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A HISTORY OF THE PROBLEMS OF PHILOSOPHY

A HISTORY OF THE PROBLEMS OF PHILOSOPHY

BY

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INTRODUCTION

THE poets of this country have been bold and very great, its philosophers timid and, on the whole, of a moderate reputation. Our genius is practical, and has shown itself so even in this matter; for poetry reaches the results of philosophy by short cuts, and without the endless linkage of argumentation. A practical people is always prudent, and seeks aims well within its reach; and we have cultivated science rather than philosophy and the inventive applications of science more than its abstract inquiries. We shun adventurousness even in the world of thought—except that of the imagination, which has the freedom of irresponsibility; and it is not strange that we should refuse the most adventurous of all enterprises, namely, that of constructing schemes of thought which shall explain the Universe of Being. For, amongst civilized nations, England ranks with Rome—the great practical people of ancient times—in the comparative barrenness of its speculations. It has originated no systematic interpretations of reality able to command the allegiance and dominate the thought of other countries. Our greatest philosophers either have been critics or they have been defenders of foregone conclusions; they have not had in their disposition enough either of heroism or Quixotism to put the lance in rest against the world. Locke and Hume investigated the Human Understanding, and sought to make human thought more sober in its undertakings; Berkeley, the most boldly constructive of all our philosophers, worked in the service of theology, and sought premisses for its conclusions; Hobbes, the hardiest of all our thinkers, not even excepting Hume in some respects, left behind him no theory of the world. We cannot even translate the

Weltanschauung of our German neighbours. We are very conscious of our limitations, are much afraid of appearing ridiculous, and like to feel that we have solid ground beneath our feet.

These characteristics are conspicuous in our bearing towards the History of philosophy, as well as other universal undertakings. We can boast of no serious attempt at presenting in rational order the great systems of philosophy, which are the successive exponents of the main stages of Western civilization. We have written text-books for students, and some very competent and illuminating monographs on individual thinkers. But there has been no attempt at the effective co-ordination of these, nor have we sought to give effect to the conviction that philosophy is, in truth, a continuous endeavour, and the reflection of a continuous experience. And yet one has to go but a little way in philosophy to realize that its great systems can be interpreted only in their context, and its problems effectively handled only through their history. We have to go back to the past not merely because here, as elsewhere, we require the help of earlier thinkers so as to start from their results, but because philosophy must reflect life. It is the exposition of experience. It is experience itself breaking out into explicitness, blossoming into clear consciousness, comprehending itself—at least to some extent. And experience always garners its past into its present: what it is can be discovered only by laying out what it has been, by following the steps of its self-articulating, self-concreting process. Both on account of the bearing of philosophy upon life, and of the history of philosophy upon philosophy itself, one may say that a competent account of its great systems is the most urgent desideratum of English reflective thought at the present time.

In lieu of seeking our own interpretation of the evolution of philosophy through its sequent systems, we have borrowed those which have been offered by German thinkers, amongst whom prudential motives are usually less operative, and who have been as ready to reconstruct one another as to construct the universe. Aristotle said of Plato that he was too good a man for the wicked even to praise: and, verily, the praise of the histories of Zeller, Erdmann or Hegel comes ill from English

lips. The debt of English philosophy to their mastery of the history of reflective thought is hardly measurable; and we have done well to borrow from them and to translate them into our own tongue. But translated philosophy, like translated poetry, has in it something that is radically unsatisfactory—even when the translations are competent, which is by no means always the case; for, like poetry, philosophy must be the outcome of our proper and personal experience, and its intimate suggestiveness cannot be borrowed. Hence, as every experienced teacher of philosophy will acknowledge, one hesitates to place translations of these great works into the hands of students. They will rarely overcome their externality. They find them foreign not only in garb but in spirit: a collection of dead doctrines, unilluminating and forbidding. And it is partly to this cause, I believe, that, in this country in particular, the history of philosophy has been deemed to be a record of exploded systems, which can only with difficulty be conceived as having had at any time living significance.

In these circumstances it seems paradoxical to introduce to English readers another foreign history of philosophy, and especially one which naturally carries within it defects of its own, in addition to the disadvantage of being a translation. I shall indicate these defects in the proper place, though it is not usual to cry down the ware one brings to market. In the meantime I desire to point out the reasons which have led me to entertain the belief that, in spite of its shortcomings, this *History of Philosophical Problems* will prove exceedingly valuable to students of the subject.

In the first place, it is French, and not German: and, if that implies, as some believe, a lack of profundity and of the exhaustiveness which comes from inexhaustible patience, it also carries with it a certain lucidity, directness and effectiveness apt to be lacking in German writings. In philosophy everything is preferable to fog. Through error the student may find his way into truth; but lack of clearness, where the subject is at once complicated and to be dealt with only by reflection, is nothing less than fatal. An indefinite thinker should take to mathematics rather than to philosophy; for the problems of the former are at least explicit and, in that province, he can, at the

worst, be convinced of his helplessness. The highly technical character and abstractness of language characteristic of the profounder philosophical thought of Germany is apt, at least with English students, to foster this indefiniteness; and it is not without some reason that even official exponents of philosophy have accused some of the greatest thinkers of that country of writing "jargon." Such an accusation, however, recoils on those who make it; it means that *they* have found nothing else in their writings: they are unconsciously frank. For it is quite impossible to believe that "jargon" (such as Hegel's!) could move European thought. But a charge of this kind cannot have even the show of truth if directed against the philosophical writers of this country; and still less, against those of France. For, in the qualities of concreteness and clearness, French philosophy shares the excellence of French literature in general. It is a clearness that extends not only to the language, itself concrete and direct, but to the arrangement of themes and the whole method of exposition. And if the grapes one gathers from it are not like those found by Joshuah and Caleb at the brook of Eshcol, at least we are not condemned to wander forty years in the wilderness.

In the second place, the relative emphasis laid by the historians upon the different systems varies greatly. Apart from Plato, Aristotle and the Stoics, whose conceptions have penetrated the best thought and practice of all the Western nations, the philosophers who have dominated the mind of France, Germany and England, respectively, have been different. Germany and England have owed much more to Kant and his Idealistic successors than France; France and England have owed more to Descartes and Locke than Germany, and at the present moment Leibnitz occupies in France a place analogous to that of Hegel in England. It is a natural consequence that the German historians should have treated English systems inadequately—even Hegel, who was, in some ways, the most encyclopaedic of them all, has done so—and that their treatment of French philosophy should be more slight still. Our own efforts would, no doubt, have been similarly one-sided—only, we have not made any. It is manifestly to the interest of the study of philosophy in this country, that we should observe how its great systems appear when refracted through

another' atmosphere, through minds deeply influenced by Descartes and his school, and to which our own quasi-psychological philosophers, from Locke to Spencer, have been of momentous significance.

I cannot, indeed, pretend that by confining ourselves to the French versions of this history we should not lose more than we should gain. The present work, scholarly as it is, contains grave defects of omission, and its accent is sometimes false. For instance, the story of German philosophy since Kant is very imperfectly told, and one might conclude that in this country, except for Mill and Spencer, the Scottish philosophy, whose echoes have been silent for many a year, has had the last word. In fact the Idealistic theory, which originated in Kant, and by its development both in Germany and in this country has swayed, with almost tyrannic power, not only philosophic reflection but science and theology and much of our common thought, creating new intellectual conditions, is treated in a way which can only be called perfunctory. This is a graver omission than can be laid to the charge of any great German history of philosophy. But, on the other hand, so constant is the pressure of Idealistic thought upon the mind of this country, and so many and varied are the means of becoming acquainted with these systems, that teachers of philosophy will the less regret the defectiveness of the book on this side. The omission is much more serious for French students than for ours. To us the freshness of the treatment, the new emphasis laid upon other ways of thought and the attention accorded to the systems that have here fallen under comparative neglect, will more than compensate for the omission of what lies otherwise ready to our hand.

In the third place, and this is in some respects the most important consideration, the history of philosophy is in this work approached in a fresh way. "It is," say the authors in their Preface, "conceived on an entirely new plan." "Our idea is, indeed, simple enough, but it does not seem to have been easy to light upon or to carry out, for to no one has it occurred before: nowhere—not in France, nor in England, nor in Italy, nor in Germany—is there a work composed on the same, or even on a similar plan." And their claim is on the whole valid. I know no proximate exception except Windelband's history, and even Windelband's

plan is different in essential ways. What we have, then, is not a history of systems of philosophy, or of schools, in their historic order, such as we have had hitherto; but a *History of Philosophical Problems*. "We have taken, one after another in their dogmatic order, the great problems of philosophy and given their history, indicating their origin, their various aspects and forms, and the stage they have reached in our day."

The objections that may be urged against this method are sufficiently obvious. In incompetent hands it may easily issue in detached disquisitions, or in an unsystematic collection of views and conspectus of results, which have just as little value in philosophy as a collection of answers to problems in mathematics. Even in the best hands, the special doctrines advanced must lose philosophical value and character just in the proportion in which they are isolated from one another and from the systems of thought of which they are parts; for none of the individual systems is presented *as a whole*.

But, on the other hand, in the case of any significant philosophical thinker his treatment of all the profounder problems of experience is always ruled by a few great conceptions. It is the condition of his having a system at all that it should issue from, and be the articulation of, great principles. He has his working hypotheses, which he applies to the facts of experience, in a manner not radically different from that of a great physicist. And when such a thinker is approached through his special doctrines, one strikes again and again upon these ruling hypotheses. His central ideas are approached inductively, so to speak, through their concrete exemplars and particular instances. There results, it is true, an apparent iteration; but the iteration of principles in facts is the very making of sound thought; it is not a defect, but a main excellence.

Again, it is, I believe, a profound truth, never laid sufficiently to heart by philosophical teachers and writers of text-books, that the only true method of instruction is that which follows the path of discovery. To understand a philosophical system we must retrace the steps of its construction, and accompany the mind of its author in its quest for the truth. And I think it is universally true that philosophers are driven to construct their systems by the pressure of particular problems. The creation of a philo-

sophical system is a work of necessity, which no one would undertake if he could avoid it. But when some trusted conviction proves false, or some principle on which theoretical or practical life appears to rest seems itself to be without foundation, and experience is found to be like a house divided against itself, there is no option left to those who have been called to think except that of building up their world anew. Kant's *Critiques*, for instance, are not intelligible except in the light of one or two problems whose solution had become categorically imperative to him ; and, in the case of every other great philosopher, it is some particular cry that breaks his dogmatic slumber, and sets him to reconstruct his experience on a higher principle. Nor are the conditions entirely different for the lesser spirits, whose utmost hope is merely to interpret for themselves the thoughts of others. They, too, once the study of philosophy has become real to them, seek, in the first place, for answers to problems set to them by their own experience. Intellectual inquiry is never at its best except when it springs from practical needs, and these are always particular. The scientific investigator in the physical laboratory does not attack nature at large, but through clearly defined problems, and by means of specific experiments ; and the true student of human experience must follow the same method, and ransack the learning of the ages because he is impelled thereto by definite problems arising from his own life. He will, no doubt, find the search longer than he expected. For in the world of spirit one problem leads to another, as in the province of natural facts. Nay, the problem with which he sets forth, like all the rest of the inquiries that it startles into life, deepens as he goes on.

In this context, I may indicate another respect in which I find this new method of studying the history of philosophy more true to its real spirit than the old. It is a history of the *problems* of philosophy. That is to say, it represents each result that is gained as a starting-point for a new endeavour ; and, in every instance, after following the evolution of a problem down the ages from the time of Heraclitus, the Dark, to our own, what is reached is still a problem.

It might be concluded from this fact that this newer method differs from the old only by making still more distressingly clear

the necessary failure of philosophic systems. And, no doubt, there are minds by which this conclusion will be drawn. The idea of Evolution, of which the history of philosophy is the greatest concrete illustration, in the same way presents each stage attained as only a new beginning, and is therefore capable of a double rendering. We may accentuate each stage either as a *terminus ad quem* or as a *terminus a quo*. "Last year's nuts are this year's black earth," says Mowgli; but it is just as true that "Last year's black earth is this year's nuts"; and the *whole* truth can be expressed only by both of these statements. If both aspects of the complex fact of growth be kept in mind, we shall find a solution to be valuable, precisely to the degree in which it is suggestive of further problems, which are themselves in turn only more comprehensive restatements of the old. Indeed, the supreme test of the real significance of a problem and of the method of seeking an answer to it is that it goes on reverberating through the experience of the ages of mankind. If our questions really reach down to experience, they touch what is in constant process of growth through reconstruction, in which there is nothing old because there is nothing new. Knowledge, like conduct, turns, after all, on a few great principles, and life, on its theoretical and practical side, is a process through which these are deepened by their application in a growing experience. In the last resort we are always engaged upon the same problems, but, in the last resort, too, the meaning of a problem depends upon the massiveness of the experience which propounds it. On these grounds I cannot but consider the experiment of teaching philosophy through the history of its problems as likely to be instructive in a high degree; and, especially so, if it be a history of those greater problems whose very permanence indicates their significance and their vital hold upon human experience.

It is not my part to endeavour to show in detail how far the authors of this work have done justice to their own method. But I may indicate one other feature of their book which I deem valuable, namely, the frequency and comparative fulness of their citations from the original authorities. For, after all that can be said for a history of philosophy, it is most instructive when it falls into a second place and serves as means of introducing students to the great masters of human thought. No account of Plato or Aris-

totle, Spinoza or Kant can serve as a substitute for the study of these thinkers themselves; and it is no slight commendation of our authors to say that they have consistently regarded themselves as media. They have not forced the views of the philosophers into any pre-conceived scheme, nor allowed themselves to become advocates of a special theory; they have done their work in that impersonal way, which is characteristic only of true scholarship.

The references, which are very numerous, are by no means uniformly accurate in the original, and the translator's task of verifying them and of correcting them when necessary has been very laborious. That no errors remain is improbable; but the care spent upon the references and the use made by the translator of the best known English renderings, wherever that was possible, will, it is hoped, make it easier for the student to read the quotations in their original context.

Amongst the graver difficulties in the way of making this work widely useful to English students was that of reducing its compass. The easiest way of overcoming this difficulty would have been to omit either the quotations, or portions of chapters in which the treatment might appear somewhat prolix. But both of these methods are objectionable; the former on the ground that it would sacrifice one of the best features of the work; and the second on the ground that it would distort the intention of its authors and reduce the value of the book for English students by shifting the accent from what is less to what is more familiar to them. In these circumstances it was deemed best to omit, *first*, the chapters which deal with problems that are only of secondary importance, namely, Chapter III. (in the original) dealing with *La Vie Animale*, and Chapter V., dealing with *Le Problème de la Conscience*; and, *secondly*, a long continuous treatment of *Logic* and the systematic account given, on the ordinary method, of the philosophical schools—which is added as an appendix to the original work. Both of these latter might be issued as independent treatises, but, on the whole, their place is not inadequately filled by text-books in logic and the history of philosophy already extant in this country. The similar independent and continuous account of the history of morals has been included in the translation, both on account of its

excellence and of the poverty of the literature of this subject in our language.

