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CAUSES AND CONSEQUENCES

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MAN AS HE IS

LIFE AND HUMAN NATURE

STUDIES OF INDIAN LIFE AND SENTIMENT

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CAUSES AND CONSEQUENCES

BY SIR BAMPFYLDE FULLER
K.C.S.I., C.I.E.
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TO

DR. GUSTAVE LE BON

IN ADMIRATION OF

THE FEARLESSNESS OF HIS INTELLIGENCE

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CAUSES AND CONSEQUENCES

INTRODUCTION

We justly figure life as a current of changes. For everything that "happens" is a *change*, and each of the changes that occur incessantly outside us and within us is linked both to the past and to the future—to the past as the consequence of a cause and to the future as the cause of a consequence. The "Order of Nature" is a chain of events, each of which grows out of its predecessor and into its successor.

The effect of these changes upon us varies with their position in time. As a present occurrence, a change may be agreeable or disagreeable; but it can only be useful or profitable in its *future* consequences. Its cause in the past merely interests curiosity or excites imaginative wonder, unless it can be artificially generated or controlled—that is to say, can be repeated in the present. In this case it may be of practical utility—but only, again, in virtue of its *consequences*. Thus heat is useful because we can produce and regulate it and so obtain profitable results; but the influence of electricity upon vegetation is only curious, because we cannot direct it, or make use of it. We obtain useful consequences by graduating the changes that produce them, and hence science occupies itself very greatly with the measurement of changes. For a detailed quantitative knowledge of changes may be of practical value although their causes remain unknown. We can turn

the changes caused by electricity to a hundred useful purposes although we do not know what electricity is. Francis Bacon is justly held to be the father of modern science, since he was the first to appreciate the *utility* of scientific inquiry. Knowledge is useful only when it is *applied*. And we apply it by putting consequences into harness, and using them as causes.

Applied science has worked wonders. Yet curiosity is one of the most aspiring of human impulses, and is sadly misused if it is kept enchained to the profitable. Magnanimity is regardless of material profit. But it is surely decadent to despise it on that account. There are some whose curiosity remains fresh—who can sympathise with the persistent " Why ? " of childhood —especially in regard to our own motives and conduct. To them these essays will be of interest. And they will find that to understand the causes which affect ourselves is of immense practical value in questions of morality, education, and politics, and will give new bearings to science, a new flavour to art, and a new meaning to history.

It is not always easy to determine the cause of a change. For, in the first place, between an apparent cause and its consequence there may intervene intermediate causes that can sometimes only be detected by inference. When we strike a match, the apparent cause of the flame is friction. But the actual cause is heat, for a match can be lit by heating it as well as by rubbing it. Heat intervenes as the consequence of friction and the cause of the flame. Our impulses are such intermediate causes. The ultimate cause of our eating food, or searching for food, is a sensation or a recollection of it, and accordingly, in expressing our action, we put the food in the accusative. (To accuse one of a thing is to indicate him as its cause.) But

between the sensation, or the recollection, and the eating there intervenes a causal impulse—it may be of desire, habit, or obedience—and the ultimate cause is, therefore, merely *liberative* or *directive*. The causes, or "stimuli," that affect life are generally of this character. They determine the course of energies that arise from life itself. Secondly, changes may be accompanied by accessories, or instruments, which may appear to be causes, but merely determine the *fashion* of the change and may be eliminated without annihilating it, whereas, if a cause be eliminated, the sequence fails. We can eat without knives and forks, and they are, therefore, only accessories. A receptacle of some sort may seem to be necessary for the heating of water. But it is merely an instrument, for we can heat water by putting red-hot stones into it. By this process of elimination true causes are distinguished from accidental antecedents, as well as from instruments. It is our safeguard against concluding *post hoc, ergo propter hoc.*

We know the cause of a change if we detect the change which necessarily precedes it. But if no preceding change is discoverable, as in the case of changes resulting from gravity and life, it appears to be caused by an enduring condition to which we give the name of "energy." A century ago heat was taken to be an abiding force of this kind. We now know that it can be caused by friction. Science has been able to carry back successions which seemed to be closed, and to show that many causes that appeared to be "final" are in reality consequences. The range of our senses is limited so that we can perceive only certain kinds of changes. But by inference—that is to say, by arguing from precise analogies between the *characters* of two different things, or between the *relationships* connecting two known things, and a known thing

with an unknown—we can apprehend what is hidden from perception. A high note of music betrays to the ear no element of vibration. But we can infer that it is vibratory because we can sound it by producing vibrations of certain rapidity, and because in low notes a vibratory character is perceptible. In exploring the remote causes of things our instrument is reasoning.

A few words as to the changes from which we learn causality. The differences which they produce may be in character or in relationship: stated more elaborately, that which follows may differ from that which precedes either (1) in nature, or (2) in comparative degree or in its associations with time and space. There is a difference in *character* between friction and its consequences in sound, heat, and electricity; between substances that are chemically combined and their products; between the stimuli that affect life and the living responses to them—as between danger and its consequence in fear; between food and its consequence in desire; and also between these motives and the movements which they actuate. In these cases a condition is followed by one that is entirely different from it. When a change is of relationship, there is no such abrupt breach of continuity. Changes in *comparative degree* are illustrated by the progress of growth from one stage to another, or by increases or decreases in intensity—as in variations in brightness of light, loudness of sound, barometric tension, and velocity. They leave the nature of things unchanged. This is also the case when a change merely affects the *circumstances of time and space* with which a thing or a condition is associated. There is a change of time in all successions,—as in the ticking of a clock; of place in all movements; of direction in all turnings,—as in the reflection of light or the echoing of sound. The spread

of heat from a fire to a saucepan is a change of relationship: its consequence upon the food in the saucepan is a change of character.

A change may give rise to more than one consequence, and these effects may be alternative or concurrent. A sensation or idea, for instance, may provoke resistance instead of response if it meets with an incompatibility of "temper." A concurrent consequence is produced when the effect of a stimulus reaches the brain: there is in this case, not merely a nervous impression, but a conscious *sensation*, and, since the sensation is associated with the response to the stimulus, a recollection of it can auto-suggestively stimulate the response. We may seek food, for example, not because it is in sight, but because an idea of it occurs to us. So a *movement* becomes a *motive* if its execution is delayed and an idea is formed of it. A smile is the consequence of pleasure and may seem to be an end in itself. But our expressions of emotion have developed causal activities of immense importance: they auto-suggestively communicate feeling from one person to another. An instrument may evolve into a cause through the interest with which it is associated. Money is an instrument of exchange; but it becomes a cause of pursuit in itself. We may infer that Evolution works by the multiplication of consequences, or, stated differently, by the complication of causes.

A succession of cause and consequence runs within us (subjectively) as well as outside us (objectively). Our feelings pursue one another in procession. A mental conclusion is a subjective consequence, the cause of which is its *reason*. We also, however, use this word for objective or material causes; and, in asking "Why?" may mean either "By what

cause ? " or " For what reason ? " Since a cause is also a consequence, the two are easily confounded, and we habitually confound them. Language abounds with such misplacements. We speak, for instance, of " hopeful news," although the hope is in ourselves, and is the *consequence* of the news. In speaking of heat we do not distinguish between the condition of being hot and its cause in something which reaches us from the sun. This confusion is exaggerated by the process of auto-suggestion, which plays a part of vast importance in our lives. For auto-suggestion runs backwards. When we wince at the thought of an injury, a muscular movement is caused, or stimulated, by the idea of injury. But this idea is a consequence : it is derived from a sensation of injury. It acts as a cause, because it has become linked to the nervous and muscular conditions that were involved in the experience, so that it recalls them. Thought is auto-suggestive. It is the converse of perception, in which the observation of things leads to the detection of their relationships. In thought, ideas of relationship suggest ideas of things. In looking at a motor-car we discover that it belongs to a friend ; in thinking of the circumstances of a friend an idea of his motor-car occurs to us.

The influence of the will, by which we can *resist* the effect of a stimulus, has also a confusing effect. For if we can oppose ourselves to a stimulating sensation or idea, it seems to lose its causality ; and the impulses that intervene between it and our action appear to be, not merely the proximate, but the ultimate causes of the latter. These impulses are ourselves, and hence we seem to initiate things, whereas our action is, if traced to its ultimate origin, really consequential. If we decide to have oysters for lunch, it is the idea of them that has actuated us,—recalled, it may be, by the thought

of the meal, or by the words of another. We might have resisted the idea. But this implies its causality: we should not have resisted if it had not presented itself. The development of this egotistical misconception (commonly called "self-realization") can be traced in language. When we say that we "like" a thing we impute to ourselves a causal activity. But in reality the thing pleases and attracts us, as is recognized in the French "il me plait," and in the original meaning of the word "like," which is *to please*, as in the old phrase "it likes me." By a similar misconception we speak of the causes of our activities as "objects" or "subjects" according as they stimulate purposeful or purposeless action; and language, reversing the actual succession of events, expresses them, as *accusatives*, after the activity which they have caused.

An inquiry into causes is, then, no easy matter. We have to keep our thoughts trained in a direction which they inherently tend to reverse.

* * * * *

Some of these essays have already been published, and I have to thank the editors of *The Nineteenth Century and After*, *The Contemporary Review*, and *The English Review* for permission to reproduce them. Being separate studies of episodes in the continuous drama of life, they involve some explanatory repetitions. It is possible, however, that facts which are but obscurely realized may gain clearness by iteration.

BAMPFYLDE FULLER.

CHAPTER I

RACE AND NATIONALITY

A HOMELY Persian proverb, that "a handful is a sample of an ass's load," illustrates the all-important fact that reason frequently argues about the great by drawing inferences from the small. Reasoning may, therefore, be disagreeable; for we dislike comparisons between the trivial and things that are of importance to us. But this feeling, however natural, is a serious obstacle to the progress of knowledge. For the stepping-stones of science may be almost infinitely small. The "vitamines," whose presence in food is essential to its nutritive value, are so minute that they have not as yet been detected, and their existence is only established by inference. The truth comes to us by apprehending the meaning of the insignificant. As Browning puts it:

> Say not a "small event"! Why "small"?
> Costs it more pain that this ye call
> A "great event" should come to pass
> Than that?

We need to remind ourselves of this when discussing questions of race and nationality. These touch us very nearly because they possess a sentimental interest. Yet elementary facts in Natural History may assist us in understanding them.

We habitually confuse race with nationality. But the two are fundamentally distinct. The one is natural —the consequence of a similarity in bodily constitution

and disposition. The other is artificial—the consequence of a grouping of mankind which has for the most part resulted from conquest. Nations appear to be distinct in race because they become distinct in language. But language is a convention. Man copies the language and fashions of the most powerful members of his community, unless he is antagonized against them by strong sectarian feeling. England changed its language under the influence of a Norman aristocracy; Provence and Brittany have adopted the language of France. Nothing of Africa remains in the speech of the Negroes of America; and in India English is rapidly becoming the tongue of the educated classes, and in the larger towns is even used by children at play. In fact, as an indication of race, language is hardly more reliable than religion.

Let us now, with apologies, descend to the trivial. If a litter of puppies or kittens differ greatly amongst themselves, we conclude that they are mongrels. Their differences will not be more marked than those which we can notice every day between children of the same family—contrasts which would astonish us were we not used to them. Indeed, apart from tricks of manner and expression which are learnt in the nursery, brother may differ from brother, and sister from sister, in stature, complexion, emotional susceptibilities, and mental aptitudes quite as widely as from members of another family. It follows that we are for the most part hybrids—the results of racial admixture; and that, except where intercommunication has been barred, purity of stock has ceased to exist. It must be remembered that, allowing a family to double its numbers in each generation, in seven centuries a foreign element introduced by a single cross-marriage will have extended its influence to nearly a million persons.

If, however, a hybrid is a mixture of racial types, it follows that racial types exist, and in Europe there are certainly two very distinct strains, differing from one another markedly, not only in appearance, but in character. One is tall, light-eyed, and fair-haired, more practical than emotional, and moved rather by dogged courage and perseverance than by imaginative enthusiasm; the other, short, dark-eyed, and black-haired, highly imaginative, and of mercurial temperament. Judging from frequency of occurrence, the home of the one is in the north, of the other in the south, and they may be conveniently distinguished as Baltic and Mediterranean. Ethnologists distinguish a third leading type, characteristic of Central Europe, specially marked by a peculiar roundness of the head —also by imaginative susceptibility to the pathetic. In other quarters of the globe strongly-marked types are illustrated by the Mongolian, the Maori (straight-haired Polynesian), the Negro, and the Esquimaux.

Since these types are *localized*, we may logically suppose that (except, perhaps, in regard to the Negro) they have evolved from a single original stock under the influence of differences in environment. We have but an imperfect idea of the conditions which surround and affect us. We ordinarily think of them as conditions of soil and climate. But they may include peculiarities which our senses cannot detect; and that this is so seems to be proved by the curious, inexplicable effect upon health of certain localities—an effect which, as doctors are aware, may be limited to very restricted areas. Insects seem to be susceptible to local influences which evade our sensibilities. Many kinds of butterflies, for instance, will not stray beyond an area of a few hundred acres. And, just as certain peculiar types of mankind characterize particular regions, so allied

but distinct species of beasts and birds are separated from one another by geographical boundaries. To take some instances from India. There are three different kinds of hares, each confined to its own region. The black francolin of the northern alluvial plains gives place to the painted francolin on the peninsular plateau. The Indian peacock is replaced in Burma by a species in which the green colour is more prominent. These facts afford some ground for an assumption that differences in environal influence are the causes of variations in animal life, although we are ignorant of the nature of these influences. And for the evolution of variations we must allow an interval of time compared to which the period of recorded history is but a few days—or even hours.

If, as is held by some, mankind must have originated from a single original variation, the negroid strain must have differentiated at a very early stage in man's evolution, since its peculiarities are very distinctive—sufficient, indeed, to demarcate a separate species. It is noticeable that in South-Eastern Asia the negroid and the straight-haired, aquiline-featured types occur together; and there are reasons for inferring that this region—or Polynesia—was man's original home—the Eden from which he has spread throughout the world. The character of his teeth shows that his natural food is fruit and soft roots: he cannot masticate dry grain or raw flesh, and must therefore have originated in a place where fruit and roots are in season all the year round. His skin is unprotected against changes of temperature, and he must have required a warm, equable climate. It is most probable that he learnt the use of fire from accidental experiences of lava streams or hot springs: the Malay Archipelago and Polynesia are markedly volcanic. And he would have

been pressed by circumstances to essays in navigation, did the sea gradually encroach upon the land through a continuing depression which broke up large islands into smaller ones. There has been such a submergence in the Malay Sea and the South Pacific. There is, moreover, much to be said for the Polynesian origin of such curious customs as those of circumcision, tattooing, and the *couvade* (under which on the birth of a child the father takes to his bed, and is fed like an infant) which can be traced across America, as well as Asia and Europe. Polynesia is a centre from which America, as well as Asia, could be colonized by immigration. It is to the point that in the Malay Islands and Polynesia savage decorative art has attained its highest development: the carved ornamentation of the canoes, for example, shows a finished intricacy of design which can hardly be improved upon by the imaginative skill of modern Europe. And we may note that the straight-haired Polynesian—the Maori or Sawaiori type—in physical strength and beauty is not inferior to the European.

If we assume that changes of environment can, in a long period of time, stimulate variation, we may conclude that as mankind spread, from whatever centre, throughout the world, different local influences developed the peculiarities which distinguish the "races" of the present day. But, since all races can interbreed, and from ages past opportunities for intermixture have been offered by trade, immigration, and invasion, there are few families which retain purity of local type. Nor can they speedily recover a purity that has once been lost. The discoveries of Mendelism show that a foreign element, once introduced, can hardly be eliminated. Mendelism also explains the curious fact that occasionally there may be born, in a hybrid family, individuals

that are true to one or other of its component types.

Trading connexions are of far greater antiquity than is usually supposed. The discoveries of archæology only disclose the last links of a chain of things perishable. But they demonstrate that, centuries before the Trojan War, merchants were tracking their way from the Mediterranean to the Baltic in quest of amber; and it can be shown that the Cornish tin trade with the south is almost as ancient. Migration is as old as man's first exodus from the home of his evolution. Indeed, even with the history of America before us, we may believe that it was more general in ancient than in modern times, since in those days the bond of union was rather the tribe than the country, and change of domicile would involve no loss of tribal union. In Europe there has been a steady current from the North to the South, attracted by a more genial climate and more generous fertility. Sir William Ridgeway gives excellent reasons for his opinion that the dominating classes in classical Greece and Rome were northern immigrants—precursors of the Goths and Vandals, and of the Normans who fell upon Naples, Sicily, and Greece in comparatively recent days. (Amongst the heroes of the Homeric poems Menelaus and Ulysses are described as yellow-haired; and the Greek girls of the Tanagra figurines contrast strongly with the modern type in being tall and fair.) The Greeks and Phœnicians planted settlements throughout the length and breadth of the Mediterranean region. And, judging from the stature, complexion, and character of the peoples who dwell upon the Atlantic Coast—from Portugal to the Hebrides—there has been, from remote antiquity, a drift from the south to the north which has followed the sea-shore. Amongst the Bretons, Cornish, Welsh,

Irish, and Scotch there are numbers which in appearance and disposition remind one of the people of Marseilles. If we are doubtful of the reality of wandering immigration, we may call to mind the gipsies, and the flights of Europeans which have found their way to American shores.

The wars into which man has been incessantly urged by romantic or economic reasons have violently accelerated the current of racial admixture. They may have been accompanied by immigration on a grand scale. But it is probable that we exaggerate the actual transfers of population to which they have led. The hosts which history records as descending upon invaded territories, like locusts, must have been composed in great measure of local recruits or converts, since it is demonstrable that the locality whence invasion originated could not have produced their numbers. It is impossible, for instance, that Arabia should have supplied the armies which, within the space of a century, spread their conquests from Bagdad to Madrid. It produced the leaders and a band of stalwarts. But the Saracens must have been very largely recruited from the localities in which their standards were unfurled. Man is attracted by *power*, whether in a leader or an ideal, and the ideals of Islam were exceedingly powerful. The unity of God is inspiring because it concentrates divine authority; resignation to predestined fate is strong enough to eliminate fear; the doctrine of religious brotherhood draws men together into a powerful whole. Islam could, therefore, count upon making hosts of proselytes. And, turning to our own country, it is probable that the insurrection which exterminated the Romanized townspeople of Britain was a *jacquerie* led by forceful Baltic immigrants. Nor could the Normans have held England unless they

had attracted by their energy large numbers of the native population. But, however this may be, war has, of course, been a potent cause of racial admixture, for a racial stamp imposed by a few men of great vitality spreads itself far and wide.

The social ties which link men into communities are *ideas* of identity in blood, interests, or domicile. Those that are so united feel that they are "akin"—that is to say, belong to the same *kind*, and accordingly treat one another with "kindness." "Gentleness" has, of course, a similar derivation. It is clear that these ties rest upon ideas, and are not instinctive, for there is abundant evidence to prove that one who is brought up from infancy amongst aliens completely identifies himself with them. The strongest of these ideas is that of sameness *in blood*. This is the bond of the tribe, which was gradually widened by a mystic process of adoption. Identity *in interest* is the bond of the sect, caste, or occupation. The interest may be religious. The common observance of a definite peculiar law has bound the Jews together from time immemorial, in spite of differences in race and customs. The Jews are indeed rather a caste than a nation, and it seems that from very early times Palestine contained no more than a fraction of their number. In the Indian castes religious are generally combined with occupational interests. Sameness of occupation is the tie which gives *esprit de corps* to soldiers, doctors, miners, and railway employés. It is the bond of Trade Unionism, and appears to exert a physical attraction, for men of the same trade tend to congregate in the same quarter of the town—a fact which is very noticeable in the East, but also in Harley Street. And there is a tendency for an occupational fraternity to fortify its peculiar identity by prohibiting marriage outside its circle. The Indian castes have

become strictly inbreeding. A similar exclusiveness prevailed during the later days of the Roman Empire; and, amongst ourselves, admission to the business of plastering is limited to the sons of plasterers.

The bond of nationality implies territorial union—that is to say, identity of domicile—the link of neighbourliness. Of itself—unless it is idealized—this is not very effective as a unifying force. In the East, men of different tribes, castes, and religions may live intermixed without losing a shred of their sectarian exclusiveness; and in town life we may concern ourselves not at all with our next-door neighbours. But propinquity affords at least the attraction of familiarity, and could bind into a whole the population of a village, a group of villages, or a "city-state." Their union, however, implies disunion with the villages or towns around them; and hence these small agglomerations are incessantly at war with one another—as is illustrated by the history of classical Greece, of mediæval Italy, and of little republics that still exist in the hills of Eastern India. To extend nationality over a country another link of union was required—a common respect for, or subjection to, a single government. And since extensive authority has almost universally been won by conquest, it follows that nationalities have in general been established by war. There are cases—Switzerland and the United States for example—in which small states have federated themselves into a nation by choice—by "self-determination." But, generally, nationality is the product of conquest—of force, not of free will. The United States owe their present existence to a successful war against secession. It is by conquest that England has been consolidated since the days of the Heptarchy; and, if it be urged that the Dominions are attached to the Empire by

consent, it must be remembered that in South Africa consent was won by conquest.

As a bond of union, territorial nationality possesses of course very great advantages. By overriding tribal and sectarian differences it welds a large community into a whole, and endows it with military strength. It tends to dissolve restrictions of marriage between one class and another, and produces in time a real homogeneity. Since residence gives a claim to fellowship, the nation may be materially strengthened by the admission of foreigners as citizens. England has beyond doubt been much advantaged by the immigration of Flemings, for instance; although it may be questioned whether the assimilation of some other classes of aliens has contributed to its welfare, except by keeping down wages and increasing expectations of industrial profit. The amalgamation of classes into a nation, moreover, widens the possibilities which are the stimuli of economic civilization; and, by throwing open to all the doors of industry and commerce, it fosters the competition which is the soul of "business."

But, except during crises of warlike enthusiasm, the tie of nationality is not as strong as that of class, profession, or religion, and is, moreover, peculiarly liable to be worn away by disillusionment. For, depending primitively upon the respect which is felt for the national government, it decays if this respect diminishes; and the nation tends to disintegrate into castes. The veneration with which the victorious founder of the nation is regarded may not—generally does not—pass to his descendants, who seldom inherit his forcefulness and not infrequently degrade his attributes. With the multitude, who know them only by repute, they may preserve the royal prestige. But those who are closer to the throne can judge of a ruler's

strength for themselves ; and if he lacks character they encroach upon his authority, extorting privileges that are in fact fragments of it. The history of the Church, of city corporations, of parliaments is that of the gradual annexation of kingly prerogatives. Faith in royalty declines with the decline of its power. Political factions spring up, and national unity suffers. Democracy offers a remedy by presenting a new ideal of power—the *self-power* (or self-assertion) of individual citizens that is idealized as " liberty." For a representative chamber symbolizes the power of those who have elected it ; to them it is as the head is to the body. Its efficiency is their own, and, if they are proud of it, they are proud of themselves. Unfortunately, however, a democratic government can rarely be efficient. Its very nature is against it. For, holding office by persuasion, it must not render itself unpopular, and, in the State as in the nursery, measures that are efficient rarely give general pleasure. And the mere fact that popular representatives must periodically submit themselves to the electors cap in hand is fatal to the loyalty that comes of the imagination. Accordingly, democratic, like monarchic, government is haunted by disillusion. Men conceive more respect for their sectarian, or syndical, authorities than for parliament, and may even seriously plan to act in direct antagonism to parliamentary government. The country is divided, and national union is shattered by the conflict of class interests.

Still more subversive of nationality is the sympathetic bond which may unite the poor in antagonism to the rich. The economic civilization of the present day entails inequality : it is based upon expectations of the profit that may be made by individual enterprise : profits are large when wages are low, and may be

increased by combinations to heighten prices. Accordingly, men may become rich by exploiting the poor, and there comes about an inequality of conditions that offends our sense of justice. Man demands justice, not because he finds much trace of it in the world around him, but because the idea of it is forced upon him by masterful feelings of his own. If he does wrong, he is punished by shame; if he acts rightly, he is rewarded by a glow of self-complacency. He expects to find these relations in the conditions outside him: merit should be rewarded, demerit should be punished, and, when these consequences are reversed, his moral sense is scandalized. The natural feelings of mankind tend, therefore, to set the poor against the rich. The Bolshevist leaders have succeeded in vivifying this antagonism, and in leading the poor to victory. They may have been actuated by the highest motives. But by levelling society they have crushed the spirit of competition and have reduced communal life to conditions of savagery. They have proved that civilization may be destroyed by idealism from within as effectually as by barbarism from without.

Remedies against these anti-national tendencies may be sought in stimuli which re-invigorate the idea of national unity. A war will have this effect, since an idea of an antagonist unifies opposition to him; and accordingly governments have at times sought to refurbish their credit by military enterprises. But we have learnt from bitter experience that the unifying effect of war is transient. More can be effected by educational propaganda. These may bring the classes of a nation together by instilling the idea that their country is their common parent—in fact, *la patrie*—round whose knees all good citizens should devotedly range themselves. Patriotism may be aroused by the

idea that fellow-citizens are one in race—that is to say, in blood. But ideals of racial unity may have a disintegrating as well as a consolidating effect. They may be employed to set a section of a nation against its compatriots. The Czechs and the Irish, for example, have been brought to consider themselves separate races; and to strengthen this illusion, languages have been revived that were actually dead. The idea of national unity may also be reinforced by enlisting the influence of tradition or history—by appealing to the credit that has been won by the nation, or by its great men, in the past. For our pride is flattered by the power of those with whom we are identified, just as a family is honoured by the success of any of its members. But pride in past achievements will hardly be felt by those classes who have not contributed to the list of national heroes. Hence the working-classes show a tendency to internationalize themselves.

This inclination to break the bonds of nationality is, of course, strengthened very greatly by the ties of international commerce. A nation is no longer an independent unit: it depends for its prosperity—even, it may be, for its subsistence—upon the co-operation of other nations, and its interests suffer if they are impoverished, or are fenced off from it by customs barriers or by fluctuations in exchange. Indeed, seeing how largely the value of money is conventional, and how greatly commerce is prejudiced through the use by each nation of different money-symbols, the adoption of an international currency is by no means inconceivable. This would draw nations together in the same fashion as the adoption of a common language. But peoples speaking the same tongue have not infrequently gone to war, and there is no more reason to believe that peace would be secured by similarity

in standards of value, or in vocabulary, than that members of the same family will be restrained by their kinship from quarrelling bitterly.

Experience has, however, shown us a means of controlling the warlike jealousies of nations, while leaving them their national individuality. Within the State peace is maintained by the judicial punishment of offences against the law. This is so efficacious because it does not merely act as a deterrent. It satisfies the aggrieved person's desire for vengeance, which would otherwise prompt him to retaliate. And, being imposed by a third party, without angry intent, it does not excite vindictive feelings in the offender. Moreover, methods of punishment have been simplified, as mankind has grown more prudent and less childish. Money is so highly valued that a fine will check and avenge offences for which in past centuries it would have seemed ridiculously inadequate. In days not remote it was unthinkable that a husband could free himself from humiliation by anything short of personal violence ; but now a demand for money compensation is an ordinary feature of suits for divorce. Were men able to reason calmly from experience (assuming that they are sincerely desirous of peace) they would find a conclusive case for the establishment of an International Tribunal with power to hear complaints from one nation against another and to inflict pecuniary punishment. If payment was refused, the fine might be realized from property held by citizens of the recalcitrant nation in other countries. And there would be a further safeguard of great value, if, arguing from the proved utility of taking security for good behaviour, each nation agreed to deposit with the Tribunal bonds to an amount commensurate with its wealth. This would involve no loss, for the interest

due would be drawn and paid over by the Tribunal. But the "caution money" would provide a means of realizing a fine by simple confiscation—free from the dangers of making a forced levy at a time when national passions were running high. On their subsidence, the offending State would in most cases voluntarily replenish its security by the amount that had been confiscated. The Tribunal would include a member nominated by each nation, the judges for the decision of each particular dispute being selected by lot in such a fashion as to render the chance of each delegate's being chosen proportional to the population and wealth of his State.

Judging from experience, it is only by such an expedient that war can be prevented. But how many centuries will pass before the growing intelligence of mankind insists upon its adoption?

National pride has, of course, its advantages. It fosters a healthy spirit of rivalry in art, industry, commerce, and philanthropy. But we need not apprehend that if the combative passions of nations were bridled, there would be a loss of national enthusiasm. For the individuals of a nation compete keenly with one another, although force is prohibited. And the history of Rome shows that there may be a very active rivalry in religion, sport, and commerce in the absence of any national spirit. Indeed, at a time when the whole civilized world was united into a single nationality, men were animated by the acutest spirit of faction, whether as to points of religious belief, or as to the merits of different schools of theatrical artists and athletes. It is true that religion and art both lost all real vitality. But this decadence is not peculiar to Rome, and may occur in nations which preserve their independence. It is the result, not of peace, but of a habit of mind

which grows up under the peculiar attractions of money. Profits, wealth, comfort, and luxury eclipse the pleasures of the imagination. Romantic are supplanted by economic interests, and the nation, as a whole, undergoes the change which takes place in the growth of a civilized individual from childhood to maturity. The visions of youth fade in the glint of economic expectations : the present is sacrificed to the future. This deterioration—for so it may seem to us—could no doubt be checked by educational influences, for man is extraordinarily plastic. But history shows that national exclusiveness does not suffice to prevent it. A nation does not preserve its religious and artistic feeling merely by preserving its independence.

But we can learn from Rome that assured international peacefulness has its dangers. Under the reign of law, combative antagonism becomes atrophied. Experience shows that the effect of law-courts within the nation is to banish ideas of retaliation by violence, so that to the respectable classes the use of force becomes almost unthinkable. We may, accordingly, infer that, if international offences also become punishable by law, ideas of military hostility would fade into extinction, as they did in fact during the later days of the Roman Empire. There would be peace. But the internationalized States would be defenceless against the aggressiveness of any peoples who remained outside their circle. Internationalism, to be safe, must be universal.

CHAPTER II

ANCIENTS AND MODERNS

In reviewing past history we are struck with the extraordinary changes that have occurred in human propensities since ancient—since, indeed, mediæval—times. Life was then simpler: there were infinitely fewer comforts, luxuries, and amusements. Faith was stronger, and could overpower reason when one sought to forecast coming events. And the objects of life were different. Men lived more in the present and less in the future. They were more "sporting" and less prudent, than ourselves—that is to say, they had more imagination and less "common sense." They were, in fact, closer to childhood. The world was young. It was simple in its tastes, superstitious in its hopes, and romantic, instead of economic, in its conduct.

The poems of Homer are living pictures of ancient life. Feelings and motives which, however heroic, might actuate conduct at the present day, are set on a stage of extreme simplicity. There were few refinements in food and cookery: pleasure was sought more in quantity than in quality. Dress seems to have varied but little within the tribe or nation. Furniture was so rude that metal pots were generous offerings as ceremonial presents. Games were of the simplest description. The chariot races of the Iliad took place on a stony, ravine-cut plain, with a stump for the turning-point. We are reminded of the improvised

expedients of children at play. Masters and servants lived in the closest intimacy. A princess could assist her maids with the family washing.

Since those days pleasures have become extraordinarily elaborated by the development of special tastes. There must be many hundreds in food and drink alone, which are *acquired*, just as one "learns" to smoke. Our dress is a complex of many articles of clothing which it needs patience to put together. Styles of dress are not national, or hereditary, but are constantly varying. Our furniture is to that of the ancients as the drawing-room is to the nursery. Our amusements are to be counted in scores: our games are defined by strict rules, and need carefully prepared "grounds" or courses. There is a vast multiplicity of tastes in art and music, with refinements that the ancients would not have appreciated. And we are not satisfied, as they were, with *creative* art: we require decoration, and insist upon technique.

Pleasure has, then, become more complicated with the advance of civilization. Nervous sensory susceptibility becomes refined so as to appreciate, we may put it, *shades* as well as colours. This is, indeed, what is meant by the "evolution of tastes." It has been proved that a man's sense of touch increases in delicacy if its delicacy is tested by a continuous series of experiments. Accordingly, sensation is refined by varied experiences in sensation, and the refinements so acquired are passed on by instruction to the next generation. But so ephemeral are these tastes that they disappear if they are not practised. One who has become a stranger to luxuries of food or drink—to art or music—is surprised to find that he has lost his appreciation of them.

Are we to conclude that pleasures become more intense by being refined? Are we happier than the

ancients? It is doubtful. Does middle age enjoy a dinner at the Ritz more than childhood does a piece of cake or an orange? We can only judge from the expression of the features; and here, the advantage is to the child. It is, no doubt, generally true that, in developing refined tastes, one loses appreciation of the simple. But very many men are happier in the rough simplicity of camp life than amidst the sophisticated pleasures of civilization.

Let us turn now to another characteristic of the ancients—the greater insistency of their faith. In those days religious beliefs were as naïve as those of the nursery. Deities differed from mortals only in being stronger, more passionate, and in living for ever. There was no elaboration of creeds or sublety of dogma: indeed, current opinions as to the nature and attributes of particular deities were constantly changing. Beliefs showed the curious mixture of the grotesque and the sublime which so often surprises us in the religious notions of children. The future, it was held, could be divined more accurately through oracles and omens than by reasoning from the past. State affairs were guided by fortune-tellers. What should we think of our Government if, being uncertain, say, as to its Irish policy, it deputed the Secretary of State to consult a clairvoyante who lived in a grotto under the cliffs of Matlock? In ancient days nothing would have seemed more obviously appropriate: the oracle was the statesman's recognized adviser, and States vied with one another in decorating its official abode. A general would not join battle until an animal had been slaughtered and cut open, and he was satisfied that its entrails were in good condition and normally placed. Had we not freed ourselves from this superstition, Lord Haig would have insisted upon inspecting the

liver of a goat, or a fowl, before issuing his orders for the day.

These imaginings are not, of course, dead. Fortune-telling is still a profitable business: there are multitudes who think it unlucky to spill salt, to sit down thirteen to table, or to start travelling on a Friday. But superstitions are dying, and it is not sacrilegious to smile at them. We have become disillusioned. To awake in disillusionment is one of man's severest trials. But he owes his sagacity to this discipline. The errors of divination have been remembered and laid to heart. Man has the capacity of reasoning from the past to the future, and has slowly extended it as faith has disappointed him. He puts more and more trust in "common sense."

These are great changes—from simple pleasures to the refined, from divination to reason. Still farther-reaching has been the tendency to live more in the future and less in the present—to set prospective interests above those of the hour. This is a transformation which will require some unfamiliar analysis. How does the future exist for us in consciousness? Evidently as an *expectation*. We cannot form a concrete idea of the future apart from an expectation or a hope, and there is no future for one who has lost all expectations. How do we come to *expect*? By the evolution, it appears, of the appetite which urges us to *search* for food and not to wait until it presents itself to the senses. Influenced by an appetite we "look ahead." When a thing has given us pleasure in experience, we search for it appetitively, exactly as we do for our food. Its pursuit becomes our "business." Our object is to realize expectations, that is to say, anticipations of the future; in other words we judge our actions by their *consequences* not in themselves. Accordingly one who

is occupied in business lives in the future without thought of present enjoyment. And his activities, like most of those which are dictated by instinct, afford no pleasure in themselves apart from anticipation of success. It may shock one to suppose that the mainspring of our commercial life is the conscious elaboration of a propensity which at its simplest is merely an instinctive craving. But we need not insist upon this. The point is that the economic interests of "business" lead us into the future, while pleasure is a distraction of the present. And of the truth of this there can be no question.

No contrast can be stronger than that between the dull insistence of an instinct and the vivacity of our "spirits." This converts favourable or unfavourable physical conditions into moods of happiness or depression; it gives their emotional element to joy and grief; it uplifts us with enthusiasm or casts us down in distress. Its influence clearly penetrates to the brain, and works a marvellous transformation in the character of thought. General or abstract ideas become concrete images or fancies; the inanimate is vivified and personified—that is to say, thought becomes imaginative, and creates and decorates in place of reasoning. We begin to imagine when we are abnormally exhilarated or depressed in spirits. A sunset which entrances us becomes an opening of the Gates of Heaven, and the fleecy clouds that surround it are flights of golden-winged angels. Imagination is the genius of Romance and Idealism as well as of Art. Romantic conduct is that which is imaginatively decorated. Our ideals are personifications of our own states of nervous exaltation and of their causes. In itself there is nothing "ideal" in freedom of choice; but by the glow of imagination it is transfigured as

Liberty. In Art and Idealism imagination bears us into the upper skies, in Romance into the clouds. But it also lends us wings for humbler flights. It is the inspiration of Play. For play is the expression of *fancies*. We "act" when we personify images of motives or conduct, and the theatre is "the play" *par excellence*. Children's games are obviously fanciful. So are those of adults. There would be no emulative excitement in a football or cricket match, were it not for the fancy that renders it an image of the rivalry of conflict.

Pleasure may, of course, be purely sensual, although, even in this case, it is enhanced by its effect upon our spirits. In its imaginative phases it may be purely spiritual. In either case it is a *present* attraction, and dims our appreciation of the future. But its absorbing effect is strongest when it is purely imaginative, since the fancy can feed upon itself, whereas the gratifications of sensual pleasure must be searched for. Accordingly it is the imaginative who are least trammelled by provident anxieties: they live from day to day, and take no thought for the morrow. This is so with children—and also with those who possess the artistic or "Bohemian" temperament.

It is indisputable that in ancient days life was vastly more imaginative and playful than at present. Athletic games were held in extraordinary esteem, and the victors were honoured above statesmen and generals. But their prizes were such chaplets or garlands as might be improvised by children in a playing-field, and offered nothing whatever to a desire of profit. The affairs of life had a melodramatic flavour; and conduct was tinged by a romance which attained its apogee in the Trojan War. In later days, Herodotus tells us, it seemed incredible to the Persians that this costly

expedition should have been undertaken merely to recover a runaway wife; and he was of opinion himself that Helen could not have been in Troy at the time, since in this case the Trojans would surely have raised the siege by giving her up. He was too modern to appreciate the uncalculating romance of earlier centuries. So there are critics in these days who will have it that the Trojan War arose out of commercial quarrels concerning the grain trade that passed through the Hellespont. They are anachronistic, animating with economic motives those who were hardly touched by them. The atmosphere of the Iliad is purely romantic. In those days the motive of war was the hope of glory, or the desire for revenge. There were economic advantages in plundering and enslaving: piracy was undertaken as a business. But most of the wars which Herodotus chronicles were undertaken for purely "sentimental" reasons. For what material expectations could Cyrus have turned his arms against the nomadic Scythians, or Xerxes have dreamt of the conquest of Athens?

Idealism is imaginative, and we find in ancient days an appreciation of magnanimity which is somewhat disconcerting. Warriors were cruel and revengeful, but under sudden inspirations were capable of extraordinary greatness of spirits. Defeat in those days might mean extermination; but, moved by a flash of pity, a conqueror might not only spare his adversary, but make a friend of him. Has the magnanimity of childhood ever been better illustrated than by the episode of Diomede and Glaucus? The rage of conflict is suddenly quenched by thoughts of old family friendship: the antagonists undress on the battle-field and exchange their armour in token of brotherhood, Glaucus giving golden arms in return for Diomede's brazen with such

romantic indifference to economic values that the poet cannot help smiling at his improvidence.

To us these motives seem poetical and fantastic. But they were accepted as real in the centuries which followed the composition of the Iliad. What has occurred since those days to change so completely our outlook upon life ? Evidently the invention of money, which has subjected man to a magnetic influence that was unknown in Homeric times. Money materializes the future, and therefore reinforces our instinctive, as opposed to our imaginative, propensities. If the future were annihilated, money values would vanish. We think of money as a symbol of *things*. We should think of it as materializing and guaranteeing *expectations*. One who possesses five pounds possesses an assured general expectation of receiving goods to this amount. Being materialized, his expectations can be exchanged for goods, or for other expectations, as is the case with operations on the Stock Exchange. In fine, the money guarantees expectations, values them—converts them into " credit "—and mobilizes them for exchange. The process of exchange is, then, immensely expanded, and, since each exchange involves a profit, the aggregate of profits is increased. But expectations exist only in mind ; and accordingly the economic situation is affected very greatly by the condition of popular mentality—by the hopes and fears of the day. Political economy ignores this, and is, therefore, an unreliable guide to the future.

It will be objected that if money represents expectations, its value will depend upon a balance between the currency and the expectations of the day, and, since these are constantly fluctuating the value of money can never be stable. We know by sharp experience that if the future becomes obscured by the confusion of

war, money loses its value, and prices rise. In ordinary times its value is stabilized by the use of credit—by expectations of receiving money—which expands or contracts as prospects vary, and acts upon the stream of currency as a regulating reservoir does upon a canal.

This definition of money is too strange to be easily acceptable. But it is not vital to our argument. No one can deny that the effect of money is to give increased reality to the future, and this suffices for our purpose. It stimulates investment: it is the source of dividends, and offers the only convenient means of sharing in others' profits by exacting interest. Man has always been pressed by instinct to look beyond the sensations and feelings of the moment. Apprehensions of the future render him careful, or frugal—propensities which assert themselves in the most primitive of peoples, and are compatible with thoughtless improvidence when emulative or idealistic motives intervene. The Indian ryot is the most careful and orderly of men: yet he will spend several years' income on the marriage of a daughter, and may be excited by rhetoric into fanatic enthusiasm. But money, by the expectation of profit which it offers, converts the careful into the *gainful* spirit. Interests become commercial or financial instead of frugal; and the future becomes an attraction to be exploited, not a danger to be insured against. So reinforced, man's prudent propensities overcome the attraction of imaginative or spiritual pleasure. The charm of play, art, and idealism fades before the urgency of "business." The course of human culture has been changed. We have become more orderly, industrious, and far-seeing. But we appear to have lost in happiness. Business is uninspiring, and is haunted by care. If we regard the features of our fellow-passengers in a metropolitan railway carriage we find

little to show gaiety of heart. Were it not, indeed, for the relaxation of holidays, which enable us to play for a while, life would be almost intolerably dull to those whose spirits have not been altogether stifled. And money-making excites no admiration. Another's prudence leaves us cold, while our heart goes out to the magnanimous.

This momentous change of outlook has come about slowly and irregularly and has been checked by reversions into imaginative simplicity. It began some centuries before the commencement of our era. A growing lust for gain is vehemently denounced by the Hebrew prophets; and classical literature abounds in lamentations for the passing away of a "Golden Age," when man was unthralled by the temptations of lucre. Its influence upon him grew and spread. A blight seemed to fall upon his spirits. Art lost the genius of imaginative creativeness, and became merely decorative: it might achieve "prettiness," or dexterity in technique, but was uninspired by living visions. Literature was barren of new ideas, drifted into criticism, or was content to juggle with words or metres. Religious interests concentrated themselves upon dogmas, forms, and ceremonies. Ideals lost their hold, and were regarded as quixotic. For most of them imply *resistance*—the antagonism of the spirits to the instincts, as of courage to physical fear, of generosity to avarice, of forgiveness to revenge—and "business" smiles at these aspirations and holds that the line of least resistance may be most advantageous. Accordingly morality became conventional. And, since man admires the spiritual—however far he may drift from it in practice—economic motives do not win the respect of others, and society lost its most forceful bond of union. The antagonism between the rich and the poor—between

capital and labour—can hardly be reconciled by "common sense," for experience shows that one class may profit by the loss of another. Accordingly, it became necessary to conciliate—and demoralize—the poor by offers of doles in unemployment and of amusement in idleness—the *panem et Circenses*. Moreover, from the "business" point of view the employment of mercenary soldiers has much to recommend it. So Rome drifted to her destruction by barbarians who were infinitely inferior to her citizens in number, knowledge, and resources.

But the death of Rome rejuvenated Western Europe. The barbarians annihilated the future by their violence and caprice. They were children—cruel and bloodthirsty—but childlike in their imaginative simplicity. Art revived in Gothic architecture. Religion regained a real significance. Ideals of resistance were honoured in asceticism. The crusades in their romantic uselessness take us back to the Trojan war. Life was melodramatic; and romanticism bore a peculiar flower in the observances of chivalry. War was infused with the "sporting" spirit; it was unfair to take advantage of an adversary's necessities or to overwhelm him by mere weight of numbers. The period of rejuvenescence lasted for about a millenium. It was thoughtless and turbulent. But Chaucer, writing near its close, gives a vivid picture of light-hearted gaiety.

The pendulum has now swung back. Life is again overshadowed by the interests of the future; and mechanical and chemical inventions have added enormously to the volume of economic expectations. They appear to differentiate our civilization widely from that of classical days. But we are, in truth, nearer the times of the Antonines than those of the Plantagenets. The change has come gradually and unevenly, as by

a process of irregular filtration. The money-making habit, once peculiar to the Jews (and a cause of the antipathy with which they were regarded) spread to the townspeople, and through them to the country. But its effect upon popular mentality could be checked by the influences of tradition and education. The Irish, for example, still preserve their imaginativeness, and it is for this reason that we cannot understand them. In the East " business " has always been limited to particular classes or castes. The Mohammedans still abstain from the taking of interest. And it is a striking fact that, in India, during the present unrest, nationalist aspirations have been led and sustained by the enthusiasm of an ascetic.

We cannot perceive this change of mentality in ourselves except through its consequences. A man who is in love is not aware that he has become unreasonable: a madman does not realize that he is insane. We can appreciate the difference that distinguishes us from our forefathers only by comparing our conduct with theirs. From this point of view what a gulf lies between our times and those of the Tudors—between us and a people that would change its religion at the dictate of a king!

It is a curious fact that in modern times the spread of commercialism at the expense of idealism has closely accompanied the development of the democratic form of government which appeals to us in the name of Liberty. The two are, indeed, closely related. For commerce is swayed by the calculation of advantages, and the persuasive use of advantages is the instrument of democratic government. The exchanges of trade are motived by the attractive expectations that they offer to buyer and seller. Democratic politics rest upon the use of attractive promises in swaying the

popular will. The idealist cannot be persuaded by consequences: he is actuated by principles that will not yield to opportunist arguments. He is, therefore, unfit for democratic government, and is an anachronism, so long as it endures.

