really clever and useful book affords is scarcely possible.

[1] Cf. above, ch. xvii, § 3, p. 419 *fin.*, § 4, p. 428.

[2] As, *e.g.*, in the epistemological problems concerning the perception of an external world and concerning the relation of body and mind.

[3] Cf. above, ch. xvii, § 4, pp. 428 f.

look closer into the various facts that this term *Anlage* covers, is this conclusion after all sustained?

Under the head *Anlage* we may include sex, temperament and certain (native) capabilities. The last present no special difficulty; in so far as an ear for music, an eye for form, a retentive memory or a 'turn for mathematics' may all be referred to 'psychoplasm as modified by heredity.' These may be left out of account for the moment: we talk of them—naturally enough—as 'endowments'; but can we regard sex or temperament in the same way? Both are strictly correlated to physiological functions, no doubt; and so far as sex is concerned we may allow that the physiological functions determine. so to say, the biological vocation of the individual and all that follows from this. But in this case the functions in question are clear and unmistakable. Fundamentally important as this vocation is for the life of the individual, it tells us nothing of the individual's character. Temperament, on the other hand, is said to be 'innate' character; so, though no one talks of psychological sex, it has been general since Kant's day to talk of psychological temperament. Like sex, this is said to be determined entirely from the physiological side, and like sex to be unalterable. What then is 'psychological temperament' we may ask? And we think we know. We soon find, however, that everything here is obscure; most of all the physiological functions on which this temperament is supposed to depend. Still perhaps with patience we may get some light; but it will be well to glance briefly at the history of the physiological doctrine, and to examine the psychological facts before attempting the main question.

(i) In one form or other the doctrine just described has persisted through thousands of years, an interesting example among many of how 'antiquity, combining groundless theories with practical observation,' has shaped our terminology while distorting our interpretation of facts. Here the facts primarily concerned are psychological facts, long familiar in broad outline to men everywhere, as common language attests. But pathologists—if we may apply so modern a term to Hippocrates and Galen—were the first to make a special study of them—not, however, by careful analysis and systematic comparison of the facts themselves, but by crude and hasty assumptions as to their latent causes. Those were the days when ignorance made it easy to theorize. From the

Ionian search for a single ἀρχή, Empedocles had only advanced as far as the familiar four elements—known to every child—of which all things were held to be composed. Answering to these there were, it was supposed, four humours of the body, after which the four temperaments were named, as one or other humour predominated in the blend. But obviously in a perfect blend (εὐκρασία, *temperamentum temperatum*) there should be no predominance; and, in fact, it was from the observation of diseased bodies rather than of healthy minds that the doctrine of four temperaments took its rise. In other words, to have a specific temperament ought to mean to have a defect or lack of balance, only distinguished from the disease, to which it was allied, by being chronic or congenital rather than acute and dangerous. And so to this day it is commonly regarded: to be predominantly sanguine or melancholy, or choleric or phlegmatic, is to fail by excess or defect of what Aristotle called the true mean.

Already Aristotle had discerned that the blood was the supreme humour on which the composition of the rest depended; and when, some 2000 years after Hippocrates, Harvey discovered the circulation of the blood, the *motion* not the *mixture* of the blood, engaged most attention[1]—in other words, the interest in function came to the fore, and that in mixture or structure declined. More than a century after Harvey's discovery, Albrecht von Haller[2], in turn, maintained that the *function* of chief importance in determining temperament was not that of the circulatory, but that of the nervous system. At last—when neurology and psychology were thus brought, so to say, face to face, nearly a century later still—Johannes Müller, the greatest physiologist of the nineteenth century, declared roundly that neither pathology nor physiology will ever account for psychological temperament. Feeling and conation were the fundamental facts: the organism always modified these, but could never give rise to them[3]. The entire history of all theories of temperament prior to this is but another instance of that inversion of methods upon which we have already animadverted. But the feeling and striving experient

[1] Cf. J. Henle's admirable lecture "Von den Temperamenten," *Anthropologische Vorträge*, 1876, p. 111.

[2] In his memorable *Elementa physiologiae corporis humani*, 1757—60.

[3] Cf. Müller's *Handbuch der Physiologie des Menschen*, Bd. ii. 2nd ed. 1840, pp. 576 f.

is now recognised as the true starting-point. It is undoubtedly conditioned by its *Anlage* here as elsewhere: the question is, in what special way is it conditioned here?

(ii) Before taking up this question, however, we need to be clearer as to the psychological facts themselves, from which we are to start. As already said, we think we know what we mean in talking of this temperament or that; yet on looking closer we find—as has been pointed out over and over again—that the meaning is very vague[1]. If we observed ourselves or other persons whom we know intimately, for any length of time, we should be far more likely to notice the characteristics of every temperament in turn rather than always those of any one. Suppose that, comparing them together, *X* is classed as melancholic and *Y* as choleric, is it not certain that comparing either with himself at different times we should find that for each there was "a time to weep and a time to laugh, a time to love and a time to hate"? Or, though the French as a nation are characterized as sanguine and the English as phlegmatic, do the French not find that they have plenty of phlegmatic people; and we that we have plenty who are sanguine[2]? In fact, as Henle has said, individuals of pure temperament are very rare[3]. So much so that it seems advisable to approach the whole question from another side, where what is psychologically important appears not as the exception but as the rule.

Temperament was originally traced, as we have seen, to bodily humours; but in the course of time humour and temper have

[1] The best evidence of this is to be found in the expositions of psychologists themselves. For example, Kant retained the classical division of temperaments into four, each simple and unmixed (*Anthropologie* in Hartenstein's edition of his works (1868) vii. p. 613): Beneke went so far as to say that any man might have twenty to thirty or more temperaments at once! (*Lehrbuch der Psychologie*[4], 1877, § 345). The temperament commonly called the melancholic Lotze preferred to describe as the sentimental (*Microcosmus*, VI. ii. § 2, E. t. ii. p. 29)! The type which Ribot called sensitive and described as 'including especially the pessimists' (*Psychologie des Sentiments*, 1896, p. 389), was divided by Fouillée into two, one of which he described as 'optimist by instinct' (*Tempérament et Caractère*, 4me éd. 1901, p. 33).

[2] A comparison of individual with individual, what has been called the 'cross-section' method, though an essential preliminary to the structural analysis of character must be supplemented by the 'longitudinal,' genetic, or synthetic method, if the formation of character as an individual process is to be followed out. Cf. L. W. Stern, *op. cit.* p. 18. It is on this complete method that we have to insist.

[3] *Op. cit.* p. 128. Similarly Volkmann in his compact and masterly handling of this topic, *Lehrbuch der Psychologie*, 2nd ed. vol. i. 1875, § 31.

acquired a distinctively psychological meaning by no means identical with that of temperament. This the synonymous term 'mood,' which has come to suggest variation, shews. The Germans recognise the same distinction, contrasting *Temperamenten* as permanent with *Stimmungen* (or *Launen*) which may even suddenly vary. There is a happy analogy underlying this German phrase, so appropriate to the genius of that people. The 'soul' as affective and conative, or as they call it, *das Gemüth*, is conceived to be—like a musical instrument—in tune or out of tune, now in one key, now in another. This attuning is its *Stimmung*. Upon what does this depend? Primarily, that is, on the lower level of consciousness—and more or less on all levels—upon the state of the body, *i.e.* on the healthy and harmonious working of the organism, or the opposite. In a word, the *Gemüthsstimmung*, or 'ground-tone,' is the feeling-tone of coenaesthesis, including under this term the so-called 'tonic action' of muscles[1]. The bodily state upon which this depends, depends itself in turn on innumerable physical conditions, 'weather, temperature, diet, the due mean of sleep and work and so forth[2].'

To sum up: what we experience in ourselves and observe in others are continuous variations in 'how we feel': these we learn by slow degrees to connect with the play of the environment on 'the thousand strings' of our organism, or with their tension, or with both. Such variations are greater in some persons than in others, but all of us 'feel more or less different,' mornings and evenings, spring and autumn, in youth and in age, &c., &c. True, there is a certain underlying identity; a man cannot change his body or constitution as he may change his garments; but bodily changes, and profound ones too, most people undergo; and all such changes entail a change of coenaesthesis and so of *Stimmung*. They also all of them involve changes in what we have described as 'the sensitive and appetitive self': how radical these changes may be has been briefly noted[3]. This 'physiological self,' as it has been called—though so to call it is going just

[1] Cf. above, ch. ii, § 5, p. 53, and ch. v, § 3, pp. 110 f.

[2] Cf. Nahlowsky, *Das Gefühlsleben*, 1862, pp. 234 ff. It is greatly to be regretted that this admirable book, so little known to English psychologists, has never been translated.

[3] Cf. above, ch. xv, § 1, pp. 364 f.

too far—is the identity or continuity underlying those changes; and to this the inappropriate concept of a fixed and innate temperament or blend has been applied. The psychological facts find perhaps a more fitting parallel in differences of voice: voices may be bass or treble, tenor or alto, &c.; but all are comparable as to *range* of pitch, though one tending to one extreme, another to another; all are liable to be out of tune as well as capable of being in unison; and none are constantly in one key. When we talk of a man's moods we are talking of concrete facts; when we talk of his temperament we are using a vague and rather empty generalisation[1].