Professor Mahaffy has read most of the proofs of these volumes, and both Miss Monahan and myself owe to him important criticisms and deep gratitude for his valuable assistance.

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AVERTISSEMENT

L'Introduction, que M. le Professeur Jones a pris la peine d'écrire pour cet ouvrage, me dispenserait de rien ajouter, si je ne tenais à lui exprimer publiquement mes sentiments de gratitude, pour le soin avec lequel il a surveillé cette traduction et pour le point d'excellence auquel il a su l'amener. J'ai lu avec une véritable surprise cette traduction, dont l'auteur montre, avec une égale connaissance des deux langues, une rare souplesse à transposer l'une dans l'autre, sans altérer l'accent de l'original.

Cette histoire de la philosophie est conçue sur un plan nouveau. Nous avons pris l'un après l'autre, dans leur ordre dogmatique, les grands problèmes de la philosophie, et nous en avons fait l'historique, en en marquant les origines, les phases diverses, enfin le point où ils sont arrivés aujourd'hui.

L'histoire des problèmes est, en général, noyée dans l'histoire des écoles philosophiques, et il faut un travail considérable pour l'en dégager ; encore n'y est elle jamais d'une manière complète (où trouver par exemple une histoire suivie de la question du langage, de la question de l'habitude ?) ; ou bien elle est mêlée aux traités dogmatiques, mais d'une manière tout à fait accessoire et encore incomplète ; ou enfin elle est dispersée dans un nombre infini de monographies difficiles à réunir, ou sans suite et sans unité.

Nous avons donc cru faire une œuvre utile en rassemblant en un seul tout ces fragments épars et imparfaits, en faisant la synthèse de l'histoire des doctrines sur les questions fondamentales. Cette œuvre est, en quelque sorte, intermédiaire

entre la théorie et l'histoire. Décomposée en ses différents problèmes, la philosophie dans son histoire se présente sous une forme plus scientifique. On y voit mieux la suite et le progrès des idées. Il y a grand intérêt, pour l'étudiant qui aborde l'étude d'une question, à connaître l'histoire de cette question, à se rendre compte des solutions qui en ont été proposées, des grandes hypothèses qui souvent continuent de s'opposer en se transformant. Rien n'est plus propre à défendre l'esprit d'un dogmatisme étroit et outrecuidant.

A ce plan on peut opposer qu'une théorie n'a de sens que dans son rapport au système dont elle est un organe, qu'elle n'en peut être détachée que par un artifice qui la fausse. Par là les diverses philosophies tiennent des œuvres de l'art et ne sauraient être décomposées en fragments qu'on rapporte et qu'on juxtapose. Sans doute, mais notre effort a été précisément, en reliant les problèmes particuliers et leurs solutions aux principes généraux des systèmes, de montrer ces systèmes eux-mêmes de points de vue divers, qui en développent la richesse sans en altérer l'unité.

On peut aller plus loin, se demander s'il y a vraiment en philosophie des problèmes permanents, invariables, dont il soit possible de faire l'histoire. D'Aristote à Descartes, de Descartes à Kant, tout grand progrès de la pensée philosophique ne consiste-t-il pas dans l'invention d'une méthode nouvelle, dans la découverte d'un point de vue original sur les choses qui a précisément pour effet de substituer aux problèmes anciens des problèmes nouveaux qui jusque là ne se posaient point? Une philosophie nouvelle est elle autre chose qu'une transformation du problème de la connaissance et de l'univers? Il est très vrai que les questions ne restent pas posées dans les mêmes termes, que de nouvelles questions surgissent, qu'il serait parfois possible d'assigner la date et l'origine d'un problème jusqu'alors inaperçu; il est vrai encore qu'une question secondaire, traitée incidemment, prend dans un système nouveau une place prépondérante. Mais, quoi qu'on en puisse dire, il y a des problèmes primordiaux, qui renaissent en la pensée de la nature même des choses, et qui se retrouvent transposés d'un système à l'autre (âme du monde, harmonie préétablie, etc. . . .). Pas plus que les problèmes, les méthodes et les hypothèses, appliquées à leur solution, ne sont

en nombre indéfini : la nature de l'esprit les limite, et d'âge en âge elles se répètent et s'opposent en se perfectionnant.

En présentant ce livre au public anglais, je dois prier ceux qui le jugeront de n'y point chercher autre chose que ce que nous avons eu l'intention d'y mettre. Ce livre n'est pas un livre de pure science ; il y aurait injustice à le comparer aux grands travaux parus en Allemagne et à l'écraser du poids de la comparaison ; il est destiné aux élèves de nos lycées et aux étudiants ; il ne se propose rien de plus que de les aider à entrer dans l'intelligence des problèmes philosophiques, en leur montrant comment ils se sont posés, et quelles solutions en ont été données au cours de l'histoire. Bref ce livre est ce que nous appelons *un livre de classe* : pour juger ce que nous avons fait, il est équitable de tenir compte de ce que nous avons voulu faire. Dans ce travail de prétention modeste, nous nous sommes d'ailleurs efforcé de suivre les règles de la méthode historique ; nous remontons aux sources, nous multiplions les textes, nous ne substituons pas des interprétations ingénieuses à la pensée vraie des philosophes dont nous exposons la doctrine.

Le caractère de cet ouvrage, le public auquel il est destiné, explique des lacunes et des omissions qu'il est trop facile d'y relever. D'une manière générale nous avons surtout insisté sur les doctrines qui appartiennent désormais à l'histoire, en y comprenant la doctrine de Kant, dont l'intelligence est nécessaire à qui veut suivre le mouvement de la pensée contemporaine. A partir de Kant, nous nous contentons d'indications sommaires sur les divers systèmes qui continuent de se partager les esprits. Mais il se trouve que je semble avoir fait une exception, et précisément en faveur de deux philosophes anglais. Il en résulte que depuis l'école Ecossaise et Hamilton, la philosophie anglaise semble tenir et se résumer dans l'empirisme associationniste de John Stuart Mill et l'évolutionisme d'Herbert Spencer.

Je n'ignore pas les penseurs qui ont repris en Angleterre, avec une véritable originalité, la tradition des Fichte et des Hégel, en se gardant des témérités dangereuses. Mais le plan même de mon travail m'amenait à insister sur les théories de Mill et de Spencer, parceque ces théories complètent et achèvent l'empirisme, en le portant à ses dernières conséquences. Cette

erreur par omission, peu importante pour des lecteurs anglais, comme le remarque M. le Professeur Henri Jones, est au contraire propre à favoriser en France le préjugé que la philosophie anglaise est nécessairement empirique. Mais les peuples se simplifient pour se juger, et il est entendu que les Anglais sont empiriques, comme il est convenu que les Français sont clairs et superficiels.

Je demande donc que ce livre soit pris pour ce qu'il se donne, pour un livre destiné à introduire les élèves à l'étude de la philosophie et de son histoire, et mon vœu, en terminant, est qu'il trouve auprès des étudiants de langue anglaise le succès qu'il a obtenu auprès de nos élèves et de leurs maîtres.

GABRIEL SÉAILLES.

Septembre, 1902.

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NOTE

The following are the chief English translations from which quotations have been made:

Plato's Dialogues,	Professor Jowett.
Aristotle's Nicomachean Ethics,	F. H. Peters.
Diogenes Laertius' Lives of the Philosophers,	Bohn's Series.
Descartes' Méthode and Méditations,	Professor Veitch.
Spinoza's Ethics,	W. Hale White and that of R. H. M. Elwes.
Leibnitz's Monadology,	Professor Latta.
Leibnitz's New Essays,	A. G. Langley.
Kant's Critique of Pure Reason,	Professor Meiklejohn.
Kant's Critique of Judgment,	Dr. Bernard.
Zeller's History of Philosophy,	A. Alleyne and Evelyn Abbot.

PART I.

PSYCHOLOGY

CHAPTER I

WHAT IS PHILOSOPHY

ACCORDING to Théodore Jouffroy, the subject of which Philosophy should properly treat has not yet been determined. This is indeed a grave accusation for a philosopher to bring against philosophy. We must turn to history for a reply. History will tell us whether there has been so much ignorance and so little agreement regarding the object of philosophy, as Jouffroy would have us believe; or whether beneath many different formulae there does not lie one idea, more or less vague in the beginning, but which, remaining on the whole unchanged, gains in clearness and distinctness as the science progresses. Philosophy is in this not different from other sciences. The first philosophical problem, therefore, to be considered is: What conceptions of philosophy did the philosophers form at the different periods of its history?

The term "Philosophy" originally used in a wide sense.

The words φιλόσοφος, φιλοσοφία do not occur either in Homer or in Hesiod. Originally, a very wide meaning was given to the term φιλόσοφος. It was used to indicate the spirit of enquiry, intellectual culture, every effort of the mind to acquire fresh knowledge. We find it for the first time in Herodotus: Croesus says to Solon: "We have heard much of thy wisdom, and of thy travels through many lands, from love of wisdom and a wish to see the world." ὡς φιλοσοφέων γῆν πολλὴν θεωρίης εἵνεκεν ἐπελήλυθας (Her. I, 30).

In Thucydides we meet the following phrase in the famous funeral oration of Pericles: "We are lovers of the beautiful, yet

simple in our tastes, and we cultivate the mind without loss of manliness." φιλοκαλοῦμεν μετ' εὐτελείας, καὶ φιλοσοφοῦμεν ἄνευ μαλακίας (Thucydides, II, 40). φιλοσοφεῖν should here be taken to mean the love of truth in all its forms, the art of speaking and thinking correctly and well, everything, in short, that tends to make man more truly man. The word continued long to be used in this wide sense. Euthydemus thinks himself "far advanced in philosophy," because he has collected many works of celebrated poets and sophists (Xenophon, *Mem.* IV, II, 23). Isocrates calls his rhetoric τὴν περὶ τοὺς λόγους φιλοσοφίαν, sometimes simply φιλοσοφία, φιλοσοφεῖν (*Panegyricus*).

The tradition is, that Pythagoras was the first to give an exact meaning to the term "philosophy." "Wisdom," he says, "belongs to no man, but to God alone; it is enough for man to love and pursue wisdom" (Diogenes Laertius, *Lives of Philosophers*, Pref.).

In a conversation between Leo, tyrant of Phlius, and Pythagoras, Cicero puts these words into the mouth of the latter, *Raros esse quosdam qui, caeteris omnibus pro nihilo habitis, rerum naturam studiose intuerentur: hos se appellare sapientiae studiosos* (*id est enim philosophos*) (*Tuscul.* V, 3). Until the time of Socrates, philosophers, in the more exact sense of the word, were called Sages (σοφοί), or Sophists (σοφισταί), or again Physicists (φυσικοί, φυσιόλογοι).

Philosophy originally Universal Science.

The earlier thinkers included in philosophy, both what we call theoretical knowledge, that is, the explanation of things, and what we call wisdom, namely the practice of virtue, or prudence in the conduct of life. Their "wisdom," however, was entirely practical, and their science concerned itself with the external world only. Taking up the problems that had exercised the minds of the ancient poets, of the authors of *theogonies*, who founded their explanation of the universe on the history of the gods, these first philosophers also endeavoured to account for the formation of the universe, and for the existence of man. They sought the origin of things either in the elements, or in atoms, or in numbers. Their philosophy was a *cosmogony*, and covered the whole range of human knowledge at that period.

Socrates leads mankind from the study of the universe to the study of Man.

Socrates brought about a revolution in philosophy, and gave it a new aim by turning from the investigation of nature to the study of man. As Cicero puts it in a well-known phrase: "He brought down philosophy from Heaven to earth and introduced her into cities and houses." That is to say, he turned philosophy from speculations on the Universe and its origin, to the consideration of political and ethical questions. But Socrates is not only the founder of moral science; for twenty centuries the principle underlying his method of reasoning has served as guide to the human mind. To him the aim of science is the discovery of the permanent element which lies beneath things contingent and particular. This permanent element is the general notion, or the concept, and the end of science is to find its definition. The Socratic method, carried further by his followers, developed into Plato's dialectic, and into Aristotle's syllogistic, and in the latter form it persisted through antiquity, and through the middle ages. Thus, until the time of Descartes, the task which philosophers set before them was the abstraction of universals from particulars, the definition of the former, and their systematic co-ordination.

With Plato, Philosophy is again characterised by its Universality. Its object is Being, the Good, the order and harmony of things.

With Plato and Aristotle, the universal character of philosophy, which Socrates had left too much in the background, reasserts itself. To them philosophy is not merely physical or moral science, nor the aggregate of all the sciences; it is the supreme, the only true science, the science which dominates all the other sciences.

Philosophy, according to Plato, is the acquisition of true knowledge (κτῆσις ἐπιστήμης). It has not for its object things of sense, which are in a state of perpetual flux and possess no reality or stability: nor is it even correct opinion (ὀρθὴ δόξα), in which a man hits upon the truth by a lucky chance without being able to defend it logically. Philosophy deals with Being, or that which is wholly real, wholly knowable (τὸ μὲν παντελῶς ὄν, παντελῶς γνωστόν). Its object is, therefore, the immutable, the self identical, that which in each thing is the

very being of that thing: τοὺς αὐτὸ ἅρα ἕκαστον τὸ ὂν ἀσπαζομένους, φιλοσόφους κλήτεον (*Rep.* 480 *b*). This is what Plato calls the Idea (Εἶδος, Ἰδέα), the principle of truth for the intellect, and of existence in things. These Ideas, these eternal archetypes of things, dwell in the Divine Being; all are summed up and included in the highest Idea, the Idea of the Good. Thus Philosophy with Plato is distinguished from, and placed above physical and moral science, and becomes in fact Metaphysics, though it is not yet called by that name.

To Plato, philosophy is not only an enquiry into what is immutable and essential, into the ideal and absolute element in things, but it is also, or rather for that very reason, a vision of the whole, a synthesis: ὁ μὲν γὰρ συνοπτικὸς διαλεκτικός (*Rep.* 537 *c*). It is the principle of harmony in life, and in thought: ὁ φιλόσοφος μουσικός; and so philosophy is identified with wisdom, φιλοσοφία with σοφία, knowledge with virtue. It is this perpetual seeking after the true and the beautiful, which is also the Good, τὸ καλοκἀγαθόν, that lifts the philosopher above the prejudices of the vulgar. Mindful not only of his own good, but also of that of others, he is the only true statesman, the only legislator into whose hands the happiness and virtue of the state can safely be committed.

"When he appears in a law court, or in any place in which he has to speak of things which are at his feet and before his eyes, he is the jest not only of Thracian handmaids, but of the general herd.