It is difficult to contrast with fairness the effects of imaginative and practical motives, for we naturally admire the former, even if we are unswayed by them. There are few to whom idealism makes no appeal, however much they are entangled in the meshes of "business." We must, however, remember that imaginative promptings have been responsible for an appalling amount of human misery, that wars of sheer ambition have for ages past destroyed civilization after civilization that man has laboriously built up, so that progress has been an alternation of daylight and eclipse, instead of a gradual advance from darkness to daylight. On the other hand, the pursuit of gain imposes the self-repression of timidity—or, at least, of caution; even the desire for vengeance will give way before calculations of profit. "Business" promotes the morality of orderliness, however conventional. And it does more than this. Since its transactions rest upon persuasion, as opposed to command, it breeds a spirit of deference which atrophied in an atmosphere of military power. And by linking nations together it produces an economic internationalism which in time may soften the clash of patriotic jealousies. Nor must we forget that the pursuit of riches leads to pleasures of an imaginative kind. For the rich are held in esteem, and may use their resources to purchase distinctions. All things considered, we may conclude that the evolution of economic interests is increasing the orderliness —and perhaps, the stability—of life, while lessening its gaiety and charm: it is rendering us dull in

ourselves and to others, but at the same time conventionally "respectable."

We may be thankful for the peace and quiet of orderliness and still deplore the loss of imaginative vivacity and idealism. Is it impossible to conserve them amidst the material temptations of our economic culture? Fortunately, man is extraordinarily plastic—influenced by education to an extent which we hardly realize—and may be stimulated by ideas as strongly as by sensations. In the training of the young we have, therefore, a means of counteracting the growing pressure of the economic. Education may be infinitely more than the acquisition of useful or useless knowledge. It may intensify the appreciation of the creative in art and literature, of such ideals as those of Magnanimity and Sympathy. The imaginative faculties may be cultivated in play, and it is probable that school games have an influence at least as valuable as the teaching of the class-room. It is for this reason that our public schools are so successful. They may impart but little useful knowledge; but they are a protest against the all-sufficiency of the commercial spirit. In these days prudence is a necessity. But it should be seasoned with what is commonly called "sportsmanship"—a sentiment which, in its purest form, is closely related to idealistic—and, indeed, to Christian—feeling.

CHAPTER III

LIBERTY

SHOULD we face life's enigmas blindfold or open-eyed? For centuries past we have been admonished to "know ourselves." We respect the precept, but shrink from it in practice, thinking, it may be, that "when ignorance is bliss 'tis folly to be wise." Is it, however, certain that humanity is as happy in darkness as it might be in daylight? Are man's relations with his fellows incapable of improvement? Is it not better to "face the music,"—*venienti occurrere morbo*—and seek the truth at all costs?

Liberty is one of the most dazzling of our ideals. It is symbolized by the very largest of statues. To praise and magnify it, poets, philosophers, and politicians unite in chorus. It stimulates a reverence which waves analysis aside as impertinent. Yet, regarded simply and straightforwardly, it reveals itself as meaning nothing more exalted than to act self-assertively *as we like* or *choose*, instead of under obedience. This interpretation is confirmed by etymology. Ἐλεύθερος and *liber* are akin to *lubens* (willingly): "free" is authoritatively defined as "acting at pleasure." Liberty and obedience are, then, contraries. Obedience may be compulsory. But it may also be dictated by faith. Liberty is, therefore, opposed to faith as well as to slavery; and we recognize that this is so in speaking of the emancipated as "free-thinkers."

We " choose " when we accept an inducement instead of obeying a command. Is our choice " free " ? Determinist philosophers will not have it so ; and, in fact, when we choose deliberately, we are plainly *led* by the most attractive of the prospects that offer themselves. One does not act " freely " if, when late for an appointment, he chooses a taxicab instead of an omnibus. But there is, nevertheless, the possibility of freedom. For he may decide at random or by " tossing up." That is to say, we have the power of making an effort of venture. It is a privilege ; for it distinguishes our conduct from the invariable sequences of inanimate Nature. But we share it with all living creatures. Animalcules that are prevented by an obstacle from rising to the surface of a glass of water will, by repeated random efforts, find a way round it, whereas air bubbles simply press themselves against it in vain. The power of venturesome effort is, therefore, a characteristic attribute of life. It evolves into the assertive volition that in children is called " wilfulness." This is attractive in idea because it implies power, and power is delightful in that it is an element of the success which is vital to our lives. From morning till night we are in conflict with our environment. Our movements in " getting up " involve antagonism to the force of gravity. We think of success as a *great* event. But little successes and failures are a running accompaniment to our most ordinary experiences, and reflect themselves upon our spirits in self-complacency or depression. Civilized life depends upon the successful practice of dexterities that are acquired in childhood. They may become eminent as " accomplishments," and we think of a " successful " violinist or cricketer. But we must *succeed* if we would satisfactorily adjust a necktie. Success in small, if not in great matters, is

essential to our existence. It involves notions of power and excellence; and these ideas are fascinating when associated with ourselves, and attract our admiration if they are associated with others of whom we are not jealous.

There is no such power in deliberate choice, when we are, in fact, seduced by the most attractive of alternatives. But there appears to be. For choice, or *selective* volition, is a phase of willing, and, as such, contains an element of spontaneity. We can disregard the merits of opposed attractions, although, as a general rule, we are influenced by them. And choice always entails the effort that is needed to still the confusion which is occasioned by competing possibilities. Hence the weak-minded are constitutionally undecided. Accordingly all willing, whether selective or assertive, appears to involve the exercise of power.

Liberty, or freedom of choice, is, then, self-power, which is so inspiring a conceit because it is so pleasing. It affords us the dignity of self-respect. It endows us with self-confidence, for power, as we well know, stimulates faith. We trust in ourselves. Because of this attractiveness liberty of choice has tended to supplant faith, or obedience, in the evolution of human culture. This change is expressed philosophically as the progress from "status" to "contract." For choice is useless as a means of regulating our social relations unless it is treated as final. It must end in an "agreement." Having chosen, we must not "change our minds." Contract is the consequence of choice, as status is the consequence of faith.

But self-confidence can rarely be so strong as faith in another. For we are keenly aware of our own limitations, whereas another's power may be magnified by imagination. Accordingly, in times of danger men

who pride themselves upon freedom turn to a leader and follow him obediently. When circumstances are emergent, liberty, we feel, is inopportune; and we do not suffer its interference in matters of real practical importance. It plays but little part in the education of childhood and youth: it is anathema in the army, the convent, and the church; and, if admitted into the factory or the counting house, it disorganizes it. It is individualistic, and strength comes from unity. It is egotistic, and self-consciousness cannot give the courage and endurance of faith. Few of its enthusiastic admirers would carry it to its logical extreme. For this would be anarchy. It is felt that, if society is to continue, liberty must be restrained by respect for some laws.

Liberty is achieved in politics when leaders and law-givers are chosen by the likings of the people, as manifested by voting. We term this "democracy." Real democracy is, of course, impossible except in such small communities as were the Greek city-states. Modern democracies are actually oligarchies in which the rulers hold authority at the pleasure of the people. This gives the electors a feeling of independence and self-respect, which arises irrespective of actual voting. For experience shows that, unless excited by emulative propaganda, but a small proportion of the electors would take the trouble to go to the polling stations. For the same reason minorities that are outvoted accept the situation. Their likings have been overruled: they have lost their liberty. But they have been consulted, and this suffices to give them a feeling of dignity. And they acquiesce in defeat all the more readily because the course of politics does not touch them so intimately as their private business. *Les affaires sont les affaires.*

In choosing our leaders we may be actuated by

respect for their abilities. That is to say, we may choose them for their personal qualities. We do so when their characters are well known to us. The directors of commercial companies, the representatives of professions and trade unions are, as a rule, elected on their individual merits. But parliamentary electorates are so large and hetereogenous that the vast majority of the electors can have little or no personal knowledge of the candidates who offer themselves. Accordingly they choose under the influence, not of knowledge, but of persuasion. This affects us through the suggestion of likings. There is no loss of dignity in accepting suggestions to act as we please. One persuades another by pleasing him—it may be by the offer of money, it may be by the offer of promises or ideals. An independent candidate can obviously offer but little; and, accordingly, those who seek parliamentary honours band themselves into groups or parties, distinguished by different principles or ideals. The simplest of all distinctions is a preference for the new or for the old—that is to say, Liberal and Conservative. The party organization gives the professional politician his opportunity. He makes it his profession to persuade, and eminent politicians bring this process to a fine art. The rivalry of competing groups, and the irresponsibility which they claim for failure or default, give politics the air of a game. If political arguments were based upon reason, democratic government would be an instrument of progress: if they were magnanimous, it would at least afford spiritual discipline. But reason is uninspiring, and, moreover, cannot reconcile interests which are really conflicting. And in these commercial days self-renunciation is at a discount. Consequently the arguments which are most persuasive are those which frankly appeal to self-interest, or

convince by exciting an emotion. They may be altogether unworthy. Nothing could be farther from the magnanimity of Christian philosophy than the appeal to vengeance which won the last election.

We feel very truly that popular government has some great advantages. It is no small thing that the different classes of the nation should be drawn together on a footing of equality, in forming the national government. And democracy broadens one of life's greatest pleasures—that of personal dignity. This is, of course, a prize that may be won by private or social activities. But popular suffrage assures us of our importance in State affairs. The feeling of dignity which gives the idea of " liberty " its attractive implication, is exhilarating, and may become an active stimulus to exertion in art, letters, and commerce. Yet few will deny that the Germans were energetic and enterprising under autocratic authority. Democratic government, it may be urged, secures us against the degradation and suffering caused by the vicious example and insolent injustice of a hereditary sovereign. We must not, however, forget that democratic statesmen may be exceedingly corrupt. It may seem that democracy is inherently more tolerant than autocracy, and is less likely to stifle originality. But here again we must qualify our appreciation. For our experiences during the war appear to show that toleration results, not from popular suffrage, but from the rivalry of popular parties ; and that, when party feeling is in abeyance, a " free " government may repress individuality with the severity of a despot. Democracy is certainly more amusing than an efficient autocracy : indeed, its very inefficiency may entertain us. This is, however, a doubtful compliment. Our admiration for democracy must, then, be seasoned with some reserves. But one credit can be unreservedly

conceded. The notion that one is to be governed through the instrumentality of persuasion in place of command undoubtedly fosters a kindly feeling towards others, just as the formal civilities upon which society insists, auto-suggestively produce feelings of deference. If democracy encourages kindliness, it has the wherewithal to cover a multitude of sins.

Beyond a doubt it must plead guilty to some grave shortcomings, due in the main to its inherent *weakness*. For it lacks inspiration, and is feeble in control. A nation is a complex of classes whose interests are in many cases diametrically opposed. The problem is to unite them. They may be harmonized by faith—that is to say, by loyalty to a ruler. In this case they *obey*, and the clash of interests is stilled. Men accept the state of life " into which it has pleased God to call them." But respectful loyalty cannot be accorded to a government which is not secure in its seat for five years at a time, and must constantly appear before the electors cap in hand. Accordingly, under democratic conditions, the different classes of a nation must be *persuaded* into harmony. This is difficult. Reasoned argument can hardly reconcile such differences as antagonize capital and labour—the producer and the consumer: for experience shows that one may profit through the needs of the other. Moreover, reason is only appreciated by the unprejudiced. Voters generally are unimpressed by it: the instruments of the canvasser are imaginative hopes and fears and emotional prejudices. But disillusion surely follows, and affords revolutionaries their opportunity. The antagonism of the poor towards the rich may be conciliated by payment—by the grant of increased wages, or unemployment relief. But this is a dangerous expedient, for " appetite comes with

eating." And it is extravagantly costly. Indeed, the reckless finance of popular government may, not impossibly, wreck our economic civilization altogether. There was prudence, so long as the middle classes held a controlling voice. But, as the working-classes obtain an influence which is commensurate with their numbers, they will naturally seek to enhance their own income by increasing taxes and wages.

Accordingly, a democratic government is constantly assailed by class, or "syndicalist," interests, which it is dangerous to disregard, and extravagant to conciliate. For similarity of occupation is in ordinary times a closer bond than nationality, and the members of a trade union, although relatively few in number, are strong in their unity. Under a Government which inspires no active faith, a nation tends to disintegrate into castes, and experience shows that within the caste —or union—willing obedience may be rendered to the most absolute authority. For, in its heart of hearts, mankind appreciates a leader's power and likes it: forceful monarchs have always been popular, in spite of cruelty and injustice. In this feeling is a very real danger for parliamentary authority. For, if the people's representatives are inefficient, and the majority of the voters are apathetic, there comes disillusionment. Numerical superiority shows itself to be less forceful than active superiority; and in truth a few energetic men represent power more truly than does a multitude of passive electors. For the present, however, the development of revolutionary self-appointed directories has been discredited by the excesses of Bolshevism.

Moreover, since it excites no enthusiasm, democracy does not command the best services of its officials Having no particular reasons for loyalty, they are

tempted to work in self-interest, and must be paid salaries which an autocratic government would consider extravagantly high. It is evident from the French newspapers that the people of Alsace are regretting the economy and efficiency of German administration. Politicians depend upon their official subordinates for much of their credit, must conciliate them, and are quite unable to withstand the insensate multiplication of offices under the State. Democracy must be extravagant. It charges the taxpayer heavily for his privileges.

For similar reasons a democracy can hardly be efficient in military affairs. The republics of ancient days fell from inability to protect themselves. The hill tribes that inhabit the country between Assam and Burma are governed democratically. One of them petitioned me for the annexation of their territory, since they needed protection against a roving band of warriors from the south. There were objections to an extension of our boundaries, and I asked their headmen why they did not drive the intruders out, as their numbers were comparatively small. "We cannot fight them," they replied, "they are led by a Raja, while we have only village councils." Their answer meant more than they imagined. It explained the failure of Athens as well as their own. We may claim that in the late war Faith was conquered by Persuasion. Faith can, of course, be overwhelmed by numbers.

Perhaps, however, the most serious of the charges that can be brought against democratic methods is that they tend to demoralize those who are influenced by them and those who use them. The arguments of political persuasion may be true and honourable; but they may be misleading and unworthy without losing their force —sometimes, indeed, with a gain of force. In this

case they are actually harmful to those who are led by them. For, while command fetters the body, persuasion may fetter the mind. One may criticize an order whilst obeying it. But mendacious propaganda poison the springs of reasoning by misrepresenting experience or pandering to prejudice. And those who purposely mislead must suffer in character. One cannot touch pitch without being defiled.

We can, then, hardly find anything which is particularly "noble" in democracy. It is an expedient, and may fail, as it has failed in the past. Yet we feel that in these days it has established itself as an enduring institution; indeed, we can hardly imagine a reversion to autocratic authority. For democracy is in harmony with the commercial spirit of our age. Buying and selling are, of course, phases of persuasion; the artifices of advertisement are identical with those of propaganda. Democracy is, in fact, government on commercial principles. It buys allegiance with promises, hopes, or money; and society becomes "ripe" for democratic methods when its interests are mainly prudential. With the ancients political liberty was a passing dream: with us it is consistent with the actualities of business life. In the history of mankind there is nothing more remarkable than the change of outlook and character which separates us from heroic, or mediæval days. In those times imagination mastered mankind, and prudence—that is to say, foresight—was merely his servant. Life was, for the most part, a play of romance or melodrama—and those who, like the Jews, sacrificed the present to the future, were as despised as a schoolboy who lends money to his fellows. Modern man, on the other hand, plays only during his childhood: in the "games" of his adult years, imaginings subserve emulation, and are not

dramatized for their own sake. A provident regard for the future is, of course, as instinctive as our appetites. Both urge upon us unseen as opposed to present interests, whereas imaginative enthusiasm cares only for the present. When the future is uncertain it is eclipsed by the present, and prudence cannot restrain extravagance. On the other hand, the longer and the clearer is the vista of future eventualities, the stronger is the effect upon us of expectations as opposed to enjoyment. By possessions, and especially by money, the future is materialized, and its attractions are heightened; expectations of profit are added to expectations of pleasure. Our economic civilization, therefore, tempts us out of the present unto the future —that is to say, into the pursuit of money. We pursue it by means of persuasion—using, that is to say, the characteristic instrument of democratic government. Consequently, we are familiarized with—and can tolerate--methods of leadership which our ancestors would have despised.

It follows that the democratic form of government, however well suited to commercialized nations, may be altogether unsuitable for peoples, such as those of India, with whom the interests ordinarily called "spiritual" still rank higher than the prudence which leads to profit. Prudential interests are, no doubt, gaining ground. But their growth is slow, and their attractions are limited to a small proportion of the population. Money is generally hoarded instead of being used in profit-getting; and the leaders of the Nationalist movement can touch the feelings of the people by denunciation of the "materiality" of our prudential view of life. It is a grave question whether a people in this stage of development will tolerate a government which they do not respect—whether

democratic rule will not be antagonized by frequent revolts against its pretensions. And this danger is aggravated by the extravagance of democratic methods, which must entail increased taxation. To give an instance. Under the changes which are associated with the name of Mr. Montagu, five highly-paid officials are now employed in the province of Assam to discharge duties which for several years I performed single-handed. The poverty of India is due in great measure to the lack of the profit-seeking spirit. But it is a fact; and it renders the people peculiarly sensitive to increases of taxation.

CHAPTER IV

ULTIMATE FACTS IN ECONOMICS

We seem to flatter political economy in calling it a "dismal science." For in truth it can hardly claim to be called a science at all. As recently confessed by *The Times*, it leaves the real nature of money clouded with mystery. It does not explain precisely how wealth can be created by the process of exchange—an achievement which at first sight appears to be as paradoxical as that people should make a livelihood by taking in one another's washing. It does not tell us why man, as he gains years, and a community as it becomes civilized, passes from a condition of childish, imaginative restlessness into one of prudent economic routine, and may revert at times from "business" habitudes into emotional simplicity—or even definitely relapse into barbarism, as occurred at the fall of the Roman Empire, and is occurring in Russia at the present day. The "economic" laws which it formulates are constantly deranged by uneconomic influences, and do not, therefore, enable us to foresee future developments. Accordingly practical men have little concern with it, and leave it to the class-rooms. They treat it with the indifference which they show to the rules of logic—as an intellectual exercise and little more.

It fails because it concerns itself too exclusively with material things, and does not realize the essential importance of mental processes. It is, in fact, too

" objective." Exchange, for instance, is considered to be the bartering of *things*, whereas it is actually a mutual transfer of *values*. But the value of a thing is plainly an *idea* of its properties, and may consequently vary with the mental predisposition of the individual. The yellow jacket of honour, which means so much to a Chinaman, is to an Englishman merely an oddity of fashion. To understand economic questions we must follow the operations of the mind, and, in particular, the evolution of our ideas. This will draw us into paths that are strange and difficult. But they alone will conduct us to the truth. And, in economics, the truth is worth money.

Our economic life is concerned with *values*, and its study must commence with a precise understanding of the signification of this term. It confuses us by possessing three separate meanings which may be distinguished as "value for use," "value for exchange," and " money value." A thing possesses value for use when it assures a pleasure (or advantage) that outbalances the difficulty of procuring it. There is no value without difficulty: such a prime necessity of life as air, for example, is valueless because it is available of itself. Generally, however, we can only gain an assurance of pleasure by overcoming a difficulty. Man eats by the sweat of his brow, or by paying money; and the payment of money is a difficulty—often a great difficulty. " Value " is, then, a relationship between expected pleasure and difficulty in which the first " overcomes " the second. So defined, we appreciate its etymological kinship with *valeo* and *valour*.

The word " pleasure " in our definition must not be taken too strictly. It comprises such advantages as the satisfaction of an appetite and relief from pain or discomfort. " Difficulty " includes the expenditure

of labour, skill, and intelligence, and the surrender of goods or money. It may be enhanced by natural causes, as in a famine; by the artificial scarcity that results from a monopoly, or by the competition of others. Its *consequence* is that which we call "cost." The *consequence* of the pleasure that is assured by a thing is a desire for the thing. A desire becomes a reasonable expectation only when it is supported by means of achievement. In this sense it is commonly termed a "demand." The strength of a demand is increased by necessity, or by the artificial exigencies of fashion.

Value for exchange comes into being when the difficulty in procuring a desired object is to induce another to surrender it in return for something else. Value for exchange is, then, primarily an *instrument* for obtaining value for use by overcoming a difficulty. But, as we shall see, it evolves into an object, and may be pursued for itself. Value for use may be expressed and measured as value for exchange. But the two are quite distinct, since one represents a comparison between an assurance of pleasure and a difficulty, and the other a comparison between two assurances of pleasure.

Money, since its invention some 3,000 years ago, has become the universal measure of value, and the worth of a thing, whether for use or for exchange, is expressed as its *money value*. But a thing cannot be appraised in money unless it is transferable from one hand to another—that is to say, unless it is "negotiable." Hence we include in the term "wealth" only such assurances of pleasure (or assurances of exchanges that will give assurances of pleasure) as are negotiable. This distinction leads to consequences which may seem absurd. A box of chocolates is wealth; but the song, to which the girl who holds it is listening, is not wealth,

although it may be much the " better value " of the two. Defined in this fashion by the influence of money, wealth includes material things, money and negotiable credit. Services, whether artistic or useful, are not wealth, although a contract to receive them is wealth, if negotiable.

Two things that are exchanged for one another gain in value for use by the transfer, since each of them assures more pleasure to the taker than the giver. Were it not so, there would be no incentive to exchange. Each of the two things exchanged possesses, then, two values for use, which may be distinguished as " producer's value " and " consumer's value." They may be expressed and measured in value for exchange. But they exist independently of it, and are, in fact, its origin. For, were there no difference between producer's and consumer's value for use, no exchange would take place.

The increase in values for use that results from an exchange may be, and generally is, much in excess of that which would suffice to stimulate the exchange. A boot-maker may be willing to accept two bushels of corn in exchange for a pair of boots rather than go without food; a farmer to give three bushels rather than go unshod. In this case there is an extra advantage of a bushel on the transaction. Its existence is an incentive to a third person to interpose. A corn-dealer, for instance, could acquire the boots for two bushels and exchange them for three, intercepting the extra advantage of a bushel. But his gain would avail him only in dealing with those who wanted corn. The invention of money, by converting extra advantage into cash profit, generalized its value for subsequent exchange, and greatly increased its attractiveness. Consequently, money has had the effect of stimulating

exchanges for the sake of the profit that is yielded by them. And it has also stimulated the use of profits in encouraging and facilitating exchanges—that is to say, the conversion of profit into capital.

Money could serve as a medium of exchange because, being metallic, and subdivisible without loss, it possessed a value for use which could be *graduated*. It could, therefore, be cast into a scale of regular, or rhythmic units by which value could be measured, just as length is measured by inches and feet. By graduating its amounts, it could be used not only to effect the exchange (by sale and purchase) of two things possessing very different values, but also to distribute between producer and intermediary dealers the increase in value that results from the transfer of an article. And, by a further development, money gave an independent existence to the value for exchange possessed by things. It represented *quantities* of value for exchange, and therefore isolated, or abstracted, the property of value from things that were valuable, and materialized it,—just as a foot-rule abstracts length, and gives it an objective existence apart from things that are long. Hence money came to signify, or symbolize, value for exchange as an existence in itself—that is to say, as "exchange value." And since the possession of exchange value gives a general command of things (within the limits of its amount) money became valued in itself, just as decorations or titles are valued because they symbolize distinction. As a medium of exchange, money is an instrument; as a symbol of "exchange value" it is an object, stimulus, or cause. On the strength of this symbolic value, tokens or paper—worthless in themselves—can be substituted for genuine coin, so that the value of money becomes largely conventional. But experience has shown that

the substitution debases the value of money for exchange, if it leaves in circulation no monetary unit whose value for exchange is maintained by intrinsic value for use.

The use of money has led to most elaborate developments of *credit*. This is an assurance of receiving money under a claim which is generally created by an advance or deposit of money or goods. A credit, therefore, includes two things—a claim and a corresponding obligation—and the term may be used in either of these meanings. The claim of the creditor may be assured by the character of the debtor for honesty, by a negotiable instrument, or by a pledge or mortgage, and is confirmed by the knowledge that the aid of the State can be invoked to enforce it. The phases of credit are protean. The wages paid to workers are advances which give an assurance of profitable sales. Money is exchanged for profitable credit claims when a share is purchased, or a bill of exchange is discounted. A cheque discharges a credit-obligation by a credit-claim on a bank. The use of credit has added enormously to the commercial resources of the country, since it enables millions of non-commercial citizens to capitalize their savings by investing them in commercial enterprises, taking, as interest, a share in the profits. Banking facilitates this process very greatly, since it concentrates the savings of individuals. And, as it is improbable that all the depositors will demand their money simultaneously, the bank can lend even more than it holds. That is to say, it can create capital and derive interest by issuing assurances of receiving money which are conditional upon its power of payment on demand. The larger its resources the more substantial are the assurances that it affords, and hence banks have a strong incentive to amalgamate.

Exchanges may be creative, retributive, or redistributive. The exchange of an article which assures a pleasure *creates* value for use, inasmuch as the article is worth more in the consumer's than in the producer's hands. Indeed, specialized production which is not followed by exchange may be futile: a stock of unsaleable boots is valueless. A man may create value for use by labouring for his own consumption. But any surplus that remains after his own wants are satisfied would be of no value unless exchanged. And things which he attempts to produce outside his own line of business will be inferior to those made by specialists, and will cost him, at producer's valuation, more than he would pay for them as a consumer. Hence production becomes specialized, with the consequence that it creates value for use only when it is followed by exchange.

The greater the difference between the producer's and consumer's valuation, the greater is the value that is created and the larger the profits that are made on the exchange. It is, accordingly, in the interests of exchanging intermediaries, or dealers, that the cost should be as low and the price be as high as possible; and they are tempted to force wages down and to raise prices by combinations, rings or monopolies—that is to say, by increasing the consumer's difficulty in procuring the article. But there is a consideration which holds artificial price enhancement in check. Exchanges are arrested by high and multiplied by low prices, and it is good business to aim at small profits and quick returns. For wealth grows more rapidly by the multiplication of exchanges than by specially high profits on a few transactions. The success of a business depends upon the number and prosperity of its clientèle. This, of course, holds good with foreign

as well as with domestic trade. To a country which relies extensively upon export the welfare of its foreign customers is of as vital interest as the welfare of its own. It is useless to produce for those who are unable to purchase.

An exchange is *retributive* when it is of money or goods in return for service. It does not add to value for use, or to wealth, because services, however pleasurable, are not negotiable. When, therefore, we pay railway or shipping companies for services of transport, or theatrical managers for services of amusement, value is transferred, not increased. For the profits which are made in these exchanges are gained at the expense of a loss, and are not "clear gain." But the exchanges may be, nevertheless, indirectly productive of wealth, if the profits yielded by them are invested as capital.

In *redistributive* exchanges the surrender of money or credit is not even balanced by the receipt of services; it is a clear loss. These exchanges are actuated by expectations of gain which on one side are erroneous, being misled by ignorance, carelessness, prejudice, confidence in luck, or deceit. All exchanges of money, or of credit obligations, are of this class. They do not add to wealth, but merely redistribute it. Such are the operations of the Stock Exchange in the transfer of shares. If one party gains, the other loses. They may appear to be creative in forcing up the exchange value of certain investments. But exchange value is relative: a rise in one direction must be balanced by a fall in others. Indirectly they may be productive in encouraging investment and so increasing the capital resources of the country. But, as exchanges, they shift wealth and do not increase it. An exchange may be merely redistributive even when it transfers an article, if the value for use of the article is mistaken. Should a

man give £10 for a piece of glass which he takes to be a diamond, he has simply lost his money.

If the profits made upon a transaction are invested as capital, the exchange has not merely created value. Its consequence, as a profit, becomes causal, and originates further exchanges. And a merely redistributive exchange may add to capital if the gainer invests his winnings. On the other hand, when profit is expended in procuring value for use—as, for instance, in the purchase of a house—it does not lead to a continuation of exchanges: it exerts no causal effect, and outlay for consumption is, therefore, termed "unproductive." Possessions in use are, of course, wealth if they are negotiable. But they are unproductive, whereas capital is productive wealth. The expenditure of the State is generally for consumption, and, if extravagant, it impedes very seriously the growth of capital. Some portion of the salaries paid to its employés, and the profits made by its contractors, may be invested. But the sums so capitalized will be inconsiderable compared with the total amount expended, which, if left in the tax-payers' pockets would in great measure be converted into capital. As such it would be as efficacious as State expenditure in providing persons with livelihood, and would at the same time remain as a causal energy, activating further exchanges.

The capitalist, then, intervenes between producer and consumer, and there is a tendency to regard him as an unnecessary intruder—to judge his profits by the oriental proverb "It fell from heaven but stuck in a palm-tree." But he does not, of course, intervene merely to intercept. Workmen cannot live without regular advances—without, that is to say, wages; machinery is required for production and transport; and no commercial undertakings can be profitable unless

they are guided by skill and intelligence and energized by the desire to make a profit. Capital could conceivably be nationalized, without detriment to its functions of paying wages, providing machinery, and directing operations. But the desire to make profit would be lost. There are men who will work from a sense of duty, or from a genuine liking for business. The generality, however, need a sharper spur. Experience shows that State control diminishes profits, if it does not extinguish them. And if profits fall, the growth of capital is atrophied. It may be urged that the managers of commercial companies are energetic and efficient, although they are salaried and not dependent upon profits. But they look to their directors for approval, and the directors judge success by profits. Capital must be animated by the profit-making spirit to be really fruitful. This incentive will lead it to exploit the working and overcharge the consuming classes, and the great economic problem before the State is how to cut its claws in their defence, whilst not detracting from its powers of grip. Socialistic or anarchistic revolutions, which would eliminate profits, would also eliminate effort. Profit-making necessarily disturbs the level of society: its consequence is the difference between rich and poor—the injustice, if you will, of inequality. Envying their riches, one may overthrow the rich. But the penalty is a relapse into barbaric simplicity, and the starvation of multitudes whose livelihood depends upon the activity of commercial enterprise. We voyage between Scylla and Charybdis.

Capital, being derived from the profits made in exchanges, will increase as the business of exchanges develops. It has been stimulated incalculably by the evolution of new desires under the complicating effect of civilization. One of the most striking of the differ-

ences between the civilized man and the savage is the astonishingly greater multiplicity of the former's pleasures. We become "sophisticated" by acquiring new tastes in food, drink, furniture, art, and amusements. Our nervous susceptibilities become refined by new experiences, just as we may sharpen our senses by testing their sharpness. These tastes are "the fashion of the day." They are not permanent acquisitions and may be lost by disuse. But, since each generation's refinements are transmitted to its successor by education, a continuity of evolution is secured. It is obvious that, as tastes multiply, demands for their satisfaction multiply, and the range of possible exchanges is extended.

The activity of business is influenced very greatly by the extent and clearness of the expectations and hopes of the day. If they are buoyant, trade flourishes; if they are depressed, it languishes. Nor is this surprising. Our economic life is concerned with *future* interests, not with the present. Value is an expectation: it is an *assurance* of pleasure or profit. Money materializes expectations: one who possesses a ten-shilling note possesses an assured expectation of ten shillings' worth of possibilities, and apart from this the note is of no value to him. That which is expected is the future: it is only through expectations (or hopes —their imaginative counterparts) that the future exists for us. We may speak of future time in the abstract; but an abstract idea represents, not an experience, but a feature which is common to a number of experiences. "Redness," for instance, has no real existence of its own: it abstracts a feature which is common to a rose and to a sunset. The same may be said of our abstract ideas of Time and Space, which merely signify that which is common to intervals of

time and distances of space. We realize the future only when we have in mind an object which lies at the end of an interval running from the present; and it ceases to exist for one who is engrossed in the pleasure of the moment, or has lost all reasoned expectations and imaginative hopes.

"Business" is, then, the pursuit of *future* interests, and if the future becomes obscured—as by the clouds which attend and follow war—prudence loses its hold upon us, and we turn, in extravagance, to the pleasures of the moment. We revert, however slightly, to conditions of ancient heroic days, before money heightened the influence of the future by giving a material tangible form to its possibilities. In those times prudence conflicted but doubtfully with impulse and imagination: to sacrifice the present to the future was indeed despised. This is the disposition of childhood. It persists with those who enjoy the artistic, or "Bohemian," temperament; they are "unbusiness-like." Some people are naturally more imaginative than others. But, generally, for those with future prospects, the interests of adult life are values and profits. The prospects of the poor are uncertain, and they are consequently improvident. The generosity of the working-man is proverbial. But the rich are impelled by the clearness of their future to weigh life's opportunities in terms of profit and loss.

It is, then, incorrect to think of the capital wealth of a country as "material." It is actually a complicated aggregate of expectations, which collectively are termed "financial resources"; and, indeed, the word "finance" seems from its origin to refer to the immaterial—to "ends" in the sense of "expected objects." This mass of expectations exists only in the mind. It rests upon confidence in the future, and if

this is shaken, it is in danger of collapse. It may be likened to a pyramid that is balanced upon its apex.

The facts which we have so far been considering mainly relate to the *creation* of wealth by production and exchange. Let us now glance at the leading causes which regulate the *distribution* of wealth between labour, capital (whether productive, transportative or distributive) and the consumer.

The cost of an article to the capitalist depends upon rates of wages and the efficiency of labour. The mechanical power which he employs is derived from coal or is developed by machinery, and the cost of coal and machinery can, more or less remotely, be resolved into wages. Payments for wages cannot exceed the price which the consumer is willing to give for an article *minus* the capitalist's expenses in producing, transporting and distributing, and profit at such a rate as will induce him to do business. They are generally much below this limit, since the desire of the poor for food, clothes, and lodging is sharpened by their needs, and those who are resourceless must accept any terms that offer them a subsistence. They are quite unable to bargain individually with capital, and are liable to be exploited by it unmercifully. Their remedy is to render their labour more difficult to procure, and this is the object of trade unions and strikes. A strike combats injustice explosively, and injures multitudes at whom it is not aimed. But it has been an effective weapon in raising wages, and appears to be the only alternative to their compulsory fixation by the State. Wages may be raised by agreement between employers and employed. But workmen could not negotiate for an agreement unless the contingency of a strike was in the background.

The efficiency of labour depends upon the skill and

energy with which men work, and the hours during which they continue working. It is a truism that man is naturally averse to persistent work which, being unimaginative, is not a pleasure in itself. His aversion may be counteracted by a desire of success: he may take a pride in his work. But the factory system discourages ambitions of this kind: it stifles individualistic feelings. Industry may become habitual. But habits of industry are easily lost. There remain two very powerful incentives. One of them is emotional —illustrated by patriotism, and by loyalty to, or affection for, an employer. The other is practical—a prudent regard for the future. The effect of emotion on industry was demonstrated very remarkably by the extraordinary energy and application with which the vast majority of munition workers devoted themselves to their tasks. Actuated by the enthusiasm of war they were indifferent to length of hours. It was not until the war was ended that ideas of "ca' canny" revived. Personal regard for an employer may have the same effect; and some of the shrewder employers of labour are aware of the fact that they can strengthen attachment by paying their workmen themselves. But, in these days of companies, workshops are directed, not by owners, but by managers who cannot attract the same degree of respect; and the tendency of the present, in industry as in politics, is to substitute practical inducements for the impulses of emotion. Workmen are regarded as labouring for economic, not for sentimental reasons. Their object is to earn pay and nothing else. This change of view has its dangers. For one who works simply for money is tempted to compare his earnings with those of others, and to ask himself whether large differences are really justified. Why, moreover, should he exert himself if his wages

are independent of his output? There is no economic reason why he should work hard if by doing so his income is not increased. Accordingly trade unions are tempted to use their power to prohibit individual workmen from using their energy and skill to produce an out-turn that would exceed that of the least efficient.

It follows that under an economic régime efficiency can be secured only by making earnings proportionate to accomplishment. A system of profit sharing gives the workmen of a factory a general interest in its efficiency. But it involves the sacrifice of the owner's immediate self-interest, and the disclosure of the factory accounts. It does not make remuneration proportionate to industry, since workmen who are energetic lose when others are apathetic; moreover, profit does not solely depend upon out-turn, and is liable to fluctuations which industry cannot counteract, and wage-earners cannot support. Earnings can only be directly linked to exertion by organizing employment on a system of piece-work or bonuses. There is no practical man of industrial experience who does not realize the vast gain in efficiency which is secured through payment by results. The ratio of output to wages rises in a surprising fashion, although the workman's earnings may be very substantially higher than when paid by time. There are difficulties. The determination of piece rates is a delicate business, and, so great is the increase of output which they may bring about, that rates which in the light of past experience did not seem to be exceedingly liberal may result in the earning of very high wages. The employer is tempted to reduce them, and this is regarded by the workmen as a breach of faith, or at least as "unsportsmanlike." For he has used their assiduity against them; he is not

content with the large increase in profits which the rates have brought him. But these are, after all, difficulties of detail. It should be possible to prescribe that piece-rates, once introduced, are unchangeable for a certain definite period, and that, if it is sought to change them, reference must be made to a tribunal on which workmen are represented. No obstacles should deter the State from furthering an arrangement, which, human nature being as it is, can alone support industry against the discouragements that are inherent in the economic system. We are committed to this system. Sentimentalism has vanished from business, as it has, in great measure, from war.

So far of the terms on which the proceeds of a course of exchanges are distributed between the workman and the capitalist. The consumer's share depends upon the prices that are exacted from him. They obviously cannot be less than the cost of the finished goods, including such profit as is required to induce the outlay of capital in production, transport, and distribution. Speaking generally, when retail dealers freely compete with one another in the market, prices conform pretty nearly to the minimum. But they may very greatly exceed it if competition can be suppressed through monopolies or rings, and hence it is in the interests of distributers to form combinations which by limiting the supply of goods increases the consumer's difficulty in obtaining them. A tradesman is most comfortable when he is in a "corner." In a closed market prices can be forced up to the limit of the consumer's paying capacity, and out of all proportion to the cost of production.

The balance of distribution will be disturbed should fluctuations occur in the value of money—in the standard, that is to say, which is used for the measure-

ment of values—since, even if wages and prices are re-adjusted in close correspondence with the fluctuations, much of the capitalist's outlay will have been incurred before they took place. The value of money depends upon the difficulty of obtaining it, and, since this again depends upon the demand for it, its worth would fluctuate very greatly as trade expanded or contracted, were it not steadied by sychronous expansions and contractions of credit. Money would be very dear during a boom, and very cheap during a slump. But credit acts upon it as a regulating reservoir upon a canal, maintaining its value at a fairly even level, so long as the State does not debase the currency, by using its monopoly of issue as a means of paying its debts. The temptations to make money in this way are exceedingly great, since money that is intrinsically valueless will retain some conventional value so long as its issue is under control—however much this control may be relaxed—and there has been a constant tendency to substitute tokens for genuine coins. Speaking generally the intrinsic value of money has been steadily falling, and has carried its exchange value down with it. The shilling was originally the twentieth part of a pound of silver : it now contains less than an eightieth part. For years past the *reis* of Portugal has represented but a small fraction of a farthing, and the unit in use is a thousand *reis*. Paper has been substituted for coin—at first as a promise to pay coin, and then as an irredeemable token ; and since its issue enables a State to meet its expenses by the process of printing, in time of financial pressure there is an irresistible inducement to flood the currency with it. The value of paper money falls as it becomes more easy to obtain, and the decline may end in its becoming valueless. The gradual depreciation of currencies has,

of course, been to the advantage of debtors, and has had the effect of counteracting the growing pressure of debt. It has been in fact a σεισάχθεια under another name, which creditors and those in receipt of fixed incomes have been unable to resist.

For the measurement of values, a debased currency may be as efficient as genuine coin, provided that its value is stabilized. One can use feet, or even inches, instead of paces, to measure the length of a walk. But, when a currency is in process of inflation or deflation, it measures changeably; and owing to the effect of conservative influences upon workmen and consumers, one class may draw profit from the changes at the expense of another. It is generally of advantage to capital that the currency should be losing value, for labour takes time to force its wage rates up in true proportion to the fall, whereas prices are raised so as to reflect it fully, and even more than fully. When a currency is under deflation, labour profits for a time, since a progressive reduction in wages is strenuously resisted. But the consumer suffers in this case also, for, although wholesale prices may conform to the rising value of money, retail prices fall much more slowly. Consumers, having become habituated to pay high, accept inadequate concessions as sufficient, and retail tradesmen may profit largely.

Currencies, the exchange value of which is supported by intrinsic value (as for instance our own currency when based upon the gold sovereign), serve for the settlement of foreign as well as home debts, and a country which possesses such a currency may profit by becoming the medium through which other countries discharge their obligations to one another. There are, then, very practical reasons for restoring the value of the English pound. But, when a currency has become

debased, it owes its exchange value simply to the authority of the State; it has no value outside the limits of the State, and cannot be used for purpose of international exchange. This is to the great disadvantage of civilized humanity, since our economic civilization renders each nation increasingly dependent upon other nations, and requires that every possible facility should be afforded to international trade. Because of this differentiation of national currencies, one who has a claim against a citizen of another country can be paid only through the intermediary offices of a citizen of his own country, and debts between different nations must be settled by a complicated "four-cornered" process, in which the claims and obligations of each country are used, in the aggregate, to cancel one another. To illustrate the process as it affects individuals. An Englishman's claim against a Frenchman, to whom he has supplied goods, is purchased, in English currency, by another Englishman, who acts as intermediary because, owing money in France, he wishes to acquire a claim against a Frenchman that will serve him as acquittance. His French creditor accepts the claim at its equivalent in francs, and recovers its amount from the compatriot who had purchased the English goods. The rate of exchange at which the equivalent is calculated is in favour of the country whose demands for acquittances in its own currency exceed its demands for intermediary transfers of claims—that is to say, whose claims exceed its obligations—and unless fluctuations can be controlled by the transfer of bullion, they may swing very widely from the nominal par level of the two currencies. For, since no money passes in these international transactions, claims must obviously balance obligations; and this must come about through a progressive fall in the exchange value of the

currency of the indebted country that is sufficiently large to stimulate the purchase of its goods by importers until equilibrium is restored. Instead of goods the debtor country may render services—so-called " invisible exports "—such as those of transport—at a price. Or it may sell its home securities, that is to say, claims upon its own industries or upon its taxes, and hence the course of a country's foreign exchange is affected very materially by the operations of the Stock Exchange. It may also raise the exchange value of its currency by the negotiation of a foreign loan, since this gives it a claim to receive large payments.

The position becomes more complicated when the Government of one country must pay the Government of another country a subsidy, tribute, or indemnity. This may be recovered as if it were due for goods exported and supplied, the creditor Government selling claims in the debtor country's currency to importers, who use them to pay for their purchases. In this fashion the British Government recovers from India the amounts in sterling which are demanded from her on account of " home charges." The process has a depressing effect upon the sterling value of the Indian currency, since if the demand for her exports does not suffice to provide the surplus required it must be stimulated by a reduction in her prices, so that the subsidy is in fact levied by a special tax upon the Indian people. Various expedients have been adopted to limit the fall, amongst them the artificial enhancement of the value of the Indian currency by limiting the coinage of rupees, and so giving them a scarcity value. But an arrangement of this kind is impracticable in such a case as that of Germany, when the indemnity is of exceedingly large amount, and cannot be paid in bullion. An attempt to realize it through the course

of trade would practically annihilate the foreign exchange value of the German currency, so that German merchants would have no inducement to sell their goods. Consequently, it must be exacted directly from the German Government, either in the form of services such as are to be rendered in the restoration of the ruined districts of France, or as goods or foreign securities which it would require from its own subjects and hand over gratuitously. But a considerable influx of goods on these terms must completely disorganize the industry of the creditor country. For they are rendered in servitude, and not by way of exchange; and free cannot exist alongside of slave labour.

CHAPTER V

AUTO-SUGGESTION

AUTO-SUGGESTION has become one of the fashionable topics of the day. Not only does it introduce us to the curious eccentricities of hysteria, hypnotism, and multiple personality ; it claims to be profitable as well as interesting. It offers to cure us of ailments without surgery or medicine—to work miracles like those of Scripture ; and it can certainly appeal with pride to the notable achievements of psycho-therapeuty in treating soldiers disabled by war. Accordingly much has been written about it. Yet it remains practically unexplained ; and, indeed, the jargon of psychology has actually deepened its mystery.

It is quite obvious that our nervous conditions, muscular movements, and thoughts commonly follow one another in a succession which is derived from experience. In the case of thought, we call this succession " memory." Two recollections are coupled because the sensations from which they are derived were experienced simultaneously or successively ; or two ideas because they have been previously drawn together in the course of reflection or conversation with others. In childhood a single such experience may suffice to establish this connection, but with advancing years repetitions are required—several blows with a hammer, so to speak, instead of a single blow. The remembering with which we are most familiar is *successive,* one

idea following another like the carriages of a railway train. But things are also remembered in *coincidence*. A moving experience, such as a declaration of love or an anguished parting, comes back to us, not alone, but set, like a theatre scene, amidst a wealth of simultaneous detail. It is by simultaneous recollection that the objects which we see are invested with solidity and distance. They present themselves to the eyes in the flat. But, having been associated with simultaneous experiences of touch and movement, they summon recollections of these experiences. But the two may be dissociated by violent concussion of the brain. In this case visual impressions lose all reality, and sight becomes vague and confused. We feel " at sea."

It is clear, then, that two recollections, or ideas, having once been linked together in experience, remain under the influence of this connection. There is an immaterial but durable liaison between the two which enables one to " suggest " the other. Its origin appears to be the intimacy that is established by association. Ideas that are associated simultaneously are obviously intimately connected : this is also the case when they are associated successively, since an interval, whether of time or space, is incomplete without the points that begin and end it, and consequently the two points, with the interval, constitute a single unit. Moreover, since the beginning and ending of each interval are, respectively, the ending and beginning of the intervals that precede and follow, a succession is welded into a *continuum*. In nervous life the consequence of intimacy is the condition which we call " familiarity "—a factor of tremendous importance. No living creatures, however lowly, are insensible to the attractiveness of the familiar and the repulsiveness of the strange. Familiarity affects the functioning of

our internal organs : the stomach digests food to which it is accustomed far more easily than substances, however wholesome, that are strange. We see its influence in our preference of acquaintances to strangers, and it is probably the ultimate basis of gregarious life. It underlies our acquired tastes. Finally (and this is the strongest point), familiarity is without doubt the cause of habit. Memory in thought plainly corresponds to habit in behaviour.