(iii) If we are right in interpreting the more or less popular notion of temperaments in the light of moods resulting from coenaesthesis as determined by physical circumstances or by health or by both, and as restricted in their range by the constitution of the organism itself, we may now resume the discussion that has meanwhile been interrupted. What is peculiar to the way in which his *Anlage* here conditions the concrete individual? Can this be brought at all into line with his *Anlage* for this or that talent? There is at any rate one clear difference: how

[1] Nothing perhaps shews the emptiness—*das leere Fachwerk*, as Volkmann calls it—of this doctrine of innate and unalterable temperaments than the explanations given of the persistency with which, on the whole, it has been maintained that there are but four distinct temperaments. Kant with his fondness for systematizing—he actually compared the four temperaments with the four figures of the syllogism—is here interesting, and has been largely followed by those who deal with temperament from the psychological side. He divides temperaments first into temperaments of feeling and temperaments of activity and each of these again into two according as the vital energy (*Lebenskraft*) is marked by *Erregbarkeit* (*intensio*) or *Abspannung* (*remissio*). So we have in the first class the sanguine and the melancholic, in the second the choleric and the phlegmatic. But the difference of degree will not account for the differences in quality that Kant and all the rest surreptitiously introduce the moment they proceed to describe the individuals they have distributed about the four corners of a square. The sanguine man, for example, Kant tells us, is a 'bad debtor and is always requiring further grace': the melancholy man, he says, is 'slow to promise for he values his word and is distrustful of his means.' Yet surely these traits are not due to bare quantitative differences in affectivity. Nor will differences in degree of energy explain the various details with which Kant fills out his portraits of the choleric and the phlegmatic types of men. In short, without qualitative distinctions the whole scheme collapses, and with them it altogether bursts its bounds. (Cf. his *Anthropologie, 2te Theil: Die anthropologische Charakteristik*, Hartenstein's ed. *Werke*, vii. pp. 608 ff.)

Cf. Mr A. F. Shand's discriminating discussion in his *Foundations of Character*, 1914, bk. I. ch. xiii.; and also P. Malapert, *Les Éléments du Caractère*, 2me éd. 1906, pt. I. ch. i.

far-reaching that difference is, is the burning question. A special delicacy in sight or hearing or manipulation, for example, or the opposite, tells on his presentation of the external world; whereas here what is conditioned is the affective and active self. And so long as we confine our attention—as we have done so far in this inquiry—to the lowest level of consciousness, can we be sure that the self is merely conditioned, and is not entirely constituted by this so-called *Anlage*? May not what is called temperament after all be the concrete individual's innate character, as many psychologists, in fact, maintain? What is the sensitive and appetitive self but psychoplasm? This is one of the problems—perhaps the root problem—which the study of individual psychology forces to the fore. Our first task, it will now be seen, must be—as already said—to clear up the special ambiguity here besetting *Anlage* as a mediating term[1]. To this the nature of coenaesthesis gives us a clue. That, we have already remarked, is sometimes called 'general feeling' and sometimes 'general sensation[2].' The reason for this 'psychological barbarism' or confusion of categories we may perhaps claim to have exposed. Coenaesthesis is also feeling-tone, and feeling-tone is not feeling but the earliest cause of it. This general sensibility or somatic consciousness presents what we *come* to know as our body, before the differentiation of the presentational continuum enables us actually to distinguish it, as such, from the other bodies that make up its environment or *Umwelt*. These facts account for the identification of the self first of all with the body[3]. And if

[1] Cf. above, p. 434.

[2] Cf. above, ch. v, § 3, p. 111.

[3] It should be sufficient without repeating what has been already said on these points—though it is essential that that should not here be overlooked—to give now a series of references:—Cf. above, ch. ii, § 3, p. 45; ch. x, § 2, pp. 249 f.; ch. v, § 3, pp. 110 f.; § 7, p. 135; ch. xv, § 1, pp. 364 f.

At this point we begin to get some general insight into the ambiguities besetting the notion of *Anlage*. The body—though perceived, yet—'as point of view' for its subject does not, so far, itself pertain to the *Umwelt* or external world which the subject perceives. So far, it is, as Reid maintained, diaphanous: as we do not see the glass when we look through the window, so we do not perceive the sense organs when we use them. On the other hand, the body, *so far as it is identified with the self*, is regarded not as sensing, but as having, the feeling to which it gives rise. These are the facts underlying the doctrine maintained by Malebranche, Reid and Hamilton concerning the so-called 'inverse relation of sensation proper and perception proper.' Cf. above, ch. x, § 2, p. 250, *n.* 4.

we never got any farther, obviously we should never know any better: we do get farther, however.

Primarily, as we have seen, it was the physical side that seemed to 'call the tune'; but later, on the higher levels of consciousness, the initiative lies with increasing frequency on the purely psychical side; and so we talk popularly of the power of the soul over the body. In proof of this power so many volumes of facts[1] have been collected—facts for the most part well authenticated—that we may spare ourselves any detailed citation here. Moreover these facts, however popularly impressive or medically important, are quite subsidiary to the strictly psychological evidence we have already obtained as to the distinctness of the experient from his *Anlage*: a position which these facts do not so much establish as presuppose. Psychotherapeutics, autosuggestion and faith-cure are out of the question below the self-conscious level, that is to say, in the case of the lower animals or of infants. Notwithstanding the invariable concomitance and the primary identification of self and body, the one main fact, then, is that the further experience advances, the more subjective selection assumes the principal *rôle* within it. This it is that justifies our general analysis and establishes at once the duality of subject and object and also the attribution to the subject exclusively of the affectivity and activity without which all psychical synthesis would be inexplicable[2]. Finally, the continuity we observe alike in phylogeny and in ontogeny—in the development of species as well as in that of individuals—seems to justify us in also concluding that this distinction between the subject and its *Anlage* is primordial. It justifies us the more as the alternative of a *generatio equivoca* is beset with insuperable difficulties, if it be not, as many hold it to be, an actual contradiction. For if the subject is not from the first distinct from the body, must it not be developed out of it, as the naturalists suppose?

This appeal to continuity becomes still more impressive, if we revert for a moment to the parallel differentiation of bioplasm and psychoplasm which facts connected with heredity brought

[1] A few of the more accessible may be mentioned:—G. Moore, *The Power of the Soul over the Body*, 6th ed. 1868; W. B. Carpenter, *Principles of Mental Physiology*; D. H. Tuke, *Illustrations of the Influence of the Mind upon the Body*, 2nd ed. 2 vols. 1884; H. H. Goddard, *American Jl. of Psychology*, x. (1898), 431 ff., "Effects of Mind on Body as evidenced by Faith-cures."

[2] Cf. above, ch. iii, § 2, pp. 66 f.; ch. xii, § 7, p. 312; ch. xiii, *passim*.

just now to our notice[1]. We conclude that the self is always distinct from the body; but till its experience is so far advanced that it is itself aware of the distinction, all is—we have allowed—as if the self were merely the body: an admission that may seem to detract from the cogency of our conclusion. But, recalling the parallel mentioned, we realise that this body is not a 'bare body' such as the physicist conceives. It is a living body continuous with other such bodies that were in like manner *angeclegt* and each in turn further differentiated by the subject whom it invested. If we picture the 'influence of the mind over the body' as thus exerted at every step throughout the entire line of the concrete individual's descent from some primeval protozoan to his immediate forbears, and if—with this picture before us—we try to conjecture the ultimate grounds within the range of our experience, of his having an *Anlage* at all, we come in sight of a new 'philosophy of clothes[2].' In other words, if we are to account for our embodiment we seem to be thrown back on the interaction of subject and object, that is to say, on the subjective selection and natural selection (widely understood) which we have found to be the factors on which its progressive differentiation depends, once it is begun. The intermediary and subsidiary *rôle* which *Anlage* or organism implies seems in this way explicable, and also its functional distinctness from subject and object alike[3].

[1] Cf. last ch., § 4, pp. 425 f.

[2] Of which Leibniz—apart from his unacknowledged debt to Spinoza—may be called the founder. For an attempt to interpret this philosophy somewhat further in the light of present knowledge, the reader, who cares to do so, may consult *The Realm of Ends*, 2nd ed. pp. 254–8 and pp. 461–7.

[3] How a 'bare soul' or naked monad—if there be such a thing—could begin to invest itself with psychoplasm is inconceivable: equally inconceivable is it how 'bare body' or dead matter—if there be such a thing—could ever quicken itself and become bioplasm. In dealing with real things our approach to the limits can never be more than asymptotic: we can attain neither to the infinitesimal nor to the infinite. The principle of continuity then gives us no title to infer from the distinction reached by analysis to the separate existence of the factors analyzed. Only experience can justify such a separation. But the world is not and has never, perhaps, been supposed to be, an absolute plurality. Kant's category of reciprocity (*Gemeinschaft*) is the last word for us on the empirical plane, and that is incompatible with absolute separation. So in psychology we find a duality of subject and object but never any warrant for dualism. On the other hand, the underlying unity and all-embracing totality, sometimes spoken of as the Absolute, does not belong to the empirical plane. With the psychological bearings of this point too the writer has tried to deal elsewhere. Cf. "The Present Problems of General Psychology," *The Philosophical Review* (1904), xiii. pp. 607–14.

The subject, however, if essentially distinct from its psychoplasm and a factor in its elaboration, must be itself a unique agent, conditioned, it may be, but never altogether constituted by what it always partially controls and can control more and more, as it rises in the scale of life. In other words, the whole secret of the concrete individual is not contained in *Anlage*, whereas to an indefinite extent the secret of *Anlagen* may be found in concrete individuals. Individual liberty—for that is really the issue—may be a mystery, as Malebranche declared, or it may be, as Du Bois-Reymond thought, the last of the seven world-riddles, or, as Höffding is content to say—and we agree with him—it may be merely one of the factual bounding-points of knowledge. But whether mystery or riddle, if it be not fact it is hard to see what remains of psychology but illusion. On the other hand, if it be a fact, then a man's bodily constitution is only one of the factors conditioning the formation of his character, a 'property' rather than an attribute of his self and normally, to a greater or less extent, directly and indirectly amenable to his control.

Instinct, Talent and Genius.