"When he is reviled, he has nothing personal to say in answer to the civilities of his adversaries. . . . Hearing of enormous landed proprietors of ten thousand acres and more, our philosopher deems this to be a trifle, because he has been accustomed to think of the whole earth; and when they sing the praises of family, and say that some one is a gentleman because he can show seven generations of wealthy ancestors, he thinks that their sentiments only betray a dull and narrow vision in those who utter them, and who are not educated enough to look at the whole, and to consider that every man has had thousands and ten thousands of progenitors, and among them have been rich and poor, kings and slaves, Hellenes and barbarians, innumerable. . . . The Freeman, who has been trained in liberty and leisure (whom you call the Philosopher), him we cannot blame because he appears simple and of no account when he has to perform some menial task, such as packing up bed-clothes, or flavouring a sauce, or fawning speech; the other character is that of the man who is able to do all this kind of service smartly and neatly, but knows not how to wear his cloak like a gentleman; still less with the music of

discourse can he begin the true life aright which is lived by immortals or men blessed of heaven" (*Theaetetus*, 174-175).

Aristotle's conception of Philosophy does not differ from that of Plato. Characteristics of the Philosophic Science.

By Aristotle the term φιλοσοφία is still used in its widest sense, denoting all knowledge and scientific research. φιλοσοφία is science in general, and comprises three different kinds of sciences: the speculative, the practical, and the artistic.

"The poetical and practical sciences treat of things that might be otherwise than they are, and that therefore depend more or less upon the will. The theoretical sciences treat of that which is necessary, at least in its principles, and cannot be altered by the will. But a distinction must also be made between art and practice. The former aims at something outside the agent, which is to be the realization of his will; practice finds its end in the volition itself, in the mental act of the agent" (F. Ravaisson, *Essai sur la métaphysique d'Aristote*, I, p. 250).

Aristotle sometimes uses the plural, αἱ φιλοσοφίαι, to indicate the different branches of science. Speaking of Mathematics, Physics, and Theology, he calls them the three φιλοσοφίαι θεωρητικαί.

But the philosopher's proper sphere, philosophy in the true sense of the word, ἡ τοῦ φιλοσόφου ἐπιστήμη, is the πρώτη φιλοσοφία, the first philosophy. In his conception of this supreme science and of its object, Aristotle, says Zeller, (*Hist. of Greek Philosophy*, II, 2nd pt., p. 161, 3rd ed.), agrees in the main with Plato. Its office is the investigation of Being as Being: (τῷ ὄντι ᾗ ὂν ἐστι τινὰ ἴδια, καὶ ταῦτ' ἐστὶ περι ὧν τοῦ φιλοσόφου ἐπισκέψασθαι τἀληθές, *Metaph.* IV, 1004 *b* 15), the essence, or, to be more exact, the universal essence of the real (ἄνευ μὲν γὰρ τοῦ καθόλου οὐκ ἔστιν ἐπιστήμην λαβεῖν). It enquires into causes and principles, that is, into the first principles and ultimate causes of things (δεῖ γὰρ ταύτην (σοφίαν) τῶν πρώτων ἀρχῶν καὶ αἰτιῶν εἶναι θεωρητικήν), finally reaching the absolute principle which presupposes nothing beyond itself. Regarded as the science of first principles, philosophy is, in a sense, universal science. Plato distinguished science, the knowledge of what is eternal and necessary, from sensation and opinion, whose province is the contingent. Aristotle makes the same distinction: he, too, thinks that

science is born of wonder, and that whereas opinion only aims at the contingent, philosophy on the contrary is occupied with the universal and the necessary.

Thus we see that Aristotle's conception of philosophy was a very lofty one. He has admirably described its peculiar characteristics.

1. Universality, the spirit of unity, of synthesis: Philosophy is to be conceived as embracing as far as possible the whole of things. (*Metaph.* IV, I.)

2. Abstraction and lofty speculation:

"The wise man, especially, is acquainted with all things scientifically. . . . (For perception by the senses is common to all, wherefore it is a thing that is easy, and by no means wise") (*Ibid.*).

3. Disinterestedness:

"That science, without doubt, is more adapted towards giving instruction which speculates about causes. . . . Therefore, indeed, nearly all sciences else be more requisite than this one; but none is more excellent" (*Ibid.*).

4. Independence and supremacy:

"The wise man ought not to be dictated to, but should dictate unto others; and this person ought not to be swayed in his opinions by another, but one less wise by this man. . . . As we say a free man exists who is such for his own sake, and not for the sake of another, so, also, this alone of the sciences is free, for this alone subsists for its own sake" (*Ibid.*).

5. Lastly, the divine character of philosophy:

"For that (science) which is most divine is also most worthy of honour. But such will be so in only two ways: for that which the Deity would especially possess is a Divine one among the sciences. . . . The acquisition of this science may be justly regarded as not human. . . . But neither does the Divine essence admit of being affected by envy" (*Metaph.* Bk. 1, *d* II).

With the Stoics Philosophy takes a more practical turn, but retains its character of Universality.

With the Stoics, the fundamental idea of philosophy remains unchanged, but their definition is more concrete and more intelligible to the vulgar. Wisdom, or σοφία was the knowledge of things human and divine. *Sapientia est notitia rerum humanarum divinarumque:* τὴν σοφίαν θείων τε καὶ ἀνθρωπίνων ἐπιστήμην (Plutarch, *De Placitis Philosophorum*, 2).

But, like Socrates, they brought all science back to matters of morality and practice. They sought nothing by means of philosophy except the principles of a rational system of ethics. Σοφία is a science; φιλοσοφία is "the practice of a useful art"; τὴν δὲ φιλοσοφίαν ἄσκησιν τέχνης ἐπιτηδείου (Plut. *De Plac. Phil.* 2), the striving after virtue: *Philosophia studium virtutis est, sed per ipsam virtutem* (Seneca, *Epist.* LXXXIX, 7). In order to emphasize the connection between speculative and practical life, the Stoics called logic, physics, and ethics, virtues; ἀρετὰς τὰς γενικωτάτας τρεῖς, φυσικὴν, ἠθικὴν, λογικήν (Plut. *Ibid.*; Diog. Laert. VII, 92). They insisted, however, on the unity of philosophy, and Diogenes tells us of the different comparisons they used in order to make this unity intelligible (*Life of Zeno*). Philosophy is like an animal: the bones and sinews are logic, the flesh is ethics, the soul physics. Philosophy is like an egg: the shell is logic, the white ethics, the yolk physics. Again, they compared philosophy to a fertile plot of ground. Logic is the fence that surrounds it, the fruit is ethics, the tree or the earth is physics. In all these comparisions logic is, as it were, the framework, the means of defence, the part that protects and contains; physics is the productive part: ethics is the result, the fruit.

Epicurus.

Epicurus gave to philosophy a more practical turn than even the Stoics. He defined Philosophy as an activity that realizes a happy life through ideas and discussions. Ἐπίκουρος ἔλεγε τὴν φιλοσοφίαν ἐνέργειαν εἶναι λόγοις καὶ διαλογισμοῖς τὸν εὐδαίμονα βίον περιποιοῦσαν (Sextus Empiricus, *Adversus Ethicos*, XI, 169). And he, too, divided it into logic (or canonic) physics, and ethics. But he makes logic and physics subordinate to moral dogmas, and for abstract science, for mathematics, for astronomy, for all that is not of immediate utility, he affects a contempt which bears witness to the decadence of the speculative spirit at that period.

Triumph of Mysticism in the last period of Greek Philosophy.

The peculiar note of the last period of Greek philosophy was *theosophy*, a mysticism that sometimes degenerated into superstition. It was during this period that Greece and the East met and were fused in Alexandria; that Philo, the Jew

(born about 25 B.C.), made his attempt to reconcile Judaism with Hellenism; that Apollonius of Tyana (reign of Nero) combined the working of miracles with the revival of Pythagoreanism; that Plotinus (204-266 A.D.) transformed the Platonic doctrine, and preached the return to God by means of ecstasy. Science was more and more confused with mythology. "The term *Philosophy* lost all exact meaning" (Zeller). A Linus or an Orpheus were now considered to be the fathers of philosophy. To them apocryphal poems were attributed, which in their vague mysticism were supposed to contain all wisdom. Consecrations, theurgical superstitions, the hallucinations of ecstasy, all announce the end of Philosophy in Greece.

Recapitulation and Conclusion: What was the Greek Conception of Philosophy?

It is clear that the term *Philosophy* was never strictly defined by the Greeks. Nevertheless, is it not possible to discern in these divers definitions certain common elements, by which we can trace the general character of Greek philosophy, and determine its *rôle* and nature? Two points stand out clearly. In the first place, what distinguishes the philosopher from others is, that he does not study the different branches of science for their own sakes, but regards them as the materials of the system which he is constructing. In the second place, every system is an endeavour to form a conception of the world and of man in their mutual relation; to discover the universal laws by which nature as well as individual and social life are governed; to find the universal principles that apply to all Being. The earlier philosophy included, it is true, all the sciences, but only in order to gather them into a whole, and to get beyond them while reducing them to unity. Human experience was limited; the thinker in forming his system was not overwhelmed by the amount of material at his disposal. Philosophy, however, is neither a special science, nor the collective total of all the sciences. It is a synthesis, a consideration of things in so far as they form a whole, and are related to, and in harmony with one another. It sees man in Nature, and Nature in man. It dwells upon those ever-

present, ever-active principles, in virtue of which the world is truly a universe. In a word, philosophy is, as Aristotle himself puts it, the science of principles and of causes.

Philosophy in the Middle Ages. Attempts to reconcile Reason and Faith.

During the first centuries of the Christian Era, Philosophy became involved in the formation of Dogma. The Mediaeval philosophers directed their efforts towards the reconciliation of reason and faith, in order to harmonize the two great acknowledged authorities, the science of antiquity, and the new religion. To show that the system of revealed truths is the expression of the intelligible, the consummation of human reason, and thus to prove that in the formulae of Christianity the laws of matter and of mind, of the whole nature of man, of his intellect and his soul, hold good; this was the desire and the hope of the great thinkers of the middle ages. St. Anselm, the greatest of the scholastic Platonists, writes: *credo ut intelligam.* "I believe, that I may understand." He holds that faith is necessary to intellect, that it is the condition even of its validity. He describes his work as *Fides quaerens intellectum.* On the other hand, Thomas Aquinas, the greatest of the scholastic peripatetics, is less ambitious; he distinguishes the province of reason from that of faith. Reason prepares the way and leads us to faith: grace does not suppress Nature, but on the contrary perfects it. *Gratia naturam non tollit sed perficit.* The truths given by faith cannot be proved by reason. Reason can conceive the unity of the Divine Essence, but not the triplicity of the Divine Persons. *Ea quae pertinent ad unitatem essentiae non ea quae pertinent ad distinctionem personarum.* He who would prove the Trinity by any natural process disparages faith, *fidei derogat* (*Summa Theol.*, quest. 32, Art. I).

But if our reason cannot establish the truths given by faith, it can at any rate overthrow the objections that are brought against these truths: *Solvere rationes quas inducit adversarius contra fidem, sive ostendendo esse falsas, sive ostendendo non esse necessarias.* For a time it seemed as if St. Thomas had succeeded in reconciling reason with faith, but

Occam, the reviver of nominalism in the 14th century, declared that everything that is beyond experience is beyond reason, and hence is an object of faith. The mystics, on the other hand, maintained that no amount of reasoning is worth one pious aspiration of a soul towards God.

Bacon : Philosophy synonymous with Science. First Philosophy.

With the Renaissance philosophy recovered its independence. Religion is respectfully excluded from rational speculation by Bacon and Descartes, the founders of modern philosophy. "It were vain," says Bacon, "to endeavour to adapt the heavenly mysteries of religion to human reason." *Da fidei quae fidei sunt.* (*De dign. et augm. scient.* III, 2.) Bacon divides human knowledge into three branches: *History*, *Poetry*, and *Philosophy*, corresponding to the three faculties of the human mind: memory, imagination, and reason. Hence everything that is an object for reason, is an object for Philosophy. *Philosophiae objectum triplex. Deus, natura et homo* (III, Ch. I). It is the whole of science, but a special place must be given to *First Philosophy.*

"But because the distributions and partitions of knowledge are not like several lines that meet in one angle, and so touch but in a point; but are like branches of a tree, that meet in a stem, which hath a dimension and quantity of entireness and continuance, before it come to discontinue and break itself into arms and boughs; therefore it is good, before we enter into the former distribution, to erect and constitute one universal science by the name of 'Philosophia prima' primitive or summary philosophy, as the main and common way, before we come where the ways part and divide themselves. . . . Being examined, it seemeth to me rather a depredation of other sciences, advanced and exalted unto some height of terms rather than any thing solid or substantive of itself" (*Advancement of Learning*, Bk. II).

This first science has a double object. It deals with the axioms that are common to the several sciences; secondly, with the transcendental conditions of the existence of things (that which by nature is either large or small, like or unlike, possible or impossible, with Being and non-Being).

The science of God comprises the science of God properly so called, or Natural Theology, and the science of the Angels and Spirits. The science of nature is either speculative or practical. When speculative it includes—firstly, Physics, the

object of which is the discovery of the efficient and the material causes: secondly, Metaphysics, which considers the final and the formal causes of things. Mechanics as a practical science corresponds with Physics, and Natural Magic, which, through the knowledge of forms, should make it possible to introduce any nature into any kind of matter, corresponds with Metaphysics. Mathematics is merely an auxiliary of science, an appendix to Physics. Bacon does not set much value on the deductive sciences, and has a low opinion of their methods. He constantly contrasts the fruitfulness of induction with the sterility of the scholastic method. He is the founder of modern empiricism. *Est vera philosophia quae mundi ipsius voces quam fidelissime reddit, et veluti dictante mundo conscripta est, nec quidquam de proprio addit, sed tantum iterat et resonat.*

Descartes: Philosophy is Universal Science, but deduced from First Principles. Division of Philosophy.

Like Bacon, Descartes regards philosophy as, in truth, the universal science. But he shows more clearly the connection between this First Philosophy and the other sciences which it involves and governs. Philosophy is not the collection or sum of particular truths. It is the science of principles, of the highest laws of all the particular sciences. Philosophy is both speculative and practical, but it is theory that lays the foundations for practice. In short, to him, as to Bacon, philosophy is the science of nature, of man, and of God; but its basis and its unity are to be found in the principle that thought turned in upon itself reaches therein the idea of the perfect Being, God, the principle of all being, the source and guarantee of all truth.

In his preface to the *Principles of Philosophy*, Descartes gives his views concerning the object of Philosophy:

"The word *Philosophy* signifies the study of wisdom, and by wisdom is to be understood not merely prudence in the management of affairs, but a perfect knowledge of all that man can know, as well for the conduct of his life as for the preservation of his health and the discovery of all the arts. And that knowledge, to subserve these ends, must necessarily be deduced from first principles."

Thus it is the aim of this science not only to know, but to

insure the well-being and felicity of mankind. From this point of view Descartes' conception of Philosophy appears perhaps to be less elevated than that of Aristotle, who regarded disinterestedness as its peculiar characteristic; but Descartes adds:

"Men, of whom the chief part is mind, ought to make the search after wisdom their principal care, for wisdom is the true nourishment of the mind. . . . There is no mind, how ignoble so ever it be, that remains so firmly bound up in the objects of the senses, as not some time or other to turn itself away from them in the aspiration after some higher good, although frequently not knowing wherein that good consists. . . . . But the supreme good considered by natural reason without the light of faith is nothing more than the knowledge of truth through its first causes, in a word, the wisdom of which philosophy is the study."