We are not accustomed to the idea that the body, and not only the mind, has this faculty of remembering. Yet it cannot be doubted that the liaison of past association affects the nerves of feeling and movement as well as the brain. The recollection of a danger, for instance, or an idea that is derived from experiences of danger—may recall a nervous condition of fear. A rapid succession of muscular movements, such as is involved in playing the piano, and indeed, in all dexterities, is learnt by repetition exactly as is a piece of poetry. Our actions and our speech mainly consist of muscular movements associated in this fashion. There may be a similar association between movements and the varying recollections of past sensory impressions that are summoned in the course of perception. When one runs " absent-mindedly " upstairs, his steps automatically fit themselves to the staircase, because the nerves of movement are controlled by being associated with recollections of visual impressions that are automatically summoned because they are similar to the visual impressions of the moment—and this, moreover, although the visual impressions may be hardly conscious.

These associations are acquired, or " learnt," by practice. But there are others that are inborn in us. Tears " naturally " follow grief, and laughter joy.

Winking is innately associated with a sense of danger to the eyes : swallowing with the sense of an object to be swallowed. The nervous exaltations and depressions that accompany success and failure are followed by instinctive revulsions which manifest themselves in consciousness as feelings of respect and pity. We cannot help respecting ourselves in success and pitying ourselves in failure. The successions in which our internal organs function come to us " ready made " at birth like the grippings, suckings, and cries of infancy. These associations are, then, inherited, and may be styled " innate concatenations." They constitute *instinct*. The substitution of association for concatenation gives us freedom. We can in some measure shape our lives instead of being wholly in the clutch of destiny.

The recall of one idea, or nervous state, by another with which it is in liaison, may be termed " associative re-stimulation." It may run backwards. That is to say, a mental or body state may be recalled by one which was originally its retainer or follower. In this phase associative re-stimulation is styled " auto-suggestion." Cheerfulness is caused by the good, depression by the bad. Therefore we view the future hopefully if exhilarated, fearfully if subdued. Hopes and fears are auto-suggestive, as opposed to logical, expectations. In our instinctive life smiles and frowns are the consequences of pleasure and displeasure ; but we can arouse faint shades of these feelings by smiling and frowning deliberately. Blows and cries accompany anger : it is possible to conjure up a feeling of anger by violently attacking a sofa cushion, and the auto-suggestive effect of cries in stimulating rage was practically recognized when they were made a feature of bayonet exercise. Fatigue is followed by lying down, and accordingly by

lying down we become sleepy. Eating follows appetite, and may therefore provoke it.

Auto-suggestion that comes, not from instinct, but from experience, is illustrated by one who whistles to "keep up his spirits" (instead of in expression of good spirits), and still more forcibly by the effect of courteous manners in producing kindly feeling. To act considerately towards another is the consequence of feelings of consideration for him. Yet the gestures will stimulate the feeling, and society has good reason for insisting upon politeness of behaviour in its effect upon oneself, as well as upon others. "Manners makyth man."

The suggestive stimulation of feeling by movements does not necessarily involve the functioning of the brain. But it is through mental processes—the intervention of recollections and ideas—that auto-suggestion attains its far-reaching importance. Thought is intelligent, not memorial, when one idea evokes another through a trait which is common to both—that is to say, through the uniting of two ideas by a sameness. But it is, of course, very largely memorial, one idea recalling another because they have become associated in perceptive or reflective experience. It is by memory that an idea calls up the word which is its label and "signifies" it: by a reversal of the memorial succession, the word calls up the idea. In this case the recall runs backwards, since the idea must have existed before its word-sign was attached to it. Spoken words are muscular movements: the vowels are formed by compressions of the chest which force wind through the chords of the larynx: the consonants are movements of the tongue and lips which do not differ in essential character from those of the limbs. Our ideas of words spoken by ourselves are then

recollections of movement accompanied by sound. They are recalled by sensations of the sound of words spoken by others. They are similarly recalled by the visual impressions of written words because these have become associated with the recollections as their symbols—an association which is established in "learning to read." It follows that we understand another's speech through auto-suggestion: the sounds uttered by him recall recollections of movements and sounds made by ourselves, and these recall the ideas which they signify. Accordingly when we listen to another we are thinking with him.

The words of another may recall to us his feelings, as well as his thoughts. But his feelings can be most forcibly suggested to us by gestures and expressions of feature which auto-suggestively recall *ideas* of his nervous conditions. For an idea of a nervous condition may exist apart from the condition: we have an idea of fear, for example, apart from being afraid. We call a nervous condition a "feeling," or "emotion," when it is accompanied by a sensation of it. From the recollections of these sensations ideas are formed which exist independently of the nervous conditions that they accompanied. They are intimately associated in ourselves with ideas of the gestures and facial expressions that are the consequences of various nervous conditions; and sensory impressions of another's gestures and facial expressions evoke these ideas because there is a sameness between the two. The ideas of expression auto-suggestively recall ideas of the feelings which they express. It is in this roundabout fashion that we understand others by their expressions, and invest the shadows of a cinema with life and feeling.

In those of very sensitive temperament the words and

expressions of another may suffice to recall not merely ideas of nervous conditions, but nervous conditions in actuality. Impressions of another's angry gesture may render one angry. Ordinarily, however, this does not occur unless the other is mentally identified with ourselves through a sameness. In this case we feel *with* him, or sympathize, because he is one with ourselves. Apart, however, from this process, there is a very remarkable case in which impressions of other persons' conduct auto-suggestively stimulate actual emotion. The feelings of pride (or self-complacency) and shame, which are in ourselves the nervous consequences of success and failure, are actually aroused by the conduct of others when it manifests respect or pity towards ourselves. For pride and shame, being instinctively followed by the reactions of respect and pity, are stimulated backwards by ideas of respect and pity, and these are recalled by the conduct of others when it is such as is associated with respect and pity as their expression. So strong is this instinctive liaison, that one may make a sensitive child cry by pitying it. In those who are antagonistically disposed towards us, respect becomes jealousy and pity contempt, manifestations of which have a similar effect upon us. By this auto-suggestive stimulation of instinctive reactions our happiness and unhappiness are at the mercy of others. They can please us by compliments, distress us by snubs, and hence we desire, above almost all things, to win their approval and escape their reproach. We are happy if esteemed, or popular, unhappy if held in disesteem; and the agreeableness of respectability is a powerful incentive to conventional morality.

Another very important instance of the auto-suggestive re-stimulation of nervous activity by an idea

is the prompting of an effort of will by the thought of making it—a succession which anyone can easily verify by experiment. Other nervous states can be recalled by ideas of them only in the case of the very sensitive: hunger, fear, or love can, ordinarily, not be produced by ideas of these conditions. But they can readily be brought about by ideas of their *stimuli*. The recollection of an injury, or an idea derived from the recollection of one, will recall the nervous state which followed the injury, and this, in its turn, may recall muscular consequences, and cause us to shudder. The stimulus which occurs in idea may be quite imaginary, if it possesses a sameness with a recollection of an actual stimulus. Thus one of imaginative disposition can think himself into love with a woman of fantasy, or into fear by the fancy of a spectre. And, as already stated, those who are very emotional can auto-suggestively produce an actual emotion by the bare idea of one, and even bring into existence actual conditions of sensation, so that they are *visually* affected by their ideas. This is hallucination.

Actions and utterances are commonly stimulated auto-suggestively by ideas of them. (But, having thought of a line of conduct, we may follow it automatically, being unaware of the movements that execute it in detail.) In speaking, the ideas which occur to us bring with them ideas of the words which signify them, and these ideas stimulate utterance associatively. The succession is so rapid that we may not catch it, and may imagine that we have thought in words, and not in ideas that recalled them. It may be possible to think in words when thought is a memorial repetition. But intelligent thought must be in ideas, for there is nothing in words that can establish intelligent connections through the unification of

samenesses. The automatic stimulation of utterances is convincingly illustrated by one who "talks to himself."

Imitative action is auto-suggestive. Visual and auditory impressions of another's movements evoke ideas of these movements that are derived from our own experience, because there is a sameness between the two; and the ideas so evoked stimulate the movements automatically. Ideas of movement are repeated in movement. Imitation is also involved in delineating or fashioning an object. For this accomplishes itself by translating impressions of form into movements of the hand and fingers. There is a sameness between forms and gestures outlining them, through which impressions of the former evoke intelligently ideas of the latter. An artist imitates his impressions, or concepts, in executing them. His imitation requires more intelligence than the imitation of movements, since the sameness between an impression of form and an idea of gesture is more recondite than that between an impression of gesture and an idea of gesture. It is transformative instead of repetitive. But it is *copying* none the less.

It is, then, evident that auto-suggestion is an influence which, if uncontrolled, would rule our lives: we should be marionettes, moved by strings twitched by memorial liaisons. We are freed from this automatism by the antagonistic effect of the nervous conditions called "attention" and "intention." The former arrests us from accepting the unrealities which auto-suggestion may present to our senses. We oppose *attention* to its promptings, and by concentrating our mental faculties place ourselves in definite contact with our surroundings. Attention includes much more than the mechanical focusing of the sense organs. It

involves aggressive activity in thought: it is this which distinguishes perception from crude sensation. Reflection is similarly controlled by *intention*, or purpose, which restrains it from wandering auto-suggestively from its subject. Intention, in like manner, controls our conduct and does not suffer auto-suggestion to influence it irrespective of convenience or advantage.

The will is another force which fends off auto-suggestive influences. Our powers of will vary with the condition of the continuous nervous energy which we call our "spirits"; in high spirits we are forceful, and determined, in low spirits, weak and undecided; and we may legitimately infer that it is the spirits which endow us with the energy involved in willing. For the most marked feature of the spirits is their vivacity, their resistance to passive automatism. They "inspire" us, whereas under the influence of auto-suggestion we are clay in the hands of the potter, —whether the ideas that mould our thoughts and actions are our own or are suggested to us by others. We can feel that the higher are our spirits the more readily we break through the chains of habit: when spiritless we are enslaved by the conventional. Auto-suggestion is, therefore, most influential when the spirits are weakened, and reaches its height when they are quenched—when the nervous system is, so to speak, "exanimated" —as in the hypnotic state. The linking current of nervous association then runs its course unchecked, and may be initiated by an idea that is suggested by another. It is to such a condition that the term "auto-suggestive" is ordinarily applied. But the curious anomalies that it exhibits are merely exaggerations of a tendency which affects us at all times, and influences

very powerfully the course of our everyday thought and behaviour.

The spirits can be dulled, with the loss of their resistant power, by a violent sensory shock, or by such a sensory strain as leads to the state of " fascination." A well-marked consequence of shell-shock is the loss of all will-power. A nervous woman, crossing the street, who is suddenly alarmed by a motor-car may " lose her head " completely, and run here and there, as various shouts reach her from the bystanders. The hypnotic—or mesmeric—state is ordinarily induced by fascination : the attention is riveted upon an object and exhausts itself. The spirits can also be dulled by certain organic conditions—as by those which are loosely termed " hysteria." In hypnosis and hysteria the associative course of the brain runs unchecked, and may lead to extraordinary delusions in both perception and judgment. The ideas that initiate self-mystification may be called up by the words of another. Their implicit acceptance is greatly assisted should the patient regard their speaker with *faith*—that is to say, with the feeling that is caused by the impression, or idea, of favourable, or protecting, power.

In the hypnotic condition there are three well-marked stages—the conscious, the subconscious, and the unconscious. In the first the patient remains aware of what passes, but cannot control perception and thought. He will mistake a walking-stick for a serpent, water for wine, at the hypnotizer's bidding. As the spirits fail, consciousness deserts him, and he falls into the hypnotic trance. But his sense-organs and his brain still function : he can receive injunctions and can even attach them to *expectations* of future events, so that, on these events occurring, the idea that has been enjoined on him will auto-suggestively

stimulate action, even after the hypnotic state has passed away. He will, for instance, sit down and write a letter after lunch on the day following, because this has been suggested to him when hypnotized. That consciousness should follow the spirits into annihilation seems to show that the current of nervous excitement, which renders impressions and thoughts conscious, is closely related to the tonic nervous energy that constitutes our spirits. And these phenomena prove that the brain can function independently of consciousness—a condition for which the expression "subconscious" may be appropriately reserved. Finally, the brain ceases from action, and the patient falls into the lethargy of unconsciousness, which resembles deep slumber. His brain is "out of circuit" and his sense organs are closed to all stimuli but such as are sufficiently violent to awaken him.

In hysteria, thought and behaviour may automatically follow the suggestions of others. But they are commonly actuated by self-suggestion—by ideas which may be as fantastic as dream-images. Indeed, hysteria may be distinguished from hypnosis by being of a more imaginative character. The spirits, having lost all resistant power, may nevertheless be stimulated "explosively" by physical promptings so as to flood the brain. The most striking of hysterical manifestations is the subdivision of self into two or more personalities. But this is really not so extraordinary as it may seem. For we change our personality with our feelings and emotions: Philip drunk is not the same as Philip sober. The force which keeps us "one" is the antagonistic contrast of ourselves with other persons and our surroundings, and, if this is lost, our unity disappears with it. Accordingly, it may be lost in hysteria. It is always lost when we imagine. Children

playing at horses believe that they are horses, and have been known to burst into tears when, sent upstairs to prepare for lunch, they were shown by the looking-glass to be only themselves. A dramatist, to write convincingly, must assume the personality of each of his characters in turn. Art is impersonal.

We have seen that ideas will auto-suggestively stimulate muscular movements, and are, therefore, prepared to believe that they will affect the tissues of the body. An entertaining illustration was published in *The Lancet* of June, 1880. A gentleman, missing his false teeth on getting up, was horrified by the idea that he had swallowed them. He felt them in his throat, and a hard swelling appeared behind the larynx. A surgeon was summoned, and was about to operate, when a servant rushed in with the teeth in her hand. She had found them in the dressing-table drawer. The swelling subsided at once. There are well-authenticated cases of the production of wounds and tumours by ideas of them, and it is well known that one can think himself into simulated cholera and lesser abdominal troubles. There is, then, no difficulty in believing that lively ideas of recovery, especially if enforced by faith, will materialize themselves in recovery. The triumphs of Christian science are indubitable. Doctors have found that to act upon the nerves by suggestion may succeed where surgery and medicine fail. According to a communication published in *Nature* on March 13th, 1919, in the Neurological Hospital at Newton Abbas, 96 of 100 soldiers who had been completely incapacitated for an average period of 11 months were cured in an average of 54 minutes. The medical literature of the past few years abounds with records of such successes.

It seems, then, that, if only we had faith, we should

have at our disposition a simple and inexpensive means of curing ourselves—from, at all events, minor ailments —in suggesting to ourselves that they do not exist, or are in course of disappearance. There is some confusion as to the necessary formula. It is sometimes represented as involving an effort of will. But the will can only control those parts of the body which are innervated from the spinal system. It has no power over organs such as the stomach and liver, which function under the control of the most primitive of our nerve installations —the sympathetic. These can be effected by a *physical* nervous condition such as that of fear, but not by the spirits, save in so far as an energetic mood enhances the general vitality of the body. If, then, we mean to influence an internal organ auto-suggestively, deliberate willing is useless: we must "let ourselves go"—submit ourselves to the obsession of an idea. Our submission will be facilitated if we put the idea into words, since words auto-suggestively recall the idea which they express. It must not, however, be understood that a will to recover is useless. It may be very effective. But it is a different remedy. It is not auto-suggestive, but resistant. It heightens nervous tone, and increases the elastic resiliency which is one of Nature's remedies, acting in this fashion like any other stimulus to the spirits—music or dancing, for instance. Which of the two processes has better chance of success depends upon the patient's temperament. Those with hospital experience know that some patients are assisted by encouraging assurances of improvement—that is to say, auto-suggestively. Others, of the self-assertive kind, may be improved by discouragement. If warned of their danger, they antagonize it, and may defy death through the spirit of sheer contrariety.

CHAPTER VI

NERVOUS TRI-UNITY

EACH of us thinks of himself as a unity. But, in fact our network of nerves—the most essential part of us—is a complex of three systems, each of which represents a definite stage in the process of evolution. Our *sympathetic* system corresponds with the full nervous equipment of such animals as caterpillars. Our *spinal* system is such a concentration of nervous elements as distinguishes the butterfly from the caterpillar. To these is added the *brain*. The three systems develop separately in the human embryo. The sympathetic nerves evolve out of the lower layers,[1] the spinal nerves out of the upper layers of the embryonic tissue. The brain adds itself to the spinal system as a vesicular outgrowth. The three systems are closely interconnected, so that a change of condition in one affects the others. And, through this connexion, the action of one system may be profoundly modified by the influence of another. But, functionally, they are three, and we can *feel* that we have three elements within us, distinguishing them as the physical, spiritual, and mental, or as the instinctive, the animative, and the reflective.

We have direct experimental proofs of this curious tri-unity, although there has been some hesitation in

[1] In our nature there is a duality of sex elements, arising from our double parentage—male and female. This, it seems, manifests itself in the twofold development of the nervous system, as sympathetic and spinal. The brain adds itself by the differentiation of the latter.

drawing logical inferences from them. One of them may be mentioned in some detail. A distinguished surgeon (Dr. H. Head, F.R.S.) submitted himself in the interests of science to a drastic operation, a full account of which is given in his *Studies in Neurology*. His left arm was opened by a long incision, the radial and external cutaneous nerve-fibrils were hooked out, severed, and the ends re-united by suture. The effect was to render part of the hand insensible to *light touch*, *prick*, and all *heat* and *cold*. But sensibility to *pressure* subsisted. This sensibility, therefore, arises, not from the nerves that run under the skin, but from nerves that lie in the muscles and appertain to the spinal system.

The sensibilities that were lost gradually returned as the severed nerve-fibrils re-established their union. But they returned in two clearly marked stages. First to be recovered was the sensibility to prick, or injury, and to extremes of heat and cold. This stage (termed by Dr. Head " protopathic ") was marked by extraordinary acuteness of pain, which was, however, not definitely located but radiated widely. This is characteristic of pain that affects the internal organs of the body, which are innervated from the sympathetic system ; and the conditions of susceptibility appear to correspond to those of lowly organized animals. In the second (or " epicritic ") stage the skin recovered its sensibility to light touch, to *degrees* of moderate temperature, and to the *distances* between points touched. These fine discriminations plainly arose when the restoration of nervous communication reached the brain.

We have, then, three distinct classes of susceptibilities attributable to the action of the sympathetic, the spinal, and the cerebral systems. Since the three

systems are connected, sympathetic and spinal impressions may reach the brain: otherwise we should be unconscious of them. And, on their way to the brain, they are not only combined, or integrated, but the action of one set of nerves may neutralize, or even reverse, that of another. None the less it follows from the experiment that our impressions are complexes of three distinct elements, which influence one another but are of different origins.

This conclusion is confirmed by the curiously localized effects of various drugs. Thus cocaine primarily affects the sympathetic system, strychnine the spinal, caffeine the brain. The eyes are innervated from all three systems, and no one who has had a scrap of iron removed from his eye under cocaine can fail to have noticed the remarkable facts that, while sympathetic reflex winking is inhibited, he can wink voluntarily, and that *fear disappears along with the reflex.* Consequently, the cerebral nerves being unaffected, he can watch the surgeon's needle picking at his eye with a feeling of complete detachment.

The primitive function of a nerve is to convert an impression into a movement. It effects this by transforming the character of the energy, or excitement, which is generated by the impression. This arises as a current of *sensory excitement* which has apparently electric affinities, since movements can be stimulated artificially by electrical action. The current of sensory excitement is transformed into one of *motor excitement*, the primitive function of which is to move a muscle. Its nature is unknown. We shall find reasons for surmising that it is of a vibratory character, like sound, and it certainly takes one or other of two phases according as it actuates a movement of approach or recoil. Nerve-units are of extreme diversity and

complexity, and it is difficult to classify them broadly and simply. But it seems that a nerve-cell, at its simplest, discharges motor as well as sensory functions, receiving a sensory and dispatching a motor current. In the spinal system these two functions are specialized to separate sensory and motor cells, arranged in pairs, that cling together in close connexion through branches (dendrons) springing from them. Did these release hold, direct communication between the cells would be interrupted, and an incoming sensory current would be deflected upwards towards the brain. We have here, then, a device for bringing the current under control. The nerve-cells of the brain are peculiar in possessing no motor outlets, so that the motor excitement that they develop must, it seems, act in some mysterious fashion upon the impression that is produced by the sensory current. In this interaction may lie the secret of consciousness.

Accordingly, a nerve is an instrument whereby causes, or *stimuli*, liberate, guide or generate consequences that are peculiar to living organisms. It is only by inference that we can arrive at any conception of the nature of these stimuli. For, since a sensation is the consequence of a stimulus, and consequences that are not mere changes in relationship always differ from their causes, our sensations cannot represent the real nature of things. Heat and electricity are quite unlike the friction which generates them. Indeed, we know by inference that the causes of our sensations of light and sound are vibrations that in themselves are dark and noiseless. But, although our senses do not reveal the real[1] nature of things, they may give us correct

[1] If our sensations are merely illusory symbols of reality, why, it will be asked, do all men see, hear, and feel alike? As a matter of fact there are differences between the sensations of individuals: some men, for instance, see red as a kind of green. But, accepting as generally

information as to the successions of phenomena and the constancy or variability of a succession. We are in the dark as to the real nature of a lump of sugar and a cup of tea; but it must be true that the addition of one to the other always produces the consequence of which we are conscious as sweetness. And, since these consequences are in many cases measurable, they can form the subject matter of scientific inquiry.

We generally think of stimuli as of things outside us that affect our senses of touch, smell, taste, sight, and hearing. But a vastly large proportion of them are within us. The nerves may be stimulated by muscular or organic conditions: hence we feel the movements of our limbs and painful physical states, such as those of injury, hunger, or fatigue. They are also stimulated organically by the glandular secretions known as "hormones," the effect of which may be compared to that of alcohol or drugs. Moreover, certain of our external experiences do not affect us unless nervous conditions contribute to their consequences. The strange, for instance, does not alarm us when it has become familiar: a difficulty does not confuse us unless we are making an effort which it obstructs: violence, and even injury, are not resented when they are offered "in play" as in the course of a football match. Since our nervous system is a complex, one portion of it may stimulate another. One nerve stimulates another if the two have become associated by having been excited simultaneously or successively in experience. So in memory one idea calls up another. And nervous changes may be stimulating in themselves in that they are followed by reactive consequences.

true that sensations are the same throughout mankind, this is explained if we infer that the reproductive germs are buds from the sympathetic and spinal systems. For, in this case, all mankind would have the same nervous equipment—continuous although disconnected.

Fear that proves groundless stimulates a revulsion of relief; the achievement of an appetite a revulsion of satisfaction. A successful effort is followed by the nervous exaltation of success; failure by the depression of shame; and in these cases nervous equilibrium is so violently disturbed that consequential revulsions are required to restore it. We are familiar with them in the feelings of respect and pity. We cannot help respecting ourselves in success and pitying ourselves in failure. The beating of the heart is probably energized by a rhythmic series of expansions and revulsions, each stimulating its successor.

Let us turn now to the consideration of the most primitive of our nervous "installations," that which is distinguished as the physical or instinctive. We see its action, at its simplest, in microscopic animalcules and in zoophytes. Every external impression is followed by a movement, and this movement is not graduated to the necessities of the occasion, but may be described as "all or nothing." They are also stimulated by their food. This is, in fact, an external stimulus which acts upon the inside instead of the outside of the body. Our food is external to ourselves. Its effect is to produce secretion as well as movement. By the fluid that is secreted the food is digested. We can discover the rudiments of a heart and the commencement of rhythmic self-stimulation. There is no animal that is not susceptible to the effects of the strange and the familiar, and the beginnings of fear lie, therefore, at the very roots of our nervous constitution. There is no animal which is not capable of a movement of venture when confronted by an obstacle or a difficulty: the capacity of venturing is an elementary characteristic of life, and is, indeed, one of the most distinctive differences between the animate and the inanimate.

Success and failure influence the humblest of organisms, the former producing restfulness, the latter restlessness. Animals of very low nervous organization may possess special sense organs. They may be equipped with eyes, and with senses of smell and hearing. We may, therefore, infer that our senses are primitively physical.

The most striking feature of primitive nervous activity is, however, that which we call "instinct," the astounding complexity of which is admirably illustrated in the writings of Henri Fabre. Under the influence of instinct an animal behaves like an actor. It is stimulated by "cues," each of which releases a set of activities. An actor plays his part by "learning" it —that is to say, through memorial associations which are stimulated by the impressions which he receives from time to time during the piece. If these associations were hereditary he could act without learning. They might be hereditary if the connexions established by experience were not associations but *concatenations* —organic nerve-linkings (differing from *associations* as an embossed envelope differs from one to which a stamp is affixed) which could be passed on from parent to offspring. In this case the substitution of association for concatenation was the first step on the road to freedom. It would enable us to learn by our own experience instead of being fettered by that of our ancestors.

In ourselves, the individuality of our purely physical nature is masked by the very close connexion of the sympathetic with the spinal and cerebral systems. But we can discover very clear traces of it. The functioning of our internal organs is instinctive: it involves processes that are as complicated as the most amazing dexterities of insect life. Our "reflex" movements are

instinctive. They are more numerous than we suppose. Coughing and winking may be effected voluntarily, since ideas of them reach the brain, and can be used to stimulate them. But they are primitively uncontrollable, and swallowing remains throughout life a reflex that can only be stimulated by something that is to be swallowed. Attention must be primitively instinctive: it involves muscular adjustments which precede conscious attention—and, indeed, stimulate it—although we may force ourselves to be attentive, as to cough or to wink, by an effort of will. The start of alarm and the effort of venture that are excited by the dangerous or difficult are fundamentally reflex: they may be made before we are aware of them or their causes. Indeed, we may make violent efforts of repulsion during sleep or when consciousness is deadened by an anæsthetic, as under the surgeon's knife. That we can be awakened out of sleep by touches, noises, and glaring light proves that our susceptibility to these stimuli is instinctive, for during sleep the brain is out of circuit. By experiments which may be deplored by the humane but have added greatly to our knowledge, it has been found that dogs will live for several months after excision of the brain. In this condition the animal is quite unconscious. But it is startled by light, irritated by tobacco smoke, and deterred from eating food by the taste of quinine.

These experiments show, moreover, that the appetites are instinctive. A brainless dog grows restless at feeding time and is periodically affected by sleep and wakefulness. A male pigeon deprived of its brain shows distinct signs of sexual excitement, and in springtime will coo all day long. It follows that the passion of love is instinctive and arises as the consequence of internal stimulation. These experiments are, it may

be objected, not conclusive as to the functions of the sympathetic nervous system, since the animals remained in possession of the nerves of the spine. But we shall find reason for inferring that the spinal system actually initiates only resistance or antagonism. For the rest it reinforces, modifies, or controls impulses which arise on the physical plane. It is the source of courage and anger, but not of fear.

The trunk of the sympathetic system is a chain of nerve-ganglia, disposed at intervals, running down the body parallel to the spine, and on either side of it. It is not unlike the complete nervous system of a caterpillar. It is connected by branches with the spinal nervous system, and appears to have lost some of its original functions with the evolution of the latter. It is possessed by all vertebrate animals except the very lowest—the curious little fish called the *Amphioxus*, in which it may have been lost by degenerative evolution. The spinal system differs from it very obviously in consisting of a close agglomeration of nerve-cells in columnar form. Now there is a striking fact which goes to show that the concentration of nerve-cells is attended by the development of nervous energy. There is no more marvellous contrast in Nature than that between the sluggishness of a caterpillar and the restless activity of the butterfly into which it turns. The transformation is accompanied by profound alterations in internal structure which take place during the chrysalis stage. The interior organs of the caterpillar dissolve and are reconstituted. Its nervous system, from being a loose chain of nerve-centres, becomes concentrated, five of the centres consolidating themselves into a ganglionic mass. Newport, to whom we owe this discovery, found that this remodelling of nervous organization preceded the other changes that

fitted the creature for a new mode of life, and was, therefore, the first step in the metamorphosis. So reconstituted, the nervous system of the insect serves, not merely as a *generator*, but as an *accumulator* of energy, and can maintain the continuous activity that is required for the use of wings. The butterfly becomes "animated": it suggests itself as an emblem of the spirit.

In vertebrate animals this concentration of primary nerve centres is specialized by the evolution of the spine, with its large terminal ganglion, the *cerebellum*. This takes over from the sympathetic nerves many of their instinctive functions. It originates, for instance, the reflex movements of the limbs. But the movements which it actuates may be of varying degrees of intensity, showing that it can reinforce the direct effect of a stimulus. In this case it must act as an accumulator of motive—or *kinetic*—energy—the force that is commonly referred to as *élan vital*. We are ignorant of the method in which it is kept "charged": were we aware of it, the treatment of many nervous complaints would be simplified. Our sensory nerves are incessantly stimulated by impressions from within and from outside us, which apparently lead to nothing, but might suffice to maintain this store of energy. Another possible stimulus is the energy that may be radio-actively discharged by our numerous and varied internal secretions. Dr. Gustave Le Bon has showed that radio-activity is far more general than has been supposed, and that substances which are not ordinarily radio-active may become so if they receive an admixture of another substance—of infinitesimally small amount. This goes some way to explain the remarkable effect of alcohol in strengthening the spirits. But we must not press these conjectures. Whatever the stimulus be,

its effects are short-circuited during sleep, since in this condition our energy deserts us.

We are, then, sustained by a "head" of kinetic motor excitement which maintains the tension of certain muscles, and endows the movements of our limbs with resistant energy. It may take one or other of two phases, according as it energizes approach or recoil. By their muscular effects, they may be distinguished as "expansive" and "contractive"; but the terms "accordant" and "discordant," "positive" and "negative," would express our ignorance equally well. Kinetic energy is normally expansive, but may be reversed in phase by unfavourable stimuli, as, for instance, in acute fear when the "heart fails us." It converts movements into *efforts*, the intensity of which can be suited to circumstances. A long step has been taken from the merely automatic.

"Kinetic" energy evolves into "tonic": *force* into *feeling*. It is not improbable that the cerebellum is the instrument of this evolution. This organ is curiously elaborate in birds, and birds are remarkably excitable. It is tonic energy that endows us with good or bad spirits. In its expansive phase it becomes conscious as exaltation or happiness: in its contractive phase as depression or unhappiness. It may reinforce the effect upon us of favourable or unfavourable stimuli. Fear and love are transfigured into emotions—that is to say, include a spiritual as well as a physical element: a movement of venture becomes an effort of will; success and failure the pride of triumph and the shame of defeat. And it may do more. It may *resist* this effect. In good spirits we make light of annoyances; in bad spirits we may be annoyed by the pleasing—contradictions which would surprise us were they not so familiar. A new element is imparted into life—that of *antagonism*,

producing the dis-harmony that seems so inconsistent with the adaptive tendency of evolution. The spirits resist the effects of stimuli which are discordant in phase. The phenomena of sound offer a parallel consequence. A vibrating tuning-fork laid upon a violin string that is tuned to it harmonizes with it in a note of music; laid upon another string it produces a discordant rattle. Accordingly a mood of exhilarative expansion resists depressing or contractive nervous conditions, and *vice versa*. It follows that resistance is stimulated by opposition. Energy is stimulated by contrariety, as reaction is by action. Moreover, in its constancy and in its vivacity, tonic energy is opposed to interruptions caused by physical stimuli, and to the mechanical automatism of physical responses. In high spirits children are unheeding and troublesome. On the other hand, when resistance is overpowered by sensory excitement, as in the fascination of hypnotic influence, individuality is lost, any ideas that are suggested are accepted, and conduct becomes as mechanical as that of instinct. The spirit of antagonism is the most essential element of our egotistical personality, and we lose ourselves when it is lost.

The element of resistance or antagonism profoundly changes some of our emotions and endows us with some of its own. Fear becomes courage, nervousness emulation, the recoil of dislike anger. In all these cases a physical response is resisted. When the misery of illness is infused with irritation the patient is recovering tonic strength. Resistance in itself is the self-control of asceticism, which has fallen out of repute in these days but has accomplished wonderful things. Influenced by instinctive foresight, or prudence, it is industry. And resistance is plainly involved in "willing." This involves an effort, and is so far

evolved from the primitive movement of venture. But the effort is inspired with resistance, or antagonism, by tonic energy, and is led by ideas of the brain. Volition, therefore, illustrates very strikingly our tri-une nature. In willing *assertively* we are directly under the influence of antagonism, or the spirit of contrariety; we term this "wilfulness" *par excellence*. In choice, or *selective* volition, the effort is one of pursuit, but it is rendered possible by the resistance which imposes delay, and enables us to review competing possibilities. There is a third kind of willing—*tentative* or experimental, which differs from assertive in that it is purposeful and has regard to consequences. It involves resistance to the mental paralysis caused by a difficulty. And here let us note a very significant fact—that we can affect by willing only those parts of the body which are innervated from the spinal cord. This endorses very strikingly the conclusion that the nervous energy of our spirits is spinal.

Resistance may be independent of the brain—that is to say, of ideas and consciousness. Brainless animals, such as insects, display marked antagonism and may be extraordinarily courageous. But the evolution of the brain has provided antagonistic energy with a new stimulus—that of an *idea of resisting*—which suffices auto-suggestively to evoke it. This brings us to the consideration of the brain—our third nervous element. It evolves as an appendix to the spinal cord. It is lacking in the Amphioxus, the humblest of vertebrates, and in many fishes consists of little but an olfactory lobe. Accordingly their only ideas are those of smell. For it is recognized by all authorities that without the brain there are no ideas and no consciousness. The brain converts impressions into sensations and recollections—that is to say, currents of sensory

excitement, on reaching it, become "perceptive ideas," or sensations, which leave a record of some kind behind them. We shall see that this record probably consists in the associative linking of particular brain-cells with particular nerve-cells in the sense organs, so that the former become "keys" for the latter, and can arouse in them echoes of the sensory conditions that they have experienced. A recollection, if carefully analysed, will be felt to involve faint reproductions of sensation. It is, then, partly constituted by the brain —in so far that it is recalled by keys in the brain (as the notes of a piano are sounded from the key-board)— and partly by the sense-organs. There is good evidence to show that these "keys" are arranged in the cortex of the brain according to the sense-organ with which they are connected. The concepts ordinarily called "ideas" are constituted by combinations of the records of different sensations, or by their comparison followed by the isolation of their samenesses or differences. These activities of the brain are independent of consciousness. For it has been proved by hypnotic experiments that persons may possess recollections that have been gathered from impressions of which they were not conscious. Indeed, we think subconsciously more often than we realize. It frequently happens that a problem which has appeared to be insoluble solves itself by a process which escapes us; indeed, with many persons it is a common experience to awake in the morning with a definite conclusion upon a point which was doubtful over-night. Recollections that cannot be summoned by a conscious effort frequently present themselves "out of the blank" when we have ceased to hunt for them. And we shall find reason to believe that the elaboration of *concepts* takes place unawares, and that we owe to subconscious

influence the suggestions that have originated much of our vocabulary.

A conscious sensation, recollection, or idea includes, therefore, two elements—sense-impressions, from within us or from the environment, that have affected the brain, and an activity which manifests itself in the condition of consciousness. This is so mysterious because there is nothing in Nature which resembles it, whereas other forms of nervous activity have some analogies with electricity and sound. To be conscious is to be impressed by one's own activity—that is to say, by one's own motor excitement, since this is *self-produced*, whereas sensory excitement is the consequence of a stimulus. If, then, the nerve-cells that are sensorily excited by an impression were also suffused with motor excitement, they would be records of sensory excitement (vaguely analogous to the record of a gramophone) which were thrown into activity by motor excitement. The impression would become conscious because it was affected by ourselves, and we can accordingly describe ourselves as " conscious of the impression." Consciousness would be a combination of sensory with spiritual activity, transforming Matter into Mind. The motor excitement, thus thrown back, appears to be generated in the brain by the effects of sensory impressions, since we recover consciousness with our first waking experiences. In producing a store of motor energy the brain would act like the spinal cord—from which it is an off-shoot. From this store a stream of energy would affect the sensory cells, and their brain-keys, that come into activity during recollection and thought. And, since the energy of consciousness is " spiritual," it and " the spirits " (kinetic and tonic) would stimulate one

another in sympathy. It follows that the much-debated term " subconscious " properly applies when the brain is acting without a current of motor excitement—the term " unconscious " when the brain is not acting at all.

The two phases of motor excitement are translated in consciousness as pleasure and displeasure. A particular pleasure—such, for instance, that of music—is pleasure that is associated with the effect of a particular stimulus. Accordingly, all conscious sensation possesses an element of the agreeable or the disagreeable, which of itself is faint, but is reinforced sympathetically by our tonic energy, just as one musical note is reinforced by another of the same tone. In cases of sudden injury we can feel discomfort grow into agony, as this reinforcement proceeds; and waves of delight swell like a tide, and do not rush upon us instantaneously. And it appears that we owe our ideas of energy—as of a rapid movement of the arm—to a similar reinforcement. But in this case it is the kinetic energy of the spinal system that influences the motor excitement of the brain, and communicates resistant activity to an impression of movement.

Life without consciousness is merely a *process*, like digestion: it is through the brain that we are conscious, and we naturally regard the brain as a supreme authority. But in fact it is an instrument of the body, evolved to widen the scope of our physical impulses and our spirits. Its perceptive faculties are concentrated by *attention*, its reflective powers by *intention*, both impulses of physical origin. Intention involves not merely the likes and dislikes which direct our thoughts upon the pleasing or displeasing, but the regard for future possibilities of which we are conscious as *expectations*. These are evidently derived from the appetites which

compel us to look beyond the immediate present for means of satisfaction—to search and not be content with awaiting. Moreover, being developed from the spinal cord, the brain can be swayed by the will, as can be all parts of the body that are innervated from the spinal system. We can force our thoughts into any channel that suggests itself.

The brain is, then, primarily an instrument for the practical purposes of life. But, under the influence of enthusiasm of spirits, it breaks loose from its material moorings and soars far above the purposes for which it was evolved. Its aims become emotional or romantic; its thoughts take a sensory form and are transfigured into imaginings which, as ideals of religion, morality, or art, lead us far from the prudential ends of physical existence. Accordingly, we are the creatures of a double evolution—the one of practical purpose, the other of spiritual aspiration. It is through the brain that these contrary tendencies achieve themselves.

But, although subordinate to body and spirits, the brain exercises faculties of its own. We distinguish them as memory and intelligence. Both involve the resuscitation, or reintegration, of a recollection or idea by another recollection or idea that has already presented itself: in the case of memory through the familiarity of a connexion that has been established by perceptive or reflective experience: in the case of intelligence, through an identity or sameness of trait. One idea revives another memorially when the latter has been associated with it simultaneously or successively in experience, intelligently when the latter possesses a trait which is the same—that is to say, is common to both. Thus a sunset may recall the idea of a rose because it is rose-coloured. Memory recalls through past association, intelligence originates through

samenesses. To these processes we shall be able to assign not only the course of perception and reflection, but the origin of our complex ideas or concepts, and of the grammar by which we express thought in language. But this is a task to be undertaken in separate essays.

We may, however, develop at once a point of great importance—that the brain subjects us to stimuli which are infinitely more varied and complicated than those of our material surroundings. It exposes us to a new environment. If we term the sympathetic and the spinal nervous systems, respectively, the Generator and the Accumulator, the brain may be distinguished as the Stimulator. And its stimulating functions, like its faculties, may be either associative or originative.

By the creation of pleasure and displeasure it subjects us to stimuli that have no place in instinctive life. For pleasure and displeasure only exist through consciousness, apart from which they are merely favourable or unfavourable nervous conditions that may be likened to those of expansion and contraction. As such they are *consequences*, but, as conscious feelings, they become *causes*, or motives. The objects with which they become associated excite likes and dislikes instead of instinctive attractions and repulsions. And since recollections of these objects are accompanied by feelings of pleasure and displeasure, we can *choose* by anticipation, instead of instinctively pursuing or avoiding. We are drawn by a pleasurable, and deterred by a displeasurable, anticipation because in the instinctive life of infancy the things that attract us are accompanied by pleasure, and those that repel us by displeasure—an association which develops with experience. We can choose between different stimuli because we can balance them, and we can balance them because their pleasurable or displeasurable con-

sequences reduce them, so to speak, to a common denominator. We regard pleasures and displeasures as of infinitely varied kinds. But, in fact, they are all one or other of two nervous phases—the favourable and unfavourable—which are diversified in feeling by the character of their stimuli and the method of their stimulation. The pleasures afforded by dancing, drinking and public approbation are the same in essence, and we can, therefore, compare them and choose between them. Civilized life has the effect of increasing our sensibilities to pleasure: the *tastes* evolve which distinguish the cultured man from the savage. This, however, is a development for separate consideration.

It would, however, be very wrong to suppose that pleasure and displeasure, potent though they may be, supplant all stimuli of a more primitive order. Love may be pursued for pleasure; but as a violent passion it is instinctive. We may eat—and do eat very largely—for pleasure: when hungry, we are moved by instinct. So again with antagonism of the spirits: we may *choose* to be courageous, but courage is primarily an automatic resistance to conditions of fear; emulation may similarly be automatic; we feel compelled to resist temptation irrespective of consequences. And when imaginatively excited we are pressed to express our ideas—or to follow our ideals—by a nervous impulse that may be quite unattended by any expectation of reward.

Not only does the brain offer us new motives of action; it stimulates actions and utterances in detail. Whenever we act or speak self-consciously, ideas of our actions or words occur to us, and these auto-suggestively stimulate muscular movement. For having accompanied movements, they have become habitually

associated with them, as is convincingly shown by one who "talks to himself." The brain, accordingly, guides behaviour in detail as well as in principle, although we dispense with its assistance when we move our muscles unconsciously, as is generally the case with actions that are habitual or dexterous. Moreover, through samenesses of trait, it can intelligently stimulate imitative movements. For there is a sameness between the impressions of another's movements or utterances and ideas of the movements or utterances that would repeat them. There is also a sameness between outlines and movements of the hands and fingers that would reproduce them. An artist imitates —but transformatively not repetitively.

And finally, by its associative and unificative faculties the brain stimulates our affections, in the sense of directing them. The love called "attachment" arises from the association with another of ideas of benevolence or helpfulness: these ideas may be instilled into us by instruction, but they are corrected by experience, and a mother can easily lose the love of her children if she treats them badly. The love of (*i.e.*, from) fellowship, on the other hand, comes from the unification of others with ourselves in respect to something which they share with us, as family, occupation, religion, or nationality. They become one with us in *kind*, and we consequently extend to them something of the regard which we feel for ourselves—that is to say, we treat them with "kindness."

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The conclusions at which we have arrived in this Essay, are very different from those in general acceptance. They are less material. The body is commonly regarded as a complex of machines which the nerves serve as instruments, whereas,

in fact, its organs and muscles are the instruments of the nerves. Living activity is closely identified in current ideas with chemical, or bio-chemical changes, and we consequently attach immense importance to food and medicine. In reality it has stronger analogies with electricity and the vibratory conditions of sound. Warmth is necessary, but merely as a condition required for the functioning of the nerves. Food may serve as a nerve stimulus; but in the main it proves *materials* for nervous activity. An instrument must not be confused with an agent. A wall is not built by its bricks, but by the mason who manipulates them. We think so much of our food because it is so agreeable—a property which it shares with alcohol. It is true that without nourishment energy ultimately fails. But an exciting idea may give us infinitely more strength than a meal. Alcohol produces a glow of cheerfulness; but so do music and dancing, a brilliant morning, the winning of a game, or a compliment. Nor does vital force come from efficiency of secretive or muscular strength. Some of the most forceful of men have been chronic invalids.

CHAPTER VII

THE LAWS OF THE MIND

"MATTER," we know, is amenable to law—that is to say, its changes occur in definite sequences, and can, therefore, be predicted. But the "mind" appears to lie outside the domain of Nature—to be an ethereal power which is unfettered by causality—and it seems impossible to believe that its vagaries can ever reveal themselves to be ordered successions. Sensation, feeling, and thought have always been accepted as inexplicable. By likening the brain to a photographic plate we can make shift to understand how it can register impressions. But when these impressions include *consciousness* and develop into *thought* we are confronted by a mystery.

We can, however, simplify the problem by distinguishing between consciousness and thought. It is difficult to believe that we can think without consciousness—that the brain can function unawares. But there is proof positive that this is so; and it is now generally recognized that subconscious thought is more frequent and more important than is consciously realized. Indeed, in the experience of many persons, it can solve, during sleep, problems that puzzle the hours of wakefulness, when the functioning of the brain is closely controlled by emotional influences. From an inquiry into the causes of thought, consciousness may, then, be eliminated.

Our feelings seem to assure us that our recollections and thoughts are transitory existences that form and dissolve—often with electric rapidity. But there must be something that permanently endures, and this, it appears, is the *connectedness*, established in the process of sensation, between particular nerve-cells of the brain, and between these cells and particular nerve-cells of the sense-organs, so that one can arouse the others into faint repetitive activity. The brain-cells may be likened to the keys of a piano, and it has been proved that they are systematically arranged, in definite areas of the brain, according to the sense-organ with which they are linked. For the post-mortem examination of persons who have suffered from the various forms of mental paralysis shows that each form is associated with the lesion of a particular area in the outer surface (cortex) of the brain. An injury to the occipital lobe, for instance, is accompanied by inability to *recognize* objects by sight. They may present themselves in vision but are not *perceived* because the keys are missing that would stimulate the recollections which are required in order to complete the impression. The keys of sounds have been similarly traced to the temporal lobe, and those of muscular movement, or utterance, to the parietal lobe. An injury to a patch in this lobe (Broca's convolution) is followed by inability to utter words voluntarily. It seems clear, then, that recollections and thoughts are material, in so far that they depend upon the action of brain-cells which, so to speak, "play" upon nerve-cells in the sense-organs. And since these brain-cells act only as instruments, one may recover from the loss of a considerable portion of the brain. For new keys would be established by experience. Consciousness apart, then, there does not appear to be anything preposterous

in likening the brain to a machine of amazing complexity, and one might search for the laws of its working even although the nature of consciousness remained an impenetrable secret.