§ 3. Included in this complex intermediate factor, the *Anlage* or psychoplasm with which the concrete experient starts invested, there are still other constituents to examine. They differ from that already considered under the title of temperament in being more restricted and so more differentiated. The clue to them is to be found, not in coenaesthesis, but in more definite or more objective situations. Correlated with these every individual has certain instincts and different individuals tend to display native endowments or defects in very diverse ways.

Though instinctive behaviour—to begin with that—is entirely a matter of *Anlage* and though too it is genetically of quite fundamental importance, nevertheless we need here do little more than recognise its place. Broadly speaking, this is on the lower level common both to man and brute, and so does little to differentiate one human being from another, whether we define instinct more widely or more narrowly. As to this, there is something to be said for distinguishing instinctive emotions, instinctive appetites and aversions, and instinctive actions. Thus instinctive

emotions are always accompanied by the corresponding emotional 'expressions,' but these, we have seen—at least in their primary manifestations—differ by their diffused nature from the more restricted and voluntary actions that result from conative impulses. Again instinctive appetites and aversions are often, but are certainly not always, accompanied by instinctive actions. Sometimes, in human beings especially, the appropriate actions are only gradually learnt. Lastly, instinctive actions, to which the term instinct is usually confined, are not necessarily attended by specific emotions at all. These at least, it will be generally agreed, furnish no basis for differentiating character. But in the case of instinctive emotions this may be questioned. No doubt some people are vastly more timid, for example, or more pugnacious, or more readily elated and depressed than others. Such differences, however, are either 'constitutional' or 'temperamental'—and so far have been already dealt with, or they are the result of habit, and then presuppose character already to some extent formed. Much the same remark applies to appetites. Some men are temperate and this we regard as natural and normal; others are intemperate, possibly from disease—as in dipsomania, erotomania and other such manias—but more frequently from indulgence aided and abetted perhaps by perverted ingenuity and imagination, as in the gourmand and the libertine. But these are forms of degradation unknown among brutes and altogether incompatible with instincts. On every tenable view, then, instinct as such seems to have little to do with the problems of individual psychology[1].

Whereas all men are alike as regards their instincts and equally all women, it is far otherwise as regards their abilities; especially when by 'ability' we mean not simply the possibility of doing at all, but the power of doing with an ease, promptness and perfection exceeding the average. Abilities of this sort we call talents. "All," it has been said, "have one talent, some have even two." But the collective talents of the human race are manifold, and individual diversities therefore are correspondingly great. This topic is thus, unlike that of instinct, an important one for individual psychology. It is, however, less important to the question of the formation of personal character in the narrower

[1] Even in Dr W. Stern's elaborate psychograms it has no place, save perhaps in connexion with differences of sex.

sense—which is now our main theme—and we may therefore treat it somewhat summarily.

(i) First of all, we must remark that it is probably a great mistake to suppose that any talent, as the term is ordinarily understood, is ever inherited in the form of a completely organized function. After all, no one is born a poet, though not anybody can become one; and of those who could, many for lack of opportunity remain 'mute and inglorious.' However we shall return to this point presently. Meanwhile we assume that what is really inherited is not the talent—this as psychologically analyzed is usually very complex—but only its main constituents. The number of these is, of course, far less than that of the various combinations of them forming the talents which either do or might exist[1]. A generically complete enumeration of these 'elements' is supplied by our psychological analysis, so far as that is itself complete. Moreover this is the same for all normal individuals, inasmuch as each finds a place within the schema which that analysis yields[2]. But there are certain other constituents disclosed by that analysis which are subjective; these we shall call 'innate' to distinguish them from the more objective elements which are said to be 'inherited' in the stricter sense. The former for the present do not concern us, but they must not be forgotten[3]. Among the latter we may note (1) differences in sensory discrimination, in motor agility and in *tempo*; (2) peculiarities of plasticity as regards retentiveness, assimilation, and so of association. Perhaps under these two heads might be included all the 'elements' of inherited talent so far ascertained; but even if the enumeration were complete as to details, the chief problem would still remain, *viz.* to account for their various combinations. Where this is not realised the search for elements is very apt to prove a snare.

For example, Bain, referring to the first mentioned item, has said: "This is the deepest foundation of disparity of intellectual character, as well as of variety in likings and pursuits. If from the beginning one man can interpolate five shades of discrimination

[1] The full consequences of this obvious but important point are illustrated and enforced at length by Beneke. Cf. his *Psychologische Skizzen*, Bd. ii. 1827, § 30, pp. 417 ff.

[2] Cf. above, § 1, p. 431.

[3] Cf. below, p. 451.

of colour where another can feel but one transition, the careers of the two men are foreshadowed and will be widely apart[1]." *Mutatis mutandis*, these remarks would equally apply to other forms of sensory or motor acuity. They would, however, certainly not go very far unless they implied more than is explicitly stated. Whether the fineness of sensory or motor discrimination was or was not accompanied by a corresponding definiteness and vividness of imagery, for example, would make all the difference. Perhaps it frequently is, but often it is not[2]. Moreover, in conjunction with aesthetic susceptibility, acuteness of sense might incline a man one way and combined with intellectual curiosity quite another. On the whole, we must demur to Bain's position that sensory discrimination is 'the deepest foundation' of character of any sort[3].

J. S. Mill provides a pendant to Bain's instance under our first head by one that belongs to the second, referring, that is to say, not to sensation, the first item mentioned, but to association, the last, and moreover taking the subjective side also into account[4]. He begins by laying down, as 'one of the simple laws of mind,' the fact we have so often insisted upon, that—to put it briefly—subjective interest is the one efficient factor in determining the details of our various associations. This "elementary law," he thinks, "would explain...in particular some of the fundamental diversities of human character and genius." To make good this assumption, he then proceeds to say: "Associations being of two sorts, either between synchronous, or between successive impressions; and the influence of the law...being felt with peculiar force in the synchronous class of association; it is remarked by the writer referred to [*viz.* Martineau] that in minds of strong organic sensibility synchronous associations will be likely to predominate...while persons of more moderate susceptibility to pleasure

[1] *Education as a Science*, 2nd ed. 1879, p. 16.

[2] Cf. W. James, *The Principles of Psychology*, ii. pp. 50 ff.

[3] For a very interesting and more adequate treatment of sensory differentiation in relation to 'character' cf. J. Jastrow, *Character and Temperament*, 1916, pp. 284 ff.

[4] Mill evidently set great store by this instance, for he gives it as his one example from 'mental science' of what he called the explanation of laws, and in an early essay, which he thought it 'desirable to preserve,' he sought to apply it to 'the peculiarities of the poetical temperament.' But it was to an essay of Martineau's—which however Martineau did not desire to preserve—that appeared in the same year (1833) and in the same periodical (*The Monthly Repository*) that, as Mill himself tells us, he originally owed it.

and pain will have a tendency to associate facts chiefly in the order of their succession." The 'mental habit which is commonly called imagination and is one of the peculiarities of the painter and the poet' is, he thinks, accounted for by the first 'sort of association,' while the second sort will account for those who, if '*they possess mental superiority*, will addict themselves to history or science rather than to creative art[1]!' Surely nothing could well be more flimsy! If the influence of the simple law is 'felt with peculiar force in the synchronous class of associations' as such, then it will be felt by all, whether they be affectively more or less susceptible[2]. But there is no evidence that such preference is general, nor indeed any that it is characteristic of poets. On the other hand, the assumption that persons who addict themselves to science have either inherited or acquired any predilection towards successional associations is at least equally groundless. No doubt the domain of painters and sculptors is in a sense restricted to *objects* as that of historians is in a sense restricted to *events*. Yet the former continually portray attitudes powerfully suggestive of action, and the latter if they are not mere chroniclers are at least as interested in the *tout ensemble* from which events proceed as they are in the events themselves. Talents are diverse and numerous enough, have many elements and may be classified in many ways; but, again, we may repeat that no one element will be decisive, least of all one so nearly imaginary. Everybody forms both synchronous and successive associations and for everybody sometimes objects and sometimes events are the more interesting. But, as Kant put it, time is the form of the inner sense, or as we say of experience, and consequently successional association is at once more ultimate and more elementary. And poetry, we may remember, is more primitive than science.

(ii) In the next place, if talents are always complex, and usually very complex, psychological 'constellations,' we have to inquire how their several constituents become a united and correlated whole. Well, let it not be forgotten that in some cases, where circumstances are too untoward, they never do. And in very many, probably in most, of the cases where the requisite correlation is achieved, it is the result of repeated trial as in other

[1] *Logic*, III. xiii. § 6 *fin.* Italics mine. The paper of Martineau referred to is reprinted in his *Essays, Reviews and Addresses*, 1890, i. pp. 40 ff.

[2] Cf. above, § 2, p. 437.

cases of acquisition and not a part of the original *Anlage*, save that here the prompting is due to pleasure rather than pain[1]. A keen pleasure in tones, to take a very simple example, leading to spontaneous efforts to reproduce them, may reveal a corresponding vocal adaptability, thereby prolonging and enhancing the pleasure and at the same time perfecting the correlation, in other words, combining these two main constituents of the singer's talent.

There are, however, cases, some think, in which talents appear at the very outset, like Minerva emerging fully armed from the head of Jove. Thus Huxley, referring to Mozart, Bidder and Pascal—stock instances of this class—says: "All these may be said to have been impelled by instinct as much as are the beaver and the bee[2]." There are, no doubt, some analogies between talent and instinct; but there also are some important differences. First of all, diversity between individual and individual is of the essence of the one as truly as practical identity between individual and individual is of the essence of the other. If every human child were as musical as Mozart or as mathematical as Bidder there would be no talk of 'special proclivity' whether of genius or talent in such matters at all. On the other hand, if only quite occasionally a beaver or a bee were found to display the extraordinary structural skill now characteristic of its species, to say that it was 'impelled by instinct' would be the last thing we should think of. Secondly, progress is an invariable mark of native talent, and that in two respects—precocity and preeminence; but it is never a characteristic of instinct. "If Mozart," said Darwin, "instead of playing the pianoforte at three years old with wonderfully little practice, had played a tune with no practice at all, he might truly be said to have done so instinctively[3]." And we might say too, that in proportion as his talent was instinctive, *i.e.* manifested without any prior progress by means of practice, in the same proportion it would certainly fail to shew any subsequent progress. Both these differences may be concisely expressed by contrasting instinct as correlation without variation and talent as variation without correlation. In the one case, the selection of the species has eliminated the variation and

[1] Cf. above, ch. xi, § 2, pp. 280 f.