How are we to reach this precious knowledge? For the vulgar, and even for the greater number of philosophers, there are four kinds of knowledge.

"The first degree contains only notions so clear of themselves that they can be acquired without meditation; the second comprehends all that the experience of the senses dictates; the third, that which the conversation of other men teaches us; the fourth, . . . the reading . . . of books."

These are the lower forms of knowledge.

"There have been, indeed, in all ages, minds which endeavoured to find a fifth road to wisdom, incomparably more sure and elevated than the other four. The path they essayed was the search of first causes and true principles, from which might be deduced the reasons of all that can be known by man; and it is to them the appellation of Philosophers has been more especially accorded."

How are these first principles to be recognized? By two signs. The first is that they are so clear and evident that the mind can have no doubt of their truth; and the second, that it is possible to deduce all other things from them.

"It will be necessary to endeavour so to deduce from those principles the knowledge of the things that depend on them, as that there may be nothing in the whole series of deductions that is not perfectly manifest."

Thus the true method of Philosophy is the deductive method. Its criterion is the clearness, distinctness, and concatenation of ideas. Philosophy falls naturally into several parts.

"The first part is Metaphysics, containing the principles of knowledge, among which is the explication of the principal attributes of God, of the

immateriality of the Soul, and of all the clear and simple notions that are in us; the second is Physics, in which, after finding the true principles of material things, we examine in general how the whole Universe has been framed; in the next place, we consider, in particular, the nature of the earth, and of all the bodies that are most generally found upon it—as air, water, fire, the loadstone, and other minerals. In the next place, it is necessary also to examine singly the nature of plants, of animals, and above all of man, in order that we may hereafter be able to discover the other sciences that are useful to us. Thus, all Philosophy is like a tree, of which Metaphysics is the root, Physics is the trunk, and all the other sciences the branches that grow out of this trunk; and these can be reduced to three, namely, Medicine, Mechanics, and Ethics. By the science of Morals I understand the highest and most perfect, which, presupposing an entire knowledge of the other sciences, is the last degree of wisdom" (Pref. to *Les Principes*).

Characteristic note of Modern Philosophy: Its starting-point, the examination of Mind.

Modern philosophy, which begins with Bacon and Descartes, does not differ in its aim from ancient philosophy. Descartes' system is as comprehensive as any, and included all the scientific experience of his time in the materials out of which it was constructed. But although the problem is the same, the spirit in which it is faced is different. The early philosopher turned his attention to objects, studied the world around him, and, accepting the ideas it suggested, rested content with the result of his speculations. The modern philosopher, on the other hand, turns his attention to the subject which knows. Even Bacon prepares his mind for the investigation of truth by forming a theory of error, and by a critical analysis of the logical methods of his predecessors. Descartes goes further. He makes total doubt the starting-point of his philosophy, thus admitting that the value of science depends on the worth of the intelligence which creates it.

With Locke and his successors Philosophy becomes a Critical Analysis of the Human Understanding.

This truth indicates the way to be taken henceforth more and more exclusively by modern Philosophy. With Bacon and Descartes Philosophy did not lose the character of universality given to it by the ancients, but the 18th century philosophers tried to separate it from other sciences, and to establish it as an independent special science. Philosophy

becomes the study of the human understanding with Locke, of human nature with Berkeley and Hume, of sensation and the analysis of sensation with Condillac.

"Metaphysics," says Condillac, "is the science that contributes most towards making the mind clear, accurate, and broad; and therefore it should serve as a preparation for the study of all the other sciences. In France it is now so much neglected that to many of my readers the statement will doubtless seem paradoxical. But there are two kinds of metaphysics. One is ambitious, and would penetrate every mystery. The nature, or essence of things, and their hidden causes are the problems which attract it and which it expects to solve. The other is more modest, and proportions its researches to the weakness of the human mind. As indifferent to what is necessarily beyond its scope as it is eager to grasp what is within its reach, it knows how to remain within the proper limits. Our principal object, which we should never lose sight of, is to study the human mind, not with a view to ascertaining its nature, but in order to know its operations, to observe with how great an ingenuity they are combined, and by learning how to govern them, to acquire as much understanding as we are capable of. We must trace our ideas to their origin, explain the order in which they are evolved, follow them to the limits prescribed by nature; and, having travelled once more over the whole realm of human understanding, we shall be able to determine the extent and limits of our knowledge" (*Essai sur l'origine des connaissances humaines*, Introd.).

In France, at the end of the eighteenth century and at the beginning of the nineteenth, philosophy was regarded as having become properly a science from the moment the problem of the origin of ideas had been substituted for the insoluble problem of the origin of things. Philosophy was now Ideology.

Kant opposed both to English Empiricism and to the Mathematical Dogmatism of the Cartesians.

With Kant a loftier conception of the subject matter and aim of philosophy begins to reappear. An endeavour was made to reconcile the old ideal of a universal science with the modern notion of an exact science founded on the criticism and analysis of ideas. Kant denies that empiricism has succeeded in determining, by its physiology of the human understanding, the extent and limits of human knowledge.

"That all our knowledge begins with experience there can be no doubt. But . . . it does not follow that it arises from experience. For it is quite possible that even our empirical experience is a compound of

that which we receive through impression, and that which our own faculty of knowledge (incited only by sensuous impressions) supplies from itself" (*Critique of Pure Reason*, Introd.).

As against empiricism, the existence and necessity of universal and necessary judgments can be proved. (1) Their existence: it is enough to quote the mathematical propositions, or, as belonging to another class, such propositions as the following: *Every change must have a cause.* (2) Their necessity: "They are the indispensable basis of the possibility of experience itself. . . . For whence could our experience itself acquire certainty if all the rules on which it depends were themselves empirical and consequently fortuitous?" (*Ibid.* II).

On the other hand, Kant also attacks the mathematical dogmatism of the Cartesians. He devotes a whole chapter in his *Critique of Pure Reason* to the distinction between mathematics and philosophy (2nd Part, *Methodology*, Ch. I). "The science of mathematics presents the most brilliant example of the extension of the sphere of pure reason without the aid of experience." This explains the attempt which was made by the Cartesians. "Hence pure reason hopes to be able to extend its empire in the transcendental sphere with equal success and security, especially when it applies the same method which was attended with such brilliant results in the science of mathematics." This is exactly what Descartes says in the *Discours de la méthode.* "But we must distinguish two kinds of rational cognition: philosophical cognition, which proceeds by concepts; and mathematical cognition, which proceeds by the construction of concepts."

Let us examine this difference, so that we may see why it is that the mathematical method cannot properly be applied to philosophy. According to Kant, to construct a conception is to bring before the mind, *a priori*, the perception that corresponds to that conception. Take, for example, the conception triangle; I can call up, *a priori*, the object corresponding to this notion, that is, I can construct a triangle that will represent it *in concreto*, through the medium of an intuition which I do not owe to experience.

"The individual figure drawn upon paper is empirical; but it serves, notwithstanding, to indicate the conception even in its universality

because in this empirical intuition we keep our eye merely on the act of the construction of the conception, and pay no attention to the various modes of determining it; for example, its size, the length of its sides, the size of its angles, these not in the least affecting the essential character of the conception" (*Critique of Pure Reason*, p. 436).

It is the same with the notion of number, which I construct by adding unit to unit *ad libitum*. But with philosophical notions, reality, cause, substance, etc., the case is different, since the mind does not discover in itself *a priori* intuitions through which these notions could be realized and represented. "No one can find an intuition which shall correspond to the conception of reality except in experience." In the same way, "I cannot represent an intuition of a cause except in an example which experience offers to me" (*Ibid.* p. 436). The philosopher cannot, therefore, construct his conceptions, like the mathematician. When the philosopher proceeds according to mathematical methods, he merely analyses his conceptions without getting beyond them, that is, without getting beyond empty forms, or what is subjective and illusory. Reality, *i.e.* the object, evades him, for he is unable to create it for himself. Consequently the mathematical dogmatism of the Cartesians must be abandoned.

. . . "The geometrician, if he employs his method in philosophy, will succeed only in building card castles. . . . It is not consonant with the nature of philosophy, especially in the fields of pure reason, to employ the dogmatical method, and to adorn itself with the titles and insignia of mathematical science. It does not belong to that order, and can only hope for a fraternal union with that science" (*Ibid.* 448.)

The Aim of Philospohy is to determine the a priori *Elements in Thought and Action.*

What, then, is philosophy? It is the legislation of human reason. Its task is to determine the *a priori* elements in thought and action, to show their relation to one another, to connect them in a system. Philosophy is either *theoretical* or *practical*. Theoretical philosophy *determines* an object, defines its nature and its laws. Practical philosophy *realizes* the object, that is, makes it pass out of the sphere of thought into that of action. The former is the science of *what is*, the latter of *what ought to be*. One is the science of *nature*, the other of

freedom (*Critique of Pure Reason*, 2nd Part, Chap. III, *Architectonic*).

All philosophy, whether practical or theoretical, may also be divided into two parts, the one *pure*, the other *empirical*. Philosophy is pure when it rests exclusively on the principles that are the necessary conditions of experience, empirical when it derives its principles from experience. Pure theoretical philosophy is philosophy in the proper sense of the term, and can be again divided into two parts, of which one treats of the *matter*, the other of the *form* in thought. To investigate notions in regard to their form, that is, in regard to their universal laws, is the function of *Logic*. *Metaphysics* considers notions in regard to their matter, that is, in their relation to objects. To put it in more familiar language: the object of logic is truth, that of metaphysics reality, or rather reality in so far as it is subjected to rational and absolute, that is, to *a priori* laws.

Metaphysics is, therefore, the science of the *a priori* laws of thought in their relations to objects. Kant holds this definition to be more exact than that of Aristotle. According to the latter, philosophy is the science of first principles. But which are the first principles? They are, we are told, the most general principles. But what degree of generality constitutes a first principle? What would be thought of a system of chronology that divided the different periods of the world's history into first centuries and succeeding centuries? One might ask, Does the fifth century or the tenth, etc., belong to the first centuries?

Again, metaphysics is divided by Kant into two parts: the first, which is preliminary and preparatory, being by far the most important in his system. This is the *Critique*. The second part deals with the systematic concatenation of concepts, and is metaphysics in the proper sense of the term. Kant gives little space to it, but it was to have due prominence in the systems of his followers.

"Metaphysics, therefore—that of nature as well as that of ethics, but in an especial manner, the criticism which forms the propaedeutic to all the operations of reason—forms properly that department of knowledge which may be termed, in the truest sense of the word, philosophy" (*Ibid.* p. 514).

Kant foresees an objection to this definition or division of philosophy. He has left no place for empirical psychology as founded by Locke.

"What place shall we assign to empirical psychology, which has always been considered a part of metaphysics, and from which in our time such important philosophical results have been expected, after the hope of constructing an *a priori* system of knowledge had been abandoned?" (*Ibid.* p. 513).

According to Kant, the proper place for empirical psychology is among the empirical sciences. It should form part of *Anthropology* or the science of man, which is the highest in the order of the empirical sciences, that is, of the natural or physical sciences.

As for practical or moral philosophy, it falls naturally into two divisions: pure ethics and empirical ethics. The subject matter of the former is the *a priori* laws of freedom, that is, the law of duty. Empirical ethics deals with the laws of prudence or of practical skill, and it is connected with anthropology or the empirical science of man.

In short, with Kant, philosophy is substantially limited to critical analysis and to ethics, or rather to criticism alone; for there is a *Critique of Practical Reason* as well as a *Critique of Pure Reason*, and philosophy is in fact the analysis of the *a priori* laws of the understanding and of the will. Thus, whereas Locke, in order to define philosophy and to mark its limits, made the *facts of consciousness* its starting point, Kant, on the other hand, endeavoured to make it once more the fundamental science by defining it by means of *a priori laws*. Locke confines himself to experience, but gets no further than subjective experience as given in consciousness. Kant also moves within the medium of consciousness, but with the sole object of discovering therein the ultimate and absolute conditions of experience. The human understanding is the object of both of these philosophers, but one is concerned with empirical, the other with pure understanding.

Fichte: Philosophy the Science of Science.

With Kant's successors, philosophy showed an increasing tendency to resume its authority as a universal and absolute science, without losing its individuality as a separate science.

Fichte, though he admits the legitimate claims of the positive and exact sciences, desired above all that the existence of a Science of science (*Wissenschaftslehre*) should be recognized. Of what value is knowledge, if we do not know what it is to know? If, as Kant says, science is a series of propositions that are related according to certain principles, philosophy will not be a science until it also answers that description. Philosophy, therefore should form a whole, a system. It should come before all the other sciences. Every science has its object and its form (logical method). All the other sciences take for granted both their matter and their form. Geometry, for instance, accepts the notion of space and the deductive method. Physics assumes the notion of body and the inductive method. Now, it is the office of the Science of science, of philosophy, to inquire into the principles, both formal and material, of the other sciences, that is, into their contents and into their method. But the Science of science has, like other sciences, its matter and its form. How are these to be determined? Shall it be through another science? No: for such a process would go on *ad infinitum*. The Science of science being the first science, and having for its object first principles, must be its own justification. Thus Fichte's definition does not differ from those of Aristotle and Descartes.

Schelling and Hegel restore the Universality of Philosophy.

Fichte's definition, like that of Kant, gave an exact meaning to philosophy, and restored to it the rank of first science, of which it had been deprived by Locke. But in this definition, philosophy is confined to the region of pure subjectivity. To Kant, philosophy means the Criticism of Reason; to Fichte, it is the systematic development of the idea of the Ego, the science of the necessary acts of the intelligence. The essential and absolute character given to philosophy by Kant and Fichte was maintained by their successors, who continued to regard it as the science of the *a priori* laws of Reason, that is, as the Science of science. But by widening its sphere, by ascending to the idea of the universal principle of the ego and the non-ego, they restored to philosophy the universality it had possessed in the systems of the ancients and of Descartes, without, however, like them, confusing it with the concrete and

particular sciences. With Schelling the subject and the object, nature and spirit are identical in the absolute; we recognize this identity through intellectual intuition (*intellectuelle Anschauung*). Philosophy develops the two terms of this identity, and comprises consequently two fundamental sciences. Either objectivity is taken as the starting point, and then the problem is to show how from the object there proceeds a subject in agreement with it. This is speculative physics. (The perfect theory of nature would be a theory that resolved the whole of nature into intelligence.) Or, secondly, it brings the object out of the subject: actual and unconscious reason is brought back to ideal and conscious reason (*Die reelle oder bewusstlose Vernunftthatigkeit auf die ideelle oder bewusste*), revealing in nature the visible organism of our understanding. This is transcendental philosophy. "It is the business of all philosophy to evolve either nature out of intelligence or intelligence out of nature."