The brain consists of two systems of nerve-cells—one spread over its surface (the cortex) the other massed at its base, between and across which there extends a dense network of fibrils, so complex that it would seemingly offer a path of communication between any nerve-cell and any other. By means of it nerve-cells might group themselves into an immense variety of interlaced combinations. There are some reasons for believing that the two largest masses of basal cells (the *optic thalamus* and the *corpus striatum*) are concerned with the production of motor energy. They are connected, respectively, with the sense-organs, and with internal organs and muscles the conditions of which impress us as *feelings*. But it is, apparently, through the cortical cells that we recollect. Feelings and sensations, as wholes, are fugitive. But they could be resuscitated as recollections, if certain of the cortical cells, on being stimulated, awoke faint echoes of sensation.

It seems clear that recollections do, in fact, involve shadowy repetitions of sensory conditions. Thoughts of one's dog, for instance, and of its bark, include echoes of certain visual and auditory impressions. A tune which is "running in the head" is evidently being played upon the auditory nerves by the memorial action of keys in the brain—a process which our knowledge of electrical action renders intelligible. Our ideas of "taking" and "stepping" involve vague feelings of conditions of movement in the hands and feet: our idea of "fear" a shadow of the actual emotion. That is to say, in recollecting and thinking, we employ, not

merely the brain, but sense-organs which are commonly considered to be parts of the body, the two working together so accurately and rapidly as to be, in fact, one. Recollections of relationships of place, as that money is *in* the pocket, are derived from sensations of touch, and would similarly be joint productions of the brain and the tactile nerves. Recollections of time, as of a walk *before* lunch, may involve a rapid repetition of feelings in sequence; for time in its most intimate phase is a succession of states of feeling. But this theory leaves much unexplained. By what process, for instance, do we recollect degrees of intensity, as a quarter-stroke at golf; or periods, such as the normal time each bridge-player takes before playing his cards? The form in which such experiences are preserved for future use is mysterious. But not more mysterious than the nature of electricity. And since our ignorance on this point does not debar us from formulating the laws of electrical action, we need not despair of discovering the laws of perception and thought because the constitution of their materials remains obscure.

Let us assume, then, that we *recollect* by reintegrating a sensation, and faintly repeating its various traits. This would occur if the brain-cells which have been likened to "keys," became connected together as they were connected during the process of sensation, and were to stimulate into repetitive activity the nerve-cells of the sensory organs to which they had become linked in the process. Each trait would be represented by a brain nerve-cell and a sensory nerve-cell. The order in which the brain-cells re-assemble themselves —that is to say, the order in which recollections occur to us—is affected very masterfully by the *intention* of the moment; and it can also be influenced by the will. But intention and volition are interfering, not originat-

ing forces: they inhibit or deflect the activities of the brain and do not stimulate them. These activities run their course uninterruptedly when our thoughts fashion themselves unchecked, as in reverie. In this case ideas re-integrate themselves by re-assembling their elements or traits on the initiation of a trait which is distinctive. This process is illustrated very clearly by the effect of words upon thought. A word is a distinctive trait of an idea, and on its being heard or seen, re-assembles, more or less rapidly and completely, the other traits that compose the idea. This process of reintegration is, in fact, a phase of memory.

Now the traits that are thus drawn together to form an "idea-system," as we may term it, are linked together by the fact that their "keys" have been familiarized with one another by simultaneous association. If we regard, for instance, a flower, its various traits of shape and colour are associated in sensation simultaneously (or in coincidence); and there are also traits of texture and substance that are derived from such simultaneous experiences of seeing and touching as we can notice children constantly seeking. It seems clear, then, that the intimacy of their simultaneous association in feeling or sensation creates a *liaison* between trait-elements which disposes them to re-associate.

It is certain that perception involves "re-collection"—that is to say, the memorial re-integration of a previously formed general idea of the particular object that is presenting itself to the senses. This is, in fact, the process of "recognition." For, if we have no previously formed idea of a thing, we fail to recognize it. Moreover, unassisted by recollection, perception would be quite incomplete: it is by recollecting that we furnish an impression with details that are not before the senses—that we know for instance, that a

man whom we see at a distance has buttons on his clothes. When our perception is of words it is "symbolic." It is obviously through memorial re-integration that word-symbols become *significant.* The sound or appearance of a word as recorded in the brain, is one of the associated traits of the idea that it signifies—and accordingly serves as a "gathering-point," round which the other traits re-assemble. The words, spoken or written, that are received in communication or instruction affect us by re-integrating the ideas of which they are associated traits.

We must now insist upon a point of great importance. The impression of an object or a word upon the senses has this re-assembling effect, because it possesses a distinctive trait which, being the same as a distinctive trait-element of a previous similar impression, re-integrates a generalized recollection of this impression. The recollection is the same as the impression newly-received, in the sense that it is a generalized form of it. Consequently, the recollection and the newly-received impression unite after the fashion that two identical notes of music merge into unison. The perception of an impression is, then, preceded by a "unification" that results from a re-integration. There is a further momentous development. The impression may give rise to a second idea if it contains a trait which is distinctive of the second idea—that is to say, if the two ideas possess the trait in common. The sight of the moon, for instance, may remind us of a gas globe, since both are round and luminous. So the sight of a motor-car may remind us of a horse, since both are means of progression. The two ideas are unified through a sameness. This is what we mean by an "analogy." If the two ideas are the same throughout, the unification eludes us because one is

merged in the other. We are, therefore, unaware of the origination of a previously formed general idea of a tree by a visual impression of a tree because the two are completely unified. But if the unification be incomplete, we are aware of it *as a comparison*. This involves the union of parts of two ideas and the contrasting of the parts which are not united.

Accordingly, in perception, a memorial re-assembling is originated by a sameness and results in a unification. Similar originatings occur in reflection, and have the effect of recalling ideas in succession. If the unification is incomplete, each idea, so to speak, overlaps its predecessor by the sameness which unites them. This is the link of similarity: one idea is like another if the two are united by a common trait. It is by complete unification that thoughts are welded together by the relative pronouns, which unify the subject of the dependent with something in the principal sentence.

Such a succession of ideas may come about without a unifying origination. For one idea will recall (that is to say, will initiate the re-integration of) another, if the two have been associated coincidently or successively in experience. This is the process that is ordinarily understood as *memory*: it resembles the memorial reintegration of an idea by the "*recollection*" of its traits, but, dealing with whole ideas, is more apparent in consciousness. It is a connective re-integration, and results in a succession of ideas which may be likened to a series of circles connected by hyphens, not by overlapping or intersecting one another, as is the case when they are linked by partial unifications. We may remember in this fashion a long string of ideas or words, since the intervals which appear to separate them really connect them, inasmuch as the ideas or words that begin and end each interval

are respectively the ending and beginning of the intervals that precede and follow it. Ideas so connected are commonly termed " associated " in the language of psychology, and we shall use the word " association " to describe the *memorial connexion* of ideas. The experiences which these memorial associations express may be in coincidence as well as in sequence. But, since ideas and words flow in a current, coincidences must be expressed as sequences unless a single word is used for two ideas, as we shall find is the case with the verb. We have coincident experiences when we see a tree *in* the garden or one man *with* another; sequent or successive experiences when we light a cigarette by striking a match, or pass the matchbox *to* another. There is coincidence in time if tea is *at* five o'clock—in place if the tea is *on* the table; there is sequence in time if the meal follows a game of tennis—in place if we walk indoors to it. The relationships that connect things together (and are expressed in grammatical syntax), such as those of time, place, movement, origin, and causality, impress themselves upon the brain as phases of coincident or successive association.

The process of association—or, more accurately expressed, of re-association—is memorial: that of analogical origination is intelligent. Memory is the consequence of suggestive connexions that have been formed by perception or reflective experience, or by following in thought the words of others. Intelligence acts by the appreciation of samenesses that underlie differences, and establishes connexions that may be *new*. But intelligence is actually a development of memory: it is the memorial re-integration of an idea through a connexion that is of character, not of experience. Both faculties illustrate the law that activity in one nerve-cell (or group of nerve-cells)

associatively re-stimulates activity in another, if the two have co-operated simultaneously or successively, in experience. That is to say, co-operation unites the two by a *suggestive* force. We experience the effects of this force on our actions as habit; on our feelings as the familiar. Both are factors of immense importance. Habit regulates most of our conduct. Familiarity is the ultimate basis of gregarious life, inclining us to acquaintances rather than to strangers. The organs of the body are susceptible to its influence: the stomach will assimilate almost any food to which it has grown accustomed. There are no creatures too small in size or too simple in structure, to manifest the repulsiveness of the strange and the attractiveness of the familiar. To establish this suggestive force may require some repetitions in experience, and it is noticeable that, owing to greater delicacy of nervous susceptibility, new associations can be established much more easily during childhood than in later years. Associative connexions tend to weaken unless renewed: in other words, memory fails, as habitual dexterities fail, by disuse.

The brain is the instrument of the body, and is affected by the requirements of our physical nature. The intention or purpose which sets thought its course, has its roots in instinct; the doubt which assails wrong conclusions and negatives them is akin to physical fear; the prejudices which obstruct reason by obscuring samenesses are of the same nature as physical likes and dislikes. The brain is, moreover, under the control of the will, as are all parts of the body that are innervated from the spinal system. But, apart from these influences, the brain functions along lines of its own. It acts memorially by re-assembling traits derived from sensations so as to produce recollections, and by re-associating connectively ideas that

have fallen together or successively in perceptive or reflective experience. So far it simply repeats experiences. But since a vast number of recollections and ideas have traits in common, and a trait can be the gathering-point for a re-assemblage or a re-association, it can, through samenesses of trait, intelligently establish new connexions between ideas, can unite particular ideas to form *generals* or *kinds*, and can abstract the essential sameness that brings about this classification. The recollections, ideas, and idea-connexions, whether intelligent or memorial, that are formed in this fashion are fugitive and transitory. But since they reconstitute themselves with electric rapidity, we can treat them as if they were permanent existences.

Let us now test the validity of these conclusions by applying them to various phases of our mental life. And, first, to the process of perception. In this, we have seen, the sensory impression of an object re-integrates a more or less generalized recollection or idea, with which it is unified through essential samenesses. It is in this fashion that the impression becomes completed by the associations and comparisons that distinguish perception from crude sensation. The traits or ideas that are recalled *in association* may be in coincidence or sequence. It is through the coincident association of traits that are derived from touches and movements that visual impressions are endowed with solidity and distance. We think that we " see " things as solid and at various distances. But there have been cases of violent concussion of the brain when associative links have been shattered, and the visual impressions of the sufferer appear as a flat mosaic of colours and shapes pressed against his eyes. Similar are the first visual impressions of those who

have been freed from congenital cataract. The word which signifies an idea is linked to it in coincident association, and we can hardly dissociate the word from the idea, may think, indeed, that ideas could not exist without words. But we can and do think without words, as do birds and beasts. Words would not suggest the analogies of thought. A pipe suggests a cigar through a resemblance *in idea*, not in words. Indeed, ideas often occur without the words to signify them, so that we have to hunt for the means of expressing them. And in the ancient ideograms of the Chinese, ideas were symbolized in themselves, quite apart from the words that expressed them; the meanings of these characters could, consequently, be understood by persons using different languages, as in Pekin and Canton.

Another very striking illustration of the coincident association of ideas is the connexion between impressions of emotional expression and ideas of emotion. The sight of a frown immediately calls up an idea of ill-humour because the two are coincident in ourselves. It is through this association that we instantaneously invest the expressive images of the cinema with life and motive, although they actually figure merely changes of movement.

When the association which is recalled in perception is in sequence it is termed an "inference." It is summoned through a sameness between one or other element of the sequence and the impression that is before us, and may, therefore, attach itself, so to speak, in front or behind the impression. Thus, if we see a man in the street opening his umbrella, we infer that it has begun to rain, because rain precedes the use of an umbrella; and if the umbrella will not open, we infer that he is irritated, since such a difficulty is

followed by annoyance. These sequences, it will be observed, are *generalized* from experience, and are qualified as being possible, probable, or certain according to the regularity of the experience upon which they are based. Since generalization and qualification come about through conscious or subconscious thought, sequences of this kind are *reflective*, not perceptive. The sameness between one of their elements and the impression which recalls them may be one of character or of relationship. It is through a sameness of character that we identify or classify a man as a negro, because he is of black complexion, has thickened lips and frizzly hair, and negroes are men that possess these characters. In our illustration of the umbrella the sameness is one of relationship, for the putting up of an umbrella is in relationship to rain because it is its *consequence.*

Perception leads to comparison when we unify the impression of an object with the impression or recollection of another object through traits which are common to both. It is through comparison, as we shall see, that we estimate, measure, and locate ; and the material character of these processes, it may be observed, is demonstrated by the fact that they fail when the cortex of the brain has suffered injury. It is obvious that differences are isolated by their standing outside unification. If we perceive that one tree is larger than another, we unify the two *in respect of size*, and so differentiate the excess in one of them. We commonly compare traits with generalized ideas of normals. When we think that a train is running fast, we mean *faster than usual.* Hence comparison rests in great measure upon memory, and inability to estimate intensity or size is a recognized symptom of cerebral injury or disease.

Perception clearly involves thought when it is observant, and extends beyond surface impressions. Thought is, in fact, evolved from perception through the reversal of a sequence. In perception, impressions of things lead to impressions of relationships such as links with place or time, accompaniments and comparisons. In thought, ideas of relationships suggest ideas of things. If we think upon a subject we explore it through the various relationships with which perception has made us familiar—its origin, concomitants, causes, consequences, and analogies. The current of thought runs through a series of unifications and associations which connect the subject of our reflections with more or less elaborate conditions by means of a verb. Verbs other than the verb "to be," express conditions of movement, feeling and thought with which ideas of various methods and instruments may be associated: "having" is the condition of *possessing*, "seeing" a condition which involves the use of the eyes. The condition of "being" (signified by the substantive verb) may be that of simple existence; but it may be that of being unified or compared with an individuality or a class ("he is an Italian," "he is like an Italian") or of being associated with a trait or a circumstance ("he is dark complexioned," "he is in London"). In thinking of ourselves the condition is unified with our personality because it is, in a measure, ourselves. And, since we are conscious of it either as a recollection, sensation, or expectation, it is in past, present, or future time. Hence time evolves into an instrument for associating other persons and things with the conditions that are signified by verbs. "I went" means that I was one with the condition of going in past time; "he went," that the idea of his appearance is unified with an idea of behaviour with which a condi-

ditions are, then, ascribed to other persons and things through a process of inference.

It is not impossible to classify courses of thought simply and intelligibly if we bear in mind that the brain is an instrument for the development of impulses that arise from the physical nervous system and the spirits, and that our classification must accordingly be based upon the character of these promptings. Two primitive physical impulses of cardinal importance are those to anticipate the future, and to approach the favourable and recoil from the unfavourable. The former is illustrated by the appetites, for these urge us to *search* for means of satisfying their cravings—that is, to look beyond the immediate present of sensation. The latter, originally a response of movement, becomes a motive through the delay that arises from the intervention of the spinal cord and the brain. It becomes the attracted and repelled conditions (in consciousness, *feelings*) of like and dislike.

When thought is concerned with the future, it may be termed "expectative." Such are the meditations of our business hours, and reflections that are concerned with plans. They forecast the future through inferences that are suggested by past experience, and are therefore "logical." They take a peculiar "suggestive" form when the future object in view is the influencing of others. When our motive is like or dislike we think *appreciatively*—in terms of praise or blame. This is the character of the reflections that supply the ordinary staples of conversation.

By the energy of the spirits the course of thought is expanded, and reflective activity is diverted into channels that are curiously remote from the material objects of physical life. Spiritual vivacity resists, or antagonizes, the confusion which is caused by doubt,

as it resists that caused by fear. Both doubt and fear are aroused by the strange or unfamiliar—doubt if this presents itself in thought, fear if it presents itself in actual experience. By this antagonism doubt is contrarified into curiosity, as fear is into courage. Curiosity explores the unknown instead of shrinking from it, so that we think *exploratively*. Stumbling-blocks are met by deliberate reasoning, the inferences of which differ from those of ordinary thought by involving a conscious effort. When confronted by a doubt, we endeavour to dispel it by searching for appropriate inferences in generalized perceptive, reflective, or instructive experience, as when, if puzzled by a word, we decide that it is Greek because it begins with "syn" and all words beginning with this syllable are of Greek origin. Unassisted by this process of resistant reasoning both expectative and explorative thought would constantly be checked by insoluble difficulties.

If the influence of the spirits be enthusiastic instead of antagonistic, appreciative thought becomes *admiring*. This excitement is aroused by the pleasing that is also the excellent. Simple like is transformed into admiration, which finds an outlet in adorning, praising, or magnifying its object. And if the tide of enthusiasm mounts higher and floods the brain, thought is transfigured by an amazing change. Its ideas assume a *sensory* or imaginative form. Reflection becomes a fantastic image of sensation. There are facts to show the cause of this transformation. But they must be reserved for consideration apart.

Doubts (expressed in language as objections) safeguard the course of thought, as fear safeguards the course of life. The confusion that is caused by the incompatibility of a conclusion with experience corrects erroneous reasoning and arrests or negatives a judg-

ment. If, for instance, we infer that man is distinguished from the lower animals by feeling shame, recollections of conscience-stricken dogs occur to us, and our inference is contradicted. Doubt, in fact, arrests a judgment as fear arrests a choice.

Accordingly doubts assist thought if they stimulate and do not enervate. But prejudices—that is to say, likes and dislikes—obstruct it—may be said, indeed, to " stupefy " it. They prevent a sameness from giving rise to a unificative comparison. We cannot see that our adversaries are in any way comparable with ourselves—or that beliefs which we cherish are analogous to those which we condemn in others. Our subjection to habit results from the attraction of the familiar—an influence of which we are only partly conscious. Our habits may, then, be classed amongst our likes; and ideas that have become habitual defend themselves from disturbance by blunting our intelligent appreciation of similarities or analogies, and even of demonstrable facts. A scientific discovery which conflicts with accepted theory is received with incredulity and adopted with reluctance.

The will is a voluntary development of the capacity of the spirits to antagonize the automatic course of physical life. From resistance we gain *an idea* of resistance, and the idea can auto-suggestively stimulate resistance. Accordingly we can self-assertively derange the ordinary course of all activities that are dependent upon the spinal nervous system. Amongst them is the functioning of the brain. We can, consequently, change the course of thought if we please, and can " wilfully " negative obvious conclusions. So far we enjoy the privilege of " free will." But we are disposed to exaggerate its advantages, and, as a matter of fact, rarely make use of it to change the current of reflection.

As an effort, volition enters into conscious reasoning. But it goes with the current—not against it.

The most exacting of all tests which could be applied to our " laws " would be to see whether their action explains the evolution of our complex ideas, or concepts, from the materials that are afforded by sensations of ourselves or our surroundings. This elaborate inquiry must be reserved for a separate essay. But it may be observed at once that some of the most complicated of our ideas are associations that have been established by experience and are conserved in memory. Notions of purpose, for instance, are inseparable from our idea of the vast number of objects which serve as instruments—as, for example, a road or a table. Symbols would be meaningless had they not become associated in experience, or through instruction, with ideas of feelings. Correlatives, such as father and son, cause and consequence, each imply an idea of the other. All verbs, except simple " being," include an idea of an active or passive condition which is a peculiar phase of " being." To the process of unification we clearly owe our ideas of kinds and abstracts. For particular individuals are drawn into a class or kind—that is to say, are generalized—because they possess an essential sameness, and this sameness is abstracted as a trait and as a quality (man, manly, manliness): particular traits are similarly abstracted into qualities, which become adjectival traits when an idea of possession is associated (virtue, virtuous).

The most subtle of our conceptions are those of the relationships that connect one thing with another in experience, and it is noticeable that they can all be classed as either associative or unificative. That is to say, they are perceived as associations that stimulate memory, or as samenesses that stimulate intelligence.

Associative relationships (signified by case endings, prepositions, adverbs and conjunctions) are essential *liaisons* in the syntax of grammar. They may be in time (then, at, before, after) or in space (there, in, with, from, to). Comparative relationships are illustrated by likeness and by the degrees of comparison. We owe to them our concepts of quantity and number, and they are, therefore, the foundation of measurement, arithmetic and algebra. But we are anticipating an inquiry which must be elaborated at some length.

A large number of ideas may take a negative or a contrary form. The two must be carefully distinguished: "unsatisfied" differs as widely from "dissatisfied" as not having five pounds differs from owing five pounds. These changes are effected in the process of thought. They are the products of mental experiences, the nature of which we may make shift to understand by likening them to electrical action—by thinking of ideas as connected in conscious thought by a current flowing from one to the other. Should there be an arrest of unification or association, there is a negative: should there be a change of phase in unifying, there is a contrary. The arrest, or reversal of phase in either case is the effect upon the brain of dislike, doubt, or antagonism. That is to say, physical conditions—of which we are conscious as "feelings"—can arrest or reverse a nervous condition in the brain. Ideas so negatived or contrarified in thought may conserve in memory their altered character. This, it may be objected, is a mere hypothesis, illustrating the extravagance into which over-venturesome speculation may lead one. The process cannot be tested experimentally. But, through its consequences, it can be verified by experience. No one can doubt that denial

and contradiction are conditions that are forced upon the brain by emotion.

Before concluding this essay it should be remarked that in rapid perception and thought we use abbreviated ideas, so that if we would analyse them, we must give them time to expand. Our complete idea of a friend, for example, is a highly complicated construction, including many hundreds of traits. We substitute for it an idea of his *expression*, which is his distinctive mark. Many objects are signified by their *purpose*, as a chair or a pencil. Others are abbreviated as outlines, such as are given by touch combined with vision, and inferred from vision. Those who are born blind have, of course, only touch to draw upon. Active and passive conditions are represented by ideas of their consequences—*giving*, for instance, by an idea of moving the hand, *dignity*, *virtue*, and *anger* by ideas of their expression. These " short-hand " emblems are points to which words can be attached in association: the idea of a word, as an utterance, sound, or sight, becomes an element of the idea which it represents and can be used as its symbol. But words in themselves are meaningless vocal articulations, as are the words of a language which we do not understand.

CHAPTER VIII

THE BRAIN AS A LABORATORY

We think of the brain as an instrument of perception and thought. But, with the co-operation of the organs of sense and feeling, it is also a manufactory. It fabricates the materials which complete perception and are used in thought—that is to say, ideas and concepts. We are unaware of the processes of fabrication. There are activities of the brain, as of the body, of which we are unconscious. But we can infer the processes from their consequences. If we examine a classified collection of flowers, we can infer the principles that have guided its arrangement: similarly, by analysing our ideas we can discover the methods of their elaboration.

This analysis is, however, difficult and tedious, and exacts unprejudiced judgment and close attention. More than two centuries have passed since Locke attempted it in his *Essay on the Human Understanding*. Little progress has been made on the track which he pioneered. For it is impossible to advance beyond vague generalities unless we are equipped with a knowledge of the laws that guide the operations of the brain: before the discovery of the law of gravity it was impossible to systematize the movements of the planets. In the preceding Essay these laws have been defined—arguing by inferences that are drawn from their consequences. We are, then, in a position to

attempt the solution of a problem that has, so far, baffled intelligence.

We may commence by briefly restating the consequences of these laws. They are that an idea may be reconstituted—that is to say, its constituent traits may be re-assembled—*memorially* through the presentment in sensation of a distinctive trait which belonged to it, or by the occurrence in reflection of an idea which has been associated with it coincidently or in succession, and *intelligently*, by the occurrence of an idea which has a distinctive trait in common with it. An idea only exists *potentially* so long as it is not under recall. But we may think of its existence as continuous, since the liaison which can reconstitute it endures, and it is reconstituted with electric rapidity.

If we now consider the origin of our ideas and the elements of which they are composed, the materials which first come to mind are the impressions that we receive through the external senses, and the recollections that we preserve of them. Thus our idea of a dog arises from our having seen, touched, heard, and smelt it. Of our five external senses that of touch is infinitely the most important: from it we derive our ideas of substance and distance. We may fancy that we perceive substance and distance by sight. But we deceive ourselves. It can be demonstrated beyond doubt that visual impressions only include solidity and depth because ideas of touches are intimately associated with them, and that, should dissociation occur (as after a violent concussion of the brain) all that the eyes present is a flat scheme of shapes and colours, like the pattern of a kaleidoscope. A man can live when bereft of sight, hearing, smell, and taste. But if the sense of touch left him, he would be utterly helpless. The supereminent usefulness of touch accords with conclusions

that may be drawn from evolution. For touch is the most archaic of the senses.

In thinking of our senses we commonly omit from account those that lie within us, by which we feel *ourselves*—our own physical and emotional conditions, and the movements of our limbs. During our waking hours they pour upon the brain an unceasing torrent of impressions, which (like the continual noise of a train) become so familiar that they evade attention, unless they are painful. But if we force attention to ourselves we shall find that we receive clear impressions of the beating of the heart, of our pressures against the things that are around us (as against a chair, for instance), and of each movement and utterance, as well as of such nervous conditions as of hunger, pride, anger, antagonism, and effort. These feelings are very happily called " sentiments " in French, marking at once their resemblance to and difference from *sensations*. Recollections of them are conserved and form the materials of ideas which we could not possibly gather through our external senses.

We may distinguish these feelings as of pressures, of movements, of physical nervous conditions, and of conditions of the spirits. Pressures and movements appear to be felt through a sense of internal touch. Pain, even that of hunger, is the consequence of pressure : there is no difference in quality between the agony of gout and that caused by tight boots. But touches of pressure may, of course, be highly pleasurable. The feeling of movement is that of a series of changing touches. Our impressions of physical nervous conditions such as those of fear, love, or anger (apart from the spiritual excitement that accompanies them) contain something that links them with the substance of the body, and hence these emotions have commonly

(and no doubt mistakenly) been located in particular organs, fear in the liver, love in the heart, anger in the spleen. It has been established by medical science that particular emotions may be attended by peculiar secretions, as, for instance, of *adrenin* which is poured into the blood under the stimulus of alarm. Our feelings of the emotions include internal sensations of such bodily changes. The nervous conditions of the spirits comprise energy, and the expansive and contractive phases of which we are conscious as pleasure and displeasure. These seem to impress themselves upon the brain through sympathetic action between them and the cerebral excitement of consciousness. For spinal and cerebral nervous excitement are alike in being *motor*. Accordingly, we feel our changes of spirits, not as the consequences of impressions of them, but in themselves.

Another source of ideas is the working of the brain, which we can follow with some success if we can fix attention upon it. We are aware of our sensations and thoughts, not by means of any special sense, but because our ideas are *conscious*—that is to say, are not merely nervous complexities but comprise impressions of our own nervous energy, and are therefore *ourselves*, as well as the consequences of sense impressions. So we become aware, not only of ideas in themselves, but of the relationships which connect them. When an idea recalls another in association, we note the fact and call it " memory," and, by analysis, we can infer that the association may be in coincidence or sequence and may assume one or other of a number of phases. It may, for instance, link two ideas together because one is *in* the other, or is derived *from* the other, or it may connect an idea with a point or period of time. When one idea is completely unified with another the process

escapes us. But incomplete unifications are apparent as comparisons and contrasts.

The impressions that we receive in these varied fashions are *concreted*, or "individualized" into entities, or *things*. The most important of all concrete ideas is that of oneself—as of a tangible substance, which experiences various causal conditions (such as hunger, or anger), manifests certain consequential activities (as a blow), and is marked by the possession of certain definite traits. Arguing from ourselves, we group our impressions of the outside world as (1) tangible objects, (2) conditions (such as heat), (3) consequential activities (such as steam), (4) relationships, and (5) traits of objects, conditions, activities, and relationships, which include their qualities and quantities. It will be found that everything we can think of will fall into one or other of these classes. All things are individualized which exist discontinuously from their environment. Accordingly, any part of a whole is a "thing" if it can be detached from it, as, for instance, a limb, or organ of the body, a note of music, or a rainbow.

To form ideas of particular objects, conditions, or activities, our recollections must be clarified by the elimination of accidental features, and the isolation of such as are essential. For no two impressions of a thing are precisely the same: they commonly present it, for example, in different positions. As these impressions from time to time recall and are unified with a previously formed recollection, the latter is *generalized*. Essential features persist, as, so to speak, a core: those which are accidental stand outside the core and are eliminated as differences. A generalized idea may be compared to a composite photograph, that unifies the features of a succession of different sitters.

By a development of this process ideas of particulars give rise to ideas of classes, or "kinds," in which particulars are brought together. They are not confused with the kind—or with one another—because they possess *peculiar* features which differentiate them from either. For the peculiar is isolated as a difference. But they are grouped together because they possess essential samenesses. We most commonly think in *kinds*: "a tree" means one of the tree kind. The detachment of a particular from its class is facilitated of course if it be given a proper (or peculiar) name.

Kind-classes may be expanded by the inclusion of other kinds: dogs and horses are united as quadrupeds. By the extension of this process ideas may be generalized into extreme tenuity: "someone" and "something," for instance, and the "on" of French, mean nothing more than individual existence. And kinds may be reduced by subdivision, as, for instance, by the distinctions between dogs of various breeds.

Causal conditions, consequential activities, relationships, and traits are similarly *isolated* from the individuals that possess them by the comparison of successive impressions and recollections. If we compare ourselves when hungry with ourselves after a meal, hunger is eliminated *by difference* as a thing apart: in like fashion heat is isolated from things that possess it in different degrees. So again the colour of a carpet is isolated from the carpet by the unification of carpets within their kind-class, since their colour is not an essential sameness. Our notions of quantity and intensity are primarily ideas of differences between traits that are the same in kind but different in degree. Incomplete unification (or comparison) also isolates *by sameness*, since traits that are unified are separated

from those that stand apart. Both processes contribute to the foundation of ideas.

By the process of *association* an idea may be linked to another idea by the fact that they occur together in experience. So the name of a friend is hardly separable from the idea of him. If the second idea is of a very general character it drops out of attention, leaving, however, clear the relationship which connects the two with an implication of the second idea. "Father," for instance, implies the idea of a son. The two are correlatives. But we can think of a father without a definite idea of the son. And if the two ideas that are connected by a relationship are both highly generalized, the relationship stands out as an idea in itself.

And finally, there is the process of *abstraction*, by which we form "abstract" ideas. These are all concepts of essential samenesses; "man" used in an abstract sense is the sameness which unites all mankind, "virtue" that which unites all actions that involve manly resistance, "coincidence" that which unites all simultaneous occurrences. Abstracts, accordingly, are formed by the isolation of continuous samenesses in kinds of objects, conditions, activities, relationships, and traits, by means of unificative comparison. They represent nothing that exists in the outside world: they exist; but only as fabrications of the brain that express continuities of sameness. Our appreciation of their nature is blunted by our use of a single word to express the kind and the abstract. We do not think of "man," "movement," and "heat" as abstracts. But they have plainly a more subtle, transcendent meaning than when used to signify "a man," "a movement," "a heat." "Beauty" and "probability," on the other hand, seem to be abstracts, not kinds. But we can speak of "a beauty" or "a probability."

Let us now review each of our idea-classes as defined above. First, of our ideas of tangible objects—that is to say, of persons and things which we distinguish as animal, vegetable, and mineral. They are infinitely more complicated than they appear to be at first sight, and are justly termed "concepts." For they include (or imply) ideas that have been associated with them by experience in coincidence or sequence. Our idea of the simplest object includes notions of its weight and size. In our idea of a *room* space is associated with sensory impressions: our idea of a *family* comprises one of number. Emblems and symbols are linked with ideas of the emotional conditions or thoughts which they signify. Pictures emblematize actualities of perception. Decorations symbolize success with its consequences in admiration and respect. Money symbolizes exchange value; weights and measures symbolize certain definite quantities.

When the associated idea is of a very general character its existence is overshadowed by the connecting relationship. Thus the idea of anything used as an instrument is accompanied by one of purpose which does not necessarily recall a particular purpose. A road, a chair, and a hammer are obviously purposeful: it is only so that they possess their character. But we can think of them without ideas of going, sitting, or hammering. When the association is between two ideas of the same class, one in succession to the other, we have *correlatives*, as father and son, cause and consequence, differing according to the direction from which they are viewed. Thus we term a sequence a "procession" or a "succession" according as we regard each incident as the commencement or conclusion of the interval to which it contributes.

Next as to our ideas of *conditions*, in particular and

in kind. We have direct knowledge of our own nervous conditions, physical, spiritual, and mental—as of movement and utterance, hunger, love, contrariety, or thought. They impress us as *causes* since they manifest themselves in activity (which may be purposeful, or merely purposeless expression, as a smile, for instance). They are actually causal consequences—the effects of stimuli, which generally elude us because they seem to be too trifling for the occasion, or can only be detected by inference. Conditions are transient: they come and go and are, therefore, isolated from consciousness, since this is continuous. We are aware of them as "feelings." But a nervous condition exists apart from the feeling of it. The two are simultaneous but not identical. A feeling is the sensation of a condition, and the sensation of a thing is not identical with the thing. We are affected by nervous changes when asleep, although we are unaware of them.

Most ideas of our own conditions, although apparently simple, are in reality complex. A condition of love, anger, or courage cannot be dissociated in mind from its stimulus, or a point of place or time, and we cannot recollect it by itself. Our idea of a movement of our own is that of a succession of internal touches accompanied by an effort. And, through associations in sequence that are imposed upon us by nervous experience, we derive from our conditions some of the most elaborate of our ideas. We have already remarked upon the inevitable series of nervous reactions which are started by the occurrence of a difficulty. If we overcome it, we experience the nervous exaltation of self-admiration, or pride, accompanied by ideas of success as regards the past, of excellence in the present, and of power as regards the future; and this again is followed by a reaction which in

consciousness is a feeling of respect. If we fail, these reactions are respectively those of shame, failure, inferiority, and impotence, followed by pity, which may be antagonistically reversed into contempt. This succession of nervous changes is experienced by us, in greater or less degree, whenever we confront a difficulty—that is to say, almost incessantly during our daily life—but we become so habituated to it that we do not notice it unless the changes are acute. From the succession we gain a number of very forcible *relative* ideas of conditions. "Effort," "success," and "power" all possess associative implications. "Dignity" is an idea of pride followed by respect: "honour" an idea of respect, auto-suggestively recalling pride. An "obligation" is an intention that is enforced by the shame, blame, or punishment that follows its evasion, and, in the language of jurisprudence, is its "sanction." Its correlation, in expectation, is a "right" or "claim." "Merit" is a claim to justice, which, as we shall see, is a relationship of congruity between cause (or antecedent) and consequence.

Arguing from ourselves we regard our environment as moved by causal conditions—life, movement, heat, sound, light, natural forces such as gravity and electricity, the wind and the various phases of the weather. With the progress of science we are coming to see that they may be *consequences*, the effects of something that produces them. We no longer regard heat as a self-existing entity. But our notions are still indefinite. We have only one word to express heat and the etherial cause of heat ("calorifac" as it might be termed), although the two are plainly distinct, if only in respect to their passage through glass or across a vacuum. We similarly confuse the conditions of light and electricity with their causes.

Thirdly, of *consequential activities*. They are more substantial than the conditions which are their causes, but, except when they involve movement, they are intangible. An exclamation, a smile, a blow, or a kiss are the consequences of states of feeling. When such activities are our own, they impress us as *feelings*: they are conditions such as we have been considering—active as opposed to passive. But when they are manifested by other persons or things they possess a different character. They are perceived by sensation, not by feeling. They are instruments, not for expressing ourselves, but for understanding, by inference, the conditions of others; and the ideas which we form of them are not those of causal conditions but of consequential activities. It is by their means that we autosuggestively infer what we cannot perceive. It is by the words and gestures of another that we comprehend his thoughts and feelings; it is by the movement of a thing that we apprehend its condition of movement. Accordingly these consequential activities are *expressive* in those that make them, *significative* to those that perceive them, because they are associated as expressions with certain feelings and thoughts and therefore recall ideas of them. Names, for instance, recall ideas of particular individuals; words recall the ideas which they represent. Music expresses feelings and signifies them. It is obvious that our ideas of this class comprise the most distinctive elements of human culture. The thoughts of the poet or dramatist, the musical conceptions of the composer, owe their immortality to the expressions which signify them: their creator dies, but, through his words or notes, they are re-created in others.

The active conditions of Nature are realized by comparison with our own. The growth of an animal is the consequence of life: its varied movements are the

consequence of its varied conditions; the changes in the appearance of a moving body are the consequences of a condition of movement; the fall of an object is the consequence of gravity; fire and steam the consequences of heat; a rainbow the consequence of sunlight; night the consequence of sunset.

We pass to *relationships*—the liaisons connecting different things which impress the brain as phases of association or unification. We are familiar with them in the syntax of grammar. Associations are expressed by prepositions (or case-endings), and by some adverbs and conjunctions. A thing may be associated with another thing, with a point or period of time, or a place or distance in space. Coincident associations are expressed by such prepositions as *in*, *at*, *upon*, *near*, adverbially by *here* and *now*, conjunctively by *and*; associations in sequence by *of*, *from*, *before*, *after*, adverbially by *hence*, *hither*, conjunctively by *because*, *therefore*, *since*, *if*, and *unless*. (The two latter introduce a tentative association.) Unificative *liaisons* are illustrated by the affirmative "yes" and its contrary "no," by the relative pronouns, by "like to," "different from," "more or less than," by "or" and the contrasting conjunctions "but," "yet," "nevertheless." Relationships are used to define as well as to connect. The demonstrative pronouns define associatively by place, the possessive by ownership, the distributives and numerals by comparison.

All these relationships present themselves as associations or unifications that occur between groups of brain-cells. But it seems impossible to doubt their existence as *realities*. When we put coal on the fire, our impression of the one and the other may be erroneous; but we must have put something on to something else. Our notion of a match is probably as

far from actuality as our ideas of light and sound. But the connection between the striking of a match and its consequence in flame must represent an actual change in causal succession. There must be a real sameness between a snake and a stick in order that in sensation one shall resemble the other.

Ideas of relationships, like other ideas, may be isolated from their *particular* context and be generalized and abstracted. Of comparative relationships so generalized, the simplest are *likeness* and *difference* in character, " moreness " and " lessness " in amount. *Analogy* and *comparison* are also obvious illustrations. A *change* is a relationship of difference between two successive appearances—between two things that occur in sequence. Other relationships between that which precedes and that which follows give rise to some of the most abstruse of our ideas. The two may be assimilated through being congruous or harmonious. A consequence may harmonize with its cause, or antecedent, in being good or bad. This congruity is *justice*—a relative consequence which is appreciated by all men because there is a like harmony within ourselves—the goodness of success is followed by the pleasure of pride, the badness of failure by the pain of shame. Accordingly justice demands the rectification of a *disharmony*—that those who have been undeservedly unhappy in this world should meet with their deserts in the next. *Use* is similarly harmony between purpose and instrument, *liberty* harmony between wishes and conduct, *right* harmony between intention, or obligation, and action. We call one hand the " right " because it is the more efficient : it is only when adjusted to a " right " angle that a thing will stand " upright." Another condition of relationship between the two elements of an association in sequence is that of *worth*

or *value*, which is possessed by a thing when it offers an assurance of pleasure which *overcomes* the difficulty of procuring it. A thing is worth the amount that it can persuade us to part with. The relationship of *correlation* also occurs in a succession. That which precedes is assimilated to that which follows by the fact that each is at once the cause and consequence —actual or inferred—of the other. A father is the cause of a son, but exists through the son, and is, so far, the consequence of him.

Amongst abstract associative relationships may be mentioned those of *coincidence* and *sequence*, of *significance*—the connection between a word and the idea for which it stands—of *purpose*, and of *obligation*, all of which are liaisons that are established by experience. But the most momentous of all are Time and Space. These are of such vast importance that they must be separately discussed at some length. But we may venture at once upon a preliminary analysis.

Time is a current of intervals, each begun and ended by points, or moments, which are, respectively, the endings and beginnings of the intervals that precede and follow. There is such a current within us: our feelings succeed one another in time. We are assured by our senses that a like current passes outside us, marked, amongst other changes, by the rising and setting of the sun. Past time is an interval that is restored in recollection; present time is a moment; future time is an interval that is carried forward in expectation. *In idea* the future only exists as an expectancy. Any thing may be associated with a moment of time: lunch, for instance, is a meal that is associated with 1 o'clock. The length of a period of time may be *estimated* by comparison with another

period, or with a normal. It is *measured* through its unification (or assimilation) with a succession of rhythmic equal intervals—seconds, minutes, and hours. We readjust the unification when we advance the clock for summer time.

Space is evidently distance in all directions. A distance is an interval which connects two points or places. But the points are in coincidence, not in sequence. This is the essential difference between space and time. Yet, although we are assured by our senses that places are coincident, we derive our ideas of distance from movement—that is to say, from the sense of touch. We may think that we "see" distances. But we are mistaken. We see arrangements in perspective which are associated with ideas of distance that are themselves derived from movement. Distances are appreciated very clearly by the blind. Any object becomes a point of space (or place) when it marks the beginning or end of a distance. It is then associated with another object, marking the other extremity of the distance, and the distance includes *direction*. We can estimate distances by comparison. They are measured, like periods of time, through identification with a rhythmic scale—inches, feet, and yards.

A condition—active or passive—may be associated with past, present, or future time. For all nervous conditions are in time, since they follow one another in sequence. The idea of this complex is expressed by a verb. A timed condition in itself is signified by the verbal participle—"fading" and "faded," for instance. The idea of a *personal* condition in time involves the unification of personality with the condition. We are, of course, "one" with our nervous states, but the process is difficult to appreciate because complete

unification eludes consciousness. The simplest of all conditions is that of bare existence, expressed by the verb "to be," and this verb is used to signify timed existence as an individual, as the member of a class or kind, or in certain associations, as "I am Henry," "I am an Englishman," "I am old," "I am at home." Conditions which are more definite than those of existence may be exceedingly complicated and may involve various associations that have been established by experience. "I have," for instance, expresses the idea of "possessing"; "I write" an active condition with which a pen is associated.

The timing of the verb may be double, for the unification may be timed as well as the condition. "I have done" indicates unification in present time with a past condition of doing. By the use of auxiliaries, this double timing is expressed in detail and greater precision of timing is secured.

These unifications are extended to others by the substitution of external time for that of feeling—for the two are identical—and the association of ideas of conditions with those of appearance. That is to say, we attribute nervous conditions to others by inference. The manifestations of feelings—their consequential activities in facial expressions, words, or gestures—are intimately associated with the feelings: indeed, our idea of another's "personality" is that of his appearance (*persona*). "I thought that he spoke" means that in my recollection his behaviour was unified in past time with that which is associated with the condition of speaking.

Finally, of our ideas of *traits*. In the outside world traits only exist as the constituent elements of things. But in the course of sensation they are detached from one another, because they differ from one another.

If they are apprehended by different senses, the "keys" to the sensory cells which register them are stored in different parts of the brain. Accordingly, as impressions, they possess a separate existence: they are substantive as well as adjective, and are generalized and abstracted like other ideas. "Red" not only means an attribute of something: it is a thing in itself.

We may class traits as objective, subjective, and relative. The objective class includes ideas of such sensory impressions as those of the red, the round, the smooth, the acrid, the shrill. Subjective traits affect our feelings: they are illustrated by the favourable and unfavourable, the good and bad, the pleasing and displeasing, the excellent and inferior. Relative traits indicate intensities, as large, strong, heavy, brilliant, rapid, or their contraries. An intensity must be relative: it only exists through comparison, which, however, may be with the idea of a normal as well as with another concrete idea. A "tall" man means one who is taller than the average.

From objective and subjective traits are formed concepts of *qualities*, from comparative traits concepts of *quantities*. These are abstract "entities," not traits. For the comparison of traits gives rise to abstracts of samenesses, as the comparison of entities isolates traits.

A quality is a sameness which unites a number of simple or complex traits that in other respects are different. They are drawn into union by the sameness, and this is consequently isolated. *Colour* and *shape*, for instance, are common to all traits of hue and form. *Beauty* is the pleasing which is also the excellent, and is, then, to be found in a number of traits. It excites admiration because it is superior, exactly as success

excites the self-admiration of pride. *Virtue* is that which is common to all traits of manliness. It also includes an idea of excellence and is therefore admirable.

Ideas of *quantity* are evolved by the comparison of similar traits which differ in intensity: they are, therefore, isolated as concepts, not of samenesses, but of differences. Intensity is difference of degree, as between two colours one of which is brighter than the other, or between two movements one of which is more rapid than the other. It becomes quantity when it affects bulk, capacity, or number; it is distance when it relates to length, period when it relates to time, value when it expresses the desirability of an object in terms of the difficulty in procuring it which its desirability outbalances. All material things have one thing in common: they involve movement or effort in compressing, manipulating, or lifting them. This sameness brings into comparison things of very different kinds: we can compare in weight a horse and a motor-car. We can also compare them in age, for age is quantity in time. We can similarly compare all colours in brightness, all movements in rapidity, and all desirable things in value.