[2] *Hume* (*English Men of Letters*), 1879, p. 113. (*Collected Essays*, vi. p. 132.)

[3] *Origin of Species*, 6th ed. p. 206.

consolidated the correlation: in the other, heredity has provided the variation leaving the individual and circumstances to realise the correlation. Finally, both the resemblance and the difference between instinct and talent, which analysis reveals, can, we think, be fairly well explained by genetic psychology. Here, as always, the principle of continuity is our primary clue. Between instinct and intelligence—*pace* M. Bergson—we can allow no absolute discontinuity. What is instinct now cannot have been instinct always: here too, if *natura non facit saltus*, the differentiation of the constituents must have preceded their synthesis, and then subjective selection must have played its part[1]. On the other hand, what is talent in the present and requires intelligence for its completion might quite well become instinct in the distant future. Even now its occasional approximation to instinct suggests an analogy between the two, though it does not justify their identification.

(iii) The discussion of the relation of talent to instinct brings us naturally to another relation, likewise much discussed, *viz.* that of talent to genius. It is conceded that they differ. The question is: do they differ in kind or do they differ merely in degree? Obviously much depends upon what we mean by these terms. In popular language both alike imply ability above the average and so far are taken to be synonymous; but whereas talent may be either native or acquired, genius is always regarded as inborn. In that case again the difference between native talent and genius may seem to be only a difference of degree[2].

[1] It is interesting to find that behaviour, instinctive in one species, occasionally appears as what might be called a talent in a particular individual of another. Cf. the Appendix by Darwin to Romanes's *Mental Evolution in Animals*, 1883, p. 367.

[2] This is the position taken by the late Sir Francis Galton in his famous book, *Hereditary Genius: an inquiry into its Laws and Consequences* (1869). The opening sentence of his preface together with that of his introductory chapter are decisive on this point. In the one he speaks of 'investigating the subject of hereditary *genius*': in the other he says: "I propose to show...that a man's mental *abilities* are derived by inheritance under exactly the same limitations as are the form and physical features of the whole organic world." (Italics mine.) He appeals to the physiologist, but to the psychologist he never appeals. He considers reputation, carefully scrutinised, as a safe indication of 'natural gifts'; and if asked to draw the line between talent and genius, would presumably have said a man is talented or 'eminent' if he is one in about 4000, and he has genius or is 'illustrious' if he is one in a million or more, has or deserves to have a public funeral and rank as a historical character. (pp. 10 f.) He

But psychology has generally been more discriminating. Kant called genius *meisterhafte Originalität*[1]. Ravaisson remarks "c'est dans l'invention que sont voir surtout cette force et cette grandeur d'esprit auxquelles on donne de nos jours le nom de *génie*. Le génie de l'aveu de tous consiste surtout à inventer, à créer[2]." Genius, says Gerard, "is confounded not only by the vulgar, but even sometimes by judicious writers, with mere capacity. Nothing however is more evident than that they are totally distinct.... Genius is properly the faculty of invention; by means of which a man is qualified for making new discoveries in science or for producing original works of art[3]." The original meaning of genius which carries us back to the mythology of ancient Rome may here be fitly recalled. According to this, as we read in the *Encyclopaedia Britannica*, "every man has his genius, who is not his creator, but only comes into being with him and is allotted to him at his birth." In other words, a man's genius is innate but it is not inherited, it pertains to the subject not to his psychoplasm, as his talents may do[4]. If that is so, the evidence for heredity, which is ample in the case of talent, should be lacking in the case of genius. And that surely is what we find[5]. But

makes no attempt by analysis to distinguish between them and seems utterly oblivious of the fact that such attempts have ever been made.

In a prefatory chapter to a second edition, published in 1892—of which I was ignorant when the above was written—Galton lays the blame for his use of the word 'genius' on Dr Johnson and regrets that it is too late to alter the title of his book and call it *Hereditary Ability*.

[1] *Kritik der Urtheilskraft*, § 49. But Kant's position is in other respects unduly narrow, in that he restricts genius to the domain of fine art.

[2] *Philosophie en France*, 4me éd. p. 245.

[3] *An essay on Genius*, 1774, pp. 7, 8.

[4] Cf. above, p. 443.

[5] As to heredity Galton remarks: "the statistics show that there is a regular average increase of ability in the generations that precede its culmination and as regular a decrease in those that succeed it" (*op. cit.* p. 84: cf. the illustrative table, p. 83). To such a generalisation genius would be a glaring exception, if it were inherited at all. But there are scores of instances of genius without any such evidence of heredity that anybody may recall; *e.g.*, mentioning names as they occur, Shakespeare, Newton, Cromwell, Napoleon, Wellington, Descartes, Leibniz, Kant, Beethoven, J. M. W. Turner. In fact, Galton himself remarks: "the kinship of the two Pitts, father and son, is often spoken of as a rare, if not a sole instance of high genius being hereditary" (*op. cit.* p. 105). But is it true that for either of them, able though they were, the title of "high genius" is or could be claimed? Other possible cases occur among Galton's round four hundred names, *e.g.* the two Scaligers and the two Bidders. But here again it is very questionable if there is any evidence of genius. As to the performances of arithmetical prodigies—the reader interested in these seeming marvels

it is only when the genius is very pronounced that the difference in kind between the two is clearly evinced by the striking originality or creativeness that only 'transcendent genius' displays. These are not the marks of heredity: on the contrary they are the diametrically opposite. Genius, in short, seems to point back to the subjective selection which we have taken as the main characteristic of our psychological individual, who has no *Anlage*. If so, then, whatever originality or creativeness the concrete individual may shew will be due not to his *Anlage* but to what he *makes* with that[1].

This is the ground of the distinction between innate and inherited which was adopted above[2]. In pre-Darwinian days this distinction was widely recognised, as the erudite work of Prosper Lucas clearly shews[3]. The continuous evolution of species, now the one engrossing problem, tends to obscure facts which the assumption that species are fixed, *while they last*, forced to the fore. Hence the famous controversy which then arose between E. Geoffrey Saint-Hilaire and Cuvier—the one stressing unity of plan, the other diversity of types. Lucas synthesizes the thesis and antithesis of these two disputants. In creation he finds two co-ordinate laws—a law of 'invention' and a law of 'imitation': the one analogous to imagination or improvisation and suggesting Plato's ideas, the other analogous to memory and suggesting repetition and routine. When we pass from creation to procreation the same two laws, he held, reappear; albeit with a more limited range and with other names. Procreation cannot transgress the bounds fixed by the species; but, within the limits of these, two laws are manifest—that of *heredity*, answering to imitation and perpetuating the species, and that of *inneity*, answering to invention and originating the individual. "La Nature," he says, "ressaisit dans la procréation de l'individualité, l'originalité, qu'elle perd dans l'espèce;...mais dans les limites mêmes où elle est circonscrite...il semble en vérité que toute sa liberté d'imagination et de composition lui reste." He continues: "Chaque individu a son type de vie. La personnalité est l'expression la plus absolue

will find an excellent psychological discussion in G. E. Müller's *Zur Analyse der Gedachtnistätigkeit u.s.w.* i. 1911, § 33.

[1] Cf. ποιητής in Liddell and Scott, 'troubadour' in Brachet, Ger. *Schaffensdrang*, &c.

[2] Cf. above, p. 445.

[3] *Traité philosophique et physiologique de l'Hérédité naturelle*, 2 vols. 1847–50.

de ce type, et *cette expression* se formule toujours[1]." That is to say, we find individuality wherever we find life; but we find it especially at the human level, where first we talk of personality. In natural history we are 'so careless of the single life' that we are usually content to stop at the species and to ignore the individual; but in human history personal individuality always counts, preeminently so when it is the personality of genius, which may be epoch-making[2]. Genius, then, is but a 'prerogative instance' compelling attention to the fundamental distinction between the experient and his *Anlage*—between inneity and heredity, to use P. Lucas's terms. Genius and invention have their source in the one, talent and imitation in the other. But all this amounts to saying that everyone has some genius; and that is true in the sense that everyone has *some* originality, some initiative. Subjective selection, more or less, is the *sine qua non* of individuality.

To sum up. So far we have only tried to make clear the transition referred to at the outset[3]. Setting out from the inherited *Anlage* which differentiates the concrete individuals of characterology from the psychological individual of general psychology we have, we trust, made good the concrete individual's title to that 'centrality' of 'subjective being' which the facts of heredity seemed to impugn. The concrete individual does not account for his *Anlage*, nor does that account all in all for him. We are now again back at the standpoint from which we set out first of all. What is new is simply this: in place of the formal duality of subject and object we have now to consider the 'special point of view' of an actual subject and the world that is there confronting it in perspective[4]. In other words we have to deal with a definite person in the historical world. The complete task of characterology—which is more than we can here attempt—is to trace the progress of the interaction of these two factors as far as it is displayed in what we call the formation of character. This interaction has, of course, its reverse side—the influence of

[1] *Op. cit.* i. pp. 101 f. Further to elucidate and support his position Lucas cites a crowd of authorities, eastern and western, early and late, all upholding in various forms the creatianist doctrine already mentioned. Cf. above, ch. xvii. § 4, p. 424.