Hegel resumed Schelling's *philosophy of identity*, but he professed to give it scientific and definite form. We have not on the one side the real, and on the other mind—on the one side the phenomenon, and on the other the noumenon. Only thought exists, thought which gives to things their truth and reality: and in it is the Absolute, all that is, all that can be. Its principle and its form are the necessary, universal laws, and the dialectical movement is the history of things. Thought being the Absolute, all reality is a determination of thought: the real is identified with the intelligible, logic with metaphysics, and the dialectic of reflective intelligence with the necessary relations of the notions and categories of nature.

Thus philosophy is the thought of the absolute truth, the idea thinking itself (*die sich denkende Idee*), the self-knowing truth (*die sich wissende Wahrheit*). It comprises Logic, the science of the pure Idea, the science of the Word, of reason anterior to all that is, the philosophy of nature; and the philosophy of spirit considered in itself and in its progressive development: philosophy of right, of art, of religion, and the history of philosophy.

Reid and his disciples reduce Philosophy to Psychology.

While Kant and his successors were restoring to philosophy

its former dignity, the Scottish philosophers, Reid and Dugald Stewart, although they differed from Locke in their fundamental doctrines, nevertheless formed a conception of philosophy that was practically the same as his. They both discarded metaphysics, or the science of first principles, as raising insoluble problems, and reduced philosophy to psychology.

"As all our knowledge of the material world is derived from the information of our senses, natural philosophers have in modern times wisely abandoned to metaphysicians all speculations concerning the nature of that substance of which it is composed. . . . A similar distinction takes place among the questions which may be stated relative to the human mind . . . questions perfectly analogous to those which metaphysicians have started on the subject of matter. It is unnecessary to inquire at present whether or not they admit of answer. It is sufficient answer for my purpose to remark that the metaphysical opinions (which we may happen to have formed concerning the nature either of body or of mind . . .) have no necessary connexion with our inquiries concerning the laws, according to which these phenomena take place. Whether, for example, the cause of gravitation be material or immaterial is a point about which two Newtonians may differ, while they agree perfectly in their physical opinions. . . . In like manner, in the study of the human mind, the conclusions to which we are led by a careful examination of the phenomena it exhibits, have no necessary connexion with our opinions concerning its nature and essence" (Dugald Stewart, Vol. I, pp. 48-9).

The Eclectic School.

In France there flourished, at the beginning of the nineteenth century, what is known as the *eclectic* or *spiritualistic* school. Founded by Royer-Collard, established by Victor Cousin and his disciple Jouffroy, this school owes its originality and true form more particularly to the doctrines of Maine de Biran, whom Cousin called the first metaphysician of his time. What were the views of this school concerning the real object of philosophy? From its first origin the school was divided into two branches, the German and the Scottish, the first being represented by V. Cousin, the second by Jouffroy. Victor Cousin's opinion on this subject was the same as that of the German philosophers. In 1818 he was a follower of Fichte, in 1828 of Hegel.

"In my opinion," he said, in 1818, "just as every truth is in the first place such and such a truth, and has besides something in it which makes it a truth, so also every science is composed of an individual element in

virtue of which it is this particular science and not another, and of a superior non-individual element which gives to it the character of science. But what is it that constitutes truth *qua* truth and science *qua* science? This fundamental question when analyzed gives rise to many other questions, and hence to a whole science which might be called the science *par excellence*, the first science, more strictly speaking the science of science."

In 1828 Cousin no longer regards philosophy as the science of science merely, but as thought thinking itself and containing in itself all the elements of reality: this is Hegel's conception.

"Philosophy," he said, "is in fact a method; there may be no truth belonging to it exclusively, but all truths belong to philosophy, in as much as philosophy alone can give the explanation of them, test them by examination and analysis, and convert them into ideas. Ideas are the adequate form of thought; in other words, they are thought thinking itself, knowing itself, having itself for its object."

Thus philosophy is no longer merely the science of science a kind of superior logic; it is the science of the whole realm of thought, of all its forms and all its fundamental notions (the Useful, the Just, the Holy, the Beautiful). It embraces reality itself in its essential and universal elements. It is no longer only a system of logic, it is metaphysics.

While Cousin was returning to the most lofty conception of philosophy, Jouffroy, more faithful to the spirit of the Scottish school, seemed to postpone metaphysics indefinitely, and severed himself from Cousin, classing him among those whom he calls the seekers after the Absolute. He divides philosophical questions into two classes: *questions of fact* and *ulterior questions* (Preface to Reid, p. lxvi.), but the latter he only admitted in so far as they are related to and solved by the former. According to him, what constitutes the unity of philosophy is that it comprises every question of which the answer must be sought in a fact or a law of the human mind. All philosophical questions have their common root in psychology. In other words: "All philosophy is a single tree, of which pyschology is the trunk, and the other parts are the branches."

Negation of Philosophy: Positivism.

Having questioned philosophers on the subject of philosophy, let us now turn to those who make it their boast that they

are not philosophers. If we are to believe the Positivists, philosophy, in the proper sense of the term, has ceased to exist. It had a *raison d'être* at the time when it was possible for one mind to contain the comparatively few existing elements of experience. Then philosophy was indeed synonymous with science, and men were stimulated by its vain dreams. To-day the sciences are divided, and they multiply in proportion to the number of subjects for investigation that are discovered. There is no place left for metaphysical philosophy which, banished from the human mind as well as from the external world, from psychology as well as from physics, is reduced to wandering about in an imaginary region. Its very history condemns it. After centuries of existence, not only has it not reached any final and universally accepted solutions, but even its proper aim and its method are still matters of dispute. Compare the progress made by positive science with the impotence of *a priori* speculation: the inference is inevitable. We must conclude that everything beyond positive knowledge is inaccessible to the human mind. "No proposition that is not finally reducible to the simple enunciation of either a particular or a general fact can contain any meaning that is real and intelligible." Facts and their laws, phenomena and their fixed relations to one another, this is the true province of the human mind.

The reason why all speculation as to the Absolute is inadmissible is that all human knowledge is relative. The positivists do not prove the relativity of knowledge by an analysis of mind, but by a history of the sciences. Every science before it became a positive science, well defined in its aim and method, passed through two preparatory stages: the *theological* and the *metaphysical*. All the sciences have passed through these two transitory stages: the more simple were the first to free themselves; the more complex have scarcely yet reached the positive stage. And let no one here object that there would be always reserved for metaphysics at least the *rôle* of a universal and synthetic science, for it is precisely the business of positive philosophy to satisfy the desire of the human mind for unity. The different sciences are distinct from one another, but they are not isolated.

Apprehending phenomena in their mutual relations they tend by their very progress to form a whole, and to become *science*.

True philosophy consists in the discovery of the connection between the sciences, and in the consequent co-ordination of their results and principles. In the realm of facts, in the first place, the most simple facts are the most general; generality is in inverse ratio to complexity: for example, physical phenomena are more simple and more general than biological phenomena. Secondly, every order of existence presupposes as its condition an inferior and simpler order of existence; for instance, organic matter presupposes inorganic matter. Hence it is possible to discover in the sciences, as well as in the objects they are concerned with, a system of subordination and inter-dependence, and to form therefrom a hierarchy, in which the most abstract and general science is the starting point, the condition, the basis of the more concrete and particular science which immediately follows it in this scheme of classification. Mathematics, being presupposed by all the other sciences, has the highest place, the mathematical properties are the most simple, and the most universal (Algebra, Arithmetic, Geometry, Mechanics): then follow in order of decreasing generality and increasing complexity, Astronomy, which could not exist without Mathematics, Physics, Chemistry, Biology, Sociology, or the science of human societies. This is not an arbitrary classification. It determines the connection between the sciences, their reciprocal relations and the order of their historical progress; and at the same time it represents the actual relations which exist between phenomena. This method of classification constitutes scientific philosophy, the only philosophy that will be henceforward possible or legitimate.

Recapitulation and Conclusion. Distinction between Science and Philosophy.

Notwithstanding the strictures of the Positivists, it may be said that two notions more or less connected appear to be the result of the work done by modern philosophy. On the one hand philosophy is the science of science, the science of the *a priori* laws of thought and Being. Again philosophy is the science of the human mind. It is distinguished from other

sciences by two of its data: (1) *the fact of consciousness*, in which the subjective is opposed to the objective—whence Psychology; (2) *the notion of the universal*, or of *unity*, to which all the other sciences are subjected even while they seem to contradict it—whence Metaphysics. Philosophy has oscillated between these two points of view for two centuries. Many different ways of reconciling them have been proposed. Kant discovered the *a priori* laws through the criticism of mind; Victor Cousin admits these laws as laws of consciousness. Biran going deeper deduces them like Fichte, but in a different manner, from the reflective analysis of the ego. In short, that there is a necessary connection between these two notions is proved by the fact that every great philosopher has had a system of metaphysics as well as of psychology.

We need not discuss Positivism here. Suffice it to say that the problem of philosophy is not the same as the problem of science, and this fact in itself justifies and assures the existence of philosophy. In presence of the same world, this same intellect of man will ever attempt to solve the same problems. Positivism would forbid man the fruit of the tree of knowledge. We may be sure that the human mind will always seek the forbidden fruit. To generalize is not to explain. The universal law would be merely a very general fact, which, by comprising what is common to all other facts, would co-ordinate them. In vain we ascend from one law to another. By this method we never reach either reasons or causes. Were the task of positive science completed, the human mind would still be unsatisfied, for it demands a science of the whole, of the absolute, the necessary, of principles and causes. The metaphysical problem has still to be faced, because many of the questions that force themselves on the mind have not been solved, and scientific knowledge is not adequate to the solution of them.

Again, science itself is only a fact among other facts. How is science possible? Under what conditions are we to conceive the universe? A science of science, an analysis of the mind and of its laws, is needed. Here is another opening for metaphysics. An object only exists for me because I perceive it, the world exists only because it becomes my thought; to the objective point of view the subjective is now opposed,

the point of view in which if it were not for thought everything would melt away. The mind is now no longer satisfied with a statement of facts, and of laws, which are only more general facts. It longs *to understand*, to pursue thought to the end, and thereby to reach the truly intelligible. Philosophy is just this striving after the intelligible, this desire to discover the meaning of things. It cannot disappear from the world, for it will ever spring up again from reflection on the part played by the subject in knowledge.

CHAPTER II

THE PSYCHOLOGICAL PROBLEM

WHAT is Psychology?[1] What is its object? Is it the science of the mind and its faculties, or the science of the phenomena of consciousness, or the investigation of the nervous phenomena that are accompanied by consciousness? These definitions, which are less opposed to one another than at first appears, imply at any rate the existence of a separate science of the human mind. On this point there seems to be a general agreement. As we shall see, it was long before the psychological problem was made distinct from the problem of philosophy, taken as a whole; and when we have followed the history of Psychology, we may perhaps also find that the attempts made in early times to grasp phenomena in their mutual relations were not altogether mistaken; for the fact remains that all things are interdependent—man and the world, mind and body, subject and object, that which is thought and the mind that thinks it are all part of the same whole. Psychologists may separate their science from the science of metaphysics; they may take up a position in the midst of phenomena, and refuse to consider anything except phenomena; but metaphysics can never cease to be interested in the study of mind, which is, after all, its centre of perspective.

[1] The word *Psychology* is of recent origin. In ancient times the study of the soul was a part of the philosophy of nature. In the Middle Ages the Science of Spirits (Souls?) is called Pneumatology. It comprises the study of God, angels, man, and even of animals so far as they are intelligent. The word *Psychology* was first used in Germany at the end of the 16th century: the psychology of angels held a place side by side with the psychology of man.

Between the time of Thales and that of Socrates, the Human Mind, which had been at first altogether occupied with External Things, began gradually to turn upon itself.

Pre-Socratic philosophy was a philosophy of nature. Men accepted the ideas suggested by sensible impressions, and, being solely occupied with the world about them, they never thought of observing their own minds. The experience of death, it is true, soon led to the distinction between soul and body, but the soul was conceived as a subtle and vivifying breath of air, which escaped through the mouth, or through the open wounds (Homer, *Iliad*, XVI, 505, 856; XXII, 362). The earliest philosophers hardly went beyond this point of view, for they did not distinguish between the corporeal and incorporeal, between the extended and the unextended. Neither the Pythagorean *Number* nor the *Unity* of the Eleatics were spiritual essences. *Number* and *Being* were the substance of bodies, the matter out of which they are made, and the need of a science of mind was not felt.

Before Psychology could begin to exist it was necessary that the world should engross the attention of man less exclusively, and that spirit should turn away from things and back upon itself. From Thales to Socrates we can trace this progress towards subjective reflection. In art the epic was succeeded by lyrical poetry, then by the drama. The drama first took the form of the epic, the plastic tragedies of Aeschylus; then there followed the thoughtful, religious, and moral tragedies of Sophocles; finally, the psychological, controversial, subtle tragedies of Euripides. In politics a democracy fickle and excitable, founded on free discussion, succeeded an aristocracy which had been nourished on traditions.

In philosophy, Heraclitus, the Pythagoreans, the Eleatics, and the Atomists all agreed in declaring that the true nature of things is not learnt through the senses, and this suggested a criticism of the mind and of its powers of knowing. At last, Anaxagoras makes the distinction between mind and matter. In order to bring harmony from chaos, the intervention of a regulating and motive power was needed. This power, he said, must be intelligence, *νοῦς*, a simple substance omnipotent and omniscient. *ὁκοῖα ἔμελλεν ἔσεσθαι καὶ ὁκοῖα ἦν καὶ ἄσσα νῦν ἔστι καὶ ὁκοῖα ἔσται πάντα διεκόσμησε νόος.*

With Anaxagoras *νοῦς* seems to have been still only a force of nature, but the rôle which he ascribes to intelligence, the idea of which was taken from the human consciousness, prepared the way for the philosophy of Socrates. By the Sophists, creative thought is identified with the human intellect. Protagoras regards man as "the measure of all things": *ἄνθρωπος μέτρον πάντων* (Diog. Laert. IX, 51).

Socrates. The γνῶθι σεαυτόν: Self-examination.

Socrates was the first to make of self-examination a philosophic method. His principle was, *Γνῶθι σεαυτόν*: *nosce te ipsum*. Socrates says:

"'Tell me, Euthydemus, have you ever gone to Delphi?' 'Yes, twice.' 'And did you ever observe what is written somewhere on the temple wall—*Know thyself?*' 'I did.' 'And did you take no thought of that inscription; or did you attend to it, and try to examine yourself to ascertain what sort of character you are?' 'I did not indeed try, for I thought that I knew very well already, since I could hardly know anything else if I did not know myself.' 'But does he seem to you to know himself who knows his own name merely? . . . Is it not evident that men enjoy a great number of blessings in consequence of knowing themselves, and incur a great number of evils through being deceived in themselves? For they who know themselves know what is suitable for them, and distinguish between what they can do and what they cannot and by doing what they know how to do, procure for themselves what they need and are prosperous; and, by abstaining from what they do not know, live blamelessly, and avoid being unfortunate'" (Xenophon, *Mem.* Book IV, Chap. II).