To trace the development of our concepts of quantities we must enter upon a train of rather minute analysis. They must, to begin with, be distinguished as (1) particular estimates, (2) normals (or averages), and (3) measured. Estimates of *particular* quantities are derived from the comparison of traits—the same in kind but differing in intensity—that are possessed by two different things. One possesses "more" or "less" than the other, and we vaguely express the ratio or proportion of the excess or deficit by adverbs, as in "a little more," "much more," "very much

more." Accordingly, through comparison we estimate intensities or quantities by appraising one amount in units or portions of another—the capacity of a tumbler, for instance, as something more than that of six wine glasses. We are incessantly making these comparisons, in particular with respect to the amounts of effort that are required to overcome different resistances, and with respect to rapidities of movement. The relative intensities or quantities so estimated are generalized as *normals* or averages—one for each kind of experience that has impressed us as possessing an intensity of its own. When we are about to lift a jug of water we are guided by a general idea of its weight, and proportion our effort to it. Should the jug be empty, we employ more force than is needed, and our arm comes up with a jerk. That is to say, a normal is an instrument for estimating amounts irrespective of measurement. A " day," a " bit," a " step " indicate quantities of time, substance, and distance that are rough averages derived from experience. It is by the automatic use of refined estimates of this kind that a violinist adjusts his wrists and fingers to various positions on his instrument. We constantly estimate intensities by comparison with normals. When we say that a horse is trotting fast, we mean faster *than usual.* We also use normals as a basis for the estimation of ratios, as in " half speed " or " a quarter-stroke."

A quantity becomes *measured* when it is compared with a standard, or unit, and is identified with the number of units which it comprises. When a comparison in respect to a common trait is made between two dissimilar things, the trait is isolated and abstracted *as a difference*, and its intensity, or amount, may be symbolized by either of them. The

pound, the gallon, and the foot are such symbols. They become rhythmic units if multiplied or divided, since rhythm is a repetition of equalities. The minutes and hours by which we measure time, the money by which we measure value, are similarly based upon rhythmic units. So defined, the weight of a water jug is not merely a vague generalized recollection of the amount of effort that is needed to lift it, but can be stated in numbers of units, which are arrived at through comparison, in the process of weighment, and, being equivalents, are unified with it. By means of these units its weight can be accurately compared with a normal or total.

The use of rhythm enables us to measure because its units, or intervals, being equal, can be counted—that is to say, can be reckoned in numbers. Our primitive ideas of numbers are groups of *units*, which were evidently isolated through the comparison of groups of fingers (digits). The Roman numerals express these groups. The idea of a number as an *individual* is of later development. As such it is the name of a particular unit of rhythm in a rhythmic sequence : 5, for instance, means the fifth beat of a series. But a unit of rhythm must *succeed* as well as *proceed*—that is to say, there must be an interval before it. Accordingly 0 (called cipher or zero from the Arabic *sifr*) was added as the commencing beat of the series. Arithmetic computes in numbers. Algebra is a development of the more primitive method of calculating by ratios.

Whence, it may be asked, do we obtain our idea of rhythm ? Paradoxical although this may appear, its source must be the beating of the heart. Science assures us that the conditions of our environment are probably rhythmic. But their beats are imperceptible, except in the case of the vibrations of very deep sounds.

The heart, however, presses upon the brain an unceasing stream of rhythm of which we are quite conscious when no other idea occupies our attention. It seems, then, that we owe to the heart our capacity for measuring and calculation. No wonder that we think much of it—even make decorative models of it, as we do of no other internal organ. But our appreciation of its services is uncritical: we respect it as the source of love, not of arithmetic.

We have still to consider traits of association in coincidence or sequence—that is to say, degrees of comprehensiveness in the one, and of regularity in the other. They are isolated by the comparison of various groupings and successions. A coincident association which includes all the members of a group is universal (all); if it comprises only some of them it is partial (some). A succession that is unvarying is constant (always); if it varies it is inconstant (sometimes). As inferential expectations the universal and the constant are the certain; the partial and the inconstant the possible or probable. Unguided by these conceptions inference would always remain a childish acceptance of *post hoc, ergo propter hoc.* Degrees of possibility and probability are expressed in fairly minute shades by adverbs. They could be signified arithmetically in the form of percentages.

Traits become adjectives by assuming an implication of association, and distinct abstracts are formed of them that include this implication. "Redness," for instance, signifies the abstract possession of red, not merely the colour in the abstract. The "potential" traits, signified by adjectives ending in *able*, or *ible*, are necessarily associative: they cannot exist except as attributes, and their abstracts ("capability," for instance) have an associative implication. Through an

associative link objects, conditions, activities, relationships, and qualities can become attributes: they are converted to this use in such compound adjectives as manly, angry, active, wilful, causal, virtuous, beautiful. And by means of adverbs (other than those of place, time, and intensity) ideas of these classes can be used attributively to qualify adjectives, and the timed conditions that are signified by the verb.

CHAPTER IX

TIME AND SPACE

TIME and Space present themselves as intervals between impressions or things, and would, therefore, exist even although our impressions were inaccurate—that is to say, misrepresented things as they really are. We know that our sensations of light and sound are illusory—that they are the nervous consequences of vibratory conditions that affect the eyes and ears. This must lead us to distrust our senses of touch and smell as affording us true ideas of the constitution of the material things around us. But, although our senses mislead us as to the actual character of the objects that we perceive, we can trust their evidence as to the existence of relationships between them. Time and Space are relationships which connect things in associative succession. They must exist independently of sensation. There must be an interval between two successive notes of music, for they would otherwise strike the ear simultaneously. There must be an interval of space between the door and table, or we should be touched by the second as soon as by the first. And it is to be observed that if our senses instruct us accurately in respect to relationships, they fulfil all that is required of them by the necessities of life.

Discussions of Time and Space as *abstracts* can lead to no solid conclusions. For, in the abstract, " time "

and " space " merely express that which is common to all intervals of time and space, just as " humanity " and " love " express that which is common to all mankind and all love affairs. A consideration of cookery in the abstract will not help us to discover the ingredients of a particular pudding. If we would ascertain the real nature of time and space we must take them as they actually impress us—that is to say, as intervals which occur in succession and extension—conditions that may be likened, respectively, to the flow of a current, and the circling spread of an eddy. For time *passes ;* space *expands.*

An interval, or period, of time is a liaison between two points of time, as between a feeling of hunger and its satisfaction, or between the rising and setting of the sun. It does not exist apart from its points ; nor do points of time exist apart from the interval that connects them. The day before yesterday, if divorced from yesterday, is isolated in timelessness. We conceive of time as being " infinite." This is when we have *abstract* time in mind. For abstracts are individualized by us as continuities, and consequently seem to be eternal. " Beauty " and " Virtue," for instance, appear to endure for ever. The idea of infinity gains consistency from the fact that we cannot imagine a rhythmic series to which a beat cannot be added—a notion that has probably arisen from the beating of the heart, which has never begun and will never cease during conscious life. But time, otherwise than as an interval between two points, past, present, or expected, has never occurred in experience. Time, in the abstract—as an indefinite duration—is a figment of the brain. If movements and changes ceased, time would cease also.

A point of time may be in the past, present, or

future. In the first case it is conserved in its sequence as a recollection, derived from our own experience, or that of another. Present time is that of a sensation actually experienced: this is indeed the meaning of the word "present." A future point of time is the consequence of an expectation. Apart from an expectation the future has no existence for us. An interval of past time is that between two recollections or between a recollection and a sensation. An interval of future time is similarly that between present sensation and an expectation, or between two expectations. We define a point of future time by associating it with an expectation, as that we will write a letter after lunch. Present time, being a point, has no duration. Accordingly, for one who lives in the present, subjective time hardly exists.

We are aware of two currents of time, marked respectively by changes in our nervous conditions and in our sensations—that is to say, time may be subjective or objective. The nervous conditions of which we are conscious as the feelings of sleep, awakening, hunger, satisfaction, occupation pass in procession: the external changes which we perceive are a similar procession. There are, then, two currents to which our experiences can be linked in time. But, as currents, they are of the same character, and are unified in idea.

The duration of a period of time may be *estimated* by our feelings and sensations, or by comparison with the concept of a normal: it is *measured* by being compared either with external changes that occur periodically, or with a scale of rhythmic intervals—seconds, minutes, and hours. We use this scale so habitually that we come to think of time as composed of seconds and minutes. But these rhythmic intervals

are of comparatively recent origin, having come to the West from Babylonia after the commencement of our era. In the days of classical antiquity men used subdivisions which were simpler and less minute.

Our feelings and sensations serve to estimate the duration of a period of time through the changes that occur in them. Therefore the more numerous and varied are the feelings which we experience, and the things which we see during a period, the longer it appears. If we are dominated by a single feeling, as, for instance, in the society of one whom we love, time seems to fly. It passes rapidly when we are absorbed in thought, because a course of thought is ruled by a single feeling: it is directed by a single purpose. If thought wanders, we become bored, and time is leaden-footed. It also drags when our attention is fixed upon an expectation, as in waiting for a train, for in this case each change that occurs in sensation, feeling, and thought punctuates the passage of time, and seems to prolong it.

We use a normal in estimating the duration of a period of time when we think that the interval between two dances is longer *than usual*, or detect irregularities in the beating of the heart. The brain generalizes intervals that are associated with well-marked occurrences, as it generalizes other experiences. From the comparison of an actual with a normal emerges the concept of a *ratio*, which is employed by us in computing periods, as when we think that a concert has been half again as long as it should have been. It is probably by the subconscious use of a ratio that many persons are able to awaken themselves at a more or less definite interval before the expiry of the normal period of sleep.

It is a long step from estimation to measurement.

This may be effected by identifying points and intervals of time with periodic changes in the apparent movements of the sun and stars, in the return of the seasons, the phases of the moon, the alternation of day and night, and the tidal fluctuation of the sea-level. (It is noteworthy that we call the latter " time " *par excellence*, for this is of course the meaning of *tide*.) In the remoter parts of India a period of time is sometimes measured by the flagging of a leaf that is carried in the hand. Movement, such as that of the shadow upon a sundial, involves external change, and can, if artificially graduated, be used as a measure. The water-glass and sand-glass are instruments for the measurement of time by movement.

Measurement gained immensely in accuracy when a rhythmic series of beats was adapted as the standard of comparison, since rhythmic intervals may be very minute, and, being of precisely equal length, may be added together accurately by counting. Rhythm involves movement: a conductor " beats " time, a drum is struck, a pendulum and balance-wheel swing to and fro. It seems that the conditions of the outside world are mainly, if not wholly, vibratory. But its rhythms are imperceptible by our senses. Within us, however, there is continuous rhythm in the beating of the heart, of which we are conscious when the attention is not otherwise occupied, and it is hardly possible to doubt that this is the source of our concept of rhythmic succession. The rapidity of the pulse varies with the state of the body and the spirits; but for a man past middle age, in moments of tranquillity, a rate of 3,600 beats per hour would not be abnormal. This figure would suggest, in its square root, a minor period of 60 beats—that is to say, the minute. The duration of an hour could have been fixed by the sub-

division of the sun's course, at the equinox, into twelve parts on the analogy of the months. In music the rhythm is generally set by the first, or the first and middle beats of each bar, the intervals between them being subdivided in various degrees of complexity. A rhythm can always be subdivided by the multiplication of its rapidity. The conclusion that the heart is the origin of our susceptibility to rhythm is confirmed very remarkably by the effect upon our feelings of slow or rapid, faint or pronounced, rhythm in music. The slow or faint is pathetic, as in a dirge, the rapid or marked exhilarating, as in a march, because, resembling the beating of the heart in these nervous conditions, they auto-suggestively recall them.

When time is reckoned in rhythmic intervals it can become a factor in mathematical calculations, and these are of so much importance that we come to think of time as essentially rhythmic. This is, as we have seen, erroneous. The interval between high and low tide, for instance, is independent of rhythmic subdivision, although we may subdivide it rhythmically. The confusion of time with its rhythmic measurement appears to be the origin of grave misconceptions in the theories that are now advanced in the name of "Relativity." We shall revert to this point later on.

Let us now turn to Space. Here again we must begin with the actual or concrete—that is to say, with intervals of space, or *distances*. For a finite space is distance in all directions. A distance is clearly an interval between two places, which connects them, just as a period of time links together two points of time. It is a liaison between *there* and *here*—between the far and the near, which appears to separate them because, in going to the far, we *leave* the near. If we

think from the far to the near, their distance from one another will appear to connect them. A place is an object considered as beginning or ending a distance, and a place only exists, as such, in relation to other places. Conversely, there can be no distance without places to begin and end it, as there can be no period of time without initial and final points.

As to the origin of our idea of distance, we can obtain a clue from the blind. They undoubtedly have ideas of distance and space. We can, then, conclude that visual impressions are not essential and that ideas of distance primitively arise from impressions of touch. To this sense distance presents itself as a period of *movement* from one position to another. Hence movement resembles time in possessing duration, and in being a liaison between two points. It is possible, therefore, to establish a ratio between units of movement and units of time, as when we describe a velocity as 1,000 feet per second. If movement were fundamentally different from time, the two would be no more comparable than is a pair of boots and a flash of lightning.

We appear to *see* distance because our movements are intimately associated with changes of perspective, so that recollections or ideas of the latter, when evoked by visual impressions, auto-suggestively recall recollections or ideas of movements. If we see an object before advancing towards it, we see it in a certain perspective, which is associated with the amount of movement that is involved in reaching it. Hence, through perspective, we can estimate distance visually, and a picture possesses depth. But our eyes not uncommonly deceive us. Impressions of sight (and of sound) must be checked by being correlated with other impressions or recollections. We may take a

lark for an aeroplane ; and since, in advancing towards an object, the relative size and position of things around us seem to change, changes in perspective may suffice to give us a deceptive feeling of movement. So we may think that our train is moving out of a station when, in reality, it is a train alongside that has started. Apart from ideas derived from touch, sight is quite untrustworthy. The memorial links between these ideas and visual recollections may be shattered by a violent concussion of the brain. The eyes then present the world as a flat scheme of shapes and colours that is close to the eyeballs. It is possible to produce this dissociation by an effort of will when looking at such a scene as a brightly lit concert stage. The performers and their instruments will then appear as a bizarre decorative pattern. Assisted by associated ideas of movement and perspective, sight immensely enlarges our perception of distance. But it relies upon auto-suggestion for its utility.

Distances are, then, perceived by us as periods of movement, and, as we have seen, resemble time, inasmuch as movement, like time, passes from one point to another. But a distance *persists*, although it manifests itself as a *passing*. We can *return* to a place, whereas a point of time is irrevocable. Moreover, we are assured by touch of the persistence of places. For we can pass from one place to another and then touch them both simultaneously. We infer from this experience that places which we cannot touch simultaneously are nevertheless coexistent. This inference is confirmed by sight.

Distances are necessarily finite. But we conceive of space as infinite. This concept, like that of infinite time, arises partly from the continuity that is inherent in an abstract idea, and partly from the impossibility

of conceiving a rhythm to which a beat cannot be added. It is reinforced by a concept of perpetual motion that is derived from undirected actions such as a random gesture, or a circular movement of the hand. For movement that is not limited by a definite goal may be perpetual. The depth of the heavens seems to be infinite (unless, like the ancients, we regard them as a dome of crystal) because we conceive that a body might move through it for ever.

A distance can be estimated by comparison with another known distance, or with a normal: a "long" table is one that is longer than the average. The distances which guide the innumerable movements of everyday life are estimated by the automatic association of ratios. But distance can be *measured* only when it is compared with a series of rhythmic intervals and identified with the number of intervals which it comprises. There is perceptible rhythm in vibratory and rotary movement, and in forward, or translatory movement there is the rhythm of *stepping*. But it is troublesome to keep count of a large number of paces, and hence distances of any considerable length are primitively measured in units of time. We commonly use the hour, or a portion of an hour, as an indication of distances: in India they may be computed by the time that is taken to smoke a cigarette. But pacing offered a basis from which rhythmic surface measurement could be developed. The pace could be portioned off into smaller units—the foot and the inch—that were suggested by parts of the body, or be subdivided by increasing, so to speak, the rapidity of the rhythm, and so shortening its intervals. The subdivisions of a foot-rule are of course rhythmic.

A distance is linear. It becomes a surface by lateral extension. So a line becomes a plane. We

are assured by touch, quite apart from sight, that there is breadth as well as length in passing from one object to another across a solid; and this is confirmed by our experiences of cross alignments. To align a distance with respect to another distance involves *direction*. We attribute our sense of direction to our eyes. But it is possessed by the blind. The body may be likened to a compass, marking cardinal points as front, back, and the two sides, so that, by stepping forwards, backwards, and sideways, we can align our movements in these four directions. Touches which impinge upon the body are similarly aligned in the direction from which they come. Vision clarifies these impressions. The head serves us as a theodolite. In ascertaining or aligning directions by this instrument, the telescope is set along a *datum* line, and then swung round upon a graduated base. The head is swung in the same fashion, the *datum* line being that immediately in front of us. The eyes are kept in plane by the semicircular canals of the ear, which correspond exactly with the spirit-level of the theodolite. By moving the head we can describe a semicircle, and it is permissible to suppose that if we could swing the head right round our ideas of direction would be more precise. Birds and beasts have this advantage over us, and the acuteness of their appreciation of direction is a common subject of surprise.

Space includes concepts of surface and volume—that is to say, of area and contents. The principal surface is that on which we live. An object which we can handle is bounded by surfaces that run into a continuous whole. We extend this concept to larger masses. Their volume is determined by their height, length, and breadth, which, when measured, become

their *dimensions*. A *vertical* line is given by the upright position of the body: by extending the arms straight in front and at the sides we make lines of *breadth* and *length*. The concept of a *plane*, apart from a tangible surface, is obviously an abstract formed by isolating flatness from a flat surface. But its character, as horizontal or inclined, appears to have evolved from movements of the arms assisted by sight. For the arms are horizontal if stretched out straight in front, and can be held out at any inclination. A forward step followed by one sideways makes a *right angle*, and if continued backwards, a *square*. In walking, the hands make *parallel* movements with the feet. By swinging the arms we obtain ideas of *circles*, *curves*, and *arches*. Concepts derived from touch are sharpened by vision. We make a visual right angle in turning the head from the frontal position to the extreme limit that is consistent with comfort, and, as the turn can be checked at any point, the angle can be subdivided. Viewed by turning the head a landscape appears to be a circular plane, an impression which gave rise to the ancient concept of the shape of the world as a whole. And, if the head be thrown backwards and turned at different inclinations, the impression of a cloudless sky is that of a series of semicircles forming a dome.

It seems, then, that our notions of geometrical figures are derived from ourselves: in the outside world, there is in fact little to suggest them. They are abstracted from impressions of our own movements, which strike us as a succession of internal touches. And, we may observe, in passing, that it is by touch that we learn to locate the various parts of the body, and the impressions that fall upon them. Ideas of touch are "keyed" in the brain according to

the part of the body to which they relate, but this arrangement would not suffice to indicate which part of the body is impressed by a particular touch, unless each idea-group was linked by external sensation to the part that it represents. This linking is effected by the association of two sets of tactile sensations—passive and active. When we touch ourselves two impressions reach the brain simultaneously—one of the pressure *suffered*, the other of the *action* of touching which defines the place touched. Accordingly a feeling of internal pressure in any part of the body that we can touch recalls an idea of its place; and external touches, pains, and movements are located.

A general conclusion to which this analysis has led us is that time presents itself as a succession of changes that occur outside us or within us, space as a succession of movements between places that persist. Time and space are, then, both perceived as successions, and this is no doubt the origin of the imaginative idea that time enters into space—is, in fact, a fourth dimension of space. This notion is purely fanciful, for time and space are fundamentally different. The one passes, the other endures.

Other very curious misapprehensions have arisen from the identification of time and space with the rhythm that is employed to measure them. Time exists independently of hours and minutes, space independently of miles and yards, as a table exists independently of feet and inches. Rhythm can be subdivided infinitely: consequently it has been assumed that time and space are infinitely subdivisible. That this idea is erroneous was proved long ago by the illustration of Achilles and the tortoise. One runs against the other, Achilles giving the tortoise 50 yards start. If space is infinitely subdivisible he can never

overtake it, for, when he has run 50 yards, the tortoise will have run 25; when he has run 25 the tortoise will still be $12\frac{1}{2}$ yards ahead, and, if the difference between them can be subdivided infinitely, it must always exist.

And it seems clear that some of the theories that are connected with the name of Professor Einstein are based upon a similar confusion of time and space with rhythm. The assertion, for instance, that both may be lengthened or shortened by an acceleration of velocity is contrary to experience. But it is true that an acceleration of rhythmic velocity may have the *apparent* effect of lengthening or shortening them. For if we quicken the rhythm of minutes we shall shorten each minute-interval: an hour will contain more than 60 minutes, and 60 minutes will be less than an hour. So, if we shorten the yard, there will be more than 1,760 to the mile, and 1,760 yards will be less than a mile. But, as "hyphenating" intervals between points, their length will remain unchanged.

CHAPTER X

VOCABULARY AND GRAMMAR

MANY of my readers, I fear, will have found it difficult to follow these essays. The things of which they treat are familiar in themselves. But I have attributed to them natures and causal relationships which are strange to current ideas, and at first sight seem to be incredible. Such being the case, it is very extraordinary that words in common use should have been forthcoming which exactly express my conclusions. We do not realize our tri-une nature as a fact: yet in "physical," "spiritual," and "mental" we have terms that precisely indicate its elements. We do not think of the will as three-phased; but the words "assertive," "tentative," and "selective" exactly express its phases. What can be more accurate than the word "thing"[1] (meaning *appearance*) to express a sensation or idea? What better than the word "trait" to signify a quality which is *drawn* from the thing which possesses it? How just is the use of the word "accusative" to signify the ultimate *cause* of an action, although in grammatical order it is put after the action, as its *object*.

These words which express so clearly what is not understood, have all been suggested by the mind, and it seems to follow that our brains are more intelligent than we are ourselves. Nor is this conclusion so paradoxical as it may appear. For, when man inter-

[1] "Thing" is derived from *thenken*, to appear. ("Methinks" means "it appears to me.") We know things only as appearances. But it is strange to find this philosophic truth expressed in common language.

feres with the working of his brain, he infuses his thought with prejudices which obscure understanding, whereas if the brain be "short-circuited" it can use its intelligent faculties without hindrance. This is no doubt the reason why problems so often resolve themselves during sleep.

The earliest utterances of infancy merely give vent to feeling and relieve it, and we may infer that words originated as ejaculatory expressions of emotion. Their utility was so obvious that words were invented as names for all the sensations and ideas of the day, with contrivances that would link them together in the relationships which impress themselves upon perception and guide the process of thought. By what steps did this marvellous evolution accomplish itself?

Our first impressions of words is that they are meaningless symbols. But certain of them, such as "cuckoo" and "hiss," for example, clearly have a meaning in themselves: they are emblematic of the sensation which they signify, not merely symbolic. They are imitative. It is probable that a very considerable proportion of words possessed some inherent meaning when they were first used. But this meaning has been obliterated by the continual changes to which they have been subjected by ingenuity and caprice. Words are like fossils which have not merely been corroded by time, but have been broken up for road metal. Their original significance has very commonly been destroyed.

It must, of course, be granted that very many ideas cannot be emblematized in utterance, and we may confidently suppose that a very large proportion of man's original vocables were arbitrary signals, used as names. The numbers, for instance, appear to have originated as *names* for the various groups of fingers.

That is to say, they were invented by efforts of trial, as are nursery vocabularies at the present day. To invent always requires an effort. But an effort need not be made at random: it may be guided by the brain, and so produce a word which will have some real sameness with the thing that it signifies. In other words, it may *imitate*. It must be realized that words are not merely sounds: they involve movements of the lips and tongue which are in fact *gestures*, and can, in some measure, mimic the movements of the fingers, arms, and legs. It is a significant, although apparently trivial, fact that in learning to write, children not uncommonly follow the movements of the fingers with the tongue. Our movements in articulating words do not interest us, because the utility of words is in their *sound*. Moreover, articulation, being habitual, evades consciousness, and is further obscured by the vowel sounds that are made by the larynx, and are modified by using the cavity of the mouth as a resonator. If, then, we would compare words with movements of the limbs, we must articulate them slowly, and without sounding the vowels. Analysed in this fashion, consonantal utterances may be classified very intelligibly, as in the Table appended to this essay.

Sensation of sounds can generally be imitated, as in "bark," "bellow," "rattle." The imitation may associate itself with the thing that makes the sound, becoming its *name*. "Chiff-chaff" and "peewit" are simple illustrations; "thunder" almost as obvious. "Foot" (and "pad") seem to express the sound of a footstep. The use of some inanimate things is accompanied by sound, and this has been imitated in "hammer," "saw," "tin," and in the "tick" of a clock. We may imitate ourselves, as in "cough" and "sneeze." It has been plausibly supposed that

"putrid" and "filth" imitate the expirations or expectorations of disgust. The five long vowels resemble cries which instinctively manifest certain states of feeling: *ah*, *ih*, *uh* express, respectively, surprise, pleasure, and displeasure, *eh* and *oh* doubt (or distress) and attention. Their use in giving these shades of feeling to words has been obscured by the tendency to vary sounds, as a musician varies his theme. But we can discover relics in "awful," "cheery," and "gloomy," which have an auto-suggestive effect. "Ache" imitates the cry of distress; *oh* is employed for the vocative, and is a significant element in "omen" and "odour."

Words that imitate movements are exceedingly common—especially amongst those of Scandinavian or Germanic affinities. In "pull" and "push" these efforts are cleverly mimicked; and the meaning of such words as "jump," "leap," "stop," "press," "puff," "thrill," and "flap" is self-evident if we follow the movements of the tongue and lips which articulate them. This imitative process is curiously illustrated by the word "link." The tongue *connects* the fore and after parts of the palate. By including this movement a large number of words emblematize connexion—"logic," "intelligence," and "recollection," for instance. If we realize that "like" is from the same root we shall understand why it is used in such very different meanings as *pleasing* and *resembling*. For in both cases a connexion is established. A similar double touching of the palate occurs in uttering the word "get," which means to establish contact by movement.

Consonantal articulations will also express *feelings* imitatively. Energy is signified by such muscular "jerks" as are involved in making the letters *w*, *ch*,

sh, *j*, and *y*, and still more by such forceful combinations as *sw* and *str*, as in "swim," "swift," "sword," "strike," "stress," and "strength." The letters *r*, *s*, and *l* seem to express continuity in movement, in utterance or sensation, and in condition, as in "run," "rub," "see," "say," "limp," "long." The feelings so imitated may be of touch: there seems to be an emblematic meaning in "hard," "soft," "smooth" and "rough."

So far of intelligent *invention*. But of still greater importance is the *extension* of words by metaphor to ideas other than those which they primarily signify. This is suggested by samenesses that lead to comparison. And the use of metaphor can be greatly enlarged by imagination, since this is blinded by an attractive sameness between two things and disregards essential differences. Likeness in outward appearance is not very fertile in metaphor; but it has extended the use of "arms" and "legs" to furniture, and has given names to a large number of flowers. It is to be found in the word "muscle," which originally meant a "little mouse." Likeness in *feeling* has led to such extensions as that of "striking" to the effect of a sudden idea, of "weighing" to the process of choice, and, more imaginatively, of "sleeping" to a village in a hollow. "Inflation" applies the idea of *distension* to the currency; "cogitation" that of *collecting* to thought; "attention" the idea of *stretching* to the mind. Metaphors drawn from feeling are admirably illustrated by the comparison of conscience to *biting* in the word "remorse." Similarities between feelings suggest the curious application of words that signify impressions of one sense to ideas that originate from another, as in a "screaming red," a "touching melody," a "sunny smile." The analogy that is often

drawn between colour and sound rests upon the similarity of their effects upon the feelings.

The most suggestive analogies are, however, those of relationships. "Value" is in its origin identical with the *valour* that overcomes difficulties: applied to a thing, it means the overcoming by its usefulness of the difficulty of obtaining it. "Relation" literally means a carrying back; "difference" a carrying asunder; "coincidence" a falling together. Metaphors of this kind are greatly facilitated by the employment of affixes denoting phases of relationship. They are much used in Greek and Latin, and, generally, it may be said that these languages (and those derived from them) are characterized by the use of imaginative metaphors, as those of Germanic affinities are by forcefulness of emblematic expression. English is so fortunate as to have availed itself of the advantages of both these accomplishments.

Another method of extending the meaning of a word is the inversion of its associative relationships—by extending it, that is to say, from a possession to its holder, from cause to consequence, or from consequence to cause. The name of a profession or condition not infrequently passes to its holder: so many surnames have originated. "Lady" is an interesting instance in point: it is clearly identical with the German and Danish *ledig*, meaning "free," and marked the free as opposed to the bond-woman. There is a similar connexion between *frei* and *frau*. Inversions of cause (or antecedent) and consequence, and *vice versa*, are less easy to follow, since they are obscured by the process of auto-suggestion. The will acts causally in determining future conduct: the word "will" is used consequentially to express the expected future. "Danger" is the consequence of another's power

(*dominiarium*). Printed cotton cloth originally came from Calicut: it is called "calico." "Pure" transfers an imitation of expectoration to its consequence. A "bit" is the consequence of a "bite": this realistic method of indicating a portion of small amount is used in Greek and Latin as well as German. To take a word of quite recent origin—Mafeking was the cause of rejoicing and is used for its consequences. On the other hand, such adjectives as "curious" and "fearful" signify consequences that are attributed to causes. In the phrase "I *long* to see him" (*il me tarde de le voir*) the tedium that is the consequence of a desire is substituted for the desire. "Right" primitively means the consequence of being governed: it is used to signify a governing principle. "End" means the consequence of purpose, but it is often used in a causal sense. There is a similar inversion in the word "boycott," which uses the victim to express the victimising.

By metaphor and inversion a primitive word root may be used in meanings of extraordinary diversity. The root *GEN*, for instance, which meant to *produce*, has borne such heterogeneous offspring as generate, general, gentleman, generous, genitive, gender, gain, origin, and begin.

The extension of the meaning of words by metaphor or inversion is stimulated by a desire for dignity and a desire for force. The former leads to such euphuisms as the substitution of "expectoration" for "spitting," of "continuations" for "trousers"; the latter has suggested "nimm" and "pinch" for stealing, and "pluck" and "guts" for courage, both vulgarisms in each case originally meaning the same thing, but the first being supplanted by the second because it had lost its picturesqueness.

Words that have once been formed are subject to

constant changes, and an examination of primitive dialects shows quite clearly that, until a vocabulary is fixed by metrical poetry, or by writing, a language is in a condition of incessant flux. In the interests of ease, long words are abbreviated (as in " bike "), and changes are made in consonantal articulation by varying the pressure of the muscle involved, so as to make such differences as those between " fader " and " father," or " kirk " and " church." Once having become fashionable, each change rapidly spreads through a community. A curious change, due to appreciation of rhythm, is word-duplication, as in " pow-wow." It is extraordinarily common in some Oriental languages.

Words are, moreover, changed by amalgamation, as in " horseman " and " telegraph." A syllable may be added to signify the class to which an idea belongs. For instance, the termination *ion* or *tion*, as a rule, indicates a condition—that of *ment* a manner or method of giving effect to a condition : *dom* implies a condition of power : *ty*, *cy*, and *ce* are used for qualities : *ly* (*like*), *y*, *ish*, *ful*, and *ous* mark compound attributives, and *ness* the ideas of kinds or abstracts that are formed from them. The correlative terminations *hood* and *ship* indicate ideas that are related to one another in sequence. Their origin displays our forefathers' ingenuity. A hood becomes a " skip " basket if reversed, and this reversibility is used to express such relationships as that between father and son, the aspect of which looking forwards, is the contrary of that looking backwards. The systematic use of significative suffixes seems to indicate that they were introduced by royal or priestly authority. Regular significant modifications of this kind are peculiarly elaborate in Arabic : it uses a scheme of internal word changes by which the bearing of

any root can be uniformly modified, so that a simple expression of action can be systematically converted into one of agent, effect, and act in the abstract. So language becomes crystallized. But it may be liquefied by a destructive war. The Romance languages are crystals that have formed themselves out of liquefied Latin, under the stimulus of man's imaginative propensity to decorate—intelligently applied.

Of this elaborative class are the affixes that are employed to mark the *nature* of the relationship which is implied in a word. *Di* (meaning *two*) indicates apartness; *dis* contrarifies; *in* or *un* negatives (there is a vast difference between "dissatisfied" and "unsatisfied"); *mis* marks failure or incompleteness, possibly from "midst" (as in the slang expression "not half" for "quite"); *re* signifies a going-back or "back-lash"; *for* implies looking forward, and, as a consequence, not behind; we *forgive* and *forget* when the past is out of mind. In Latin and Greek grammatical prepositions were commonly used in this fashion. They are really syntactical and appertain rather to grammar than to vocabulary. In languages of Scandinavian or Germanic affinity they usually follow the verb.

We pass to the consideration of *Grammar*—the art of linking words together in the relationships which are formed in the brain. These are either associative or unificative. The former are liaisons which are established by experience (or by instruction from another's experience) and are re-established by the process of memory. That is to say, they can ultimately be traced to sensation. The latter are liaisons which originate from the effect of a trait of character or relationship, that has become associated with two idea-

complexes, in re-assembling the second after it has re-assembled the first—an effect which we abstract in idea as *intelligence*. Unificative liaisons are, then, originated by the brain and seem to be intuitive. To one or other of these classes all the connecting links of grammar can be referred: the various "parts of speech" are instruments for expressing them in various connexions.

The *associations* which we perceive may be in coincidence or in sequence—that is to say, simultaneous or successive. Of the first kind are the coincidences between one thing and another, as between a thing and a point of time or place, which are signified by such prepositions as *with*, *upon*, *in*, *out*, *at*; of the second kind the successions in time, place, and thought which are expressed by *of*, *from*, *to*, *away*, *towards*, *therefore*, *because*. It seems that the genitive and ablative, respectively, marked the beginnings of phases of liaison in time and space: the dative and accusative their endings. But for the reversed successions of thought, in which endings precede beginnings, prepositions are more convenient.

Unificative relationships are less easy to follow. Unification may be complete or incomplete: the former is identification, the latter results in comparison. We are not conscious of complete unification, since the two ideas merge into one another—as two notes that are in unison—and we can only assure ourselves of their union by inference. We are conscious of comparison, since in this case differences remain outstanding.

There is complete unification when we recognize, or identify, an individual, when we generalize a number of similar individuals into a kind-class, and when we classify an individual by uniting it with its kind-class. Affirmation strikingly illustrates complete unification.

" Yes " means " that is so," *viz.*, the same as is in mind. When we ask " who did it ? " we inquire as to the *particular* doer that is to be unified with the *general* idea of a doer which is in our mind. Accordingly, questions arise out of doubts as to unification. A negative answer denies by contrarifying a unification.

It must be understood that these relationships are not specifically expressed by particular parts of speech. They run across the classes of grammar. Pronouns, adverbs, and conjunctions, for instance, may be associative, unificative, or comparative. Nouns may be associative or comparative : " leader," for instance, implies the associated idea of a " follower " ; " excellence " involves comparison with a normal. A particular relationship may be expressed in very different grammatical fashions. We may say, for instance, " it will probably rain," " it is probable that it will rain," or " there is a probability of its raining."

Perception and reflection differ from crude sensation in that they involve the framing of a *thought* which attributes to something that it is unified, compared or associated with something, or is unified with a *feeling*. We may conjecture that thought runs on these lines because our most primitive and persistent thoughts are of ourselves, and we cannot think of ourselves except in this fashion. The core of a thought, and of the sentence which expresses it, is a timed condition signified by a verb. It is timed because our own passing conditions of body and mind are linked to points and periods in the stream of consciousness. Those that are past can be recalled in memory. Our idea of the future is that of the consequence of a condition of expectation, analogous to that which is produced by an appetite —hunger, for example. A condition is in the future when it is expected.

The conditions that are expressed by verbs are to be distinguished as those (1) of simple existence (" being "), (2) of being unified or compared with an individual or a class (" being Henry," " being like Henry," " being a lawyer "), (3) of being associated with a circumstance or a trait (" being in chambers," " being eloquent "), and (4) of a phase of movement, feeling, or thought with which ideas of methods or instruments have been associated by experience. Thus " having " is the condition of *possession* ; " doing " is associated with ideas of movements of the hands, " walking " with those of the feet ; " quarrelling " is a condition of antagonism associated with violent utterances ; " involving " is a condition of interlacement, as between the fingers of the two hands.

A verb becomes personal when an idea of personality is unified with that of the condition which it expresses. A conscious condition of our own is, of course, one with ourselves. When the personality is that of another individual (or a thing), the unification is between an idea of his particular appearance (including his gestures, expressions of feature, and words) and a general idea of an appearance with which an idea of a certain condition is associated. His condition is, therefore, not perceived, but inferred. The unification and the idea of condition are both timed, but in external time, not in that of consciousness. For the two currents are unified as identical. " He limps " means that his appearance, in perception or in idea, is unified with that of limping, and through the appearance is associated with the condition of limping. Unification, comparison, and association in themselves do not necessarily involve timing. Accordingly, in some languages, as in Arabic, they may be signified by simple apposition of the two ideas, without the use of

a verb, except when it is necessary to specify the time as past or future. And a distinction may be made between unification in kind and association with a trait or a circumstance. For the former is permanent, the latter transient. Consequently, in Spanish different verbal forms (*ser* and *estar*) are employed for the two.

Condition, time, and personality are so intimately welded together in the verbal concept that one word may be used to express all three, as in Latin and Spanish. But timing gains greatly in exactitude if the time of the unification is differentiated from that of the condition. This is effected by the use of the auxiliary verbs " to be " and " to have " with participles. " He is going " means that he is one in the present with a present condition of going; " he has gone," that he is one in the present with a past condition of going; " he will have gone," that he is expected to be one with a past condition of going. The verb " to have " is used to express present or past unification with a past condition because the past is represented by the recollections which we *possess* of it. But, for verbal participles that do not express activity, the verb " to be " is a more appropriate auxiliary, since it includes no implication of activity: this is recognised in French and German. The future, being an expectation, is expressed by " will " or " shall " because these indicate volition or obligation—states of mind which give effect to an expectation. Words signifying causes are used to express consequences.

By the use of auxiliaries time is *analysed* into two elements. Two points of time are *synthetized* when the timed condition is a thought, since in this case the time of the thought must be combined with that of the conditions that are thought of. Hence, if the thought is derived from memory, or completed inference, the

timing of the condition in present or future is thrown back, " is " becomes " was," and " will " becomes " would." This is so when we repeat the substance of another's speech, and also when the condition is merely the contingent consequence of a supposition or hypothesis, which presents itself as a recollection or a completed inference, such as " if I went out I should get wet." Thoughts of hypothetical possibilities are, of course, typically expressed in the subjunctive mood.

We may refer here to certain other auxiliaries—those expressing ability, possibility, probability, and certainty (can, may, and must). These are inferential degrees of expectancy which arise out of the comparison of similar associations in regard to their comprehensiveness and regularity. If, for instance, I *always* succeed in attempting a thing, I *can* do it; if only *sometimes*, I *may* do it; if there is no alternative, I *must* do it. These relationships are subject to the same changes in timing as the ordinary auxiliaries, if they occur in a conditional conclusion.

Simple " being " is expressed by the *substantive* verb, since this condition may be out of relationship. The verb " to be " is also used to signify unification in itself. Verbs may be termed *subjective* when they express a condition, active or passive, which has no external end or purpose, as, for instance, " sleeping " and " reflecting," " being loved " ; *objective* when they imply an end or purpose without which they are incomplete. This follows them as an accusative and in some languages is incorporated with them. But this distinction is by no means clearly cut. A vast number of verbal conditions (" seeing " and " eating," for instance) may be either subjective or objective, and any subjective verb may be made objective by regarding its condition as its end—" sleeping a sleep," for

example. So an objective verb becomes subjective if it is used reflexively as in " s'ennuyer." The relationships of the verbal condition to the environment are signified by affixes (" overthrowing," " surpassing "), or by prepositions as in " thinking of," or by both together (" intervening between "). In an impersonal verb, failing a causal attachment, a condition is assigned to itself. " It rains " means that the rain rains ; " *il faut*," that necessity needs. But " it," as well as " there," is commonly used pronominally to invert a sentence, so as to emphasize or amplify a subject by putting it after the verb. Both are used for this purpose in the French *il-y-a*.

Thoughts (and the sentences which express them) are elaborated by the definition and amplification of the subject, of the condition that is attributed to the subject, and of the object of this condition. It is necessary to define, for most of our ideas are general concepts of *kinds*. It is by amplification that a thought is expanded in detail.

A subject is accurately defined by its proper name. When it possesses no proper name its kind-name is used, and it is isolated from its kind by being defined as *present in sequence* by the definite article, in *number* by the indefinite article (originally " one "), and in *place* by a demonstrative (this or that). When one is speaking of oneself or of another, or to another, the use of unificative personal pronouns obviates the necessity of naming: it simply substitutes utterances for the demonstrative gestures that are commonly employed. The risk of confusion is lessened if the third person is distinguished by gender. An individual or thing may be defined by its possessor: hence the use of possessive pronouns, which may be employed to define more respectfully than by pronouns, as in the phrases

" my lord," " your servant," and " his excellency." When a subject is plural it must be defined by a comparative relationship, since all ideas of number and quantity are relative. The comparative relationship may be (1) in number or quantity (three, many, few), (2) to a particular total (more, most), (3) to a degree of association in coincidence (all, some), or (4) to a degree of association in sequence (each, *i.e.*, " one-like," everyone, someone). " Every " is plainly allied to " ever," which apparently signifies " in sequence " ; the same root in " very " means " repeatedly."

A peculiar method of defining ideas is by gender. Its use for inanimate objects is an interesting illustration of the fact that we realize the conditions of other persons and things by investing them with conditions of our own. We may define an idea more precisely by means of an attributive trait—that is to say, by an adjective. This may be simple or compound, the former signifying a trait of a sensation (red, strong, hot), of a condition (free, difficult), or a degree of association in coincidence or sequence (universal, partial, variable, and invariable). From degrees of association are formed, as traits of inferred expectations, the adjectives " probable," " possible," and " certain," since these depend upon the degrees of comprehensiveness of a grouping, and the degrees of regularity in a succession. Compound adjectives attribute a kind (tigerish), a condition (joyful, lovely), or a quality (gracious, useful). A trait may be compared in degree—as more or less—with that of another individual ; and used in this fashion the adjective is given a distinctive comparative termination.

Adjectives lead us to adverbs. We give this name to a very heterogeneous collection of words. They may be distinguished as unificative, comparative, and associa-

tive. "As" unifies one idea with another. Comparison is indicated by "more" or "less" connected by "than" (originally *then*, meaning "followed by"); resemblance by "likewise." Qualificative adverbs (commonly ending in "ly" for "*like*") define adjectives and verbal conditions by *comparing* them with objects, conditions, activities, relationships, and traits. An interesting function of adverbs is to express degrees of comparison with reference to an average or maximum: they serve as a scale of estimation that is more primitive than measurement. Degrees of intensity (or quantity) and of resemblance are indicated by "rather," "very," "exceedingly"; phases of coincident association by "little," "much" (more-like), "quite," "almost wholly"; phases of successive association by "seldom," "sometimes," "often," "always"; phases of inferred probability by "hardly," "somewhat," "rather," "very," "highly." "Very," as already noted, means *over and over again*, as when in moments of enthusiasm we repeat an adjective. "Ever" means in sequence; "never" not in sequence; and "even" out of sequence, and hence without incident. An *even* number closes a rhythmic series. The associative adverbs are those of time and place. They are abbreviated substitutes for circumstantial associations: *there* means "in that place"; *now*, "at this time." The exclamation "There now!" draws attention to a coincidence in place and time; "Now then!" means "look ahead," indicating a sequence.

We come to the use of *circumstances* in defining and amplifying. Circumstantial relationships may be of association or comparison. They may be signified through their beginnings by case-endings, through their endings by prepositions—the former being most

convenient for putting things in the order of time, the latter for putting them in the order of thought. "Cicero's friend," "Cicerone divitior" recognize that Cicero existed before he formed a friendship or became the subject of a comparison, whereas, reversing the order, and using "of" or "than," the relationship leads up to him.

Circumstantial relationships in *coincident association* may be with other persons, or things, or with points of time or space. Their coincident character is disguised by their appearance, since, thought being a succession, they must be *expressed* in sequence. Companionship is indicated by "with" and "against"; the coincidence of purpose and instrument by "with" or "by"; points of time or space by "at" and "in." Circumstantial relationships in *sequent association* are of a more complicated character and include some *liaisons* of which we do not ordinarily think as successions. A sequence may be either in space (that is to say, one of movement, for we derive our ideas of distances from movement), in time, or in thought Those of thought are typically expressed by connected *sentences*, not ideas, and this consideration will be deferred until we touch upon the syntax of sentences. We regard the sequences of space as forward movements of our own, those of time as currents which approach us from the future and recede into the past. Thus "before" and "after" a certain hour mean anticipating it or being anticipated by its arrival. "From" and "to" indicate the beginnings and ends of distances in space, and of periods in time. "For" signifies "in front" or "looking forwards": "for his sake" means "looking forward to his interests." "Since" (*syne*) means "looking backwards." Other sequences are those of purpose and end ("from" and "to"),

and those arising from origin, cause, material, and possession that are attached by " of." This connects two things in the reversed, or auto-suggestive, order of thought, in which the consequent precedes the antecedent. But we still use a genitive case-ending, as in " love's triumph "—a sequence of cause and consequence.

It may be observed here that it is the " little " words of a language—its pronouns, adverbs, prepositions, and conjunctions—that are, so to speak, its nerves. Nouns, adjectives, and verbs are very commonly borrowed. But the definitive and connective particles persist. From this point of view English is a branch of Scandinavian which has enriched itself immensely by borrowing. It is differentiated from the Germanic tongues not merely by its syntax, but by consonantal changes. " Tide," for instance, which is *tid* in Danish, is *zeit* in German.

The objective or accusative (as this name implies) is at once the ultimate cause, or stimulus, of an active condition and its end. The causal effect of the object is eclipsed by the impulse that is its active consequence. This becomes a cause and takes the stimulus as its end. The object might then be appropriately connected with the verb by the preposition " to," and in Spanish it is actually so introduced when it is a person or a personified idea.

A thought may be amplified by the inclusion of associated (and) or alternated ideas (or). " And " denotes an *association* in coincidence or sequence that has been established by experience ; " or " introduces, as an alternative, an idea which is *comparable* with its predecessor in its relationship, as cause, consequence, object, method, or instrument. These two little words, then, precisely typify the two processes to which can

be reduced all mental activities that are unaffected by emotion or antagonism.