[2] Cf. W. James's essay, "Great Men and their Environment," *The Will to Believe and other Essays*, 1897, pp. 225 *fin.*–229.

[3] Cf. above, ch. xvii, § 1, p. 409, note 1.

[4] Cf. above, ch. xvii, § 4, p. 428.

the historical person on the world. With that aspect, however, psychology has no immediate concern; therein lies the difference between characterology on the one hand and history and biography on the other, which *are* concerned with both aspects. But all alike—it is worth while recalling in passing—depend on the cross lights afforded by what we have called the transparency of the social medium. *Pari passu* as this grows clearer it reveals more: the consciousness of self, and the practical acquaintance and spontaneous sympathy with other selves, likewise become wider and deeper. General psychology, the science of individual experience as such, then first becomes possible, and provides at length the clue to characterology and comparative psychology which aim at envisaging, *as it were from within*, the concrete individuals among whom we live and move[1].

Such a living interpretation from within of 'the thoughts and intents of the heart' is the distinctive ideal of characterology, not a lifeless 'psychograph' constructed with the help of statistical and correlational methods. Only in this way is any continuity throughout psychology as a whole to be maintained. As the details of characterology lie beyond our province it only remains here, first, to discuss certain marginal questions which are not altogether special, and which at the same time concern this continuity, and finally, to bring the two, characterology and general psychology, into line.

Intelligence, Sentiment and Character.

§ 4. Individuality, character, personality, at the human level are fundamentally identical and often used as synonymous. But the relation of what is called intelligence or intellect to character is much disputed. This is one of the questions on the border line that we may fairly be called upon to discuss, both on its own account and also as a step towards rendering the concept of character itself more precise. At the outset, however, we must object to the terminology. To talk of the intellect as to talk of the will is, as already said, to lapse back into the old faculty theory of mind that we claim to have outgrown[2]. It is the

[1] Cf. above, ch. xv, § 1, p. 369, § 3, p. 381; ch. xvi, § 2, pp. 394 *fin.*–396; and in the present ch. § 1, p. 433 f.

[2] Fouillée and Malapert, for example, are guilty of the most flagrant *ignoratio elenchi* in arguing this question against Ribot, and largely on this account. Malapert

individual subject that thinks as it is the individual subject that wills. The activity is one, yet the differences between volition and intellection are manifest. The one is primary, concerned that is with ends—the conservation or the betterment of self; the other is secondary and instrumental, concerned at the outset with the means to these ends. No subject limits itself[1], but the need of means shews it to be limited, conditioned by the object with which it interacts. The elaboration of intellection as an 'organon' subserving this interaction is, as we have seen, the outcome not of individual purpose *ad hoc*, but of that inter-subjective intercourse which kindles 'the cross lights of the social medium,' as said just now. Hence so far as it is effective and deserves the name of 'intellect,' that organon is a structure correlated with what is objective in the epistemological sense and so far objectively determined. So far, then, it is altogether impersonal. If a man chooses to think he must play the game if he is 'to score'; but the laws of the game are not of his devising. Accordingly in common parlance a man's character and his intelligence are always regarded as distinct and largely as independent. His character is displayed in the use he makes of this organon; he may improve it, he may neglect it, or he may abuse it: so far he has a certain responsibility—the sole criterion of personal imputation. In our terminology, then, this organon is inherited, not innate, pertains to the individual's *Anlage*, not to his 'subjective being.' It is an 'endowment' for which, as such, he is neither to be praised nor blamed.

But we reach this conclusion, it will be observed, from the standpoint of structural psychology, that is to say by regarding intelligence analytically and interpreting it in the strictest sense[2].

speaks of the intellect as itself 'preferring' and as possibly 'becoming predominant and exclusive to the point of effacing both sensibility and activity' (*Les Éléments du Caractère*, 2me éd. 1906, pp. 51, 50). Fouillée at times seems to identify intelligence with consciousness, and argues that because intelligence is instrumental in the formation of character it must therefore be a constituent of the character formed (*Tempérament et Caractère*, 4me éd. 1901, pp. 107, 109). For Ribot's position cf. his *Psychologie des Sentiments*, 10me éd. 1917, pp. 391 f., 439 ff. and his references to Schopenhauer.

[1] Hence Descartes' famous doctrine that "the will may, in a certain sense, be said to be infinite" (*Principles of Philosophy*, I. xxxv.) and Carlyle's corollary that it is useless to offer even a shoeblack half the universe and expect him to be satisfied. Cf. above, ch. xvi, § 2, p. 392 *fin.*, p. 397 *fin.*

[2] Such strict intelligence is of course, we must remember, an unrealised ideal, not a fact. Cf. above, ch. xii, § 2, p. 293 and p. 295.

From the functional standpoint, however, and taking intellection as we actually find it, new aspects of the relation of what is called intelligence to character come into view. Summarily to ignore these might be defensible but would hardly be wise. In the first place we must not overlook the fact that the intellectual *Anlage* of the concrete individual is entirely the result of the progressive experience achieved by the subjective selection of his ancestors and that he himself is gradually nurtured in and by the social tradition which they have built up and preserved. The solidarity or organic unity of human society is due to, and cannot be sustained without, intelligence: only as a 'member' of this 'over-individual organism[1]' is the concrete individual a person, and only through his intelligence is this membership possible. We cannot, then, regard character and intelligence as independent. The only points we can insist upon are (1) that there is only one kind of intellection in question when we talk, for example, of 'reason' or 'common sense,' and (2) that this so far does not serve to *define* character.

But further, when we talk, as people not uncommonly do[2], of intelligence without this restriction, then indeed—leaving the fact of more or less imperfection aside—some originality, as well as 'private judgments,' subjective prejudices or prepossessions in divers forms, is always to be found. We see originality in what psychologists generally call constructive or creative imagination: we see subjective bias wherever belief (or 'make-belief') is the result of an affective-volitional attitude instead of being objectively grounded (or 'assumed')[3]. Both are unquestionably intimately connected with personal character[4]. Also, though both involve a certain selective synthesis yet in neither case can this be identified with the synthesis which connects intellect with logic. The same ideational continuum is 'manipulated' in all, but objective relations are the sole determinants in the last, and subjective interests the final cause in the other two. Between these, however, there is still a difference: prejudices and pre-

[1] With this concept the writer has tried to deal briefly in *The Realm of Ends*, ch. vi. pp. 117–24.

[2] But cf. above, ch. xii, § 5, p. 302.

[3] Cf. above, ch. xiv, § 4, pp. 354 ff., § 5, p. 358.

[4] We are reminded here of Fichte's saying: "Tell me of what sort a man is and I will tell you what philosophy he will choose."

possessions lead us to cast about for confirmation of positions already adopted, our characters being what they are; but creative imagination continually opens out new possibilities which may influence the further development of character profoundly. And when that happens such influence has often been attributed to inspiration, good or bad, but never to 'intellect' as an organon. For then, we have got behind everything instrumental and seem, so far as psychology goes, to have reached the living personality on which all structure ultimately depends. In a word—putting it roundly—intelligence may imply a complete psychosis in a way that intellection does not. So far, then, intelligence will manifest character, whereas intellection need not.

This brings us naturally to another question involving the relation of character and intelligence, *viz.* that concerning the development of sentiments. Much has been written in recent years by psychologists of repute about what they call the 'logic of the sentiments[1].' Some of these writers, like Ribot, lay the chief stress on 'emotional or affective reasoning': others, like Paulhan and Urban, talk mainly of affective generalisation and abstraction, of affective signs, &c. The views of the first we need not further consider, as the facts of their so-called 'reasoning or emotioning' have been already dealt with under the heading Belief. Those of the second it is more worth while to examine for a moment; for the exposition they offer of the development of sentiment is hardly compatible with the exclusively functional being of the experient subject, on which we have been led to insist. We seem to see the presentationism that has dogged our steps from the first here masquerading anew under the guise of an affective logic. It purports to shew that, as experience advances, its affective-volitional side, *as such*, discloses a 'content' and structure analogous to what is found on its cognitional side in sensations, images, ideas and symbols and the substitutions or transformations they may undergo. This attempt to assimilate the two is all the more misleading, because a seemingly slight but really vital change of statement would

[1] A reference to the following may suffice:—W. M. Urban, *Psychological Review*, viii. (1901), "The Problem of a 'Logic of the Emotions' and 'Affective Memory'"; Ribot, *La Logique des Sentiments*, 1905; H. Maier, *Psychologie des emotionalen Denkens*, 1908; W. M. Urban, *Valuation: its Nature and Laws*, 1909, chs. iv and v.

make it perfectly true. We have only to regard the 'content' of internal perception or self-consciousness as the whole of experience and the presentationist has a case: we have only to recognise that self-consciousness is never more than a part of experience—that experience is always more and wider than knowledge, involving function as well as structure or content—to see that his case is gone[1]. Let us now look at the facts.

We have already noted that in talking of feelings as respectively sensuous, aesthetical, intellectual and so forth, we are, in fact, referring both to pure feeling as an ultimate subjective factor in all experience and also to the definite objective content that pleases or displeases. At the self-conscious level we come indeed to know about this affective factor, but this knowledge —so far from identifying what is 'subjectively subjective' with what is subjectively objective — only reveals their essential duality[2]. When, however, we talk of sentiments we refer not merely to a specific content and the feeling its presence or absence may occasion, we usually imply also the conative attitude, the love or hate that the feeling would evoke. Further, sentiments thus presuppose only the potentiality of the affective-volitional attitude, not its actuality; whereas feeling and emotion, as such, involve *psychologically* actual situations—situations, that is, which are either real, remembered, expected or assumed. Every actual experience of feeling, every emotional reaction is an event in the experient's life. Sentiments, however, are not events, and so may persist apart from actual situations: in other words, they are dispositional[3]. As such they carry us back

[1] Cf. above, ch. i, §§ 5, 6, pp. 23 f.; ch. xv, § 2, p. 273, § 3, pp. 376 *fin.*–379. It would be unfair to assume that all the writers referred to are deliberate presentationists; but they seem to have unwisely adopted a plausible standpoint which fatally obscures the true significance of the many interesting facts which they have the merit of first bringing together. Thus Urban denies "that feeling is wholly subjective, wholly different from sensitivity [or 'feeling-tone'] and therefore incapable of undergoing processes analogous to generalisation and abstraction" (*Valuation: its Nature and Laws*, p. 134). Cf. also pp. 97 ff.