Socrates saw clearly the principle of the return of mind upon itself. Still we cannot attribute to him the intention of making the human mind the object of a distinct science. With him all knowledge is implied in the *γνῶθι σεαυτόν*.

Through self-knowledge we discover the logical processes by which truth is acquired, and also the rules of moral conduct. It teaches us what we are and what is suitable to our nature, and what it is that truly constitutes good and evil. In short, Socrates identifies self-knowledge with dialectic and ethics.

Plato: The Science of Mind included in Physics and Metaphysics.

To Plato, as to Socrates, the ultimate cause of events and beings is the Good, which is the principle of knowledge, the

supreme end of all action. But this idea of the Good was by Plato developed into a vast system in which the universe, the state, and the individual are co-ordinated, and which makes the present, the future, and the past of all existing things into an organized whole. The human soul cannot be understood apart from other things; it has its own place in the system of things, and the study of it is a branch of physics. Between the sensible world, such as it appears to us, and the world of ideas revealed to us by *Reminiscence*, a medium was needed. This medium is the soul of the world, the creation of which we witness in the *Timaeus*. The world-soul is the principle of all life, of all order, of all motion, and of all knowledge here below. It is of this world-soul that individual souls are parts. In its nature and composition, the explanation of the faculties of the individual soul will, on a last analysis, be found. Psychology, therefore, as a distinct and specialized science of mental phenomena, does not exist for Plato; nevertheless, he did much to advance the knowledge of the human mind. In the *Phaedo*, the distinction between the soul and the body and the supremacy of the former over the latter: in the *Republic* (V.), the division of the soul into three parts (*νοῦς, θυμός, ἐπιθυμία*) corresponding to the three souls in the *Timaeus*, and having the head, the breast, and the belly as their respective seats; the theory of degrees in knowledge (*εἰκασία, πίστις, δόξα, νόησις*) in the *Republic* (VII.) and of earthly and heavenly love in the *Symposium*; the theory of pleasure in the *Philebus*: the opposition of sensible and intelligible things (*τὸ αἰσθητόν, τὸ νοητόν*) in the *Theaetetus* and in the *Republic* (IV, V.); lastly, the final triumph of the Good through the punishment of evil in the *Gorgias*: these are great theories which constitute what may be called the psychology of Plato, though it is true that they are part of his metaphysics and physics.

Aristotle, though he did not separate the Science of the Soul from Physics and Metaphysics, yet made a Special Study of it.

Aristotle was the first to give special attention to the phenomena of soul as we observe them in ourselves. To him philosophy was a vast encyclopedia of sciences, all of which were related by their principles, but distinct as to their objects. Amongst these what place does he give to the science of the

soul? He regarded it as part of physics (the science of nature), which itself depends on First philosophy or Metaphysics, the science of the principles of all being. Its method is that of every science, namely, observation and analysis, but always from a speculative and metaphysical point of view. And now, what does this science deal with? Aristotle does not admit the existence of the world-soul. He does not exactly look upon the world as an organized living whole, an animal governed by one and the same soul, but rather as a collection of beings, united only by a common tendency towards a higher end, towards a perfection that is above them all. (F. Ravaisson, *Essai sur la Méthode d'Aristote*, Vol. II, p. 155). The science of the soul is, with him, a general and comparative science of every kind of soul, of the soul which is the principle of organization in plants, which is the cause of motion and sensation in animals, and which thinks in man. The soul is the principle of life, which in the case of man rises to intelligence. Aristotle distinguishes in the soul four parts, namely, the nutritive, sensitive, and intellectual faculties, and the faculty of locomotion (*τὸ θρεπτικόν, αἰσθητικόν, διανοητικόν, κίνησις, De Anima*, II, 2.) The lower faculties may exist without the higher, but the latter cannot exist without the former, except in the case of the rational soul (*θεωρητική*), the only one that is separable (*χωριστός*), and it is a different kind of soul (*ἕτερον ψυχῆς γένος, De Anima*, II, 2). But Aristotle not only defines the nature of the soul and distinguishes its powers, he also investigates its phenomena, and in his investigation gives evidence of his remarkable genius for observation. To the three books of the Περὶ ψυχῆς he adds short treatises on special questions: *sensation, memory and reminiscence, sleep, divination in dreams.* His analysis of sensation, of memory and its laws, his definition of pleasure and of voluntary activity, are the first examples of a scientific theory of mental life.

Epicureanism, Stoicism, Neo-Platonism.

With Epicurus, philosophy meant the application of reason to the pursuit of happiness. Psychology he treats as a branch of physics, which again he makes subordinate to ethics. Atomism presupposes a sensualistic theory of knowledge, but by reason of the swerving or declension of atoms (a motion

which has no cause) man has free will. In the Stoics we find the same attention to the practical side of life, and the same connection made between psychology and physics, and between physics and ethics. The world was conceived by them as a living organized body, whose soul, regarded as both material and intelligent, both extended and exercising providential foresight and care, was God. The distinction between what is corporeal and what is spiritual was still so vague, that it disappeared altogether. The human soul was to the human body what the divine soul was to the world: that is activity, effort, tension (ἐπιστήμην ἐν τόνῳ καὶ δυνάμει κεῖσθαι, *Stob. Ecl.* II, 130). For the explanation of psychical phenomena they have no principles except those of physical phenomena. The human soul, which is material, knows itself by a kind of internal contact: knowledge is a kind of tension. Nevertheless, the conception of consciousness and of the ego is discernible in Stoicism, and according as men became absorbed in ethical problems, their attention was more and more drawn to the problem of human nature.

The psychology of the Neo-Platonists was, like the rest of their philosophy, of an entirely theological character. Their world-soul was the third *hypostasis*, emanating from the νοῦς, the Word was a kind of eradiation of it, just as the νοῦς itself emanates from the Supreme Unity. Like Plato and the Stoics, Plotinus looks on the world as a single, organic, and living being, pervaded by a great soul in which are contained all the individual souls, though it is difficult to understand how they are to be distinguished or separated from it. Thus with Plotinus also, the science of the human soul was merely an appendage of the science of the world-soul, and its principles were borrowed from those of cosmogony.

Summary.

In conclusion, we may say that psychology as a distinct and independent science of the human soul, or of its phenomena, did not exist for the ancients. Until Socrates, psychology was altogether ethical. To Plato it was an episode in cosmology, a deduction from his theory of a world-soul. Aristotle indeed suppressed this single primitive soul, but his science of individual souls was not the science of the human soul, for it

was dependent on his metaphysical theory of the four causes as well as on his physics.

In the Epicurean system, the soul is merely an accident; the Stoics and Neo-Platonists, on the other hand, introduced once more a world-soul, thereby condemning themselves to a search in the unknown after the causes of mental phenomena, instead of observing the latter directly in themselves.

St. Augustine: Supreme Importance of Self-knowledge.

The Christian religion naturally led the human mind to examine itself. St. Augustine foresaw the new direction which philosophy was to take, and proclaimed it in an authoritative manner.

To the question "What is the object of philosophy?" he answers, It is the knowledge of God and of self. "*Deum et animam scire cupio.—Nihilne plus?—Nihil omnino.*" (*Soliloq.* I, 7). In his contempt of physics, he naturally gives the highest place to the science of the soul. *Nihil enim tam novit mens, quam id quod sibi praesto est, nec menti magis quidquam praesto est, quam ipsa sibi* (*De Trin.* XIV, 7). We should look unto ourselves, rather than out on the world. In order to make the foundation of science secure, St. Augustine begins with an examination of scepticism. Through doubt, reflection discovers the highest among truths, the existence, namely, of thought.

"*Utrum aeris sit vis vivendi . . . an ignis . . . homines dubitaverunt . . . vivere se tamen, et meminisse et intelligere, et velle, et cogitare, et scire, et judicare quis dubitet? Quandoquidem etiam si dubitat, vivit . . .* (*De Trinitate*, X, 14). From the knowledge of himself, as a being who doubts, and aspires after truth, man is able to ascend to God. *Noli foras ire, in te redi; in interiore homine habitat veritas, et si animam mutabilem inveneris, transcende te ipsum*" (*De vera relig.*, 72).

Beside these formulae which remind us of Descartes, we occasionally find in St. Augustine analyses that make us think of Locke or Thomas Reid (See the remarkable passages on memory in the *Confessions*, X, Chaps. VIII-XVI). But with him, especially in his later works, psychology began to be subject to theology and hampered by insoluble problems, such as, for example, that of predestination.

Influence of Neo-Platonism and of St. Augustine and Aristotle in the Middle Ages.

The thinkers of the middle ages contributed no new idea and no new method in philosophy. They adopted the theories of St. Augustine, of the Alexandrian mystics and of Aristotle, but under the influence of Christianity the feeling of the inward life grew stronger and the consciousness of self became more clear.

Some of the mediaeval philosophers, as Bernard of Chartres (1070-1160), and William of Conches, adopted Plato's theory of a world-soul. The school founded by Hugh (1096-1141) and Richard of St. Victor (died 1173), invented, on the other hand, a kind of progressive method, in which the soul is lifted by six stages to ecstasy, the final goal of contemplation. In a remarkable treatise, *De Anima*, William of Auvergne (died 1249) clearly distinguishes psychology from physics, and declares that to deny the existence of the soul is a contradiction, because this negation itself presupposes thought. Thomas Aquinas resumed the theories of Aristotle, making such alteration in them as orthodoxy demanded. Duns Scotus, a more original thinker, opposed to the Determinism of St. Thomas a theory in which Divine Liberty is the principle of all that exists, and human liberty the highest of all man's faculties—*voluntas superior intellectu*. The superiority of intellectual intuition over the intuition of sense, was affirmed by William of Occam, the reviver of Nominalism, who seems to have had a presentiment of the empirical psychology of his English compatriots.

Intellectus noster non tantum cognoscit sensibilia, sed etiam in particulari et intuitive cognoscit aliqua intellectibilia, quae nullo modo cadunt sub sensu, cujusmodi sunt intellectiones, actus voluntatis delectatio tristitia et hujusmodi, quae potest homo experiri in se, quae tamen non sunt sensibilia nobis, nec sub aliquo sensu cadunt (*Sentent.*., Prolog. q. I). This intuition, moreover, reaches only the states, and not the substance of the soul (*Quodlibet*, I, q. 10).

Mediaeval *pneumatology* was, on the whole, then, more a theological commentary on the psychologies of Plato, Aristotle, and St. Augustine, than a scientific development or a revival of psychology itself. It was a science not of the human mind, but of spirits, and boldly dealt with such questions as the nature of the soul and the knowledge of the angels.

The Cartesian Reform.

Descartes escaped from scepticism by his *Cogito ergo sum*, and found in this truth the criterion of evidence. May he therefore be called the founder of psychology, as the science of mental phenomena? Yes, in a sense: for instance, in the Meditations, he distinguishes three kinds of ideas, the factitious, adventitious, and innate ideas (III), and analyzes the idea of the infinite in such a manner as to supply in advance a reply to the objections urged by Locke (III). He also proves that the will has a part in judgment and in error (IV), and he anticipates the Scottish school in his analysis of the illusions of sense (VI). All this, however, was connected with and formed an essential part of his metaphysics. Still, by taking the subjective point of view, and by substituting the criticism of knowledge (methodical doubt) for the old dogmatism, Descartes may truly be said to have opened out a new road to thought, and to have founded modern philosophy. Our knowledge of the body is not immediately certain, and may be doubted; but the mind cannot doubt its own existence, because all thought involves the certainty of the existence of the ego which thinks. It is when the mind reaches itself that it for the first time reaches reality. Descartes, by putting the reflection of thought on itself before everything else, prepared the way for the empirical psychology of Locke, who sought to mark the range and limit of human knowledge through the study of the human understanding; for the spiritualistic metaphysics of Leibnitz, in which the universe is constituted after the model of the soul: and lastly, for the criticism of Kant, who sought in the analysis of the *cogito* the laws of the phenomenal world. We must remember too, that, in his *Traité des Passions*, Descartes prepared the way also for the physiological psychology of our day, which seeks in the facts of organic life, and more especially in the cerebral mechanism, the laws of internal phenomena.

With Malebranche Psychology begins to be an Experimental Science.

Malebranche seems, at first sight, to have been even further than Descartes from making a science of psychology; for, while the latter taught that our knowledge of the mind is clearer than our knowledge of the body, Malebranche, on the contrary,

teaches that we have a clearer knowledge of our bodies than of our minds.

"Although we know the existence of our souls more distinctly than the existence of our own bodies, or of the bodies that surround us, still we have not so perfect a knowledge of the nature of the soul as of the nature of the body. (*Recherche de la Vérité*, III, 7, 4). We only know the soul *through consciousness*, and it is for this reason that our knowledge of it is imperfect (*Ibid.*). I know clearly the parts of what is extended, because I can easily see the ratios between them. It is not the same with my being. I have no idea of it. I cannot see the archetype of it. I am unable to discover the ratios between the modifications which affect my mind. The consciousness which I have of myself informs me that I am, that I think, and desire, and feel, and suffer, etc. But it does not tell me what I am, or the essence of my thought, or of my will, my feelings, my passions, and my pain; nor do I learn through it the ratios between all these things, because again, having no idea of my soul - being unable to see its archetype in the Divine Word— I cannot discover by contemplating it, either what it is, or the modes of which it is capable, or, lastly, the ratios between these modes, relations of which I have a lively consciousness without knowing them" (3rd *Entretien sur la Métaph.*).

In other words, psychology is an imperfect science, because it does not admit of the application of the mathematical method. But it is just because "we only know of the soul what we feel takes place in it," that the experimental method must be used instead of the deductive method in the science of the mind.

"It were very useless to meditate on the things that take place within us if it be done with the purpose of discovering their nature. For we have no clear idea either of our being or of any of its modifications, and the nature of things is only discovered by examining the clear ideas which represent them. But we cannot reflect too much on our feelings and internal actions, in order to discover the *connections and relations* between them, and *the natural or occasional causes* that excite them. For this is of the greatest consequence to ethics. The knowledge of man is of all sciences the one most necessary to our subject. But it is only an *experimental science* resulting from reflection on what takes place in ourselves" (*Morale*, I, Ch. V, §§ 16 and 17).

Thus in Malebranche's system Psychology is separated from Metaphysics even more than Physics, and in his analyses of the errors of the senses, of memory, and of imagination, as well as in his theory of occasional causes, he appears as the precursor of modern Associationists.

Spinoza: Deductive Psychology.

Spinoza, like Malebranche, asserts that the mind has only an inadequate and confused idea of itself: but he concludes that the true science of the soul is not to be sought in internal observation: it should be entirely deduced from the nature of God. Man is not in nature like "an empire within an empire"; he does not disturb the order of the universe, he forms part of it.

"... For Nature is always the same, and everywhere one and the same in her efficacy and power of action; that is, Nature's laws and ordinances, whereby all things come to pass and change from one form to another, are everywhere and always the same; so that there should be one and the same method of understanding the nature of all things whatsoever, namely through Nature's universal laws and rules. ... I shall, therefore, treat of the nature and strength of the emotions according to the same method, as I applied heretofore in my investigations concerning God and the mind. I shall consider human actions and desires in exactly the same manner as though I were concerned with lines, planes, and solids" (*Ethics*, 3rd Pt. Introd.).