The definition or amplification of a subject or condition may entail the use of explanatory or complementary conditions that are expressed in more or less elaborate dependent sentences. These may all be classed as associative, unificative, or comparative. The simplest associative link is " and " or " moreover." " Consequently " and " accordingly " carry on a sequence. " So—that " and " so—as " connect manner with consequence and purpose with end. There are various modes of linking antecedent with consequent, since the attachment may be merely connective (" he is on crutches because he has been wounded "), or may be inferential (" he has been wounded because he is on crutches "), and the association may run with time or with thought, that is to say from antecedent to consequent, or from consequent to antecedent. When simply establishing a connexion between two events in order of time the antecedent may be introduced by " since," or the consequent by " therefore." ((" Since) the fire was lit early (therefore) the room is warm ") ; if the connexion is established in order of thought, " for " or " since " is used to introduce the antecedent. In *inferring* a past cause from a present consequence, the consequence is introduced by " because " if the order is with time ; the cause by " therefore " if the order is with thought (" The room is warm, therefore the fire was lit early "). If the inference is as to a future consequence from a present cause, the consequence is introduced by " therefore " if the order is with time, the cause by " because " if the order is with thought. (" The room will be warm because the fire was lit early "). The connexion of cause and consequence, or the inference of one from the other, is hypothetical

when one of them is merely a supposed possibility. The supposition is introduced by "if" (*gif*), or, if negative, by "unless," apparently meaning "let not."

Sentences are very commonly linked to one another in succession of time, forwards or backwards, since life's experiences, internal and external, succeed one another in a current flowing onwards from the future, through the present, into the past. We are ourselves part of this current, but appear to be stationary in it, seated, as it were, upon the rock of our unchanging personality, looking upstream, so that our experiences seem to approach us from the future, and recede into the past. Our sensations and feelings reveal the current to us only as the ripples and waves of the immediate present. By expectative inferences from past experience (actual or learnt from others) that are forced upon us by our impulse to foresee, we look upstream into the future. By recollecting our sensations and feelings we can cast our eyes backwards—downstream—into the past. The mind may be likened to a reversible mirror which turns itself from the present, sometimes to the receding past, sometimes to the advancing future. Accordingly the adverbs "here" and "now," "there" and "then" are used to signify points of place and time in either the past or the future. And our recollections and expectations may run with the current, or against it. We can reconstruct yesterday, or construct to-morrow, progressing from breakfast to dinner, or from dinner to breakfast.

One sentence is connected with another unificatively when the dependent sentence rehearses, paraphrases, or defines something that is included in the principal sentence. "That"—meaning a fact which is unified with a general idea of it—is very commonly employed as a uniting liaison—particularly to introduce the

elaboration of a thought, feeling, or speech which has been already vaguely indicated. "This" or "it" may be employed at the commencement of a sentence to unify its subject with what precedes. "As" is characteristically unificative: it may unite a condition or a purpose with a manner ("as fast as possible," "so as to be in time"). But the principal instruments of unification are the relative pronouns. They are also interrogatives, and, employed in this sense, they ask for a fact which would complete an idea that exists only in outline. As relatives they combine these two elements, and are accordingly able to complete in detail a general idea that is incomplete. They are equivalent to "the same as," and it is worth noting that in Danish *som* may take the place of a relative. The general idea which they complete may be one of condition, time, place, cause (why), or manner (how). "Lest" is a curious word that is used with unificative effect. "I fear lest he come" means "my thought, in fear, is—let him not come" (in French "qu'il ne vienne").

Comparison, as a link connecting one sentence with another, is illustrated by the use of "or." Contrast is the consequence of comparison. It may be drawn between a sequence, actual or inferred, and that which would be expected from experience. When an antecedent does not lead to its expected consequence or inference, it may be emphasized by "although": or, by the use of "but" or "yet," its consequence may be contrasted with that which would be expected. "However" means "way after way" and hence "in spite of"; "notwithstanding" expresses the same idea by negativing an antecedent; "nevertheless" contrasts a consequence with a normal as being *out of sequence* on this occasion.

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This essay, it need hardly be said, makes no pretence to be a detailed review of vocabulary and grammar: its object is simply to illustrate the effects of regarding them from a new point of view—that is to say, as the consequences of mental processes which are sufficiently regular in their action to be regarded as *laws*. They are hypothetical, as, indeed, are all the laws of science, and are substantiated only if they stand being rigidly tested by experience. It has been shown that, if we grant that ideas can be connected or united by intimacy of association, or identity of elements, we can discover the origin of a great part of our vocabulary and can reduce grammar to a study in evolution. Our laws have, therefore, successfully withstood an exacting practical test.

Analysis of the Gestures of the Lips and Tongue in Forming the Consonants

	Upper and lower lips.		Fore-tongue and palate.		Hind-tongue and palate.	
	Touched.	Approached.	Touched.	Approached.	Touched.	Approached.
Tapped together—						
narrowly ..	P	F	T	TH (thin)	K	C (*Latin*)
broadly ..	B	V	D	TH (this)	G	CH (loch)
Pressed together ..	M	FF	N	S	N (bien)	CH (ich)
Jerked apart—						
narrowly ..	V (*Latin*)	W	CH (child)	CH (chère)	Z	ZH (jeu)
broadly ..			J	Y		
Rubbed together ..	—	—	L	R	LL (ville)	R (rue)

Consonants formed by approaching are *breathed.*

"Narrowly" and "broadly" indicate respectively movements of the middle portion and of the whole of the width of the lips and tongue.

"Presses" and "rubs" are distinguished in their alphabetical names by being introduced by a vowel, e.g., eM, instead of Be.

CHAPTER XI

LOGIC

IT is not easy to understand exactly what is meant by the term "logical," and I have read somewhere of an American professor who, having asked his pupils to give an illustration of "reasoning" from the course of a day's experience, received only one reply that was in point. We may, in the first instance, turn to the history of the word itself. It comes from an ancient root *LEG*, which in Greek and Latin (in itself or with various prepositions of relationship) assumed such various meanings as *thinking*, *speaking*, *reading*, *tying*, *gathering*, *selecting*, *loving*. It enters into the word "religion." In India words of apparently the same origin mean to *adhere* and to *begin*. In English we have a scion of the same stock in "link," and this word, it seems, preserves for us the fundamental meaning of the root. In all its developments it preserves the idea of *connecting*. We connect when we think, speak, read, tie, pick, or love. Religion connects consequences with magical or mysterious causes. In "beginning" we connect the present with the future.

Now if we apply the signification of "connecting" to logic, all is clear. It is a means of linking the incidents of the present and future with past experience by correcting the misapprehensions that are forced upon us by the uncontrolled working of the

brain. Without its assistance, superficial are mistaken for real similarities, accidental sequences appear to be successions of causes and consequences, and we are continually misled by the insidious effects of auto-suggestive processes.

Perception and thought proceed by the very rapid development of liaisons between sensations, recollections, and ideas. The liaison may be the result of a sameness of trait: thus the edge of a saw recalls an idea of teeth because it is a row of cutting points, *hare* evokes *hair* because they are signified by the same word-sound. Such samenesses play a part of vast importance in arguing from analogy, and in naming things metaphorically—"crane's-bill," for instance. A liaison may also be the consequence of an attachment which has been established by coincidence or sequence in perceptive, reflective, or instructive experience: thus the thought of shoes recalls one of stockings, the sight of wine an idea of gladness. Liaisons of the first kind are abstracted by us as *intelligence*, those of the second kind as *memory*.

In perception these liaisons are established between sensations and recollections, or ideas that are evolved from recollections; in thought between recollections, or ideas, and ideas. Sensations are ideas derived from sense-impressions; recollections are re-assemblages of these ideas, and it will save much verbal repetition if the term "idea" is employed for sensations and recollections, as well as for the concepts that spring from them.

When a sensory idea is connected with a recollected idea—or one recollected idea with another—by a sameness of trait, they are undistinguishable *so far as this trait is concerned*, since it is common to both of them. Thus, for instance, the sight of a rose

and the recollection of a hollyhock of precisely the same tint are the same in respect of pinkness. But in other respects they are different, and consequently as wholes remain distinct. Things that are partially unified in this manner are *assimilated*, or *compared*. It is impossible to compare two things which possess no element of sameness. The comparison of two similar things leads to their *differentiation* or *contrast*.

Unification may extend beyond a trait and affect a thing as a whole—as an "individual." We *identify*, or recognize, a person by unifying our impression of him with a generalized recollection. If we unify him with a general idea of *kind*, he is *classified*, and we know that he possesses all the traits that are universal in the kind.

Accordingly the process of unification has, as its consequences, comparison, differentiation, identification, and classification.

It generally happens that, immediately the impression of a trait or an individual is unified with a pre-existing recollection or idea, facts come to mind that have been associated with the latter in coincident or successive experience. Thus the sight of a friend recalls his name, and may recall the thoughts that he *has been* ill, or that his conversation *will* amuse us. When these associations precede or follow the impression they are "inferences." We may infer backwards or forwards. We infer from the tone of a piano that it has been long in use, because thinness of tone is preceded by long usage. We infer that a train is at hand when the signal falls, because this is followed by the arrival of a train in the station. These inferences are derived from experience. But an inference may spring from an auto-suggestive reversal. We infer from experience that a man is on crutches

because he is wounded; we infer auto-suggestively that he is wounded because he is on crutches. Auto-suggestion runs backwards. Its course is the contrary of that of perceptive experience. In perception impressions of objects lead to the detection of relationships; in thought ideas of relationships lead to ideas of objects. By this reversal several consequences can be referred to a single cause, and we form the inference that *all men* using crutches have been wounded.

We may interpose here the observation that, since thought is a succession, the processes of comparison, identification, and classification take the form of sequences, and resemble in form inferences that have originated in experiences of actual successions. Thought is a succession of sequences, which are to be distinguished according as they are unificative or associative.

Now, if the brain is permitted to follow its course of unifying and associating unchecked, its action will result in some curious errors which have had a momentous influence upon human conduct.

In the first place, if a trait is emphasized in attention, it will lead, not merely to the comparison of two things which include it, but to their actual identification, or to the classification of one within the other, since the interest that the trait excites obscures actual differences between the two things. We illustrate this confusion very clearly when, impressed by a man's stupidity, we think that "he is an ass" instead of that "he is like an ass." So the scapegoat was identified with a sinner, and a sacrifice with him who offered it, because the attention was fixed upon sin and its removal by expulsion or expiation. We may gather a grotesque illustration of this misapprehension from India, where it is commonly held that a newly dug tank and a newly planted orchard must be

formally " married " in order to be productive. For fish and fruit, as products, are identified with children, and these follow marriage.

Secondly, casual successions of events are linked together as causes and consequences. So one may think that a fall in the barometer causes rain, or that he has had bad luck because a magpie crossed his path. Rain has followed prayer, as blight may have followed Sunday cricket: these casual sequences are regarded as causal.

Thirdly, we may be deceived by auto-suggestion. We owe to this memorial reversing of sequence the evolution of thought from perception. But we pay a price for this development in the errors to which auto-suggestion may lead. A thing which is closely associated with another thing as its natural accompaniment becomes its stimulus or cause. So it is believed in India that one can become courageous by eating a morsel of tiger's flesh, and the Calcutta Zoological Gardens make an income by the sale of rhinoceros' urine as an aphrodisiac. Pigs are fat and live in sties: therefore a baby will become plump if rolled in a pig-sty. To mix cotton and wool reminds one of unnatural cross-breeding between different kinds of animals: therefore it was forbidden. Breakage is the consequence of violence, violence is associated with men, therefore men must not approach women who are making pots, or the pots will crack in the firing. Ill-temper is followed by injury: therefore a malevolent glance may bewitch one. Shame is relieved by its liberation: therefore confession cleanses from sin. The effect of emblems and symbols have a similar auto-suggestive effect. We must distinguish between the two. Both are associated with ideas as their *signs*. But an emblem has a sameness with the

thing it signifies; this is lacking in the symbol, the association of which with the thing it symbolizes is purely conventional. Turning round a chair is emblematic of the changes of luck; therefore it will change bad luck into good. A wax figure of a man emblematizes him: therefore injuries to it will hurt him. Salt is symbolic of friendship: to spill it is to risk a breach. A flag symbolizes the pride of national unity: an insult to it may lead to war.

It is obviously these delusive mental processes that give birth to such superstitions as witchcraft, to the observances of magic, and to the mysteries that overshadow savage life and haunt the beliefs of civilization. Logic defends us from them. It graduates the significance of traits by comparing the regularity and particularity of their occurrence, and the effect which their elimination would have on the order of things. The *constant* (always), as opposed to the occasional, is that which persists in successive impressions of the same thing; the *universal* (all), as opposed to the partial, is that which extends to all things of the same kind; the *special* or *peculiar* (only), as opposed to the general, is that which is isolated as a difference, and is, therefore, characteristic. These distinctions arise from comparisons which come about automatically through the action of the brain. Others of still greater importance arise from the action of the will in tentatively excluding, or eliminating, traits that are used in identifying or classifying, or of facts that are connected with other facts as their antecedents. A trait which cannot be eliminated without changing an identification or classification is *essential*. If we exclude movement, there is no idea of life: therefore movement is essential to life. If a man's expression is eliminated, we have no idea of his

character: therefore expression is essential to individuality. A trait is *real* or *actual* only if it persists after the elimination of the "personal equation"—that is to say, of the effects of like or dislike, faith or distrust. An antecedent which cannot be eliminated without changing a succession is *causal*; and, contrariwise, one which can be eliminated is not a cause. The character of the weather does not follow the phases of the moon: therefore changes of weather are not caused by changes in the moon's position relatively to the sun. We can light a match without scratching it by putting it near a flame: therefore heat, not friction, is the cause of its lighting, and friction takes its place as the cause of heat. Accordingly it is by a process of elimination that we define the essential, disclose the real, and discover the causal. This process is obviously of a different order to comparison. It is not automatic, but voluntary, and is in fact an effort of trial in response to doubt. It marks an advanced stage in the evolution of logical thought.

The distinctions between the constant and the variable, the universal and the partial, the special and the general are of vital importance in correctly identifying and classifying, in searching for the causes of occurrences, and in ascertaining the reality of facts. Identification and classification are only *certain* when they are based upon a trait which is *peculiar* or special to the individual or the kind. They are in this case *necessary*, since, the peculiar being an outstanding difference which is shared by no other causes, there is no alternative to its consequences. They may be *probable* when they are based upon the *constant* or the *universal*, but cannot be more than probable, since what is constant in the individual and universal in the kind may be possessed by other individuals and

classes. They cannot be more than possible if they are based upon the occasional or the partial. But when once a thing has been identified or classified, the constant or the universal will afford trustworthy clues to its attributes, since it must possess all the traits which are always attached to the individual or the class.

In searching for the cause of an occurrence we may accept with probability a constant antecedent of similar occurrences; within the bounds of possibility an occasional antecedent. But certainty is only attained when our judgment is tested by the elimination of all antecedents, the exclusion of which leaves the occurrence unchanged. Our conclusion is, then, *necessary*, because it has no alternative.

It requires an effort to trace the essential and the causal by the process of elimination. It requires a greater effort to verify a thing as *real* by the elimination of personal feelings—of like or dislike, faith or distrust. For these feelings stifle doubt—the ordinary stimulus of inquiry—and consequently an effort of elimination must be stimulated auto-suggestively by an idea of itself. But its stimulation is generally blocked by the auto-suggestive effect of these feelings. Like is stimulated by the good—that is to say, by the favourable—dislike by the bad. Consequently that which we like appears to be good; that which we dislike, bad. If we are cheerful, the future is full of hope; if we are in bad spirits, our despondency suggests fears. Hopes and fears are auto-suggestive, not logical, expectations. For the same reason it is extremely difficult to see realities which are unflattering to our egotism, patriotism, or *esprit de corps*. No one can be judge in his own quarrel; and we cannot criticize our own ideas fairly until the pride of their

conception has had time to subside. A jury that takes a dislike to an accused is in danger of condemning him unfairly: this is what is meant by "prejudice." We cannot believe good of our enemies. Faith is a condition of peacefulness in which apprehensions are relieved by a sense of protecting or favouring power: the power being good, its commands are auto-suggestively good also. The sense may be of leading instead of protecting: it then induces us to accept without question the doctrines of an accepted teacher. It is obvious that most of our knowledge reposes upon faith of this kind. On the other hand, the distrust or dislike of another illogically gives an unfavourable colour to everything we hear of him, and everything that he does or says.

So far we have considered Logic as an instrument for the control of ordinary perception and thought. But there is a peculiar phase of thought with which it has become particularly associated. This is reasoning, or ratiocinative reflection. In actual experience it is always initiated by a doubt—in fact it is a response to the nervous confusion of doubt which resists it, under the antagonistic influence of the will. The process of reasoning is an instrument for the obtaining of a "considered" judgment. But it is characteristic of evolution that it converts instruments into objects. The interest which their use excites, auto-suggestively invests them with interest in themselves. We see this transformation illustrated in a hundred fashions. Language is an instrument: it becomes an object of literary cult. Government is an instrument: it is incessantly becoming complicated by elaborations that serve no useful purpose—may indeed be harmful—because its processes are so interesting that they breed a taste for "red tape." It becomes an art—

and art stimulates decoration. In like manner the processes of ratiocinative thought have become a study in themselves, and their possibilities have been elaborated with immense ingenuity. But these complicated refinements are used only for class-room exercise, and do nothing to assist us in discovering truth, or in attaining our expectations. To follow the actual course of reasoning we must shake the dust of formal logic off our feet.

The doubts which stimulate a course of resistant reasoning may relate to the identity of an object or occurrence, its kind-class, its intrinsic traits or its extrinsic traits. By intrinsic traits are meant those which are constant and do not vary with changes in the environment. Extrinsic traits are variable, and arise from relationships between the object or occurrence and other objects or occurrences.

In identifying a doubtful object or occurrence the starting-point of our reasoning is a trait possessed by it which is used as a " reason by definition." If, for instance, we are in doubt as to the identity of a dog which disturbs the night, we may endeavour to define it by the quality of its bark. If this trait can be unified with the bark of a particular dog, the animal is identified or *recognized.* We may recognize an object by identifying it *as a whole* with another object. A distance is an idea of movement ; space is distance in all directions : it follows that space is an idea of movement in all directions. Our conclusion, then, is reached by a process of *unification.* We use the words " therefore " or " because " in expressing it, according as we follow the process as it occurs, or auto-suggestively reverse it, commencing with the conclusion.

In referring a doubtful object or occurrence to its

kind-class the *reason by definition* must be supplanted by an intermediary "reason by classification"—the "major premiss" of formal logic—which connects the trait of the definition with the class. If, for instance, we decide that an object is a bird because it has wings, we use the general reason that "all things with wings are birds." Our classification rests upon our definition, and hence we commonly explain our conclusion by the defining reason and omit the classifying reason as obvious. It suffices to state that the object is a bird "because it has wings." It may be observed, however, in passing, that in this illustration our conclusion is not *certain*, because it rests upon the universal, not upon the special or peculiar. For bats have wings as well as birds, and the object may be a bat.

If an object cannot be identified or classified, its intrinsic traits can only be determined by observation. But if it is recognized or classified, they can be *deduced* from its nature or its class. Thus, if we have classified a substance as calcareous because it effervesces under hydrochloric acid, we know that it possesses some manurial value because lime is a plant-food. It is to be remarked that the conclusion so deduced is not a unification, but an association in relationship, since manurial value only exists if there are things to be manured.

The *extrinsic* traits of an object or occurrence are relative—conditions which only exist in relation to other things. There can be no son without a father, or consequence without a cause, and one thing cannot be "within" another unless the other exists. A relative trait is, then, complex: it includes something which is connected with the subject of our thought, and also the connecting liaison between them.

We have single words to express some relative traits—"sonship" and "causality," for example. But, generally, we must use several words to express them. It is a relative trait of an umbrella that it has a crooked handle, or is in the hall, and we can express these traits, as such, only by such awkward strings of words as "crooked-handle-ness" or "in-the-hall-ness." Relative traits are ordinarily attached to their subjects by relative sentences.

The relationship which connects one thing with another may, as we have seen, be comparative or associative—that is to say, it may arise from a mental process of unification or from an experience that has impressed itself upon us, bringing two things together in coincidence or sequence. The former links two things together as being like or unlike, accordant or discordant, as being equivalents, contraries, or more and less, as being the part contrasted with the whole, or (a connexion which is the foundation of mathematics) as one *measuring* the other in proportion (or ratio), or in the form of a graduated scale. "Ten minutes" is a period of time relatively defined by comparison with such a scale.

By a relative trait in *association* things may be linked together simultaneously or in succession. The simplest associative trait of the simultaneous class is that of being attended by an associate or companion, connected in syntax by "with." But companionship comprises the less obvious association between personality and feeling, thought, expression, action, and name, all of which have become linked to the "ego" by simultaneous experiences, and, when recalled, invest it with traits in simultaneous association. Accordingly all the conditions expressed by verbs, except that of simple "being," and being compared

or unified, are relative traits of this kind. Other associative traits of the simultaneous class are those arising from the including (in), the excluding (out), the supporting (on), the neighbouring (near), the alongside (by), the place (at), and the point of time (at). And we must add the associative trait of *quantity*, expressed as comprising a certain number of units or intervals, as ascertained by comparison with a rhythmic scale.

Traits of associative relationship in succession (or sequence) include the origin, cause, material, or possession (of), the object (stimulus) of feeling, thought, expression, action, and speech, the successor or consequence, the method or instrument (by), the place and point of time of start and finish (from and to), and those preceding or following start and finish (before and after), the distance, and the period of time.

Now, in discovering by reason an unknown trait of relationship, we argue either by connecting it with another known trait of relationship, or by eliminating other traits as out of the question. Our reasons are, then, by relationship, or by elimination. These are essentially different instruments. The use of a perceived trait of relationship involves its preliminary identification with an idea of it that exists already in the brain. Were there no such idea it would not be recognized or understood, just as first impressions of sight are meaningless to one who has been freed from congenital cataract. The relationship acts, then, by insinuating itself amongst our stock of ideas. A doubt, for instance, as to the place where we could find a man at midday would be solved by the thought that it was a relative trait of his to lunch at a particular restaurant. On the other hand, when we proceed by elimination, we make an effort of trial under

the stimulus of doubt. To discover whether a succession of events is causal, or merely casual, we eliminate the antecedent or the consequent, and see whether, according to experience, the second occurs without the first, or the first without the second. If so, the succession is not causal. We may make the elimination by an experiment. But generally we must search experience for cases which suggest themselves because they are similar. If, for instance, we think that political disaffection is the consequence of poverty, we look to history for cases in which poverty itself has failed to produce it, or in which it has, as in Ireland, actually followed an increase of prosperity. There is a radical difference between arguing from simple analogy, and arguing by elimination. For, in the one, a conclusion is formed automatically by a process of unification, followed by one of comparison or association; in the other, it is arrived at through the instrumentality of an effort of will—guided, it is true, by analogy, but involving the process of trial.

The traits of *comparative relationship* with which we have most practical concern are measurements—that is to say, dimensions, contents, and value or cost in units of money. We arrive at them by arithmetical processes, the simplest of which involve no *reasoning*. Arithmetic is the use of rhythm for practical instead of artistic purposes, as in music, poetry, and decoration. The figure 1 represents a rhythmic interval, or unit, and each of the other figures a particular interval in a succession. These units are attached to the things which they measure, as a foot rule is applied to a table. But they exist independently of them, and can be given a concrete existence as graduated scales of time, length, quantity, or money. In adding and subtracting, a series of rhythmic units is lengthened

or shortened by the attachment or withdrawal of units. Simple multiplication and division involve the identification of the unit with the series: the one is, in fact, the same as the other, for the series is a repetition of similar units, and a thing does not lose its character by being repeated. We multiply a series of units by repeating it as many times as there are units in the multiplier—that is to say, by assimilating the series as a whole to the multiplier: we divide a series by portioning it off into as many equal parts as there are units in the division. In applying multiplication and division to *things*, a concrete rate is identified with the unit (it is itself a unit), and is repeated or reduced in accordance with the number of units in the series. Mathematical processes become *reasoned* when they are concerned with *ratios*, where they are employed to discover an unknown quantity or ratio through its relationship to a known quantity or ratio. Given, for instance, a relationship of proportion between two quantities, we can deduce by its application an unknown quantity from a third. Algebra can make use of exceedingly subtle relationships by its manipulation of the unknown in symbolic form, and its ability to contrarify both known and unknown quantities.

The traits of *associative relationship* in respect to which we are most commonly in doubt are the cause of a thing, its consequence, and the connection of things with space and time. The quest is for a *cause*, when criminal investigation endeavours to discover the perpetrator of an offence. It may draw inferences from traits of comparative or associative relationship, as from finger-prints or from the habits or motives of particular individuals. Or it may proceed by elimination, so as to exclude all other persons save those who

have entered a house between certain hours, or wear hob-nailed boots. So, if we wonder who has taken our umbrella, we exclude all who have not passed through the hall since it was last there. We follow similar lines in tracing the cause of a circumstance, as, for instance, the non-appearance of someone at breakfast. We may use a hypothetical relationship, since the brain suggests relationships in the ordinary course of thought. For thought, being the converse of perception, searches for things through relationships and presents us with hypotheses. But a hypothetical relationship is only accepted if it satisfactorily "explains the difficulty"—that is to say, indicates its cause. It is an assumption that arithmetical numbers represent particular units in a rhythmic succession. It holds the ground because it explains the origin and course of mathematical processes.

We use similar processes for the discovery of *consequences*. If, for instance, in speculating on the exchanges, we decide that a rate will rise, it is because of certain relationships that have been associated with rises in past experience, as, for instance, that trade is increasing in activity. Our doubt refers to *method* or *instrument* if we wonder how flies can walk up a window. The relationship of a rubber sucker to a polished surface suggests itself, and we accept the supposition that flies possess an apparatus of this kind because it explains their capacity.

In settling doubtful questions as to time and place we commonly trust to the associative relationship of habit, as when we infer that a man was in church on Sunday morning because he is a regular attendant. We also proceed by elimination, as in inferring that an accident must have happened at night, because sight would have prevented it. Time is often indicated by

a relationship in space, and *vice versa*, as when we decide that we must allow a quarter of an hour to catch a train because the station is nearly a mile distant.

The conclusion drawn from an associative relationship in coincidence or sequence will only be certain—that is to say, true or trustworthy—if the former is universal and the latter is constant. These qualifying traits and their contraries, the partial and the variable, are of a highly complicated kind. They are relationships of comparison in regard to comprehensiveness and regularity of association, and are the fruit of intelligence and memory working together. Anything short of certainty declines through various shades of probability into possibility. Mathematics have endeavoured to measure these shades by unifying them with a rhythmic scale.

When we are endeavouring to reconstruct a past event, we may use the recollections of others instead of reason—that is to say, we may go by evidence in place of argument. But our acceptance of evidence is conditioned by the relationships which link a man's sensations with the things that offer themselves to the senses, and his words with his sensations. Those relationships are lacking, if his senses have wandered, or have been misled, or if his impressions are auto-suggestively or deceitfully misrepresented. In weighing evidence these contingencies present themselves as relationships, such as those between mental alertness—or conditions of light—to accuracy of observation, and between bias and misrepresentation. By a similar relationship the statements of a witness gain credibility when they are against his own interests. The development of man's logical faculties has tended to discredit testimony from recollection: it has been

proved by experience to be untrustworthy. In ancient days the testimony of two witnesses was commonly accepted as proof positive. Now, the words of a dozen carry less weight than good " circumstantial " evidence—that is to say, facts which link an incident with an occurrence—or one occurrence with another—not through being recollected, but by being critically observed.

Had we not *doubted*, our methods of investigating crime would have remained mediæval. We owe our progress to " honest doubt," which not only originates reasoning and inspires it with the strength to make efforts of trial, but steadies its course, as with leading strings. For doubts constantly interfere to contradict false conclusions, being introduced by the sameness that underlies a likeness or analogy, and suggests a parallel which negatives a peculiarity. Socrates would not have concluded that man is specially distinguished from the lower animals by his capacity for breeding all the year round, if the thought of rabbits had occurred to him. So, if we attribute to a peculiar racial difference the fact that Frenchwomen can generally cook, whereas Englishwomen generally cannot, our opinion is contradicted by the thought that there is no essential difference of origin between the inhabitants of Picardy and those of the English counties across the Channel.

There has been in the past much discussion in regard to the comparative merits of inductive and deductive methods of reasoning. But the two cannot properly be contrasted. They are, in fact, two stages on the same road—the road by which we arrive at a conclusion. We proceed inductively when we identify or classify an object or a trait with an idea of it, or its class, which was pre-existing in the brain:

deductively, when we use an associative relationship to give us a conclusion. We reason inductively when we classify a plant as a *Solanum* by the examination of its flower: deductively when we conclude that it possesses some poisonous properties. Induction tells us that it is midday when the clock strikes 12; deduction, that it wants an hour of lunch-time.

Logic being the connexion of facts with past experience, it follows that logical truth is that which is in constant accord with experience. Yet we feel that there are truths which are independent of experience and transcend it—that time and space, for instance, are eternal, and that courage, truth, and lovingkindness are inherently excellent. But these convictions are the auto-suggestive consequences of mental processes. Time and space are abstracts, and an abstract idea is a trait which is individualized as a thing because it resembles things in possessing continuity. Its continuity is, therefore, its essence, and it seems to be indisputably eternal and infinite. Courage and lovingkindness are ideals, and ideals are excellent in that they represent traits which are imaginatively personified because they excite the enthusiasm that provokes imaginative activity. We idealize Love, Liberty, Mercy, and Self-sacrifice because they are intimately connected with imaginative pleasure. As ideals they are actually its consequences. But they auto-suggestively present themselves as its causes, and, since the cause of good must be good, these ideals are invested with a transcendent excellence that is independent of experience.

CHAPTER XII

MOTIVES AND FEELINGS

OUR emotions are so mysterious, partly because they seem to be on a plane above analysis, and partly because their analysis is so exceedingly difficult. It obliges us to put ourselves in the place of lowly-organized creatures, such as zoophytes, and to infer, from resemblances between their behaviour and our own, the impulses and conditions to which they are subject. And this comparison will be fruitless unless we realize the tri-unity of our nervous system, and the effect of this diversity in complicating the nature of our motives and moods.

The observation of any living creature must satisfy us that it possesses, albeit unconsciously, certain ruling impulses which serve a fundamental instinct—that of carefulness for the continuity of life, in self, or through offspring. This involves watchfulness in sensation, searchfulness to supply requirements that are defined by appetites, and impulses to approach the favourable and recoil from the unfavourable. Continuity is obviously the most vital need of life: it is secured if a nerve-system, before perishing with the individual, has thrown off portions of itself that can carry on its existence in other individuals. Accordingly, when sexes are differentiated, the life of the species is assured by sexual instincts, and by the various complicated instincts that secure the maintenance of the offspring.

We may also infer the existence of conditions that are not motives. The strange, dangerous, or antagonistic causes the nervous contraction of alarm, which is followed by relief if a recoil from the stimulus is successful. Restfulness follows the appeasement of an appetite; restlessness is the consequence of failure. Nervous conditions are, then, contraries, and we may figure them as states of expansion and contraction, if we judge by the appearance of animals.

These impulses and conditions persist as the overshadowing fatalities of our physical nature. We owe to them our strongest propensities. We derive from them our idea of *purpose*—our conviction that life has an aim could we but discover it. Purpose manifests itself in two conditions of vast importance—those of *attention* and *intention*. Both of these guide us by inhibiting. Attention concentrates the senses upon one object by excluding others. Intention governs the course of thought—directs it upon a subject—by arresting mental processes that are out of accord with its aim.

These primitive instinctive forces are elaborated almost out of recognition by the influence of the spinal nervous system and the brain. The former endows us with persistent energy. This gives the movements of attention, approach, and recoil an impetus, or *élan*, that can be graduated. It reinforces, or "enthuses" nervous conditions on the physical plane, converting them into emotions, passions, and moods. But it may antagonize, or resist, them, if they are out of accord with it in nervous phase, or interrupt its continuity. It may, also, change their character by infusing them with an antagonistic element, as, for instance, when dislike becomes irritable or angry. It may assume one or other of two phases according as it is normal, or is

affected by the unfavourable; and its phases are the good or bad nervous conditions of which we are conscious as our "tempers." And, by its resilient tendency to revert to the normal when contrarified, it brings about revulsions such as those of which we are conscious in joy and amusement.

That we commonly antagonize our own promptings is realized by everyone who has given any attention to himself. There is resistance in hesitation and in quarrelling—conditions which are manifested by vast numbers of the lower animals, and are not improbably experienced by all that possess a concentrated nervous system. We term this capacity for self-resistance "spontaneity," and rightly hold that it is one of life's most distinctive features. It obviously implies the existence of two sources of energy, for a current cannot antagonize itself. We possess these two sources in the sympathetic and the spinal nervous systems (the brain is an outgrowth from the latter); and we may permit ourselves to wonder whether the evolution of sex in the animal world is not connected with this duality, the female and the male endowing the offspring, respectively, with instinctive responsiveness and persistent energy, the *instrument* of the latter being thought.

The brain, by involving delay in a response, converts movements into motives: automatic *movements* of approach or recoil become *conditions* of like and dislike. It renders us conscious of our nervous conditions and movements, as well as of the impressions which we receive from outside. Favourable and unfavourable conditions of spirits impress us as pleasure and displeasure; and since, by memorial associations, these conditions are connected with their stimuli, we are attracted or repelled by the stimuli with conscious feelings of like and dislike. It unifies us with others

that possess a sameness with ourselves; to those so unified we naturally extend the care that primitively was devoted to ourselves. The instinct of searchfulness becomes conscious as a realization of the future—as an expectation: pleasure and displeasure can, therefore, exist in expectation, and can excite our desire or aversion, as, in the present, they excite like and dislike. If we desire them we pursue; if averse to them we avoid them. By forming ideas of stimuli, the brain becomes an instrument of auto-suggestive stimulation. Its ideas present themselves in thought only when permitted to do by the intention of the moment, and the action of the brain is therefore liable to the control of a physical impulse. It is an instrument, not an energizer. But its ideas subject us, physically and spiritually, to infinitely more varied experiences than our environment affords.

Amongst these ideas is that of antagonism in itself, and, since this can stimulate antagonism, it develops conscious "will power" out of conditions that are primitively merely those of involuntary nervous contrariety, or wilfulness. And, since the energy of the spirits can influence the action of any part of the body which is in nervous connexion with the spinal system, it can affect the working of the brain as well as the action of the limbs. Conscious volition can therefore influence the course of thought, and deflect it into any channel that suggests itself. The brain, therefore, comes under the control of the spirits, as well as that of instinctive intention. And the spirits can affect it enthusiastically as well as antagonistically. When flooded by spiritual excitement, thought changes its character, and subjects us to the fantastic and idealistic visions of imaginative activity.

Conscious volition in its various phases raises such

complicated problems that its discussion must be relegated to a separate essay. The motives with which we are now concerned in some cases involve willing. But only so far as it is required to give effect to them, and the will is, therefore, merely their instrument. Even so abbreviated, our review will carry us over a vast field, and it will be impossible within the limits of this essay to follow out in any detail the ramification of our impulses in the multitudinous phases of human behaviour. We must rest content with a descriptive catalogue, and not attempt a disquisition.

It is obviously impossible to bring our nervous or emotional conditions within the limits of a very simple classification. Reduce them as we may they cannot be classed under less than six heads—as individual, sexual, environal, social, prudential, and ideal.

By " individual " conditions are meant those which do not move us to external action unless they stimulate an active impulse. Such is the feeling of self-care or egotism. Such also are the appetites. Lust, hunger, thirst, and fatigue arise as vague feelings of painful restlessness which, primitively satisfying themselves instinctively—and retaining in man their instinctive forcefulness—in man need to be directed by trial or instruction. Their appeasement is attended by pleasure. This illustrates an evolution of cardinal importance—the substitution of conscious pleasure and displeasure, as stimuli, for the automatic promptings of instinct. This momentous change enables us to profit by experience : we can reduce stimuli, so to speak, to a common denominator, and choose between them. It is under the influence of this versatile stimulus that man has " civilized " himself—an arti-

ficial experience which comes to the lower animals only when they learn "tricks."

We think of pleasures and displeasures as of infinite variety. But the basis of all pleasures and displeasures is the same—an expansive or contractive state of nervous excitement. They appear to differ in quality simply because they are associated with different impressions, and are accompanied by different sensory experiences. The theatre and the supper which follows it are alike in affording pleasurable excitement. Their attractions differ because they are associated with different sense impressions. Pleasure and displeasure is exceedingly acute when it is revulsive—when it is the consequence of a sudden change of phase. Such are joy and sorrow, and the pleasure which comes from the humorous or comic.

Pride (or self-admiration) and shame are pleasurable and displeasurable revulsions that are strongly marked by the character of their stimuli. They follow success or failure in overcoming a difficulty. Our lives (although we but imperfectly realize it) are spent in an incessant struggle with difficulties: the simplest movement must overcome inertia and gravity. When we succeed, there is an expansive pleasurable revulsion, however small it may be; when we fail, a contractive painful revulsion. These nervous changes come to pass independently of our consciousness of them: it cannot be too often repeated that our feelings are sensations of conditions that would exist if they were unfelt. They may then affect us unawares. But, when we are conscious of them—that is to say, self-conscious—the expansion becomes an exhilarated appreciation of one's own success, the contraction a depressed appreciation of one's own failure. That is to say, they become feelings of self-admiration and

self-contempt. If they are energetic, they are succeeded, respectively, by contractive and expansive revulsions before equilibrium is restored. These become in self-consciousness self-respect and self-pity. A feeling of self-admiration, succeeded by one of self-respect, constitutes "dignity"—one of the most prized of our possessions. On the other hand, the self-depreciation of shame, when infused with self-antagonism, becomes the bitter misery so aptly named "remorse." "Conscience" is a feeling of obligation that is enforced by anticipation of pride or shame.

The life of the individual relies for its safety upon the emotion of fear: an animal that was absolutely fearless would not have many hours of existence. It is a condition of nervous confusion, not an impulse, and becomes a motive by stimulating a movement of recoil: should this fail, it remains a state of trembling helplessness. It may be excited by the strange, or unfamiliar, the antagonistic, or memorially, by the dangerous—that is to say, by something with which ideas of injury are associated. But its most primitive cause is the strange, and when the dangerous has become familiar, it may no longer be fearful. Dread is the fear of injury in expectation. When the injury is that of social contempt, or reprobation, this feeling is called "nervousness."

When fear is resisted by the spirits it becomes the stimulus of courage. This may be involuntary, in which case it depends upon the tension of the spirits and may fail if it has run down. On the other hand, resistance is strengthened if the spirits are exalted by any such feelings as those of patriotism, pity, or sympathy, and even when they are stimulated by music or alcohol. Voluntary courage may be stimulated auto-suggestively by an idea of it. But it may

be deliberately chosen for its consequences in affording pride and avoiding shame.

A condition akin to fear is that of doubt—the mental confusion that is caused by the clash of two ideas, one of which is " strange " to the other, and will not go with it. Resistance to it is curiosity—an impulse analogous to courage, and named from the same root (*cor*). Doubt is of immense service to us in checking errors in thought, or " jumping at conclusions." But it may also be an instrument wherewith prejudice stupefies thought or cramps it. Curiosity like courage may be voluntary or involuntary. It is of course the mainspring of man's intellectual progress.

If we can escape from, or overcome, fear or doubt we have faith, or confidence, in ourselves. This is a nervous condition of relief with which we causally associate ourselves. It may be extended causally to others, and then becomes one of the strongest ties of social life—a mooring to which we gratefully attach ourselves in times of trouble.

Lastly of habit. The habitual is the familiar and the familiar is the peaceful. To be attracted by the familiar and to be repelled by the strange is one of the most fundamental susceptibilities of life. No living organism is too simple for this experience. It affects the functioning of our internal organs: food becomes readily assimilable when it has become familiar. It is apparently the ultimate unconscious basis of gregarious life. In our conscious experience it is the vague attraction which draws us towards acquaintances rather than strangers. But its unconscious influence is, we may infer, far greater than we suppose. It chains us to the customary in thought as well as in conduct. It is the foundation of our multitudinous acquired tastes. And, by attaching us

to convention, it forcefully inclines us to conventional morality.

So far of the individual. The continuity of the life of the species is assured by the instincts of sexual and maternal love. The passion of love draws energy from every branch of the nervous system. Primitively an elementary physical craving that is concentrated upon an individual by a like, it swells into a desire which stimulates the nervous exaltation of admiration. This, extending to the brain, sets it imagining, and the excellences which are emotionally fancied re-stimulate the imagination. Hence it is true that love feeds upon itself. And it is blind, because it is dazzled. To these exalted conditions may be added that of sympathy. For a man and a woman may each imaginatively regard the other as one in spiritual personality with himself or herself. This is a feeling which will endure. But sexual passion is too ecstatic to be long-lived. In the woman love is more durable than in the man, since in her case it is reinforced by the maternal instinct.

This is an impulse to *cherish another*. Woman is physically differentiated from man by the fact that she is charged with the sustenance of two individuals, whereas man can live for himself. She consequently develops more nourishment than is required for herself, and must periodically disembarrass herself of a surplus. Her impulse to cherish another life—which may be extended from child to husband, or even to lap-dog—necessarily renders her more instinctive and practical than man—less disposed to forget the actualities of life in politics and idealism, and quicker to perceive the realities of character that are masked by language. This is what is meant by "mother wit." She fears the artificial rules of convention

because a breach of them is visited upon her so hardly. But she does not admire them, and hardly understands man's unquestioning devotion to "good form." Her object, put colloquially, is to "get there all the time." She thinks, however, of another and not only of herself.

The motives that may be classified as *environal* are all developments of the primitive unconscious impulses to approach the favourable and recoil from the unfavourable. In conscious life these stimuli become the pleasurable and the displeasurable, and, owing to the delay in response resulting from the intervention of the brain between stimulation and movement, approach and recoil evolve into motives of like and dislike. These become desire and aversion when they are aroused by *expected* pleasures and displeasures, and achieve themselves in action by pursuit and avoidance. And, since the future offers more than one possibility, there is frequently a clash of competing attractions or repulsions which is settled by *choice*. This involves an effort of will in delaying response to the first idea that presents itself, and so giving time for deliberation. But, having deliberated, we choose the most pleasing or the least displeasing of alternatives, although the inevitable character of our choice may be masked by a difference of quality between the pleasure chosen and that rejected (as, for instance, between a glass of wine and one's dignity), or by the fact that we regard ultimate as well as immediate consequences, and may choose what apparently is the least pleasing because of the pleasingness of its fruits. We may indeed choose "wilfully," in a spirit of contrariety. But this is not choice, but self-assertion.

The pleasures that may attract us are those of the

feelings or of the senses. The former are less sophisticated—more natural—than the latter. The pleasure of pride, for instance, does not vary with the progress of civilization. But great changes occur in the objects that may be valued as affording pride. They are symbols of success, and stimulate pride as does success—fashions of dress, decorations, titles, riches—with which ideas of success are associated. They are amongst the most entrancing of the objects which we strive to secure. But they are conventional, and vary from one country, and one epoch, to another. So again with the pleasure of amusement. It is that of nervous revulsion and is as ancient as is man. But the instruments of amusement are perpetually varying, because they affect us through association of ideas that are liable to change.

Pleasures of the senses other than those of touch are still more artificial. Marvellously few of them can be instinctive, for in this case they would be common to all men, whereas, in fact, tastes vary so greatly as to have suggested the proverb that " one man's meat is another man's poison." All men derive instinctive pleasure from certain touches ; all like the sweet, and dislike the bitter ; most of them like colour and sound which is not harsh or over-loud. Rhythm is universally appreciated. But, for the rest, our tastes are as conventional as the fashion of our clothes. They are plainly acquired, not innate. Their development proceeds in some cases from a sharpening of sensory susceptibility which comes with practice : it has been demonstrated, for instance, that a man's sensitiveness to touch is sharpened by experiments that test its sensitiveness. So a tea-taster gains his delicacy of discrimination. An increase of sensibility discovers a pleasure that underlies a displeasure, and the latter

becomes lost by habitude. This appears to be the explanation of "learning to smoke." All sensation is either agreeable or disagreeable in some degree, and by a refinement of sensitiveness a concealed pleasure may be brought out. Such tastes gain in strength as they become familiar. It seems, moreover, that physical experiences, like symbols of honour, may become pleasurable by association—that we are pleased with a thing if we are convinced that it is excellent. The consequence of this evolution is that we are attracted by our environment through pleasures which are for the most part artificial—which are discovered by trial, and are spread by imitation under the pressure of fashion.

When our liking for a thing includes an appreciation of its superiority or excellence, our feeling becomes admiration. Since these qualities are the consequences of success, the thing is a symbol of success and affects us just as our own success would affect us. That is to say, it auto-suggestively stimulates the spirits, and our like becomes enthusiastic. Beauty is the pleasing which is also excellent. When admiration is mingled with fear it becomes awe. On the other hand, inferiority transforms dislike into contempt. And a dislike becomes irritable when it is infused with the spirit of antagonism.

Our *social* motives rest upon the same foundations as our environal. But, applying to persons instead of objects, they are profoundly affected by the fact that, since we understand other persons by inferentially investing them with such feelings as our own, we can be antagonized by them as we are by ourselves. This mental antagonism is illustrated very clearly by emulation. The idea that another is competing with us arouses our antagonism immediately. The con-

trariety may arise automatically, as when one thrush sings against another, or a child strives to outrun its playmate. As a voluntary feeling, stimulated by an idea of antagonism, emulation is ambition—one of the most masterful of our social impulses. It manifests itself in our solicitude for a "career." It is the essential element of the hunting spirit, in which there can be little that is physically instinctive, for it is demonstrated by our teeth that we are not intended by Nature for a carnivorous diet.