[2] Cf. above, ch. ii, § 6, pp. 57 f.; ch. x, § 2, p. 245 and p. 247.

[3] And so, whereas the recurrence of events, identical situations, that is to say—in consequence of 'the law of novelty'—diminishes the intensity of the feeling or emotion they call forth, dispositions—in consequence of what we might have called 'the law of habit'—become stronger and more persistent the more frequently they are brought into play. Cf. above, ch. x, § 2, p. 255; ch. iii, § 7, p. 98; Höffding, *Psychologie*[3], pp. 384 f.

It hardly needs to be said that though all sentiments are dispositional not all

beyond present circumstances to the subjective selection which alone will ultimately account for them. But this distinction between sentiments and feelings or emotions can be made more precise. We do not speak of sentiments as either sensuous or intellectual for example[1]; nor do we speak of sentiments in the case of any particular emotion.

As to the first point, the specific contents with which sentiments are concerned, regarded broadly, come into line with interests and personal affections: they imply permanent values, personal or impersonal; and in fact, they have been so regarded[2]. Valuation is doubtless an intellectual process, as we have already seen, but it is not a process with a logic of its own, though its specific domain, that of conation, is distinct from the domain of cognition[3]. To ignore the *identity* between these two domains, so far as intellection is concerned, while maintaining an intellectual *analogy* between them, where it is not, strikes us as a *tour de force* only to be concealed by treating the feeling and attention which subjective selection involves, as nothing but 'content.' There is no experience of which this is true, though a defective analysis of self-consciousness has led the presentationist to think there is. The objective complex, that is valued positively or negatively and loved or hated accordingly, may be represented by a concept that is abstract and symbolic—a case of 'imageless apprehension'—but to infer from this that sentiment is 'intensityless appreciation' is to miss the meaning of

dispositions are sentimental. The only thing common to them all is this 'law of habit.'

[1] "I never heard the pain of gout or any other severe feeling called a *sentiment*," said Reid (*Active Powers*, v. vii. Hamilton's ed. p. 674). "We do not speak of a man's *sentiments* concerning a mechanical contrivance, or a physical hypothesis, or concerning any speculative question whatever, by which the feelings are not liable to be roused or the heart affected," said D. Stewart (*Philosophical Essays*, Note D).

[2] Cf. A. F. Shand, "Character and the Emotions," *Mind*, N.S. v. (1896), p. 217. Unfortunately there is no word either in French or German that exactly corresponds to our word 'sentiment' in this respect; though the German *Gesinnung* comes near to it, as the following passage from Lotze's *Grundzüge der Psychologie* (1881), § 5, will shew. *Gesinnungen* he there describes "as permanent dispositions of heart (*Verfassungen des Gemüths*) due to the fact that once for all a definite value is placed on certain ideational contents (*Vorstellungsinhalte*): they are therefore—*e.g.* piety or patriotism—not themselves simple definite feelings [=feelings or emotions] but causes whence, as circumstances determine (*nach Lage der Umstände*), the most diverse feelings may arise."

[3] Cf. above, ch. xvi, § 2, pp. 388 f.

disposition altogether, to confound the abstractness of the concept with the potentiality of the sentiment. Between these there is obviously no analogy whatever. There is just as little analogy between the word as 'a substitutive sign' and the sentiment as a disposition. And so we come to the second point.

We do not speak of a sentiment of fear or a sentiment of anger although we speak of a timorous, and of an irascible, disposition. But the *disposition* in these cases does not depend on a feeling of value; though the actual manifestation of emotion, when it is due to sentiment, *is* determined by a feeling of value[1]. It is this relation between emotions and sentiments that we have now to consider somewhat further. The manifestation of special emotions long precedes the development of sentiments; in fact, emotional manifestation as the immediate result of feeling we have seen to be primordial and the genetic precursor of voluntary movement[2]. Emotion then is initially a reaction determined from the objective side; but this ceases to be the case when emotion is consequent on sentiment: here we must rather say that the initiative lies on the subjective side. In saying this we realise a certain defect in the term 'sentiment' due largely to its etymology. Sentiment regarded as affective-volitional disposition implies more than feeling, the 'more' which the German term *Gesinnung* supplies. A genuine sentiment[3] implies both valuation and motivation, but as commonly employed, the former alone is apt to be predominant. It is however *qua* motive that sentiment is entitled to be called 'dispositional.' Now while the same emotion may be determined by the most varied objects the same sentiment may determine the most varied emotions. Hence we never speak of the sentiment itself as a reaction; for, as such, it rather initiates reaction. Strictly speaking, it is, of course, always the subject that reacts. Since, however, sentiments appear first on the human level and are in fact acquired, we are surely warranted in saying that they belong to character, and that their part in determining emotions is thus explained; for, as we shall see more clearly presently, the formation of

[1] On the contrary the timorousness or irascibility of a concrete individual depends primarily on *Anlage*. Cf. above, § 3, p. 444.

[2] Cf. above, ch. ii, § 5, p. 52; ch. xi, § 2, p. 276 *fin.*

[3] With the 'fatty degeneration of the soul' called sentimentality we are not now concerned.

character means just this transference of initiative from the objective to the subjective side[1].

But it is time now to ascertain more precisely in what sense we are to understand character. For, in fact, character is used sometimes in a narrower, sometimes in a wider sense: the one going back to the personality 'characterized' and its development; the other stopping short at the characteristics it displays. There is here a difference of sense comparable to that between root and branches, circle and periphery, author and work. The one deals with the obvious and external, and hence is apt to be confused with reputation. The literary 'portraits' common in all ages—from the *Characters* of Theophrastus to the *Memories and Portraits* of R. L. Stevenson—might be included under it[2]. The other means something which it requires a clue to find; for it is neither obvious nor external. The most important recent writers on character—they are chiefly French—adopt in the main the wider and more external, one might almost call it the physiognomical meaning of the term[3]. From this to a merely classificatory or comparative treatment of characteristics is almost an unavoidable step; and, then, in place of an investigation of character as such and its gradual development, we have descriptions of various *types* of characters—about which no two of the writers agree. The types again are selected not so much by any insight into character as a whole as by singling out some salient feature on the basis, as already said, of the outworn faculty-psychology[4].

[1] Cf. below, § 5, pp. 462, 469 *fin.*

[2] They are at any rate continuous with it, and help to account for its lack of method, its antiquated standpoint, and its frequent failure to distinguish what is primary from what is secondary. Cf. above, § 1, p. 431, § 3 *fin.* p. 453.

[3] Cf. Mr A. F. Shand's excellent criticisms of two of these writers, *viz.* Fouillée (*Mind*, N.S. v. 1895, pp. 125 ff.) and Malapert (*Mind*, N.S. viii. 1899, pp. 242 ff.).

[4] Thus Malapert talks of character as determined now by one faculty, feeling, as its mainspring (*ressort principal*), now by another, intelligence or will. So he gets six principal genera, *les Apathiques*, *les Affectifs*, *les Intellectuels*, etc. All this reminds one of the Roman fondness for nicknames—Flaccus, Strabo, Naso, Calvus and many more. But after all a feature is not a face. Malapert does not, it is true, overlook correlations; but he does little towards tracing them to their source. Mere characteristics as features do not correlate themselves. Yet he speaks of the *fonction prépondérante* as a *trait profond et essentiel qui donne à toute la physionomie son cachet propre et distinctif* (*op. cit.* pp. 121, 196). Such playing fast and loose with metaphors may shew literary elegance, in which indeed Malapert is not lacking—witness the various 'portraits,' historical or anonymous, that he has sketched in the course of his book—

Kant, also referring to the ambiguity in the term character, distinguishes between the use of it in which it may be confidently ascribed to everybody and a stricter use in which it belongs to very few. To have this or that character (*als Sinnesart*) is, he says, a matter of *naturel* or temperament: to have Character (*als Denkungsart*) implies a subject conscious of something that he has himself acquired, *viz.* self-control in accordance with fixed principles that are self-prescribed. It is not a question of what nature (his talent and temperament) makes of the man, but of what the man makes of himself. Talent may give him a market-value (*Marktpreis*) in respect of the services he can render; temperament may give him an affection-value (*Affectionspreis*) as a congenial and pleasant comrade; but character gives him [or may give him] an inner worth (*Werth*) that is beyond all price[1].

The Formation of Character as the Development of Personality.

§ 5. It is the acquisition of character in this stricter sense that we propose here to consider. It suggests at once a connexion between characterology and axiology, to which some reference must presently be made. Meanwhile there are two points to note which our discussion of the meaning of character has brought out: (1) that the two factors of character in the wider sense, the so-called natural or extrinsic and the spiritual or intrinsic, are to be sharply distinguished, and (2) that *rank* or degree of development as personality rather than variety or fixity of *type* is the one thing of essential moment in the formation of character in the stricter sense. Both these points suggest a connexion or rather a comparison between characterology and biology: this —though somewhat of a digression—we may notice at once, trusting it will be helpful on the whole. In animal life and in human experience alike, the lower we descend in the scale the less initiative or selection we find; the higher we ascend,

but it is not psychology. In fact there is but one mainspring or *primum movens* in experience, *i.e.*, the experient himself, let his physiognomy be what it may.