Notwithstanding this semblance of a geometric deduction, we find in the second book of *The Ethics* (*De Mente*) some very interesting observations on the intellectual faculties, and the third book (*De Affectibus*) contains one of the most complete and powerful analyses of the phenomena of feeling and passion that has ever been made.

Leibnitz: Combination of Metaphysics and Psychology, the latter remaining subordinate to the former.

The metaphysics of Leibnitz is permeated with psychology. The world, he teaches, is composed of simple substances, spontaneous activities, forces which are to be conceived in the same way as we conceive our own souls, spiritual atoms, whose reality is expressed in the activities of *perception* and *appetition* (*perceptio, appetitio*). Still Leibnitz was not a psychologist, but a metaphysician. He only saw details in their relation to the whole; even when he considers a fragment, it is in the whole that he is interested. Being, like Descartes, enamoured of mathematical analyses and of clear and distinct ideas, he reasoned more than he observed. If he made consciousness his starting point, it was because his dialectic, leading him to the notion of force, brought him

back to himself, and constrained him to adopt a subjective point of view. "While seeking the ultimate causes of mechanism and the laws of motion, I was very much surprised to see that it was impossible to find them in mathematics alone, and that it was necessary to go back to metaphysics" (Letter to Rémond de Montmort, *Opera philosophica*, éd. Erdmann, p. 720). His analysis of the Cartesian mechanical theory proves the existence of force as well as of extension. "Thus the results of the analysis of external facts call forth reflection on our own minds, by which these results are completed. On this notion of substance, already brought to a high degree of distinctness by analysis, reflection comes to throw from within a further light, which finally enables us distinctly to know its contents" (*Monadologie*, éd. E. Boutroux). Lastly, the method of Leibnitz is definitely characterized by his Hypothesis of Pre-established Harmony, and by his constant use of the principle of Sufficient Reason. Still, like Malebranche and Spinoza, Leibnitz has his psychological theories. They appear in the *New Essays on the Human Understanding*, and are indeed more independent than those of his predecessors. It must be recognized, however, that in this work he follows Locke step by step, and usually gives completion to the observations of the English philosopher by means of his metaphysical doctrine.

John Locke, Founder of the Empirical Science of Mind.

The true founder of empirical psychology, of psychology regarded as a science of mental phenomena, is John Locke. Bacon, in making induction the universal method, gave to the philosophical spirit of England its special character; and Locke, by a fruitful application of the inductive method to the study of the human understanding, continued the work of Bacon. With Locke a tradition began, which was destined to continue without interruption, for it was carried on by Hume, Hartley, Thomas Reid, and the Scottish School; in France, by the school of Royer-Collard and Jouffroy; and it persists in our own time in Mill, Bain, and Herbert Spencer. Locke distinguishes clearly psychology, as he understands it, from physics and metaphysics.

"This therefore being my purpose to inquire into the original, certainty and extent of human knowledge, together with the grounds and degrees

of belief, opinion and assent, I shall not at present meddle with the physical consideration of the mind, or trouble myself to examine wherein its essence consists, or by what motions of our spirits, or alterations of our bodies, we come to have any sensation by our organs, or any ideas in our understandings, and whether those ideas do in their formation, any or all of them, depend on matter or not. . . . It shall suffice to my present purpose, to consider the discerning faculties of a man as they are employed about the objects which they have to do with" (Locke, *On the Human Understanding*, Introduction).

David Hume, Founder of the Psychology of Association.

Hume, continuing the task of Locke, practised mental observation, the difficulties of which he recognized.

"It is remarkable, concerning the operations of the mind, that, though most intimately present to us, yet, whenever they become the object of reflection, they seem involved in obscurity; nor can the eye readily find those lines and boundaries which discriminate and distinguish them. The objects are too fine to remain long in the same aspect or situation; and must be apprehended in an instant, by a superior penetration, derived from nature and improved by habit and reflection. It becomes, therefore, no inconsiderable part of science, barely to know the different operations of the mind, to separate them from each other, to class them under their proper heads . . . to make a sort of *Mental Geography*" (*Inquiry concerning Human Understanding*, I, § 8.).

But philosophy cannot rest content with this description.

"But may we not hope that philosophy, if cultivated with care and encouraged by the attention of the public, may carry its researches farther and discover, at least in some degree, the secret springs and principles by which the human mind is actuated in its operations? Astronomers had long contented themselves with proving, from the phenomena, the true motions, order, and magnitude of the heavenly bodies, till a philosopher at last arose, who seems, from the happiest reasoning, to have also determined the laws and forces by which the revolutions of the planets are governed and directed. . . . And there is no reason to despair of equal success in our inquiries concerning the mental powers and economy, if prosecuted with equal capacity and caution" (*Ibid.* I, § 9).

By this method the science of the mind will discover the particular laws which will resolve themselves into more general laws. Hume thought he had discovered this psychological law in the association of ideas, which is, he says, in the moral world what the law of gravitation is in the world of bodies. Hume is the true founder of the associationist psychology,

which has been developed in our day, more especially in England. He formulated and used its method, which consisted in reducing complex to simple phenomena, and in determining the laws of their combination.

Scottish School: Thomas Reid.—Psychology becomes an Independent Science.

It was with the Scottish School that psychology first really became an independent science. For while Locke and Hume still regarded it as the means of determining the limits and extent of human undertanding, Thomas Reid did not treat psychology as subordinate to logic any more than to metaphysics. An opponent of Hume, he attacks scepticism in the name of common sense, but in psychology he adheres to the traditions of Locke.

"Human knowledge may be reduced to two general heads, according as it relates to body or to mind; to things material or to things intellectual" (Pref. to *Essays on the Intellectual Powers of Man*). "By the *mind* of a man we understand that in him which thinks, remembers, reasons, wills. The essence both of body and mind is unknown to us. We know certain properties of the first and certain operations of the last, and by these only we can define or describe them." How are we to arrive at an exact knowledge of the mind and of its powers? Reid replies, " . . . By attentive reflection, a man may have a clear and certain knowledge of the operations of his own mind" (*Essay*, I, 1).

The French School: Royer-Collard, Victor Cousin, Th. Jouffroy, Maine de Biran.

In order to refute Condillac's sensationalism, Royer-Collard made use of Reid's psychology, but, in accordance with the French cast of mind, he carried it out to its ultimate consequences with strict and relentless logic, just as Condillac had done with the theories of Locke. Théodore Jouffroy translated the works of Reid and Dugald Stewart. Like Locke and Condillac, he distinguished psychology from physiology: but he also endeavoured to prove that this distinction which had been made, as it were instinctively by Locke and Condillac, is a legitimate one, for this had lately been contested by psychologists. Jouffroy shows with great clearness the difference between internal and external observation (Préf. de la trad. fr. des *Esquisses de philosophie morale de Dugald Stewart*).

Subjective facts are perceived by their own light. Physical

facts, on the other hand, always seem to our consciousness to be objective. Although, therefore, these two kinds of facts constitute one and the same being, they are the object of two distinct sciences.

"Physiology studies the animal, psychology the man; that is, psychology investigates the principle in which we each of us feel distinctly that our personality is concentrated, which is the intellectual principle. That is the ego or the veritable man, and it is in this sense only that psychology is the science of man" (*Mélanges, de la Science psychologique*, I).

Having defined the subject-matter of the science, he describes its method.

"The obscure consciousness which we all have of ourselves becomes the science of the ego as soon as it has been made clear by independent reflection. What do we find in the consciousness which each one of us has of himself? The whole of psychology is in the answer to this question" (*Ibid.* III and IV).

Jouffroy and his disciple, Ad. Garnier, did not improve much upon the doctrines of the Scottish School, but Victor Cousin, whose ideas had been enlarged by intercourse with Germany, did not confine himself to treating psychology as the inductive science of psychical phenomena. To him psychology was above all a method, *the* method of philosophy in fact, by which we endeavour to rise from mental facts to their spiritual principle, and from the soul to God. He founded metaphysics on psychology, thus taking a middle course between the Scottish and German Schools.

But it was especially through Maine de Biran that French spiritualism acquired its distinctive and original character. The Scottish psychologists attempted to apply Bacon's method to the study of the soul, and to pass by induction from the examination of inner phenomena to the principle which produces them. But though induction may enable us to ascertain the constant relation between phenomena, it can in no case enable us to reach substance through phenomena.

The leading idea of Maine de Biran is that a being who knows himself must consider himself from a point of view different to that from which he regards a thing known externally and objectively. The method of psychology is therefore not the method of physical sciences. The great

mistake made by the sensationalists was that they confused spiritual forces with physical causes. We do not know physical causes in themselves, they are for us only abstract terms, by which we indicate a group of phenomena (attraction, affinity, electricity). Hence the sensationalists were led to regard intellect, will, and subjective causality in general as mere abstractions. But by what right is a being who is conscious of his acts, and of the activity by which he performs them, to be treated as an external object? No doubt the mind in its absolute substance is unknowable, but between the point of view of the pure metaphysicians, who take their stand upon the Absolute, and that of the empiricists, who only consider phenomena and their relations, there is a third point of view, that of self-reflection, which enables the subject to distinguish itself at once from its own modes and from the hidden causes, the existence of which outside ourselves we assume. The primary fact of consciousness is voluntary effort, by which we know the *ego* and the *non-ego* in their mutual opposition.

The matter of knowledge is the object that opposes the ego; its form is in the act of volition, and it is therefore not given *a priori*, but abstracted by reflection from external experience. Consciousness is no longer made subordinate to reason: it is, on the contrary, the principle of reason. In short, psychology is identified with metaphysics.

Psychology in Germany still subordinate to Philosophy in general.

While in France and England there was a tendency to confuse philosophy with psychology, in Germany the latter continued to be treated as subordinate to the general and systematic science of philosophy. Kant's three great *Critiques* correspond exactly with the three great faculties which he attributes to the human mind. The *Critique of Pure Reason* answers to the faculty of knowledge, *The Critique of Judgment* to our sensibility, and *The Critique of Practical Reason* to our activity. But Kant's method is neither empirical, like that of Locke or the Scottish philosophers, nor intuitive, like the method of Maine de Biran: it is *critical*. By means of analysis Kant disengages the *a priori* forms which are the conditions of all determinate thought; and he

subjects to these forms both the phenomena of mind and the phenomena of the external world. The mind does not perceive itself in its reality; it is only known as it appears, not as it is in itself. We must not expect to know the soul intuitively, nor even through inference from psychological phenomena, to reach the immaterial entity underlying them. Empirical psychology, as understood by the Scottish School, does not belong to pure Philosophy, but under the name of *Anthropology*, to the physical and natural sciences. To Fichte, Schelling, and Hegel, psychology was neither an empirical study of the facts of consciousness nor the science of the ego and its faculties, but the history of Spirit constructed *a priori* in its successive moments; it has its place in the deduction of all that is. It is from the definition of Spirit that the necessary phases of its progressive development are made to arise. Herbart was the precursor of the German scientific psychology of to-day. Psychology is still with him dependent on metaphysics; his starting point is the definition of Being. But he is led by his conception of Being to define psychology as the "mechanics of the mind," and to look for the model of the psychological method in the method of mathematics. As in physiology the body is built up of fibres, so in psychology the mind is built up of representations" (Ribot, *Psych. allemande*, p. 6). Our ideas oppose one another. They react on and balance one another in obedience to mechanical laws. This is the whole life of the mind, and psychology is nothing but the endeavour to discover the mathematical laws governing this action and reaction.

Modification of the Object and Method of Psychology. Associationist School. Psycho-physical School.

To-day, owing to the psychologists of the Associationist School, John Stuart Mill, Bain, and Herbert Spencer, and the psycho-physicists of the German School, Fechner and Wundt, psychology tends more and more to become separate from metaphysics. No longer the science of the soul, psychology is now the science of inner or mental facts, and of their relations to their physical and physiological concomitants. To look for laws instead of causes, to add to the observation of consciousness (which has been too exclusive, and tends to the identification of the human mind in general with the mind of

the philosopher), all the facts furnished by animal life, by the life of primitive races, by mental physiology and pathology, languages, and the remains of bygone civilizations; in a word, to gather together all the elements of a free inquiry into mental life, this is the present method of psychology in all its compass. (See Ribot, *Psychologie anglaise*, 1875; *Psychologie allemande*, 1885.)

The English associationist psychology, founded by David Hume, continued by Thomas Browne, developed by James Mill and his son—the famous John Stuart Mill—is still, like the Scottish psychology, the science of subjective and internal observation, but it is no longer a theory of direct intuition by consciousness, which too frequently represented complex facts as simple phenomena and acquired faculties as innate principles. In the endeavour to find, through psychological analysis, the irreducible elements and the laws of association according to which they are combined, their psychology goes further than mere description; it emancipates itself from metaphysical hypotheses, and claims thereby to have assumed a scientific character. Subjective analysis has in the works of Hartley, and amongst contemporary writers, in those of Bain and more especially in those of Herbert Spencer, been accompanied by an analysis of physiological conditions.

This last point of view prevails also in Germany. The first principle of the physiological psychology of Wundt, Weber and Fechner, is that "every psychical state is connected with one or several physical events" (Ribot, Introduction, XI). Consequently, physiological psychology "has for its object the nervous phenomena that are accompanied by consciousness, of which the type most easily known is found in man, but which are also to be traced throughout the whole animal series.'

The difference between psychology and physiology is, that the latter investigates nervous phenomena apart from, and the former nervous phenomena accompanied with consciousness. The method of this new psychology is experimental. As external and internal phenomena are intimately conjoined, in causing the former to vary we make the latter change also. This is the method described by Mill, as the *Method of concomitant variations*. In virtue of this change of method psychology claims to be no longer merely *descriptive*, but to

have become an *explicative* science. This new psychology opposes to the *natural* knowledge of consciousness, which is *direct*, knowledge which is *scientific* and *indirect* (Ribot, Introd. XI-XV). The experimental methods of psycho-physics are, however, as Wundt allows, only applicable in cases where subjective phenomena are in regular dependence on the external objects, with which our consciousness is in relation. This is to admit that in psychology the field of physical experiment is singularly limited.

Thus from physical experience, which is manifestly inadequate, we are brought back once more to physiological observation and experiment. The very nature of psychical phenomena leads us moreover to employ, in addition to these modes of investigation, a new method, which may be called the *ethnical method* (Ribot, *Psych. allem.*, p. 41 *sq.*). Mind expresses itself in its products: there it shows itself as it is and realizes its laws. We are able therefore to examine not our own mind, but the human mind as it appears outside itself, in different customs, amongst different races, and in history. An examination of the methods employed by the learned and of works of literature and art may also afford valuable data, but nothing is so instructive as the study of language and its laws; because language is an embodiment of the mental acts which the mind creates spontaneously and models after its own image without disturbing, through reflection, the operation of its own laws.

Conclusion. Psychology cannot dispense with the Subjective Method.