Emulation—even violent emulation—may be perfectly good-tempered if it is between men who are of the same class or kind. But, if we dislike our opponents, our antagonism becomes angry, and expresses itself *against* the cause of irritation. Movements of recoil are transformed into movements of attack, just as courage advances towards danger, while fear flees from it. We may be sure that this reversal proceeds from irritation of spirit, since impulses of attack are confined to animals that possess a concentrated nervous system. Through efforts of trial, and reasoning from analogies, this feeling of aggressiveness has developed extraordinarily complicated methods of injuring others.

Our spirits, then, set us against everyone who can compete with us, so that another's rivalry is only ended by his death. Our emulative antagonism can easily become angry or jealous, unless it is stilled by faith or affection, or subdued by fear or prudence. The wonder is, not that a Government should be troubled by unrest and revolt, but that it should ever meet with acceptance.

Another notable consequence of our interpreting the feelings of others by our own is the effect upon us of the esteem or disesteem of our fellows. If their words

or behaviour give us an idea that they respect us, this idea auto-suggestively stimulates the feeling in ourselves, followed by a feeling of pride, since the two are associated in nervous sequence. This succession of feelings, in reversed order, is the actuality which underlies the idea of "honour." The contempt of others inflicts upon us in like manner the dishonour of shame. Hence our happiness is dependent upon the attitude of others towards us. We are oppressed by a nervous regard for their esteem, and since we are "respectable" if we observe the conventions of our society, the morality of the day is enforced by a sanction which is very much stronger than that of the law. But this remarkable reflection in ourselves of the feeling of others only occurs when they are *one with us* in class or kind, since it is only in this case that we are assimilated with them. We are indifferent to the good or bad opinion of aliens.

Persons, like objects, stimulate our admiration by their excellence. If they are powerful, in actuality or in idea, we respect them, since power is the consequence of success. If their power protects or advantages us, our respect becomes faith, which is associated with them, so that they always appear to us with a halo. But if we dislike them, our admiration becomes envious. And if an idea of their power is felt to be illusory, faith breaks up in revolt.

The inclinations towards others that are termed "affections" may be instinctive, or may proceed from mental processes of association and unification. We are disposed to overrate our instinctive susceptibilities. If any affection is directed towards its object by instinct, it would certainly be maternal love. But a mother has no innate recognition of her own infant, and will cherish a changeling as her own if she is

unaware of the change. It may be thought that children instinctively love their parents. But if a mother be unkind, love for her does not develop. It seems that physical instinct is *indicative* merely in inclining us towards familiar acquaintances and against strangers. Our affections gain their *impulsive* power from instinctive forces of like and dislike. But mental processes decide upon whom these forces are directed. By associations derived from experience, or instruction, certain persons are connected with ideas of benefaction or injury, benevolence or malevolence. We regard them with affection or the reverse. Our affection is then precisely what is implied in the word "attachment": and it is of the kind vulgarly known as "cupboard love." But we need not belittle it on this account. Does not religion exhort us to love the "Maker and Giver of all good things"?

By unifying us with those who are the same as ourselves in *kind*—that is, in family, tribe, religion, occupation, language, or nationality—the mind attaches us to others as our "fellows" or "brothers." We are, then, disposed to treat them with "kindness" or "gentleness," since they are in a measure one with us. It is obvious that from this mental classification of others have arisen all the social and political bonds which draw men into union, except that of common subjection to an alien ruler. Apart, then, from conquests, the collective life of mankind has resulted from the springing and fading of ideas of "kinship" that could unite men into fraternities. Amongst them are fictitious notions of racial apartness which may be promoted by the resuscitation of languages that are actually dead. If a unifying idea is disintegrated by sectarian particularity, the fellowship is dissolved. It is through ideas that we attract or repel one another,

and hence the young can easily be taught a jealous exclusiveness which unreasonably alienates them from others.

Gender is a "kind." Accordingly sexual love implies a contrariety in kind, and should not arise between members of the same family. Marriages within certain degrees of relationship are consequently prohibited. Where kinds have hardened into castes, marriage is also limited within the caste, since the introduction of an alien would violate the caste unity.

"Kindness" is replaced by sympathy when the unification is carried farther, and imaginatively unites another's *personality* with our own. He obviously cannot be one with us in substance. But it is characteristic of the imagination that it personifies *conditions*: it can therefore personify the spirit, and in spirit another can be one with us. There can be no sympathy without imagination. Unity in spirit is friendship or comradeship—the strongest of social bonds. We no longer feel *for* another, but *with* him: we do not merely respect his success or pity his misfortune, but share his pride or shame. Such is the power of a mental process in reinforcing affection.

Dislike, on the other hand, grows into ill-will or antipathy. Admiration becomes jealousy; pity contempt. The imagination accentuates this irritated antagonism. For another whom we dislike may be imaginatively *contrarified* to ourselves in personality. He then becomes our *enemy*, and is regarded with remorseless hate. In war killing is not murder. And cruelty towards him becomes as natural as care for oneself, since one is the contrary of the other.

The prejudices which prevent us from profiting by experience, or by reason, are of similar origin to our affections, and we may permit ourselves a short

digression in regard to them. They blind us to experience by obscuring cause and effect. If we believe in a statesman we are unable to judge his policy by its fruits. They obstruct reason by preventing mental unifications. If we admire Liberty we are unable to see that it is merely the idealization of self-assertiveness. Our prejudices, like our affections, may be instinctive, associative, or unificative. Being instinctively inclined to the familiar, we resent the strange. Years passed before the reasoning of Copernicus was allowed to prove that the earth went round the sun; Franklin's discovery that thunderstorms were electric was rejected by the Royal Society. If an idea of dignity is *associated* with a thing, we cannot perceive an analogy that would humiliate it: we can see no resemblance between an inspiring speech and a glass of whisky. We are similarly incapable of accepting anything that is to the discredit of our *class*. A military man rejects imputations upon the army with a chivalrous indifference to evidence.

We pass to motives of the *prudential* kind. These are commonly called our "acquisitive" instincts, and they are certainly markedly instinctive in their joylessness. The pursuit of riches, it may be urged, is simply a motive of the "environal" class: we covet money because it is pleasurable. But there is something stronger behind it than the pursuit of pleasure. Prudence is a care for the future which is ingrained in us by our appetites, for in order to satisfy them we must "look ahead." Its strength depends upon the effect of the future in stimulating us, and this again depends upon the definiteness of future prospects and the length of the vista which they afford. Prudential, or, as we term them, "economic" interests gain in influence as our expectations become more compli-

cated and more assured—that is to say, with the development of commercial civilization.

There is a standing conflict between instinctive prudence and activity of the spirits, which may be determined, in the latter's favour, by so trifling a reinforcement as a little alcohol. In children prudence is overridden by the imaginative playfulness of spiritual activity: they live in the present. And the same may be said of the poorest classes of a commercialized community, for they have no future prospects to attract them. But generally prudence gains with advancing years, and is manifested by industry and hoarding even in countries that are economically backward. It grows as commercial opportunities expand, and offer prospects not merely of security but of profit, and money-making, or "business," at last becomes the principal object of life. This is the essential difference between ourselves and the ancients. Moreover, prudence takes the place of faith as the motive of allegiance to authority. We accept a Government because it pays us to do so, not because we respect it. A people is not "ripe for democracy" before it is commercialized.

Deceit is an instrument for safeguarding the future. It is objectless except through its *consequences*. It is primitively an involuntary reversal of a thought caused by a shock of apprehension: "I broke the plate" becomes "I did not break it," just as "I will jump it" becomes "I will not jump it." In young children deceitfulness accompanies timidity. But, through an appreciation of its consequences, it is adopted as a prudent means of gaining an advantage by misleading another. Its use is of course as old as mankind, and owes nothing to the development of the commercial spirit. Indeed, since commerce rests upon

credit, its effect has been to promote honest dealing between the various commercial classes. But deceitfulness has undoubtedly been fostered by democratic methods of Government. For they rest upon persuasion, and deceit is a persuasive instrument of great utility.

Finally, of *ideal* motives. Our ideals are imaginative personifications, made under the influence of the admiration that is excited by the nervous conditions that they represent. For they all figure what is superior, excellent, or powerful. They are religious when they personify causes; æsthetic if they are personifications of feelings or sensations; egotistic if phases of self-assertion are thus idealized; moral, or ethical, if the self-assertion is against the temptations of the flesh. Thus naïve religious feeling sees the hand of the All-Powerful in a thunderstorm, and to learned theology God is the First Cause. The characters of the dramatist personify feelings; in poetry sensations may be personified, as in Shelley's *Cloud*. Self-assertion is idealized in Liberty, resistance to temptation in asceticism, temperance, and humility; and, if infused with altruism, in justice, gratitude, honesty, mercy, and charity.

These ideals affect our conduct in that, being imaginative, they demand liberation in expression. Religion expresses itself in worship. The Divine, being personified, will be pleased by that which pleases ourselves, by adulation, propitiation, and honorific ceremonies. Æsthetic ideals are manifested by artistic expression, description, or fabrication; egotistic and moral ideals by conduct that conforms to them. Moreover, the admiration with which we view our ideals impels us, not merely to express them, but to glorify and magnify them—that is, to increase

their dignity. We become, not only their votaries, but their missionaries, and are inspired with a zealous desire to spread their influence. For the enthusiastic appreciation of a quality expresses itself by exaggerating its excellence; and what in words is praise, in practice is propaganda.

CHAPTER XIII

FREE WILL, TRIAL, AND CHOICE

THE interminable discussions that have contrasted Free Will with Determinism, as mutually incompatible, resemble very closely the quarrel of the two knights who fought about the colour of a shield, each side of which was coloured differently. For, as a matter of fact, the will sometimes acts arbitrarily, and at other times within leading strings. These two conditions have been confused because the will is figured as a simple unity. It is so only when it is abstracted in idea—that is to say, when it represents the quality which is common to all efforts of willing. As it presents itself in experience, it assumes one or other of three phases—assertive, tentative, and selective. It is assertive when it simply resists or antagonizes; tentative when it gains experience by an effort of trial; selective when it utilizes experience by delaying action until the brain has had time to present the recollections which are the materials of choice. The first is the effect of the spirits pure and simple, the second that of the spirits urged by a desire, the third that of the spirits urged by a desire and directed by thought. Desire is fundamentally a physical impulse; and we therefore see in these three phases of volition the interaction of body, spirit, and mind.

Willing implies an effort. A movement of venture is one of life's chief characteristics: nothing distinguishes

the living from the lifeless more sharply than its capacity of surmounting, or circumventing, difficulties by a random movement. To air bubbles, hindered by the bottom of a wine glass from rising to the surface of a tumbler of water, the obstacle is impassable; animalcules will by repeated movements soon find their way round it. Five minutes' observation of living organisms under the microscope will suffice to prove that they free themselves from difficulties by random movements in all directions; the curiously distorted roots of plants record the movements by which they have evaded impenetrable objects in the soil. These movements are merely spasmodic responses to particular difficulties until they become animated by the reserve of living energy that is required to maintain continuous muscular tension, as that of the legs when we stand upright. This reserve, sometimes called *élan vital*, is more familiarly known as our "energy" or "spirits." Primitively its concern is with muscular movement; but it evolves into a *tonic* force which affects nervous conditions of body and mind as well as movements. We are conscious of its fluctuations in our *moods*. It may reinforce instinctive conditions and impulses, converting them into emotions or passions. But it may also antagonize or resist them, and in its antagonism becomes an emotion, but of very different kind to those which are rooted in our physical nature. Antagonism is a struggle between contraries: it is the consequence of contrariness. Our tonic energy is normally contrary in phase to the depressing nervous consequences of difficulty, danger, or doubt: its continuity of tension is contrary to the disturbances caused by the external and internal impressions by which our senses are constantly assailed; its vivacity is contrary to the mechanical automatism of purely

passive life, of auto-suggestion and of habit. We see these points illustrated by the naïve behaviour of children: when in high spirits they are regardless of danger, heedless of admonition, restless and troublesome—in a word "wilful."

This is "unthinking," or emotional, antagonism, stimulated by the nervous conditions that it resists. It is the ordinary motive of conduct that involves resistance—that is to say, of all conduct which does not simply yield to a stimulus that appeals to our physical nature. We unthinkingly oppose the nervous effects of danger, difficulty, and rivalry when we are courageous, adventurous, or emulative; the effects of doubt, temptation, and sloth, when we reason, control ourselves, or are industrious. All behaviour of this kind involves something that is analogous to willing, but differs from it in that it lacks conscious effort, and involves no conscious idea of resistance. Conscious volition evolves from auto-suggestion, that influence which seems so mysterious, but is actually the result of memorial association. Every conscious effort of resistance is accompanied by an idea of it: hence, if an idea of effort occurs, it will associatively stimulate the effort. And since this idea may be general—that is to say, of effort *generally* and not in respect to any *particular* difficulty or incompatibility—it stimulates us irrespective of any particular circumstances, and *when no actual nervous antagonism exists*. It is to this auto-suggestive phase of resistance that we give the name of the Will.

It may be objected that we may have an idea of resistance and still fail to resist. So it commonly happens under temptation. Our idea of resistance is so far effective in that it delays our fall. But this merely gives time for choice to come into play, and

we succumb because the temptation is the more attractive alternative. We act deliberately, instead of impulsively: but we are, nevertheless, subdued by a desire that overpowers the will.

Conditions of unthinking antagonism may be appropriately termed "assertive": we assert ourselves in being courageous, emulative, or industrious. It becomes "self-assertive" when it is auto-suggestive, since in this case the stimulus is not a thing or a condition, but an idea of antagonism which auto-suggestively presents itself and auto-suggestively stimulates an act of antagonism. Self-assertive volition is the origin of our consciousness of personal independence, or liberty—a feeling which develops with the evolution of thought and is therefore intenser in civilized man than in the savage. It is indeed the foundation of our egotistic individuality, for it manifests our independence of our surroundings, inasmuch as the ideas which stimulate it are derived, not from impressions that have affected us, but from our resistance to their nervous consequences.

It is to self-assertive volition that we give the name of "Free Will," implying that the actions which it prompts are caused by ourselves and are therefore *spontaneous*. In this we deceive ourselves. For self-assertive volition is the consequence of an idea of resistance: we assert ourselves because an idea of antagonism occurs to us—that is to say, is offered to us by the brain. This idea is itself the consequence of nervous resistance as an actual occurrence, and this again the consequence of contrariety between nervous conditions. But efforts of self-assertive volition, although not spontaneous or causeless, are *free* in the sense of "arbitrary." For a general idea of antagonism may lead us to resist anything which offers itself—and

even to search for things in order to resist them—and, within very wide limits, to carry our resistance into action. It may even stimulate one to antagonize life itself in an act of suicide.

We can define with some precision the limits within which self-assertive volition can materialize itself in movement. It can move the limbs and exterior muscles of the body, and, by compressing these muscles, can affect the lungs, the intestines, and the bladder. It can actuate movements of the mouth, tongue, and larynx, of the eyes and nose, and, with some persons, of the ears, but cannot produce the movements of swallowing without a material stimulus—that is to say, something to be swallowed. It cannot, except indirectly, affect the internal organs of the body. From these facts we may infer that we can voluntarily move only those parts of the body which are innervated from the spinal cord; and, further, that the spinal cord is the seat of our kinetic and tonic energy.

Since the brain evolves as an appendix to the spinal cord it naturally falls within the power of the will. We can will to be attentive—a condition which involves much more than the simple "focussing" of the senses. Attention is *intention* when it controls the course of thought. We can accordingly force ourselves to think on any subject that we can recall. But the effort to think continuously upon a "willed" subject will be considerable unless we become interested in it. In this case our will gives place to a liking. We cannot will to remember a fact which has been forgotten, or compel ourselves to summon analogies that are connected by samenesses of trait with an idea that is in the mind. That is to say, we cannot directly interfere with the laws of thought. But we can do so indirectly by an effort of intention. For this sets a course of thought

which ultimately present us with the recollection or analogy that we require.

So again it is only indirectly that we can will ourselves into an imaginative or emotional state. We cannot make ourselves imagine creatively through an idea of imaginative effort. We can, however, will to *imitate*, since this comes by movement; and art which is forced is simply a combination, more or less dexterous, of plagiarisms. When it works "to order" it is commonly formal and spiritless. Nor can we by an effort of will subject ourselves to an emotion that has a physical basis, such as love, anger, or faith. But indirectly, by summoning a stimulating recollection, or idea, we can auto-suggestively (or associatively) throw ourselves into imaginative ecstasy or emotional passion. The idea may have no foundation in actual experience, beyond its resemblance to a recollection. But it will, nevertheless, suffice to recall an imaginative or emotional state that actually accompanied its original. So one can inspire himself poetically by general as well as by particular ideas, can lash himself into anger by an imaginary insult, or actually fall in love with a phantasy of his brain.

The capacity for assertive volition—that is to say, "will power" or "strength of character"—varies very greatly from one individual to another. Some men "take life easily," as it is said. Yet even in the most easy-going the auto-suggestive effect of an idea of resistance can be immensely enhanced by practice. For the association between an impulse and the idea of resisting it, and between this idea and an act of resistance, is consolidated by repetition, exactly as in the association of one idea (or one word) with another which we particularize as memory. Pure self-assertion is typified by asceticism, and asceticism means

"practice." One who is not naturally disposed to self-control will not conceive the idea of practising it. But he may acquire this idea from another, and if he respects his teacher and believes in him, may carry the idea into execution. Self-discipline may be taught as a *duty*—an obligation that is "owed" to self-respect inasmuch as self-respect demands it, and will not be satisfied without it. But it becomes infinitely more attractive if it is imaginatively personified as an *ideal.* It is sufficiently exciting to be so transfigured. For it is leavened with the idea of power which is so attractive to all men. There is more strength in controlling oneself than in taking a city. It is by the teaching of ideal self-control that cults of discipline have been established, systems of practical philosophy which have exercised immense influence upon the history of mankind; and it may be regretted that in modern education ideals of self-renunciation occupy so small a place.

These ideals have faded because in these economic days vast importance is attached to *prudence,* and prudence is incompatible with idealistic self-denial. Prudence calculates, idealism soars; prudence contemplates the future, idealism lives in the present. There is, then, a standing contrast between the two, and, as prudence has developed with the enlargement of material expectations, idealism has declined. We have no use in these days for the ascetic dreams which in their time led multitudes into desert hermitages. But, although it may be that these fanatics (as we term them) would have been more *profitably* employed in industry, it is difficult to laugh at their aspirations. It is to be remarked that habit may be as potent a sedative as prudence. "The Law killeth, the Spirit maketh alive."

From this digression let us turn to the second, or

tentative, phase of volition. This is stimulated by a difficulty. It involves resistance to the mental perturbation that a difficulty occasions, and an effort, which may be made at random or be guided by ideas. Tentative differs markedly from assertive volition in that it is *purposeful* : it is not intent upon itself, but has regard to a consequence and therefore contains an element of prudence. For most people an effort of trial is merely an emotional impulse—it may indeed be a random struggle—but with those who are used to scientific or mechanical methods it becomes intentional, as a designed experiment. We do not generally realize the importance of the part which it has played in the evolution of human culture. It is not, of course, the only instrument of invention. Discovery may be the fruit of reasoning from observation, imitation, or accident : we may reason that light is vibratory from its analogies with sound ; we may imitate the flight of birds in an aeroplane ; accident must have shown man the intoxicating consequences of fermentation. But efforts of trial must have been even more instructive. We owe to them the evolution of our instruments, arms, and appliances, the greater part of our vocabulary, and our acquaintance with natural processes. The use of fire for cooking purposes, as of steam for engine-driving, must have been learnt by experiment. We think of such inventions as telegraphy and the aeroplane as the fruit of mathematical reasoning applied to observation. But for the most part they have been built up by the hands of skilled mechanics who, by trial after trial, have chanced upon improvements. These inventions are then *proved* by mathematics. Nor has trial been limited to material things. It enters into our reasoning processes. A hypothesis is, fundamentally, the experimental use of a possibility. And argument by

elimination, as when one tracks down a cause by eliminating all other things that have preceded an occurrence, is an effort of trial.

Volition assumes its third phase as an effort of selection, or choice. The characteristic feature of this process is that it uses past experience, and becomes more and more reliable as a guide to conduct as experience widens. The consequences of past experiences occur to us as pleasurable or displeasurable *recollections* which are auto-suggestively transformed into *expectations* by the desire or aversion that they excite. They take time to present themselves and it therefore needs time to compare them. This is gained by resisting their attractions until the comparison is made. To be deliberate, choice involves delay; if we act on the spur of the moment we do not choose, but "jump at a conclusion." We may, indeed, choose assertively instead of deliberately: in despair of deciding between the merits of various alternatives we may adopt one at haphazard, and this hasty method of choosing is characteristic of the strong-willed. On the other hand, those of weak character may be so perturbed by the equality of possibilities that they are quite unable to "make up their minds" between them. An effort of tentative volition may also substitute itself for choice, as when we settle a doubtful point by tossing up.

When our selection is not assertive or tentative it is clinched, not by an effort of will, but by the superior attraction of the course which we adopt. It is ridiculous to attribute volition to one who, hesitating over the purchase of a first- or third-class railway ticket, takes the latter because he discovers that the first-class fare would not leave him sufficient money to pay for his lunch. Deliberate choice is determined by desire

or aversion—purely instinctive, or physical, impulses—and volition merely enables these impulses to exert themselves with due regard to experience.

If, however, deliberate choice is, in fact, determined by instinct, why do we think of it as "free"? Firstly, because choice is not infrequently arbitrary, or at random, and in this case really involves willing; secondly, because it is determined by the influence of a liking, as opposed to a command, and he who follows a liking is "free"; and thirdly, because we adopt one inducement only by resisting others, and to resist a stimulus implies freedom from its control. But, as a matter of fact, choice, when it is deliberate, is a yielding to temptation, and only differs from appetitive impulse in that it compares before pursuing or avoiding.

We may surmise that the evolution of tentative and selective will power from the merely assertive is of good augury for man's future. For it indicates a growing deference to the lessons taught by individual experience—a tendency which commenced with the substitution of conscious for reflex movements, and of acquired recollections for instinctively linked associations. These changes enable the individual life to draw more and more profit from the current of causes and consequences upon which it floats. They have introduced *prudence* as a factor in behaviour. We need not necessarily infer that man is to drift into the spiritless condition of the calculating profiteer. His imaginative faculties are a saving grace against this decadence; and indeed experience, rightly gauged, shows that, although the imagination may express itself harmfully, it is in itself one of the most profitable of our endowments—that idealism in Morality and Art can give an enduring happiness, far superior to the self-complacency of conventional respectability, rank, or riches. Pru-

dence, it is true, grows as economic civilisation develops, since the tentacles of "business" stretch out into the future and keep us constantly in mind of future interests. But a measure of idealism will survive if it be impressed upon the character during the years of education. Ideas that have been instilled into us in youth influence us to an extent that is hardly realised. We give lip service to the doctrine that "man is the creature of his ideas," but actually prefer to regard ourselves as swayed by instinctive impulses. As a matter of fact, man is obsessed by the notions that he contracts during his early days, and can scarcely free himself from their control. Idealism can, then, be cultivated, and there is a good stock on which to graft its culture. For every one of us is an idealist during childhood, and so will be those that come after us. It would be illogical pessimism to believe that children are born infected with the mental habitudes of their parents. For in this case man could never have emerged from the dark absurdities of magic. We have only to continue to use what is given us at birth, remembering that "Except ye become as little children, ye shall not enter into the kingdom of heaven."

CHAPTER XIV

THE FOUNDATIONS OF MORALITY

It is in some respects unfortunate that morality has become linked with religion—is, indeed, regarded as a religious exercise. For faith may be corroded by disillusionment; and should religion lose its control, the reins of morality are slackened. The documents to which religion appeals are gradually discredited by an increasing acuteness of historical criticism. And the logic with which civilised man is becoming permeated leads irresistibly to the conclusion that every one of our experiences, whether of animate or inanimate Nature, is a *consequence*—the inevitable outcome of a cause—so that there is no room for the discretionary influence of an external Providence. The existence of injustice has always been a stumbling-block to the recognition of Omnipotent Goodness. It has been explained as an instrument of trial: it has even been used to prove that justice which is eternal demands the punishment of children for the sins of their parents. In this light it has been accepted. But logic proves that the sequences of causality are indifferent to justice or injustice. They do not acknowledge that merit or demerit—apart from their effect upon the conscience—should be followed by the harmonious consequences of reward and punishment.

There is no essential connexion between morality and religion. The two were almost wholly dissociated in

the practice of classical Greece and Rome. Christianity links them together because it took by inheritance from Judaism, and to the Jews the Law came as a divine institution. But Christ ranked legal impeccability far below sincerity and lovingkindness. And, in fact, morality can hold its own independently of any religious belief. It arises from feelings that are innate in man, and, if encouraged by education, can generally overcome promptings that are opposed to them. Man's susceptibility to instruction goes far to liberate him from the fate that is predestined by his inherited inclinations. Influenced by education, his feelings and actions are still *consequences*. But they are the consequences of ideas that are suggested to him by others, not of the physical peculiarities which he has inherited from his ancestors.

A moral rule imposes an *obligation*—that is to say, it exacts an effort of will that is influenced by the thought of an unpleasant consequence which it is a relief to avoid. This consequence may be the shame of failing to attain what is felt to be the excellent, or is accepted as the excellent by our fellows; the shame that is auto-suggestively caused by the disapproval of our fellows; or a legal penalty. In so far as our ideas of what is excellent are conventional the obligations which they impose have no deeper foundation than the fashion of the day; and there are some philosophers who have concluded that moral rules are merely expedients for promoting conduct that experience has shown to be of value to the community. But we can feel that this is too narrow a view, and that our "moral sense" springs from sources which lie much deeper than habit. This is so. If we analyse our conceptions of the higher ethics—as opposed to purely conventional morality—we shall

find that they are blends of two essential elements—*Self-control* and *Altruism*—manifesting themselves in different forms under the influence of different stimuli. The two can exist in apartness, and are, indeed, of very different natures. Self-control involves spiritual antagonism to self; Altruism is the consequence of a mental attitude towards others which draws with it emotional feelings of affection. But the two can combine, and produce in combination, and in response to various stimuli, the super-excellent qualities which we term "magnanimous."

Let us endeavour, in the first place, to trace the origin or cause of the antagonism which is the essence of self-control. In our purely physical nature there is nothing moral or immoral. Our physical responses at their simplest are instinctive or "reflex," and from the moral point of view are no more open to judgment than are the operations of the stomach, the process of evolution, or the action of gravity. Morality begins with the antagonism of our "spirits" to purely physical promptings—the antagonism which sets courage against fear, self-control against the appetites, and, under the guidance of the brain, energizes our will-power. That there is such an antagonism no one will dispute. Its existence infuses our nature with the mysterious. If we are the products of evolution, how could a tendency develop which is out of harmony with our physical nature, and what can be its cause? The simplest answer to these questions is that this resisting energy has not evolved in man, but has been instilled into him by a higher power, as an instrument by which he can overcome the sinful tendencies that are inherent in his primitive disposition. But, if we scrutinize the workings of this force, we shall find that it is also charged with far humbler functions. Its

changes put us into good or bad tempers, or moods; and it is clear that there is a connexion between these conditions and our muscular energy, for, when we are in good spirits, we are more than usually active, and even stronger than when depressed. Further it seems clear that our appreciation of the amusing or ludicrous is the consequence of revulsions of spirits caused by incongruity between first impressions or thoughts and those which succeed them. This energy may lead us to the "higher life." But it also assists us in the routine of our everyday pursuits, and helps to distract us from its monotony. It is homely as well as inspiring. Nor can we deny its possession to the lower animals. Dogs can evidently resist temptation and feel shame if they yield to it. There are, then, points of view from which it seems extravagant to claim a supernatural origin for the energy that we call "spiritual."

In preceding essays it has been shown that the antagonism which at times sets us against our own inclinations, and against other persons, would be accounted for were we to assume that our "spirits" are a persistent nervous energy which may take one or other of two phases—felt in consciousness as agreeable and disagreeable. We may term the phases "accordant" and "discordant" on the analogy of sound, "positive" and "negative" on the analogy of electricity, or "expansive" and "contractive" if judged by the movements which they would produce and by our *feelings* of them. The spirits would resist physical promptings if they differed from them in phase, just as (to use a mechanical comparison) a vibrating tuning-fork throws off light objects which come into contact with it and interfere with its vibrations. If their phase were expansive, they would

oppose the effects of unfavourable stimulation, and *vice versa*. We know from common experience that some action of this kind occurs. If we are in good spirits we make light of troubles; if in bad spirits, that which ordinarily pleases may be annoying, and life's little crosses become too heavy to be borne. And there is another cause of antagonism which is independent of passing phase. The vivacity of our spirits is incompatible with inertia and with the mechanical sequences of instinctive and auto-suggestive, or habitual, response. We can feel that this is so. High spirits break loose from habitudes—indeed make mock of them—and render us restless and adventurous. Every mother knows that children are disposed to be naughty when they are excited; the frost of custom which stiffens our adult years is instantly dispelled by a glow of enthusiasm. It follows that resistance is a *consequence*: it is stimulated by conditions that are contrary to it.

All resistance is not, however, "moral." Courage and curiosity, strictly regarded, are not *moral* qualities. Resistance is moral when it opposes itself to *temptation*. There is nothing tempting in the fear and doubt that are antagonized by courage and curiosity. We give the name of "temptations" to impulses which arise out of our physical nature, such as are resisted in modesty and temperance.

The antagonism of energy to physical promptings is independent of a brain. The courage of a fly is proverbial: it may be alarmed, but at once recovers its audacity. The intervention of the brain has, of course, momentous consequences. But resistance is primitively unconscious, and we can *feel* that there is something in us that resists, irrespective of our thoughts —that there is a standing antagonism which, in the

words of Marcus Aurelius, makes life more of a wrestling-match than a dance.

This instinctive contrariety becomes *voluntary* under the influence of the brain. For, through the force of association, ideas act as *causes*. Although they are the consequences of bodily and mental conditions, they can auto-suggestively stimulate them. Thus an idea of an effort of antagonism may stimulate the effort. We appear to stimulate ourselves, and resistance becomes *assertive* instead of automatic. Now this assertive antagonism is clearly the foundation of our independent personality : it is the essential element of our egotism. And, since it is followed by a feeling of pride, or self-admiration, and this again by a feeling of self-respect, it endows us with egotistic dignity. For dignity implies pride, with respect as its consequence. On the other hand, failure to resist is followed by the shame that humiliates our power, and degrades us from freedom into slavery. At the present day it seems fantastic to attach great importance to these successions of feeling. For civilization has had the effect of externalizing our views : we have become prudent, or expectative, instead of introspective, and success or failure means, not pride or shame, but profit or loss. But in bygone days man lived more in himself, and was greatly concerned with experiences that were independent of his objective environment—a conclusion that could be illustrated *ad libitum* from Homer or the Hebrew prophets. Pride was figured as purity, and shame as pollution—the consequences, respectively, of resistance and submission. And since, through illogical auto-suggestive reasoning, things which resemble causes, or are closely associated with them, are taken to be the causes that they call to mind, objects and con-

ditions were fancifully supposed to cause purity and pollution because their consequences possessed some analogy with purifying and polluting, or because they were connected with purity or pollution as emblems or symbols. The body is associated with tempting appetitive desires: therefore the body is impure. It follows that the blood is impure, and that things which resemble blood in colour are unfit for food. All purely physical actions—parturition, for example—involve ideas of contamination. An acquaintance of mine, calling on the headman of a hill village in India, found the door closed against him, and a voice from within—"A cat has just kittened and you must not come in." Even eating and drinking are dangerous, unless safeguarded by magic precautions. This is the magical state of morality, illustrated by the *taboo*, and the meticulous rules of Indian caste observances. Civilization has not obliterated all its vestiges. We still think of sin as "polluting."

By rendering us conscious the brain makes us aware of our antagonistic efforts. But there is a further consequence which imparts a new motive into life. For conscious experiences are infused with pleasure or displeasure, and these cling to the recollections of the experiences. Accordingly, recollections of the favourable or unfavourable present themselves in memory as pleasurable and displeasurable *consequences*, which become *expectations* if they are regarded appetitively—that is to say, as the stimuli of desire. Being instinctively impelled to seek the favourable and avoid the unfavourable, we *choose* between the various expectations that memory offers to us, according to the degree of their attractiveness or repulsiveness. Our resistances become deliberate or calculated. They are also "prudent," since they have regard, not

to the present, but the future. Their aim is practical if the expectations that move us are material; sentimental if we look for spiritual pleasure. Morality becomes practical when its injunctions are designed to secure the peacefulness and orderliness of social life. Violence and theft are added to the things that are *taboo'd*, and adultery is condemned because it distracts society, not because it pollutes the individual. Breaches of morality are punished because this consequence deters their commission, not because it cleanses the offender. "Sin" becomes *criminal*. But the two concepts are often confused. We speak of a convict as "expiating" his offence in gaol.

Prudential morality is of the "sentimental" class when the expectations that urge it are the winning of pride, or the avoidance of shame. These inducements being the consequences of consciousness, we term actions that stimulate it "conscientious." There is a further very remarkable development. We may win the feeling of success or become involved in shame through the behaviour of others towards us, and may, accordingly, pursue the one or avoid the other by impressing our friends and neighbours. It is of course indisputably true that we feel successful and self-satisfied if another shows respect to us. His respect recalls an idea of the respect which we feel for ourselves in success, and this idea auto-suggestively stimulates a feeling of pride. Accordingly we may be moral in order to be respectable. Such morality is "ostentatious." And since the respect of others may be won by pretence, this auto-suggestive process encourages the "pretentious" hypocrisy which grows, like a fungus, upon our moral sensibilities. The desire to be respectable is a useful preservative of our social conventions. The rules of both "magical" and

practical morality rapidly become conventional: they are familiarized as habits—involving no resistance and, therefore, no pride—and they could only be maintained by punishment, were it not that it is "respectable" to observe them. But a glance at the features of those who are haunted by the desire of respectability shows that it consumes their happiness.

So far we have been considering the effect of the brain upon the spirits. But the spirits react upon the brain and, by changing the character of its processes, produce an entirely new order of mental stimuli. Under the influence of spiritual excitement the brain *imagines* instead of thinking: its ideas take a *sensory* form, and become fancies or images which simulate the character of sensations. We are well aware from personal experience that nervous exaltation, such as enthusiastic admiration for instance, sets us imagining. The moon becomes *feminine* if we admire it; the soaring lark a *spirit*. It seems possible to trace the cause of this marvellous transfiguration of ideas from the general into the concrete. But the discussion would draw us from our present subject, and it suffices for our purpose to realize that thought, when enthusiastic, vivifies and personifies impressions or ideas which in themselves possess no living individuality. We may personify in this fashion our own nervous conditions. Our "ideals" are such personifications, and can consequently be vividly represented in painting and sculpture. If we view the most venerated of our ideals we shall find that the most of them figure phases or consequences of resistance. Self-control is idealized—and exaggerated—as Asceticism; Temperance, Chastity, and Modesty personify resistance to the appetites; Humility resistance to egotism; Sincerity and Justice resistance to the

temptations of deceit and prejudice. Morality in itself becomes *ideal*. In the abstract, resistance is idealized as Virtue, which, however incompletely achieved, or aimed at, is admired by all men as one of the highest human qualities. For ideals of resistance, expressing the excellence of power, stimulate our admiration, respect, and faith, just as does the idea of divine omnipotence, or the prestige of a victorious hero. We are consequently attracted by them, desire to glorify and magnify them, and pursue them by expressing them in our behaviour. In a word, we idolize when we idealize, and are attracted by the aureole with which we crown our idol. We are proud if we succeed :

> In the fell clutch of Circumstance
> I have not winced, nor cried aloud.

So resistance becomes a pleasure in itself :

> For thence, a paradox
> Which comforts while it mocks,
> Shall life succeed in that it seems to fail.

It is a fact to be remarked that we do not idealize *prudence*. No dramatist could make a hero out of industrious profiteering. For prudence, being appetitive, is urged by a physical impulse, and spiritual energy merely adds to its efficiency.

Idealized resistance was the cult of the Stoic philosophy. It is worth noting that Epictetus, the greatest of its teachers, was an Asiatic—a Phrygian—who served as a slave in a Roman household but ultimately gained his freedom. Rome, under Domitian, would have none of him, so he opened a class-room at a port on the Greek coast used by travellers between Italy and the East ; and men of

fashion thought it no waste of time to interrupt their journeys and attend his lectures. He wrote nothing, and what we know of his teaching is gathered from notes taken down by his disciples. Life without resistance appeared to him to be merely the periodic emptying and filling of a bag—a tiresome succession of needs and satieties.

Let us now turn to Altruism, the second essential element of the higher ethics. It arises from processes of the brain, which direct upon others feelings that are primarily devoted to ourselves, and so endow us with kindness and sympathy. These are feelings which differ entirely in origin from the instinctive impulses of sexual and maternal love, or the attractive influence of the familiar which is the ultimate foundation of gregarious life. For kindness and sympathy rest upon the mental assimilation of others with ourselves: they depend upon the ideas with which we regard others, upon our mental attitude towards them. If this attitude is changed—as for instance during war—we may hate those whom we regarded with kindly feelings, and may sympathize with those who in the past were our antagonists. Now assimilation implies union. We have seen that two ideas are united if they have an element, or trait, in common. Thus a man "reminds us" of a lion if he is brave, or of a monkey if he is mischievous: these traits call up ideas of the animals which they characterize, and through the trait, the man is united with the animal. In precisely the same fashion others are united with ourselves, in idea, if our minds are impressed by a trait they share with us—and this, too, even although the trait be imaginary.

Now our social relations plainly result from such unifications. Those who have interests that are the

same as our own are united with us as our " fellows," just as the " fellows " of a wheel are united to form its circumference. Fellowship may be in religion, nationality, trade, profession, or caste, and the oscillations which give a tidal character to history may, very generally, be attributed to the growth and decay of various ideas of social analogies.

These social unifications differ of course from those which occur in the process of reasoning in that they are emotional as well as mental. For they stimulate affection. When we are united to others we regard them in a measure as ourselves, and extend to them the motives of self-preservation, self-indulgence, and self-interest which instinctively promote our own welfare. Our egotism becomes altruism. Hence, while the immediate cause of unselfishness is the action of the brain, its ultimate cause is deep-seated in our physical nature.

We may identify others with ourselves in kind or in personality. In the first case they are our fellows ; in the second case they are our comrades. To those who are united with us in kind we owe " kindness " or " gentleness "—words of precisely similar derivation which have entirely lost their original meaning. The closest alliance in kind is that between members of the same family, for they are bound together by unity of parentage. Thence the kind broadens to the tribe and to the race by ideas of unity in blood which are generally fictitious. Unity of interest connects those of the same religion, caste, profession, or trade ; unity of tradition those of the same school or regiment ; unity of social relationship those of the same club. The bond of nationality includes many unifying elements : there are samenesses in loyalty, tradition, language, and domicile to which are added imaginative

ideas of identity in race. All these unions are naturally acknowledged by the practice of kindliness, and our social morality gives definite effect to this tendency.

Sympathy is far more intense than kindliness because he with whom we sympathize is not merely united to us by a common trait, but is unified with us in personality. He is "at one" with us. There are differences between us and him. But they are disregarded and do not prevent complete identification. This proves that sympathy is imaginative, and it is a truism that there can be no sympathy without imagination. For it is characteristic of the imagining brain that it ignores all traits but those which stimulate its admiration or enthusiasm. To Shelley the forest was the "lyre" of the West Wind because it is energized by the wind into sound: the actual difference between a forest and a lyre fades out of appreciation. The artist is blind to all traits but those which inspire him: indeed, he loses in his dreams even his own personality, as does a child at play. Accordingly one with whom we sympathize dwells in us, and we in him. We do not feel *for* him, but *with* him. Sympathy, therefore, involves self-abandonment, and in this respect differs altogether from kindness. The Indian cultivator calls his bullocks "my brothers" because they belong to his household. To St. Francis of Assisi all birds and beasts, and even flowers, were his brothers, because, under the spell of his enthusiasm, they lived in him, and he in them.

A kind act and a sympathetic act both give a double pleasure—to him that gives and to him that takes. For in both cases the giver has the feeling that he gives to himself. But the pleasure is keenest when it flows from sympathy because the unification of the

two is not partial but complete. And sympathetic feelings can be broadened indefinitely, whereas those of kindness are limited to persons who are united to one by a sameness which can be appreciated by reason.

A large number of our ideas can be contrarified like those of the quantitative relationships with which algebra is concerned. A trait of sameness is contrarified into a difference, unity becomes antagonism, and the kinsman or caste-fellow becomes a rival or adversary. In war our opponents are antagonized imaginatively in personality: they are our "enemies," and our moral obligations towards them are entirely dissolved. To kill them is no longer murder: we can view the sufferings of their women and children with an equanimity which the profession of Christianity will not disturb.

The *practical* value of Altruism is recognised in our conventional morality. Society insists upon its manifestation in politeness of manners. Loving-kindness and sympathy are also imaginatively *idealized*. But, unfortunately for mankind, since they imply no antagonistic success, they lack the seductive brightness of resistant ideals. One *succeeds* in being just or temperate, not in being kind or sympathetic. They gain, however, this quality of brilliance when they are infused with an element of resistance. Generosity, Charity, Mercy, Forgiveness, and Loyalty attract the admiration of all men because they all involve resistance, although the resistance is on behalf of others. After all is said, body, spirit, and mind are one, and can unite their different tendencies. It is in these blends that the higher morality achieves itself. They are abstracted in idea as "Magnanimity," which, however attenuated by prudential motives, cannot

be altogether dissolved by them. Magnanimous ideals are universal and constant, whereas conventional morality is special to the period and the nation. They are the Beautiful which is also the Good.

But men innately respond to them in very different degrees. A few are born with an abnormal imaginative susceptibility to ideal stimuli: they are haunted by the ideal as by a "presence which is not to be put by." By their insistent admiration and advocacy they influence others, and spread the domination of their principles. That is to say, idealism is extended by teaching. For it is a fact of immense importance to us that nervous susceptibilities are sharpened by use, so that by practice we can acquire "tastes" that are very much more delicate than our innate sensibilities. The nerves can, in fact, be *educated.* One who is mastered by the enthusiastic appreciation of an ideal can inspire with like appreciation those who believe in him. Their enthusiasm may swell and spread into a flood of idealism which, for a time at all events, sweeps multitudes off their feet. So thousands followed St. Anthony into desert hermitages; hundreds of thousands pledged themselves to the romantic adventure of the Crusades. If an ideal is opposed to logic—that is to say, is not supported by experience—sooner or later it surely vanishes in disillusionment. But magnanimous ideals are as profitable in their consequences as admirable in themselves. Not only do they represent the cult of our higher susceptibilities at the expense of those of lower evolutionary rank, they have *practical* consequences. To those who pursue them they give enduring happiness. And, by commanding the respect of others, they invest the

magnanimous with an influence far stronger and more durable than is given by birth or wealth, or is won by eloquence. Generosity towards the vanquished is *prudent* as well as noble, for it lays the spectre of revenge. Had this been borne in mind by those who made the Peace of Paris, present conditions in Europe would have been very different.

Magnanimity was of course the keynote of Christ's teaching. He did not insist upon puritanic self-denial. Himself of ascetic life, he could cordially accept the hospitality of the well-to-do; he could pity the Magdalen and invite her devotion. His last words were in forgiveness of shameless injustice. It is clear from a cynical reference in Lucian that, so long as a century and a half after the Crucifixion, Christians were distinguished above all things by their extraordinary generosity and loyalty to their fellows—feelings so naïve as to be easily imposed upon. Two centuries later, the emperor Julian (the Apostate) was nettled to find that the "impious Galilæans" did not limit their almsgiving to their co-religionists but extended it to the pagan poor. This ideal of broad-minded charity gradually faded as Christianity evolved into a system of government, a ritual of imaginative ceremonies, and a creed of mysteries elaborated by metaphysical subtlety. Magnanimity was overshadowed by the requirements of obedience, faith, and orthodoxy; and the historian of the future will record with surprise how little effort was made by the Church to moderate the bitter animosity of the Great War, and to infuse some generosity of mind into the conflict.

Why should not Philosophy take up the burden which has slipped from the shoulders of Religion,

and teach magnanimous ideals in its class-rooms? It is true that, our nature being composite, we must draw motives from various sources and should not allow particular impulses wholly to engross us. Idealism which was quite untempered by prudence would lead us to penury and the suffering of continued injustice. What would become of us if we really took no thought for the morrow, or turned the other cheek to those who injured us? But in these economic days prudence needs no stimulation. There is a danger, on the contrary, that it will dominate us entirely; and it is only by fixing our eyes upon the highest ideals that we can hope to attain the Golden Mean.

CHAPTER XV

THE DEVELOPMENT OF ART

THERE is a fragrance about Art which seems to shield it from analysis. We may pull a rose to pieces and examine its structure; but our magnifying glass will tell us nothing of the scent which extends the flower, as an odorous cloud, into the air surrounding it. The spirit of criticism is, however, not dismayed by the impalpable, and the appreciation—or depreciation—of works of art has become a very prominent feature of current literature. But we often read these criticisms with a sense of incompleteness, feeling that picturesqueness of language veils indefiniteness of thought. Praise and blame involve reference to a standard, or canon, of taste. The canons of Art are, however, unstable, and, like fashions in dress, are constantly changing. One generation condemns what its predecessors admired. We are out of sympathy with early Egyptian or Byzantine art; to most Europeans Japanese music is acutely displeasing. Art involves many elements, and changes its character as it is dominated, now by one and now by another. And these elements can be isolated and discriminated only by tracing their evolutionary development.

Art evidently involves skill. For mere skill of itself is often termed "art": we speak of the arts of carpentry, cooking, and conjuring. By "fine art," however, we mean skill that is put to a peculiar pur-

pose—skill that harmoniously expresses *fancies*. It may be objected that art sometimes employs itself in copying nature, as, for instance, in landscape or portrait painting. But in these cases the artist does more than imitate. He infuses the scene, or the likeness, with a fancied sentiment that may render it more attractive than reality. Herein lies the difference between the artist and the draughtsman or photographer. So again with the artistic expression of human feelings. They must be fancied, not real. There is no art in the manifestation of actual feelings of love, anger, or courage. There may be art in flirtation; but there is none in passionate courtship. We observe a similar difference between the dramatist and the annalist: the one is an artist, the other an observer. The historian commonly assumes both characters, playing now one part, and now another.