[1] *Anthropologie*, § 87, Hartenstein's ed. 1868, pp. 609, 614 ff. The words in brackets are inserted because Kant himself tended to use character too exclusively in a moral sense. On Kant's distinction between prices and inner worth it may be remarked, in passing, that the former are liable to the law of diminishing return. But character, he held, may progress towards perfection without limit and so have a worth which is beyond all price.

the wider the range of adaptation and the greater the diversity displayed. Yet there is one important difference. Life has been defined as the adjustment of internal relations to external relations; it tends directly, that is to say, only towards self-conservation. But character shews itself rather in a certain adjustment of external relations to internal relations[1]; in other words, the end here is the self-conscious realisation or betterment of self. *Simplex in vitalitate, duplex in humanitate:* the human individual is amenable to both principles, does not merely live from hand to mouth but lives also in the domain of values and is possessed of ideals which it strives to realise[2].

But there is still a further difference. The advance from a lower to a higher form is in biology a phylogenetic process: in characterology it is an ontogenetic process[3]. The biological parallel to the formation of character is to be found, that is to say, in the progressive development of species, not in the natural history of the individual animal. What the animal cannot do, man may. "For the animal," as Hegel remarked, "the process of the species is the highest point of its vitality." The leopard cannot change its skin: it never indeed gets so far as to know

[1] As bearing on this difference cf. A. R. Wallace's essay, "The Action of Natural Selection on Man," *Contributions to the Theory of Natural Selection*, 1871, pp. 311–17.

[2] There are, of course, times for everybody, when the restraints of circumstance make self-conservation—even as a condition of self-realisation—all engrossing; when all the choice there is seems to be confined to the struggle for the *means* of existence, and the pursuit of freely chosen *ends* to be out of the question. For some, such adversity is not momentary, but perennial, those whose tragic lament is that they 'never had a chance.' Doubtless there is truth in the moralist's commonplaces about the blessings of adversity and the snares of prosperity; but the broad fact remains that character developes best where it is possible for a man to make more opportunities for self-realisation than he finds, and that in proportion as such possible opportunities fail, the formation of character may be arrested, though life still goes on. It must not, however, be forgotten that what the circumstances are that hamper a man depends a good deal upon the ends which he is seeking to attain; and the higher these are the less circumstances count. Cf. below, p. 469.

[3] This statement may seem to conflict with others in ch. xvii where an analogy between psychogeny and biological ontogeny is upheld (cf. § 1, p. 410, § 4, p. 425). There, however, the comparison referred to the development of the psychological individual rather than to that of the concrete individual. The capital fact that now engages our attention—*viz.* that historical persons are not only severally *sui generis*, as we say, but personalities that may acquire widely different psychological ranks—was not then before us. (Cf. § 2, p. 417.) But in so far as ontogeny is palingenetic and so presupposes phylogeny, there is obviously no biological opposition between the two—a fact that only adds point to the psychological difference referred to here.

that it has a skin, for "it never gets so far as being for itself at all[1]." The whole experience of the animal, in a word, is marked by 'immediacy and isolation' (what Hegel called *Einzelheit*); having no trains of ideas[2], the animal devises no plans—makes no tools and cooks no food, for example[3]. Compared with a man even the highest animal resembles an automaton. Hence Leibniz, while he likened the animal 'soul' to a machine that God invented, represented 'spirits' as themselves "architectonic, each being like a small divinity in its own sphere,...each having its special (*propre*) world [standpoint in the one world, that is to say] where it sometimes does marvels[4]." In other words, man in becoming spirit, *i.e.* self-conscious and reflective, acquires being for himself over against the world and sets to work mediately making himself by his conduct in it.

This is a process in which concrete individuals may rise (or fall) much or little. It is this scale of rank that has its biological parallel in phylogeny. But in biology such gradations of rank apply to species and are mainly—though not exclusively—the result of natural evolution: in characterology such gradations apply to concrete individuals and are the result mainly--though not exclusively—of their several developments as personalities. And the difference is profound, a difference of category and not merely a difference of degree[5]. The only continuity between the two is that which all evolution implies—gradual advance or, it may be, gradual decline[6]. In speaking of Nature as 'the

[1] *Encyclopaedie*, i. § 221.

[2] Cf. above, ch. vii, § 2, pp. 188 f.

[3] In spite of the obscurity on which Dr McTaggart animadverts (*Commentary on Hegel's Logic*, 1910, §§ 274 ff.), Hegel's dialectical account of the transition from the level of life to that of spirit is illuminating, at least if we interpret it psychologically. When Hegel (*Ency.* § 222) says, "the death of the merely immediate and isolated vitality is the procession of spirituality (*des Geistes*)," may it not be the advance to the 'idea of the true and the good,' a new birth—like that of the phoenix arising from its ashes—that he has chiefly in mind? Intersubjective intercourse puts an end to the *isolation* as the transsubjective standpoint thereby attained puts an end to the *immediacy*.

[4] *Monadologie*, § 83. Cf. *Théodicée*, § 147.

[5] Cf. Bergson, *L'Évolution créatrice*, 1907, pp. 198 ff.

[6] Degeneration is comparatively a rare though regular biological phenomenon both in phylogeny and in ontogeny; and here again we find parallels in characterology. So too, just as there are phyla or lines of species known as stationary or 'persistent' types, which have neither progressed nor degraded, so there are also races or societies

forecourt of spirit' (*Vorstufe des Geistes*) Hegel acknowledges this continuity. At the same time in contrasting the isolation and the immediacy of 'the living individual' with the community and the transsubjective outlook that 'spirit' and personality imply, he brings out the higher category to which they belong[1]. The general synthesis of this personality from its irreducible minimum onwards we have in the course of this essay tried to trace. It remains to bring the concrete individual into line with this, now that we have tried to clear up 'the problems that beset it.' Though these preliminaries have been tedious, this final step may be brief.

Gathering up results—we call human beings persons when they can talk intelligibly of Me and Mine; when, that is, they have attained to the consciousness of Self as continuously related to whatever affects them and whatever they can affect. It is not the bare cognition of situations, but the conative attitude towards them, that primarily distinguishes one person from another. The Mine varies with Me, though ultimately there is but one objective universe for all; and were such subjective selection concerned with the world *sub specie aeternitatis* so to say, then—in that realm of essence—Schopenhauer's *operari sequitur esse* might be all there was to say. In this actual world of time and change, however, it is equally true that *esse sequitur operari*. Here being is always becoming, and development implies progression as well as stability. His personality, then, will not be shewn merely in what a man is but in what he is striving to be. But to be personal, the ideal for which he strives must be his own, must originate in himself—however impersonal its goal may be. These two characteristics, stability as the basis of progression, and originality in shaping its course, seem to be the two essentials of any living personality. We may now attempt a general survey of concrete individuals in respect of these[2].

Whereas the mere animal practically begins and ends with the stability of its instincts—is from first to last confined to the level

and individuals of which the like is true. Such cases, however, belong to the details of characterology and do not now concern us.

[1] This higher category, called *Cognition*, is here—following a hint of Dr McTaggart's—identified with the self-consciousness that renders the true and the good explicit for the experient. Cf. Dr McTaggart's *Commentary on Hegel's Logic*, p. 292.

[2] Cf. above, ch. xvii, § 2, p. 415 and p. 417.

of its species—man only gradually achieves personal stability in passing from that level through the instability of the imagining and desiring self of childhood to the steadfastness of a reasonable and autonomous being[1]. But it is notorious that there are many who never, completely and all round, develop beyond the larval stage, are never altogether 'grown up'; but in one respect or in many behave like children all their days. Ribot calls such people *les instables ou polymorphes*: he even regards them as more or less morbid cases of arrested development or '*infantilisme psychologique*[2].' That however is true of them only at the lower limit; but at least a partial and imperfect development of their personality holds good of them all. As Volkmann would say: they may shew some of the traits of character but have no definite character of their own. And for our purpose, we may follow Ribot and leave them out of account[3].

[1] Cf. ch. xv, § 1, p. 366; ch. xvi, § 2, p. 389; ch. xvii, § 2, p. 413.

[2] *Psychologie des Sentiments*, pp. 387, 422.

[3] Closely connected with stability of character there is what is known by the vaguer term 'strength of character.' We may then digress for a moment and endeavour to define the latter somewhat further and to distinguish the two. No one confounds strength of character with the violence of passion—a sure sign not of strength, but rather of weakness, of character. Nor is mere wayward 'self-will' or stupid obstinacy mistaken for strength of character: it again is a sign of the lack of it. In short there can be no strength of character without stability and yet the two, though inseparable, are in a sense distinct. In other words, stability is a static notion: it shews itself, in opposition to pressure and to attraction alike, in steadfastness in the face of difficulty and discouragement as well as in the presence of temptation (cf. Sully, *The Human Mind*, 1892, ii. p. 262). Some who are strong in the one way are often not equally strong in the other. No doubt strength is implied in all this, but strength is also a dynamic notion, and so we often speak of *force* of character. So, as Malapert points out, we distinguish between men who are 'masters of themselves' and others who are 'men of action.' The energy displayed by men of action, their 'power of work,' is however, largely a matter of endowment, physical or intellectual vigour, due primarily to *Anlage* and varying with age and health. But power in this sense may be regarded, like wealth, as consisting in resources at the subject's disposal, rather than as an attribute of the subject itself. Nevertheless that interaction between subject and object which all experience involves implies some sort of inherent activity on both sides. We attribute to matter, without any misgiving, the possession of potential and actual energy. Yet to speak of 'psychical energy' has seemed to some a 'scandal'; though, beyond any question, mind not matter is the source of this concept. We can and we do exert ourselves; we have power but not unlimited power (cf. above, ch. xiii, § 6, p. 344; ch. iii, § 3, p. 73; ch. x, § 3, p. 263). Simply as power, however, this psychical energy, like physical energy, is, as such, directionless: though essential to the acquisition of experience it is therefore no index of character. Thus, while it raises many fundamental questions which would soon carry us far beyond the domain of psychology, it does not further concern us here.