Fancies are the product of imagination. We are confronted with the most extraordinary of all human aptitudes—an impulse to wander outside the boundaries of experience, and construct ideas not of things as they are, but of things as they are not. The imagination is at its strongest during childhood, and the naïve behaviour of children enables us to infer its primitive cause. They are most imaginative when they are excited: nervous excitement is followed by the imaginings which manifest themselves in play. This is confirmed by adult experience: everyone is a poet when in love. Imagination, then, represents the influence of the spirits upon the course of thought. They cast its ideas into concrete forms. Traits form themselves into individuals that characteristically typify them; and ideas of nervous conditions, or feelings, are impersonated in self, or are personified. In fact, thought assumes a *sensory* form. Reason

tells us that death comes even to the highest, or that we are inevitably exposed to irresistible temptations. In imaginative thought these general truths present themselves as visions, showing that " Death lays his icy hand on kings," or that Providence besets our path " with pitfall and with gin." Imaginative ideas can, then, be portrayed. When a condition, or feeling, is *impersonated* all sense of one's own personality is lost: a child " playing at horses " thinks itself a horse. When a condition is *personified*, as in composing a fairy tale, the imagining brain watches the developments which it creates. In the one case it is an actor; in the other, a spectator.

We can infer from the concreteness of their visions that dreams are imaginative, and in many cases they can be shown to be fanciful presentments of internal or external impressions, or of thoughts of which we are unconscious. When these visions persist into our waking hours, they are hallucinations: and insanity is probably a chronic perversion of thought under the influence of abnormal nervous excitement. When the excitement is strong, but normal in its phase, it is the inspiration of genius. It is truly said that genius and madness are akin.

Nervous excitement must be vented, or liberated in movement—a truth which is imperfectly appreciated, but is easy to realize if we watch the gestures of one who is " above himself "—is exalted by emotion or the spirit of contradiction. It is recognized in the line " She must weep or she will die." During childhood nervous tension is relieved by dancing and shouting, as a bird liberates the joy of life in song. With advancing years we use gestures and expletives. But we preserve throughout life liberation by " featuring "—that is to say, by facial expression—a safety

valve which evolves into a means of communicating with our fellows. It is curious that the imagined fancies of excited, or emotional, thought should resemble in some essential respects the muscular expressions of the features. Both "externalize" nervous conditions—express them in sensory form. It is characteristic of imaginative ideas that they are *alive*—that is to say, imagination vivifies ideas. There is no stronger manifestation of life than our expressions of emotion: it is through them that we see life in the shadows of a cinema-film. It is also characteristic of imaginative activity that it decorates as well as creates. The expressions of emotion *adorn* the features with the charm of vivacity: expressionless beauty does not move us. And, thirdly, imagined characters possess *personality*: they demand proper names. Everyone who has tried to amuse children by story-telling knows how pertinaciously they insist upon the naming of the characters. Expressions of emotion, although common to humanity, have, nevertheless, that in them which distinguishes the individual.

This remarkable analogy between thought and movement is heightened by the fact that imagined ideas press for expression in action. They are the consequences of excitement, and become the causes of further excitement by arousing admiration. This must be freed in muscular movement: we involuntarily gesticulate or exclaim when we admire. Pressed by this energy the artist is "forced to express himself" in action, or utterance, in writing, delineating, or fabricating—that is to say, by *imitating* his ideas in action. Until they are translated into action their energy is oppressive and their existence seems incomplete. When he has "freed" them

in this fashion he gains relief. "Liberavi animam meam."

We are, it may be objected, confusing the crude involuntary fancyings of childhood with the elaborate and polished creations of the artistic temperament. But unless evolution be a myth, voluntary must be derived from involuntary or instinctive activity. This development is clearly the most important of the advances which distinguish the higher from the lower animals. We can watch its growth in the individual life of a child. "Willing" begins as an involuntary contrariety which, in spite of its crudeness, we recognize as "wilfulness." Deceit is at first the involuntary reversal of a thought—caused by apprehension of blame or punishment. Deliberate willing and deceiving evolve when ideas of antagonism and deceitfulness are formed, and their consequences are appreciated. It is so with the imaginative faculty. Beginning as an involuntary condition, it evolves into a conscious process. For it gives much pleasure. Imagination, being the consequence of excitement, auto-suggestively produces it. Its fancies are agreeable stimuli, producing pleasure, and their expression affords further pleasure—that which is earned by skill. Imagination may, it is true, be *voluntary*. The will can deflect the working of the brain, as it can direct the movements of the limbs. We can will to break off a train of thought, and substitute for it any other that suggests itself. We can will to imagine. But the effort will be artistically productive only in those of emotional susceptibility, who retain in adult life the keen sensitiveness to the beautiful or wonderful which, however uninstructed, illuminates the years of childhood.

The artist, like the child, may either impersonate or

personify. He may *conceive* personalities that are represented by himself; or he may *compose* them, through the development of ideas of conduct, words, and circumstances. These two methods may be distinguished as subjective and objective. They are analogous to those of ordinary experience. We *know* our own feelings subjectively; we *infer* those of others objectively from their behaviour. Impersonation must needs be emotional, for it is the individualisation of emotion, and may therefore, as with Byron, degenerate into self-conscious egotism. Personification is also emotional if it is sympathetic—if the artist unifies himself with his characters and does not merely construct them. In the latter case it is merely *inferential*, or critical, and, however much it may interest or amuse, does not afford the thrill which one catches from a presentment of emotion which is felt by the artist and not merely signified. This seems to be the distinction upon which Benedetto Croce insists. Homer sets so little store by objective circumstances that he uses stereotyped phrases to describe them: he is concerned with feelings and employs speeches only as their manifestations. He identifies himself so completely with his characters as to become quite impartial: he sides alternately with Achilles and Hector and leads his readers with him. His art is, therefore, independent of the conventional, and must retain its charm so long as human nature endures. Shakespeare could not have composed the speeches of Richard II, Hamlet, Othello, and Shylock had he not felt himself at one with them. In modern fiction this sympathetic quality is well illustrated by Hutchinson's *If Winter Comes*, which trembles with emotion, emotionally expressed in language that breaks away from the smooth conventionalities of literary style.

A thought may be impersonated. In his *Ode to the Nightingale* Keats represents one who is wearied by convention and thirsts for romance; Browning, in *Love among the Ruins,* impersonates one who is struck by the reality of present love as contrasted with the futility of past accomplishment. Natural objects may be easily personified, as in Shelley's *Cloud,* since the imagining brain takes hold of similarities in disregard of essential differences. A birch-tree, overhanging a stream, is personified as the Fairy of the Glen, because it resembles a fairy in its gracefulness. A natural object may even be impersonated, if the artist feels himself one with Nature so that her phases express his own. The artist seizes hold of features that have some kinship with our own expressions of emotion: there are analogies, which we appreciate, for instance, in speaking of a "sunny smile." In painting a wild duck flying across the face of the moon he may use the bird subjectively to express his own feelings in moonlit solitude, or objectively figure the feelings of the bird. Music may, in the same fashion, be subjective or objective: it may be a cry from the soul, as, for instance, Tchaikovski's "Pathetic" Symphony; or it may be a skilfully varied succession of pleasing notes and harmonies.

But, whether it be subjective or objective, fine Art must be purposeless from the practical point of view. Its end is to express, and this must suffice of itself. The artist may feel a desire for fame, or for money; but these motives must be quite subsidiary. If they overmaster him, he degenerates into the composition of "pot-boilers." The artistic spirit, at its purest, is content to express, and is quite indifferent to profits and even to the appreciation of others. The builders

of some of the finest Gothic cathedrals have left no names behind them. Shakespeare was so indifferent to notoriety that he did not even trouble himself to secure that his dramas were correctly recorded on paper. Edward Bok mentions in his autobiography that, in his very wide experience, the greater the author the less was his concern with the notices which his works received in the press.

Artistic expression must be skilful. Awkward attempts at drawing or poetry are not artistic, however fervid be the enthusiasm which urges them. Skill is so pleasing both to him who uses it and to him who watches it, because it is a form of success. For man learns to be skilful through practice: his dexterity is not innate, and its acquirement is a triumph over difficulty. The functioning of his internal organs manifests the most wonderful inborn co-ordinating capacities. But his hands are not guided by such hereditary cleverness as that which directs (for instance) the nest-building of birds and insects. It has been proved that, if untaught, he possesses no manual dexterity; and he may consequently easily relapse from civilization into barbarism. He wins his skill by the overcoming of obstacles, and associates it with ideas of success, power, and superiority.

These ideas are so pleasurable, because successful effort is always followed by a feeling of self-admiration or pride, and is accordingly associated with this feeling in idea. Thoughts, or even hopes, of success recall, as we all know, feelings which set us on good terms with ourselves. And a similar feeling of admiration—manifested by praise and applause—is aroused by skill that is displayed by others.

Skill is learnt from others by imitative effort, and

is conserved by a faculty akin to memory. Passages on the piano, for instance, are memorized by repetition exactly as are passages of poetry. But there is something more in skill than simple memory—an element akin to intelligence, an appreciation of samenesses between form and movement, which guides the hands to imitate outlines by transforming visual impressions into muscular action. This capacity varies greatly from one individual to another, and is highly developed in the "natural artist," who needs no instruction to draw, in some fashion, things which his eye presents to him.

It is not, however, sufficient that an artist's expressions should be skilful. They should be beautiful—and also harmonious in composition. The beautiful is the pleasing which is also excellent—that is to say, superior. It attracts our admiration (as well as our *like*) after the same fashion as does skill—because it implies an idea of success, and this idea is associated with a feeling of admiration and recalls it. Accordingly one "finds nothing to admire" in that which is ordinarily pretty. Beauty is a complex of two elements—prettiness and excellence—and one of these may gain upon the other, so that, if we are convinced of its excellence, we may admire a thing which is not very pleasing. Moreover, by the development of acquired tastes, which is perhaps the most distinctive feature of civilization, sensations may become pleasing which to the unsophisticated are actually displeasing. These tastes arise partly from an increased delicacy of sensory appreciation which comes of practice. For, as is well known, nervous sensibility is sharpened by experiences which test its sharpness. The more often we see good pictures, or listen to good music, the greater is our appreciation

of them. But special tastes or fashions also originate from the association of exalted feeling with particular impressions, such as those, for instance, that make a national flag seem beautiful to those whose nationality it symbolizes. No definite standard of beauty can, then, be laid down, except that it should conform to Nature. If this be disputed, there is no limit to the possibility of glorifying what is merely bizarre or grotesque.

There is harmony between two things when between them there is a subtle sameness, as of purpose, for instance. Red harmonizes with green because between the two colours there is an identity which renders them almost undistinguishable to some persons. One note of music harmonizes with another when it is identical with one of the harmonies, or "over-tones," of the latter. Harmony in association may link together things of such different nature as a sound and a colour, an emotion and a costume. There is harmony between action or words and a theme when both are dignified.

Inspired by admiration for his creations the artist is pressed to *decorate* them. For admiration always decorates: to a lover his mistress appears more beautiful than she really is. In words one glorifies by praising; in deeds by decorating—just as, impelled by egotistic admiration, we adorn ourselves with clothes and jewellery. Dramatic action is embellished by dress, scenery, and music; poetic expression by rhythm in metre and by the harmony of rhyme; plastic or pictorial works by ornamentation that is not uncommonly rhythmic. The skill with which the artist materializes his fancies may of itself suffice to adorn them; there is a decorative effect in mastery of pure outline. But, generally, as technique develops,

art tends to become more ornate. The artist becomes absorbed in the delight of his craftsmanship, and his expressions lose the emotional in the ornamental, the imaginative in the appreciative. Ornament appeals to sensation, whereas life appeals to feeling; and we are sensible that the latter is the more powerful of the two. Hence we feel that over-decoration involves decadence. By embellishing too lavishly the fantasies of his brain the artist may smother their vitality in their clothes.

The simpler are the expressions of Art the greater is their chance of immortality. For sophisticated methods and decorated styles are fashions that vary from time to time with the tastes of the day. They may include an element of simple sensory pleasure. But in great measure they owe their attraction to artificial associations of ideas and feelings, and these associations may dissolve. A top-hat, for instance, gives pleasure to its wearer because it is associated with a feeling of dignity. Of this class are the mannerisms of Art. They are not everlasting, but peculiar to the time and place. For this reason the Japanese painter discards shadows: being variable and inconstant, they give an air of instability to the artistic.

Art is always *interesting* if it presents the play of circumstance upon feeling, since the feelings which we attribute to others are, in fact, our own, and the circumstances might accordingly affect us. If the feelings that are caused by (or respond to) the circumstances are presented with emotional impressiveness, we may very easily be auto-suggestively *inspired* with them, so that we actually experience conditions which the artist has imagined. It is the easier to sympathize, since the personalities of Art, being fancied, do not antagonize us through

the jealousy and prejudice which introduce discord into actual life. Art may, moreover, afford *pleasure* of the purely sensual kind, and will *amuse* us if the varied character of its incidents produce rapid fluctuation of spirits. If we compare modern art with that of classical days we must conclude that the play of feeling has yielded in attractiveness to the play of the senses. This is the difference between the Antigone and Chu Chin Chow. Taste has become more *objective.* And it delights, above all, in skill. Multitudes will flock to hear a noted pianist without troubling to inquire what pieces he will play.

Let us now endeavour to trace the course of evolution in the development of the various phases of Art. We must begin with some rather fine-drawn definitions. The creative inspiration of Art may spring from feeling or from sensation: its *ideas*, whether *creative* or *decorative*, are always drawn from sensation. Feelings may be distinguished as moods, motives, and thoughts; sensations according as they are tactual, visual, or aural. The instruments of artistic expression are utterances, gestures, and manipulated materials. Utterances and gestures may be either purely emotional or practical: the former are dancing and singing, which fundamentally express moods, not ideas; the latter are actions and words which primitively may have been emotional, but have been moulded with a regard to their practical utility. Materials may be used to express ideas tactually as well as visually—as in sculpture—or simply, visually —as drawing and painting.

These elements evolve into constructions of great complexity, partly through refinements of nervous sensory susceptibility, and partly through the opera-

tion of the laws of the mind. To the first cause we owe the increasing delicacy and complexity of artistic tastes—an appreciation of music, for instance, such as would have made no appeal to our forefathers. We also owe to it a tendency to appreciate the instruments of expression quite apart from the feelings or ideas that they express. They become artistic objects in themselves. Language, for instance—primitively a means of signifying ideas—becomes an artistic cult in itself, and, if mellifluous or flamboyant, may be admired almost irrespective of meaning. By stimulating curiosity, circumstances and incidents which in primitive art are subsidiary to the development of character evolve into *motifs*, as is illustrated by the "detective story."

By the associative tendency of the brain two or more methods of expression are combined, if they have been used together with pleasing effect in accidental or tentative experience. Thus expression by utterance, as by speaking or singing, is associated with the muscular expressions of dancing or acting. Words are in like manner associated with singing, and scenery with the drama. Through unification, one method of expression may be *substituted* for another which is similar to it. Instruments of music can be substituted for the voice, since they produce similar notes. Words are substituted for gestures because they have the same meaning, and written words can be substituted for spoken. Thus the drama has evolved from acting in dumb show.

We find the earliest springs of Art in dancing, singing, and play. Dancing and singing we share with the birds. Under the influence of excitement, cranes and peacocks posture and step in absurd resemblance to the Indian dancing girl. A bird's

song is clearly the result of excitement, strong enough to set its body a-tremble. It is a marvellous revelation of ecstatic feeling that would astound us were it not familiar. The playfulness which occupies the hours of childhood can be observed in kittens and puppies. It always includes "acting"—that is to say, the substitution of another personality for one's own; and we recognize this kinship between play and the drama in calling the theatre the "playhouse."

Dancing is a *rhythmic* succession of movements. Singing may be controlled by rhythm, but it is fundamentally a *harmonic* succession of notes. Both differ fundamentally from acting. For they express *moods*, not motives or thoughts, and they manifest these simple emotional conditions by movements and utterances which are fluid in their connective relationships and can be linked with one another as the artist pleases. The succession in which the movements of dancing and the notes of the voice follow one another can be varied, whereas the movements and utterances of acting have been crystallized into definite manners of action and forms of speech. Accordingly in dancing and singing the fancy occupies itself with the instruments of expression, whereas in acting it is mainly concerned with ideas of motives and thoughts.

Dancing develops from a solo into a duo performance and thence into a concerto. In the concerted ballet it is richly embellished with dress, colour, and music, and, in endeavouring to express *ideas*, may trespass upon the domain of the drama. But its effectiveness is greatest when it suggests a pleasing mood or succession of moods. Dancing suggests moods both to dancer and onlooker, not only because it is primitively the automatic expression of moods, but because there is a real analogy between our moods and the

rapidity and evenness or unevenness of a rhythm. Slowness, for instance, suggests gravity, quickness excitement rising to ecstasy.

Singing is primitively wordless. The little chants with which the Indian cultivator beguiles his hours of labour are as idea-less as the whistling of a school-boy. Whistling, being identical in its notes with the voice, can be substituted for the voice; and the reed, or oaten-pipe, can in like manner be substituted for whistling. It was probably discovered by accident, as also the musical possibilities of a tight-drawn string; and the elaboration of wind and string instruments followed. Music, no doubt, was primitively vocal and became instrumental through substitution. The chorus is more ancient than the instrumental concerto, and was, it seems, through the "catch" the origin of modern harmony.

Music possesses a peculiar interest in that it is a miniature illustration in sound of the relationships by which our personalities are linked into connexion with our environment. The course of a melody is an association in sequence: when chorded, notes are associated in coincidence. Successions and combinations of notes suggest themselves to the composer through samenesses or differences. A sameness is simple and most complete when two notes are in *unison*, since, in this case, although distinct, they are actually the same. Harmonious accords rest upon samenesses between the harmonics (or "over-tones") of different notes which enter, almost imperceptibly, into their composition. Harmony may, then, be defined as a sameness between the vibratory elements which enter into different notes, and it becomes more elaborate as these elements are less apparent to the senses. The musical composer in using successions

and combinations of notes to express feeling is guided by a delicate appreciation of these samenesses—in fact, by an acute musical intelligence, for intelligence may be convincingly defined as the appreciation of samenesses which underlie differences.

But his compositions, however skilful, will lack feeling unless they are inspired by an emotional mood. His melodies and harmonies may, of themselves, inspire him. For music excites feeling auto-suggestively, partly because it is fundamentally an expression of feeling, and partly because certain phrases have become associated with feeling. Our National Anthem, for instance, to us suggests a feeling of loyalty, but has no such effect upon a Frenchman. It follows that musical compositions which to one nation are repellent may be fraught with pleasurable sentiment to another. But music appears to have an effect upon us quite apart from these associations. Sounds are atmospheric vibrations of different rapidities and complexities, and, since our nerves are susceptible to vibratory influence, certain phases of music would stimulate us independently of association. So major and minor keys would *naturally* produce different shades of sentiment, and the resolution of a discord would have the pleasurable effect of a nervous revulsion. The influence of music would be, in fact, sympathetic as well as associative, our consciousness telling us nothing of the sympathetic action while revealing to us its results. For we are undoubtedly affected by music unconsciously. A sleeping infant will awake if its lullaby ceases.

The association of words with music increases its suggestive effect by recalling *ideas* of emotion, and giving it a dramatic complexion. But there is a loss of beauty. For the vocalization of sounds is impeded

by the pronunciation of consonants. The words of a singer are seldom apprehended, and it is possible that we have lost something in not treating the voice as an instrument, purely and simply, and concentrating the singer's attention upon purity of tone and flexibility of enunciation.

Rhythm is not essential to music. The turns and cadences of Indian village chants are as rhythmless as a bird's song. But rhythm can be easily combined with music, and enhances its stimulating effect since it appeals to an innate susceptibility. And, as the pulsations of the heart increase in rapidity and vigour under the influence of excitement, musical time is auto-suggestively exhilarating when it is quick and well marked, pathetic when slow and indefinite. Hence comes the difference in emotional effect between a march and a dirge. By quickening the rhythm a rhythmic interval can be divided, and its divisions be subdivided to any extent within our capacity for discriminating the elements of a rapid succession. The rhythmic unit of music is, of course, the bar.

These rhythmic possibilities, and the large number of harmonic identities between the notes, offer the composer a wide field for the elaboration of novelties in time, melody, and harmony. He can, moreover, by efforts of trial, make essay of combinations and successions which would not naturally suggest themselves. Discords afford pleasure if resolved, and by conventionalities of taste may appear to have qualities of excellence in themselves. The rules of harmony are in great measure conventional: innovations which, when strange, offend the ears, may become pleasing when familiar. Accordingly music tends to become more and more complicated, with results that may please by their skill, but will not touch the heart

unless they express the loving, joyous, tragic, or pathetic. And for this it is necessary that the composer should experience these feelings, imaginatively, himself. But in music as in the other Arts there is a tendency to sacrifice sentiment to technique.

From the fancifulness of play the dramatic art has evolved. The drama is, indeed, a serious form of play. It is serious because it is intended to impress others, and is therefore "staged." And it must conform to certain conventional rules. There were times when the number of actors might not exceed three, and when it was unpardonable to transgress the "three unities." It may be wordless, as in the charade and the cinema: indeed, personalities may be represented by marionettes. But speech reveals to the audience, not merely the motives, but the thoughts of the *dramatis personæ*, and in the Greek drama it almost superseded action. For by speech action that takes place off the stage can be represented in description. There is a difference of vast importance between actions and words. The former indicate motions because they *follow* them; but words are the *coincident* symbols of ideas and signify them, not by inference, but by description. It is because words and ideas are connected in coincidence that we find it so difficult to divorce them. Accordingly words can be used, not merely to manifest an actor's thoughts, but to bring before the audience actions, incidents, and scenery which are not actually presented to them.

In the acted drama each actor impersonates a separate character. But the playwright impersonates each of his principle characters in turn if he "subjectively" feels with them, and does not merely construct them objectively. He is, then, an illustration of "multiple personality." Nor is it difficult to

see how this comes about. For each of our emotions, as it arises, is identified with our personality, and we have, in fact, as many personalities as we have emotions. Our normal personality is the concept of a balance between these heterogeneous impulses, and if this concept is shattered, personality disintegrates, as in Stevenson's allegory of Jekyll and Hyde. The playwright presents his personalities through speech and action; and by the words of his stage-directions he signifies action in itself and the environment, or scenery, in which his characters move. The novelist carries the use of words further: actions are signified, or described, instead of being performed, and by the use of description he can introduce complications of feeling, thought, relationships, and scenery which are beyond the dramatist's reach.

A drama becomes poetical when its speeches are thrown into rhythm. And when words are substituted for action—that is to say, when action is described in rhythmic language, instead of being performed—the drama becomes a poem. Poetic *description*, as contrasted with impersonation, appears to have originated from the bardic rhapsody, which might either be declaimed or chanted to instrumental accompaniment—a distinction which still survives in the terms "epic" and "lyric." The language of strong excitement tends to assume a metrical form. If the description is not of fancied sensations or recollections, but of thoughts, it becomes *meditative*. But the characters in personificative poetry may describe or meditate as well as converse, so that the three forms of expression may be intermingled. And it is to be observed that, when a poet describes or meditates, he really personifies a phase of himself—that is to say, he is *acting*, and it is as unreasonable to

judge his real character by his sentiments, as to assume that an actress has homicidal tendencies because she plays Lady Macbeth convincingly.

Finally of pictorial and plastic art. This is a later development. In all time the excellence of the Homeric poems will hardly be surpassed, but, when they were composed, Greek expression of life by modelling and painting was in its infancy. The function of these arts is to express feeling by representing sensations that are its *stimuli* or causes, whereas acting expresses them through their *consequences*. The stimulus may be altogether fanciful or may be based upon experience. The artist materializes it by imitating his idea of it—that is to say, by action that has a sameness with the idea. There is a sameness between the visual impression of a sphere and a circular movement of the hand. This is a simple illustration of an identity between all straight lines, curves and angles, and movements of the fingers and hands; and an appreciation of these identities makes the draughtsman or designer.

A picture or statue may stimulate sentiment by forcefulness as well as by fidelity to Nature—that is to say, by exaggerating certain *features* at the expense of verisimilitude in the whole. So Byzantine art by its very stiffness gave forcible expression to the dignity of holiness. One of these points of view is adopted by the Naturalistic, the other by the Symbolic school, the latter permitting itself to caricature Nature if, by emphasizing particular impressions—especially those of *movement*—it can strengthen its significance of feeling. And, since movement involves *change* of visual appearance, it may be signified very forcibly by lines which are out of accord with our impressions of a fixed position.

Architecture is to be reckoned pure Art only if its buildings serve no material purpose, for it is of the essence of artistic expression that it should be useless from the practical point of view. The ends for which a temple, church, or cathedral is designed are not material, and those buildings may, then, be expressions—perhaps the highest expressions—of fine Art. It is noticeable that in days when dwelling-houses were generally mean and inconspicuous, man reared religious edifices which surpass the most magnificent structures of the present day. Monuments, such as obelisks, are also purely artistic, emblematizing the unapproachable eminence of those whom they commemorate. But when architecture sets itself to beautify the useful it is *applied*, not pure Art: it is decorative, not creative; it serves utility instead of ignoring it. We do not esteem applied Art so highly as pure Art because the prudent, being less exciting than the imaginative, seems to lie on a lower plane. But our debt to it is, of course, immense. We owe to it all that is beautiful in our dwellings, our furniture, and our dress.

This subordination of art to utility marks the encroachment of the instinctive upon the imaginative—of the prudent upon the romantic. For prudence is the pursuit of future expectations: it is fundamentally appetitive, not spiritual, and conflicts with art and idealism. When the future is obscure, prudence has little to stimulate it, and gives way to the imaginative playfulness of romance. But with the development of economic civilization, the future gains in reality, and prudential feelings tend to overshadow the imaginative, except in the young, and in those who are so fortunate as to remain young in imaginative susceptibility.

There was a time when meadow, grove, and stream,
The earth and every common sight
To me did seem
Apparelled in celestial light,
The glory and the freshness of a dream.

This glorifying sensibility persists in those who enjoy the artistic temperament. But, ordinarily, with advancing years, the lustre which it sheds upon our surroundings is dulled by prudence and "fades into the light of common day."

It follows that, if childhood possessed the skill and discrimination which come from education and experience, it might outrival age in artistic creativeness. Children very commonly act extraordinarily well, and the "infant prodigies" which from time to time astonish us are more abnormal in being skilful than in being artistically inspired.

CHAPTER XVI

AMUSEMENT

To be amused is to be pleased ; but to be pleased in a peculiar fashion. We do not use the term for purely physical pleasure : we are not " amused " when we enjoy food or drink ; if we are " entertained " by a meal it is not by the eating of it. Nor are we amused when we are under the influence of strong continuous excitement—as that of love, triumph, idealism, or religion. There must be pleasure. But it must flicker, must rise and fall like the water of an ornamental fountain ; or (to borrow a similitude from electricity), it must vary in its *tension*. The word " amusement " endeavours to express this idea by a vulgar metaphor. It is akin to *museau*, a muzzle, and seems to signify the movements which we describe as " nosing " or " nuzzling round." As often happens, a consequence is used to express a cause. Not very happily, it may be thought. But we must admit that the condition of being amused is exceedingly difficult to describe.

The continuous energy which we call our " spirits " is infinitely more sensitive than we may suppose. Under the stimulation of sensory impressions and ideas, its tension is continuously rising and falling—so long as it preserves its sensibility. These changes manifest themselves in facial expressions and gestures as well as in words, and we have only to watch the

face of one who is amused by conversation to appreciate the energy of the fluctuations which occur in his mood, and the rapidity with which one succeeds another. Change is, then, of the essence of amusement. A continuous stimulus may fascinate or entrance; but it does not amuse. On the other hand, sensations which are in themselves not keenly pleasurable may become amusing by the mere fact that they change: in this lies the attraction of the kaleidoscope. Our environment is constantly changing, and, were our sensibilities not blunted by habitude, we should find the ordinary experiences of daily life as amusing as they are to children. Unfortunately we become *blasés* to the everyday wonders that Nature and the behaviour of mankind offer to our eyes and ears. Life, which to the child is a fantastic delight, becomes to us "flat, stale, and unprofitable," and we have to seek for the amusing in the extraordinary—in a theatre, at a football match, in gambling, or through foreign travel. We must have recourse to artificial recreations.

Amusement is "recreative" because by stimulating the elasticity of our spirits it has a rejuvenating effect. Age involves a loss of nervous susceptibility: as years pass, our power of mercurially appreciating simple pleasures seems to fail—that is to say, we lose our ability to respond to them. Our sensibilities become hardened. The growth of this nervous "induration" may be checked by periodically stimulating the nerves to use their elasticity of response. Amusement has this effect. Whatever be the shortcomings of the "pictures," they give draughts of *elixir vitæ* to multitudes who stand in sore need of its refreshment.

Conversation is the simplest of amusements apart from that which is given by the mere exercise of the

senses. It entertains us when it involves fluctuations of mood. We understand the experiences of others by feeling in ourselves the consequences of their experiences,—with emotional effects that are in sympathy if we identify ourselves with them, are antipathetic if we are opposed to them, and are, in other cases, respectful or pitiful according as the experiences are of success or failure. Moreover, we continually extract from the words of others implications which are in some degree flattering or derogatory to our self-esteem. Conversation is, then, a series of varying stimulants, and under its effects the tension of our spirits is ever rising and falling. The morning newspaper has a similar effect. Indeed, journalism is a form of conversation, which arouses our feelings by visible signs instead of by vocal utterances.

The imagination enables us to fabricate artificial stimuli which are of the same kind as those afforded by actual or conversational experiences, but may be vastly more exciting. In children's play the incidents of life are mimicked with such results upon the feelings as the incidents would produce. From this it is but a step to the drama. Poetry and fiction are the elaborated counterparts of the oral enchantments of the bard and the story-teller.

Now it is a remarkable fact that in play, in the drama, and in fiction, amusement is afforded by incidents that are in themselves displeasing. We appreciate tragedy as well as comedy; and there are theatres, such as the Grand Guignol, which attract the public simply by dramatizing horrors. We derive amusement from the alarming incidents of a ghost-story. We owe this faculty of extracting pleasure from the unpleasant to the *explosive* elasticity of our spirits. Happily for mankind their normal phase is

that of expansion or cheerfulness, and, when they are contracted or depressed by a stimulus which is unreal or does not personally concern us, there is an expansive revulsion which overcomes—outvalues—the contraction, so that an unpleasant stimulus becomes the cause of pleasure. In fact it is as with the will—opposition is aroused by contrariety of condition. This hypothesis is confirmed by an analysis of the feeling that we experience when touched by the tragic. And there is a fact which supports it still more obviously. Tragedy affords no pleasure to the low-spirited—indeed, it deepens their gloom—since in their case there is no contrariety and hence no revulsion.

This revulsion of spirit has some resemblance to the instinctive nervous reactions which follow success and failure, and link to them, respectively, as consequences, feelings of respect and pity. We inevitably respect ourselves in success and pity ourselves in failure, and extend these feelings to others unless we are set against them. These reactions are, however, automatic nervous changes that are independent of the brain. Did the brain form no idea of them we should not of course *feel* them as respect and pity. But they would exist as physical consequences nevertheless, whereas without the brain there could be no amusing revulsions, since these are the consequences of the interaction of ideas and the spirits. Pity plays a part of much importance in our appreciation of the drama. We owe to it the sentiment of *pathos*, which may be exactly defined as pity that is aroused by the comparison of the actual with the "might-have-been." Pity and pathos are both pleasant, since they involve an expansion from the nervous contraction that is caused by the idea of misery or failure, and we not infrequently derive this consolation from the contrast

in our own case of the actual facts of life with its promises. But these feelings are fundamentally physical, not spiritual; and consequently pathos is not "amusing," although it may contribute materially to the pleasure of an amusement.

The effect of a revulsion of spirits depends very greatly upon its suddenness. In watching a drama the feeling that it is unreal is always present (unless, as sometimes happens, it is overpowered by a wave of sympathy), and the consequence is that its tragic elements lose their poignancy, and become interesting if not actually pleasurable. But if the idea of unreality suddenly interposes itself as a flash which dissipates an atmosphere of reality, the revulsion is, so to speak, catastrophic, and gives rise, not to a tide, but to a wave of pleasure, that must free itself in smiles or laughter. So if we have been alarmed quite causelessly we "smile at our fears." The revulsive amusement that may be derived from the displeasing must then be distinguished according as the process of revulsion is continuous or sudden. In the first case it proceeds from a feeling of *reassurement* caused by the knowledge that the displeasing incidents are unreal or that they do not concern us. In the second case it may be ascribed to a rapid *readjustment* of ideas, such as that which, by contrarifying that which is normally respected, or by uniting ideas that are at first sight incongruous or discordant, affords the pleasure of the humorous or comic. Revulsion, whether continuous or sudden, plays a part of immense importance in amusing us. But we must remember that stimuli may be impulsively as well as revulsively amusing, and that we may be entertained by a succession of impressions or ideas which differ chromatically but are all pleasing

in themselves, as, for instance, by an operetta or *revue*.

Let us now proceed to test the soundness of these conclusions by applying them to the various phases of amusement, and seeing whether they afford us a consistent clue to the understanding of their attractions. The methods in which we amuse ourselves are so exceedingly diversified that it may seem impossible to arrange them in the pigeonholes of a classificatory scheme. But the difficulty is solved if we bear in mind the threefold nature of our nervous system—the distinction between the physical, the spiritual, and the mental. These three elements form a connected unity, and our higher nervous activities are, therefore, always composite. But in each of them one or other of the three elements stands out as the most fundamental or characteristic. From this point of view we can class dancing and music as physical amusements, for they derive their changeful attractiveness from sensation. Amusements which arise from oscillations of the spirits are of a more complicated description. But we realize their kinship, and give them the collective name of "play" or "sport," whether imitative (or dramatic), emulative (such as football), or speculative (gambling). Amusement is distinctively mental when it is given by the humorous, ludicrous, or comic. But we must not forget a possible complication. Physical and spiritual amusements may be infused with passion or emotion, or with the admiration that is inspired by the artistic. In this case the lesser feeling of pure amusement is eclipsed. We are not merely recreated, but exalted.

Dancing and music, being physical, are the most elementary of amusements, and it is probable that we do not appreciate at its full value their recuperative

effect upon the nerves. The steps of dancing are linked together in rhythm ; but they involve continua changes in movement and in feeling, and, consequently, are not fatiguing. So again, music is a series of sounds which presents to the ear a current of changing stimuli. Its effect upon us is, no doubt, very largely associative —that is to say, auto-suggestive. For being evolved from, and primitively representing, cries of emotion, it recalls emotion. A cause is re-stimulated by its consequence. Accordingly, since the voice rises under excitement and falls as one grows calm, we are alternately exhilarated and soothed by a musical progression as it rises and falls. The effect of rapid or slow, marked or blurred, musical time is similarly traceable to its analogies with the beating of the heart. Music adds to these natural associations others of an artificial kind. Certain styles become associated with certain moods, and tend to provoke them. A hymn tune, for instance, recalls religious feeling. Since these associations are artificial, musical tastes are in great measure conventional : a European can discern little meaning in Japanese music. And the styles of musical expression necessarily vary in time and place since they are *evolved* : they appeal to tastes that are acquired by practice, and are confirmed by the fashion of the day. Yet, when all is said, it is difficult to deny that music affects of itself, independently of previous associations and acquired tastes. For if, as is reason to believe, the nervous energy of our spirits is of a vibratory nature, it is not improbable that the vibrations of sound should physically affect it and give a tone to our feelings.

The amusements which spring distinctively from activities of the spirits are imaginative—that is to say, they develop, in a more or less fantastic fashion,

associations which have been established between sensory experiences of certain kinds and emotions, and can be re-established by incidents of the same class. Thus a child would derive no pleasure from playing at horses unless he had seen a horse and admired it; a gambler would find no attraction in cards unless he had experienced the turns of good and bad luck. Imaginative amusements can be broadly classed as imitative, emulative, and speculative. They are imitative when they are of the dramatic nature, which is most primitively illustrated by children's games. These exhibit very clearly the impulsive and revulsive elements of amusements. In playing at horses all the ideas that present themselves are agreeable; in blind man's buff the agreeable is mixed with the disagreeable —the fear of being caught—which is manifested by screams of apprehension and delight; in playing at bears all the elements are disagreeable, and are amusing only because they are unreal.

In children's play there is *active* amusement. That which the drama affords us is passive: we are lookers-on. But through our feelings we understand those simulated by the actors, and react to them. The sight of Desdemona being suffocated before us would be intolerable were there not a continued sense of the unreality of the scene. This, however, leaves to us the imaginative pleasure of *pathos*. To those of strong sympathies the unreality may disappear, with a subsequent emotion of acute distress: and the Greeks held that incidents of this kind were best narrated, not presented to the eyes, since in this case they lost something of their poignancy. The conduct of Iago would enrage us if we did not know it to be unreal: it does enrage those of very sensitive disposition and give them a longing to assault the actor.

Poetry, properly so-called, is the expression of sustained feeling, and is therefore on a higher plane than the amusing. But when this feeling expresses itself through the imagining of varied incidents, and conversations, as is the case with the dramatist, it may amuse as well as inspire. Fiction expresses these incidents in visible word-signs instead of by action or utterance: it is in fact drama that is played in written symbols. To its manifold attractions it may add that of mystery—the charm that is shed by the supernatural. This, of course, pleases us only because it is unreal: spiritualism is not *amusing* to those who believe in it. Within the present generation the possibilities of dramatic amusement have been immensely increased by the invention of the cinematograph. Judged by the amount of pleasure that it gives to humanity, it may, indeed, be ranked amongst the greatest inventions of all time. It calls up ideas of conditions of feeling, not by the artificial memorial connections that have been established between ideas and words, but through the natural association of feelings with facial expressions and gestures.

The games of children are simply fantastic. To amuse those of riper years games must be spiced with emulation. The delight of pure imagination is outgrown. Emulative amusements are collectively known as "sport." A game of football mimics the conflict of war: the invention of its artificial antagonism sprung from experiences of actual combat. It is impulsively amusing because it abounds with varied incident—more amusing, however, to the spectators than to the players, since the latter are carried past amusement by their emulative feelings. It is revulsively amusing because it contains an element of luck

—that incalculable inconsequence which may defeat the most meritorious exertion, and can, therefore, impart consoling reassurement when things look blackest. In hunting, shooting, and fishing man "pits himself" against the animals which he pursues. Originally expedients of necessity they become artificialized as instruments for provoking the emulative spirit. Luck enters into them very largely, giving rise to hopes that will reassure the angler during uneventful hours of failure.

Amusement becomes purely speculative when this reassuring element of luck is used for all that it is worth. Gambling and racing resemble business in that they are infected with the money-getting spirit: they differ from it in that they extract a pleasurable revulsion from misfortune through the reassuring thought that luck may change. The gambler is not only triumphant when he wins, but hopeful when he loses; and we need not be surprised that gaming and betting are the habitual amusements of multitudes of mankind.

There sometimes enters into amusements of the imaginative kind a peculiar pleasure which may be styled "self-congratulatory." It is admirably described by Lucretius:

> Suave, mari magno turbantibus aequora ventis
> E terra magnum alterius spectare laborum:
> Non quia vexari quemquam 'st jucunda voluptas,
> Sed quibus ipse malis careas quia cernere suave 'st.[1]

We can obtain this pleasurable contrast artificially

[1] When that the mighty sea's by tempest lashed
To frenzy, sweet it is from land to gaze
On one who's fiercely battling with the waves:
Not that another's peril gives us joy,
But that 'tis sweet when we are free from woes
Which others suffer.

by the deliberate ill-treatment of others—by the cruelty which some children find amusing, and the bullying that so often embitters school life. The contrast gives a peculiar zest to such entertainments as gladiatorial combats, bull-fights, and the exhibition of dangerous acrobatic feats, and is the cause of the *unreasonable* inhumanity with which man not infrequently inflicts suffering upon his fellow-creatures.

The mental amusement that is afforded by the humorous, ludicrous, or comic introduces us to one of the most keenly debated problems of psychology. The most widely accepted explanation is perhaps that of M. Henri Bergson, who holds that the laughter which ridicules the comic is an instrument that has been evolved for the repression of the abnormal, or eccentric, and the maintenance of an ordered continuity in the development of culture. But this explanation will not stand the test of logic. For, in the first place, laughter is not essential to our enjoyment of the grotesque: we may be amused in silence. And, secondly, we may be amused by conduct which excites no disparagement or contempt.

There is a distinction between the humorous and the ludicrous, which is appreciable, however difficult to define. It is the difference between "fun" and "wit." Turning, in the first place, to the humorous, we can perceive by analysing humorous situations that they all involve the sudden contrarification of an idea that arouses feelings of respect or deference by the association of a humiliating idea with it. That is to say, they involve a readjustment of ideas. The idea that is contrarified may be that of exalted language, dignified manners, or personal prestige which is contradicted by personal inferiority or by vulgarity or childishness of conduct or speech. So we laugh

when Simon Tappertit reflects that he should have been born a corsair, when Mr. Micawber professes the heroic, at Pecksniff's hypocrisies, at Mrs. Nickleby's absurd inconsequences, and are amused when adults behave childishly, and children ape the manners of "grown-ups." The contrarified idea may be that of conventional morality which exacts our deference and constrains our lives: incongruities with it give spice to the indecent. Humour is, then, an expansive revulsion from the constraint which is involved in respect or deference—a revulsion that is expressed by the word "bathos." When the revulsion is explosively energetic, it throws up a wave of pleasurable excitement which must liberate itself in muscular movement —by smiles or laughter.

Now it may be denied that there is a contractive element of constraint in respect or deference. Our lives are, in fact, so habitually controlled by this feeling that our consciousness of it becomes blunted. But the constraint of respect is shown very clearly by the gravity of expression which accompanies the deferential submission of oneself to another's authority, and marks the features of those who are burdened with an overweening respect for themselves. Moreover, fear is not uncommonly associated with respect. For another's power may be *dangerous*, an association which is illustrated very curiously by the origin of the word "danger" in *dominiarium*. We respect convention because its rules are made by the powerful and because their adoption by society gives them the prestige of a majority vote. We also fear convention, since a breach of its ordinances involves shame and the contempt of others. The constraint that it imposes is to be seen in the spiritless gloom of those whose chief object in life is to be respectable. Con-

vention civilizes us by caging us, and there is a pleasing revulsion at the idea of escape.

There is of course humour in the actual experiences of life. There is something amusing in the sudden jerk of the train which discomposes the dignity of our fellow-travellers. We are intensely amused when stateliness of demeanour is accidentally discomfited. The humorist provides this entertainment for us artificially. He exaggerates impressiveness in order to depreciate it more effectually. The operettas of Gilbert and Sullivan are so amusing because they associate dignity in musical expression with flippancy in thought and word. The humorous charm of the Beggar's Opera is of a similar nature, arising from the contrast between low conditions of life and high art in their representation.

The ludicrous, on the other hand, is a sudden revulsion from the bewilderment that is caused by an incongruity between two ideas, and is dissipated by the perception of a resemblance that unites them, and "readjusts" the situation:

> "Leave the lamp," said the baron.
> "Anything else, my lord?" inquired the domestic.
> "The room," replied the baron.

We are puzzled for an instant by the application of "leave" in the sense of "let it be," to a *room*. There is a hiatus: but the gap is bridged immediately the sameness of sound brings to mind "leaving" in another sense. The process is ordinarily so rapid that we are unconscious of the momentary bewilderment. But, in one who is slow to see a joke, there may be an appreciable interval before comprehension occurs, during which his features show very plainly that he is puzzled and "disconcerted." There is a

pleasurable revulsion when this feeling is dissipated by a readjustment of ideas.

Ludicrous incidents occur in actual experience. We are not seldom momentarily disconcerted by failure to identify familiar persons or objects, and testify to our relief by a smile of recognition. Jokes may be artificial presentments of the humorous. But they commonly suggest the ludicrous by emphasizing differences that are underlain by samenesses. There is an identity between an idea and its contrary, and one may accordingly raise a smile by contrarifying his experiences—by describing, for instance, as "charming" a disgusting day. The different meanings possessed by a word, or words of like sound, offer infinite possibilities for the making of puns or *double ententes* which, however trivial, are of service in keeping conversation good-tempered, and holding the ears of an audience. Indeed, a facility for making *bon mots* is one of the most useful of a politician's accomplishments. We call this facility "wit," because it is by our *wits* that we appreciate it, using (as so often happens) a consequence to express a cause.

A witticism is, then, a puzzle that is almost instantly solved, and is therefore followed by a sharp revulsion. In this respect it differs from a puzzle problem which may tax our wits for some time before it is unravelled. But in essence the pleasure offered by both is the same—the revulsion which follows the removal of a stumbling-block. We labour over a puzzle in the hope of a triumph. If we knew it to be insoluble, we should not attempt it.

We may, then, conclude that the continuous nervous energy which we call our "spirits," not only intensifies our life and dignifies it, but by its acute sensibility and explosive resilience provides us with our amuse-

ments. Hadrian appreciated this point, and used it to give a tinge of humour to the pathetic in addressing his departing soul:

Animula, blandula, vagula,
Hospes, comesque corporis
Quae nunc abibis in loca ?
Pallidula, rigida, nudula,
Nec, ut soles, dabis jocos ! [1]

Our moods not only endow us with earnestness—with emotional passion, imaginative enthusiasm, and wilful antagonism, according as they move us: they enliven us with a light-hearted elasticity which irreverently extracts amusement from the current of changes that sweeps us along through time, and can make even our own cherished dignity its laughing-stock.

[1] Dear little soul of mine, so sweetly wayward,
My body's long-time guest, and comrade fain,
Whither away now art thou flying ?
Naked and wan, thy sprightliness belying,
Never to give me a good laugh again !

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