As to originality—even a child may give evidence of this and continue to do so after attaining to man's estate; and yet may remain sadly lacking in any stability of character. In fact, strange as it may seem at first sight, the child and the adolescent, though less stable, are often more original than those of maturer years. The mastering influence of the social environment, however, fully accounts for this fact[1]. In shaping their lives the great majority of mankind become *gens moutonniers*: they may be legally persons, but their psychological personality approximates to *nil*. Kant would stigmatize them as *Nachäffer*, servile apes of the man who has a character. Ribot styles them *les amorphes*, because psychologically they have no form that they can call their own. What they are depends on where they are. "*Ils ne sont pas une voix, mais un écho. Ils sont ceci ou cela au gré des circonstances.*" Here again Ribot exaggerates. Even in imitation there is some subjective selection and so far some character; and when the model is selected as exemplifying the subject's own ideal, there may be a good deal. Still it is not the attraction of sympathy—that *may* promote personal development—it is the domination of prestige[2], which tends at length to repress it, that we have here in view. The 'principle of imitation,' as Darwin called it, may facilitate the development of talents; but it prevents the development of character. It is effective in drilling *Beamten* but not in educating men; as the example of Germany proves. A man's conduct may shew all the stability that conformity to custom requires; and yet he himself will be devoid of character in the stricter sense, in proportion as he is lacking in personal initiative, personal convictions and any ideal of his own life. As regards the essentials of character, he again, as Ribot holds, is of little account. He may be described along with others of a like type—whether in respect of idiosyncrasies, vocation, or what not. But with individual psychology of that sort—comparative or morphological characterology, it might perhaps be called—we are not here concerned: beyond the taxonomy of personalities we do not propose to go.

How now are we to differentiate concrete individuals in respect of psychological rank as persons or to indicate the development of the same individual in this respect? This question brings us

[1] Cf. above, ch. xvii, § 3, p. 419.
[2] Cf. above, ch. xii, § 1, p. 290.

back to the connexion between axiology and characterology referred to at the beginning of this section. Personality and values, as we have seen, are mutually implicated. The only psychological standard for assigning gradations of rank to values and motives we found to be the thinking and willing self[1]. And now the only basis we have for determining the rank or progress of personalities, so far as psychology is concerned, consists in the synthetic preferences which their ideals of life disclose. In appraising the world the individual at the same time ranks himself: find the microcosm and you find the man[2]. His world is circumscribed by his interests: the narrower these are, the narrower it is, and the narrower it is, the lower his place in the scale of personal development, the less he knows of himself or of his possibilities[3]. On the other hand, the wider the world his life-plan embraces, the more systematic and unified his sentiments and practical maxims will be.

Normally there is progress as the individual advances from adolescence to maturity; and he may exemplify several 'types of character' in succession as wider experience leads him to new valuations[4]. Again if we compare savage with civilised races we find a similar development: 'sense' tends to be supplanted by sentiment, and fugitive desires by fixed maxims. The fermentation, the 'growing pains,' of youth and immaturity are symptomatic of the transition from the lower level of immediacy and mere vitality to that higher level, where the thinking and willing self clearly discriminates itself from, and even opposes itself to, the stream of circumstance in which hitherto it has been more or less passively borne along. The *Duft der Geisterwelt*, as Hegel called it, begins to breathe through the man and he emerges as a person of character, a man with a will of his own.

[1] Cf. above, ch. xvi, § 2, p. 392, § 3, pp. 402 f.

[2] Cf. above, ch. xvii, § 2, p. 414. Here the biological analogies suggested above are illuminating. An animal ranks higher the wider the range in space and time to which its behaviour is adjusted: so we say, a person ranks higher in the scale of (psychological) character the remoter and the more harmonious the ends for which he strives. Cf. H. Spencer, *Data of Ethics*, chh. vi. and vii. In both these chapters and especially in the latter the reader will find an abundance of detailed illustration of the truth we can here only briefly epitomize.

[3] Cf. above, ch. xv, § 1, p. 362.

[4] Cf. Malapert, *op. cit.* 3me partie, ch. i. "La Formation du Caractère," pp. 237 ff., Paulhan, *op. cit.* 3me partie, ch. iii. "Le Caractère individuel," pp. 203 ff.

The more single and resolute his purpose, the more 'inward' the self that he seeks to realise, the greater his progress may be. Yet, such progress, though a psychological advance, might quite well be a moral decline. Even Kant allowed that "a man of bad character (like Sulla), though he excites our horror by the tyranny of his settled maxims is still an object of our admiration as compared with a good-natured man of no character at all[1]." But good or bad, he is more of a person, has psychologically more character the more he shews of singleness of aim, the less easily he swerves from this, and the wider and more coherent it is.

Crises in the development of such personality are the rule rather than the exception, especially when a complete transvaluation of all things divides the old life from the new. Psychologically it could hardly be otherwise, for the profounder the change the more central it must be. "Whatsoever turns the soul inward on itself tends to concentrate its forces and fit it for greater and stronger flights," Burke has somewhere said. This is a fact admitted on all hands[2]. What is familiarly known in religious experience as conversion or 'second birth' is the most striking instance of it[3]. This 'change of heart' is often deceptive and has only 'a temperamental origin[4]'; but sometimes, at any rate, it is genuine; and, in the case of those whom James calls 'religious geniuses,' is so impressive as to compel universal reverence. Such

[1] *Anthropologie, loc. cit.* Cf. W. M. Urban, *Valuation, its Nature and Laws*, 1909, p. 287, Bosanquet, *Individuality and Value*, 1912, p. 345.

[2] Even by Schopenhauer (*Welt als Wille und Vorstellung*, § 70) who reconciled it with his fundamental doctrine only by the help of Oriental metaphysics.

[3] What is true of it is true in a lesser degree of other crises and we might therefore pass them over without special notice. But it may be well to take an instance of such a crisis in what has been called 'the bad self.' The readiest that offers—though many better in fact or fiction might doubtless be found—is that of the Duke of Gloucester in Shakespeare's *Richard III.* Unable, owing to his personal deformities and forbidding appearance, to take a leading part in the frivolous court life of the early years of his brother's reign, he ends his soliloquy in the first scene of the play with the resolve:

> And therefore—since I cannot prove a lover,
> To entertain these fine well-spoken days,—
> I am determined to prove a villain
> And hate the idle pleasures of these days.

So indeed he proved. "I am a villain" are almost his last words the night before his death on Bosworth Field.

[4] Cf. W. James, *Variety of Religious Experience*, 1902, pp. 236 ff.

were men who proclaimed that 'they had overcome the world, being in it but no longer of it, had realised 'a peace passing all understanding' and found 'strength to do all things' in the consciousness of an indwelling presence deeper than their self-consciousness—verily a state of *εὐδαιμονία* in the highest sense; for the guiding 'genius' that inspired this new life was, they believed, divine[1]. And their lives confirmed their profession, whatever we may think of the mysterious and seemingly mystical source to which they appealed. They *were* superior to the weakness of the flesh, the fear of men and the temporal anxieties that hold so many in bondage, leading perhaps to the 'self-loathing and self-despair' from which this new 'birth' is the deliverance. Thus, for these religious geniuses at any rate, 'the divided self' ceased to be, and the inner peace and unity they professed to have found, appeared in its stead. With a single eye and a single aim their whole being seemed full of light and joy. At one in mind and will with the ground of all reality and the source of all good, as they conceived it, what had they to fear, whoever might be against them? They stood fast, strenuously devoted through life and faithful in death to the widest, deepest and highest that they knew, or indeed—when all is said and done—that it has entered into the heart of man to conceive. Reaching by subjective selection to the supreme in the scale of values, we must regard them as so far attaining to the highest rank as personalities; their world was circumscribed by no selfish interests, since they loved God, in whom and by whom and for whom were all things. As regards unity, stability and originality there seems nothing beyond: no further crises, only progression. It detracts in no wise from this living by faith—we must emphatically maintain—that its so-called God-consciousness may be epistemologically unverifiable. We are for the present concerned exclusively with the psychological facts, and these seem to be beyond question. It is also pointless to rejoin, as some doubtless may be inclined to do: No, they are not facts, they are at the best only rare and beautiful ideals. But there are no more important psychological facts—especially when character is in question—than the ideals or values that determine conduct. Though the highest is the hardest to attain, yet the difficulties lie not in circumstances but

[1] Cf. above, § 3, p. 450. On Eudaemonism and Personality, cf. Professor James Seth's *Study of Ethical Principles*, 1894, ch. iii.

in self, but just on that account is the religious genius the most instructive for us in studying personality[1].

We have now, it is to be hoped, made clear, so far as our limits allow, that the development of personality is the central fact in the formation of character—a fact which brings characterology into line with general psychology. The concrete individual's character is reflected in his microcosm—'an objective differentiation progressing on subjectively determined lines,' in accordance, that is to say, with the individual's pragmatic valuation not with any colourless and impersonal contemplation. Many other topics essential to a complete characterology have been incidentally referred to; but a fuller discussion of these would carry us far beyond such an outline of psychological principle as is here attempted. Upon one point only it is needful to insist—all such topics must be regarded in the light of the one organic whole on which their meaning and their value depends, *viz.*, the creative synthesis which reveals and must perfect personality.

Von der Gewalt, die alle Wesen bindet
Befreit der Mensch sich, der sich überwindet.

[1] Cf. Spinoza's *Ethics*, Bk. v. prop. xlii.

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