The science of psychology has been obliged to turn from the introspective to the objective method. May we not find that it is after all necessary to complete all these objective methods by returning to the subjective method, which in any case we employ whether we will or no, everywhere and at all times? No doubt it is necessary to make a study of the products of thought; but it is in what these things reveal to us of the thought behind them that their importance to psychology consists. One may visit all the museums of Europe, and examine all their masterpieces without gaining any clearer idea on the subject of aesthetic creation or feeling. Mind can only be known by mind. We do not study the products of thought

from without, we witness them from within. "One only knows what one does oneself," said Aristotle. This is especially true of the science of the mind. Psychology, though it may call other sciences to its aid, though it may change, be utterly transformed, will always remain a science of mental observation, a creation of sympathy. Reflection will always be the true principle of psychological investigation, for it alone can give voice to the mute products of thought. But instead of guessing and inventing theories and subjecting facts thereto, psychology will learn the patience of scientific research, and the resignation which is content with provisional and unavoidable gaps in knowledge. It will seek its inspiration in realities, in experience, in history. The spirit of science will change, its methods will be perfected. We shall seek for ideas in facts, but in the last resort these ideas will be due above all to the reflection of the mind upon itself. It will seem that one looks at mind from outside; whereas, without this inner light, we could know nothing from outside.

Psychology, like all the other sciences, has parted from metaphysics, for this is the law of scientific progress. The mind may be considered as an object, and in this respect it belongs to the realm of the positive sciences. This is the fact upon which contemporary psychologists in England and Germany, and even in France, have justly founded their methods. But the mind remains the subject, the principle of all knowledge. No doubt psychical facts are only the subjective side of physiological facts; but we may say at the same time, and with still more truth, since psychical facts are the only ones we know immediately, that physical facts are the objective side of psychical facts. By the very fact of our perceiving it the object brings us back to the subject, the world to thought.

If empirical psychology were complete, there would still remain for examination the conditions of all thought, the categories under which all facts must be brought before they can belong to the unity of the same consciousness. But the consideration of things from the standpoint of mind is metaphysics, which is the end of the criticism of knowledge, the study of the necessary conditions of thought.

CHAPTER III

THE SENSES AND EXTERNAL PERCEPTION

THE problem of external perception comprises two distinct questions. The first is a question of fact, *quaestio facti.* How, and by what kind of process do we enter into relations with the external world? The second is a question of right, *quaestio juris.* What do we really know of the external world? The first question belongs to empirical psychology, the second to the criticism of knowledge.

The history of the problem of external perception includes then these two questions which have never been properly separated.

The First Philosophers did not recognize the part which the Subject plays in Knowledge. Sensation explained by the Contact of Like or Contrary Elements.

Even in pre-Socratic philosophy we already find a physiology of the senses, and a crude attempt at an analysis of the knowledge acquired through them. But in order rightly to understand these first attempts, there are two things which it would be well to bear in mind. Firstly, that even those notions which now seem most clear to us were at that time in the human mind still confused and indistinct, like the different parts of an organism in the unity of the germ. Secondly, that, before the Sophists, the part played by the subject in knowledge had not been suspected; it had never occurred to anyone to speculate as to how much of itself the mind may project into a knowledge which presupposes its activity. The prevailing idea in this first period was that sensation is explained by the contact of like elements.

Alemaeon of Crotona.—Heraclitus and Anaxagoras.—Leucippus and Democritus.

The oldest description of sensible perception that we know of is that of Alcmaeon, a physician of Crotona, a contemporary and perhaps a disciple of Pythagoras. The brain, according to him, is the seat of the soul, and sensations reach it through the medium of channels which start from the organs of sense. We perceive smells when in breathing they reach the brain through the nose. The ear is hollow, and all hollow things resound, therefore the ear resounds when struck by the air in motion: the auditory duct of the ear is the path by which the sound makes its way to the brain. Sight is explained by the reflection of brilliant and transparent bodies, the medium here being the water contained in the eye (Theophr. *De Sens*). In this theory the quality of the external body passed into the brain, and the problem was to discover the means by which this passage was possible.

According to Heraclitus and Anaxagoras, sensation is not produced by the like, but by the unlike. A consequence of this doctrine was, in the teaching of Heraclitus, that the opposition and union of contraries explain all reality. According to Anaxagoras, there can be no action of like on like, as no change can be produced thereby. Our eyes which reflect objects are obscure bodies. We only feel temperatures which are different from the temperature of our bodies.

The theory of the senses held by Empedocles is part of his general teaching. All bodies have pores (πόροι), and moreover there are from every body emanations, effluences (ἀπορρόαι), so small as to be imperceptible, but which penetrate into the pores of other bodies which correspond to them. All change being caused by mixture or separation, there is no other way of explaining action at a distance. This general law accounts for sensation. Like is known by like, water by water, earth by earth, etc. Hence sensation arises when the particles detached from objects come in contact with the similar parts of the sensorial organs; whether these particles come into contact with similar parts through the pores, or inversely as in visual perception, the similar parts are projected through the pores into external bodies. The diversity of the senses and of sensation is explained by the difference in the pores; each

sense only perceives what is symmetrical with its pores and penetrates into it. The particles that enter the nose or the mouth produce smell and tastes. The air being set in motion penetrates into the auditory duct, "as in a trumpet," and produces sound. The eye is a kind of lantern. Empedocles imagined that he had explained sensation when he had proved the contact of two like elements, one of which belonged to the organism. But on the other hand, in his theories on hearing, and still more in those on sight (relations between two terms), we seem to find a faint idea of the *rôle* of the subject in sensation.

In the atomistic hypothesis of Leucippus and Democritus, all our mental images may be reduced to corporeal phenomena (*τὰς αἰσθήσεις καὶ τὰς νοήσεις ἑτεροιώσεις εἶναι τοῦ σώματος*, Stob. *Floril.* ed. Mein. IV, 233). Sensations are changes produced in us by external impressions. Since every action of one body upon another originates in an impact, sensation is itself traceable to a contact or touch, and this contact is in its turn explained by the *emanations*, which are presupposed in action at a distance. We have representations of things when their emanations reach our bodies, and are diffused all over them (Theophr. *De Sens.* 54). Only like can act on like, our senses are affected only by things that are similar to them. Emanations become detached from sensible objects without losing their form, and these images (*εἴδωλα*), being reflected in the eye, are the cause of vision. Sound is a stream (*ῥεῦμα*) of atoms which, flowing from the object, sets the atoms of the air in motion, and when, owing to the symmetry of the elements, this stream of atoms penetrates into the body and comes in contact with the atoms of the soul, sound is produced. Although sounds as well as visible images penetrate the body everywhere, we only hear with our ears and see with our eyes, because these organs are constructed so as to receive the largest quantity of sounds or images and to afford them the most rapid passage.

First Attempts at Criticism. Rational Knowledge opposed to Sensation.—Protagoras: the rôle of the Subject in Sensible Knowledge.

Side by side with this physiology of the senses, we find

the earliest attempts at a criticism of sensible knowledge. By the Pythagoreans, by Parmenides, Heraclitus, Anaxagoras, and even by Democritus, true knowledge is contrasted with sensation. To the knowledge derived from the senses Parmenides opposes the unity of Being, Heraclitus absolute plurality, Anaxagoras the chaos, the mixture of corporeal things, and Democritus the impossibility of perceiving the atoms and the void, which, according to him, are the elements of all reality. Still, we must bear in mind that none of these philosophers made any pretence of examining our knowledge of the subject in the light of the laws of subjective thought. Their philosophy was not critical, but dogmatic. In these first attempts at psychology, we also find the distinction between primary and secondary qualities. To Democritus belongs the credit of having first made this distinction. According to him, the qualities of bodies are ultimately reducible to the quantity, magnitude, form, and reciprocal position of the elementary atoms, and they are all derived from the quantitative relations of the atoms. But a distinction must be drawn between these qualities: some of them, such as weight, hardness, and density, may be immediately deduced from the nature of the atoms themselves; others, as colour, temperature, or sound, depend indeed on the different combinations of the atoms, but only represent the particular way in which we perceive their combination (Theophr. *De Sens.* 63).

With the Sophists the point of view changes. The relativity of knowledge to the mind is discovered. All is motion, says Protagoras with Heraclitus, but he does away with the absolute reason by which in the teaching of the latter the flux of things is directed. All knowledge is sensation, and every sensation can be traced to the reciprocal action of subject and object, to the impact of their different motions. From this Protagoras infers that there is no reality in sensation, or in sensible qualities; that they only exist one through the other at the moment of the contact of the two phenomena. "Man (*i.e.* the individual man) is the measure of all things" (Plato, *Theætetus*, 152 *a*). That is to say, all things are relative, nothing exists, everything is in a state of becoming. Thus of a newly-discovered truth, scepticism was the first result.

Plato: Physiology of the Senses. Part played by Sensation in Knowledge.

Plato recognizes with Protagoras that sensible qualities result from the relation between subject and object, and that consequently they are a sign, or an expression of reality, not reality itself. The world can act upon the body, which is composed of the same elements as itself. Sensation is only an external impression continuing itself by way of the body into the soul. The diversity in sensible qualities is caused by the diversity in the motions, which the impression communicates to the body, and which the body propagates to the soul (*Tim.* 43, 64, 75). The sense of touch is all over the body, and gives general sensations (*κοινὰ παθήματα*), like those of heat, cold, heaviness and lightness, softness and hardness. In every case it is the movement communicated to the corporeal elements which becomes the sensation. The sensation of heat, for instance, arises from the fact that fire, owing to the small size, sharpness, and extreme mobility of its atoms, penetrates into and decomposes the elements of the body. Taste and smell are intermediate senses, by which we ascend to the higher senses of hearing and sight. Sound is the disturbance of the air transmitted by the ear through the brain and the veins to the soul. Plato is always bent on determining the media by which the external motion is propagated to the soul. In vision, the medium is no longer air but light, a kind of fire which is at once in the eye and outside it. The light that radiates from the eye goes out, so to speak, to meet the light radiating from the object. Thus vision is the result of an external motion, which is transmitted, in the first place, to the environing light, then to the light of the eye, and finally to the soul. At night the light of the eye no longer meets the external light, and, the continuity of the transmission being broken, we cannot see (*Tim.* 45). Since the light belonging to the eye has a part in perception, the latter must have a subjective character. Plato admits and proves this when he shows that the principle of divers visual sensations is contained in the relation between the two lights (the subjective and the objective) on their coming together.

And now, what, in Plato's opinion, is the value of sensible knowledge? He does not deny the reality of space or of

motion; but, according to him, it is not bodies, such as appear to our senses, that move in space, but mathematical elements, small triangles, the combination of which constitutes the four elements (*Tim.* 53 *c*). He holds, with Heraclitus, that sensible things have no substantiality: that they are in a state of perpetual becoming; that they are incapable of definition. They who rely on their senses are therefore like prisoners in a cave, who only perceive the shadows of objects thrown upon the side of the wall on which the light falls (*Rep.* VII).

Sensible knowledge is of two kinds. When concerned with bodies it is a belief (πίστις); when it only reproduces the images of bodies or their shadows, as in dreams, for example, it is merely a conjecture (εἰκασία). Still, sensation has a place in the systematic whole of our knowledge. It is the function of thought to ascend from the sensible to the intelligible, and sensation is the starting point of this progress towards the Idea. Some sensations awaken in us the sense of the intelligible—those, namely, which involve a contradiction (*Rep.* VII). The same object is at once heavy and light, large and small, one and many: on encountering these contradictions thought is awakened, and rises from sensations to the ideas of greatness and smallness, of the one and the many. This is the first effort of the mind to reach the intelligible.

Aristotle: Conditions of Sensation. Special, Common, and Incidental Sensibles.

According to Aristotle, the sensitive soul is the principle of animal life. For the animal, to live is to feel. Sensible perception (αἴσθησις) is, in the first place, potentiality (δύναμις); each of the senses oscillates between two contrary qualities. Sight perceives whiteness and blackness; hearing, sharpness and flatness; taste, sweetness and bitterness. But αἴσθησις is not mere potentiality or absolute indifference. It tends to activity, εἰς τοῦτο ἄγει (*De Sens.* 4, 10). Its activity is a changing, ἀλλοίωσις, but a changing that causes the soul to pass from an imperfect state in which she is prepared to feel, to a state of greater perfection, in which she actually does feel.

What are the conditions presupposed by the passing from potential αἴσθησις to actual αἴσθησις? They are the presence

of the sensible object, together with the concurrence of the media and organs. The αἴσθησις is extended all over the body, but has its principal seat in the heart, the latter being the centre in which all particular impressions meet. Besides this general organ, there are the organs of the special senses. It is not the organ that feels—for sensation is not an extended thing—but the *form*, the *end* (τέλος), the soul, as it were, of the organ. In addition to the action of the bodies and of the organs, there is needed, for the production of sensation, a medium, which, being set in motion by the sensible object, transmits this motion to the organs. In the sensation of touch this medium is the flesh; with the other senses it is either air or water. The εἴδωλα of Democritus are thus shown to be unnecessary.

Having established the conditions of all sensation, Aristotle attempts a classification of the data of the senses. There are, in the first place, the *special sensibles*. Each sense is potentially the group of contrary qualities which the object it is destined to perceive may possess. Touch is potentially tangible qualities; sight is potentially black or white, and the intermediate shades of colour. In the case of each sense, Aristotle describes (besides the organ and the medium) the special data that we owe to it. But how do we know that whiteness is not sweetness, that blackness is not bitterness? It must be through a sense, since it is a question of sensible qualities; but it cannot be either through vision or through taste, since there can be no common measure or connection between these two senses. To account for this comparison between the data of the divers senses we must admit the existence of a *common sense*. This 'common sense,' whose seat is in the heart, and which is the principle of all sensation, sees through sight, touches through touch, and subsequently centralizing the data of all the senses, combines and compares them. Finally, it is this sense which, assisting in all particular sensations, extracts from them the *common sensibles*: that is to say, the general qualities which each sense only perceives under a certain aspect, but which belong to all, namely, motion, rest, extension, figure, number, and unity.

Aristotle, in his admirable analysis, arrives at another distinction. Besides the special and the common sensibles there are the *incidental sensibles*, what we now call acquired per-

ceptions. The action of the senses is simultaneous. When I taste a fruit I at the same time see it, consequently its colour will in future suffice to suggest its flavour. This is a *sensibile per accidens*. Like modern psychologists, Aristotle finds herein the explanation of the supposed errors of the senses. When referred to its proper objects, to that which is of itself sensible, sensation never deceives; but when referred to the *sensibilia per accidens* it may be either true or false. If from a noise that I hear I infer that a carriage is passing, it is neither the sense of sight nor of hearing that deceives me. On the other hand, the higher faculties may assist in the rectification of these errors.

The Import of Sensible Knowledge.

What do we perceive through the senses? αἴσθησις is the potentiality of the soul to receive sensible forms without their matter, "just in the same way as wax receives the impress of the seal without the iron or the gold of which it is composed" (*De Anima*, II, 12). We must not therefore say with the ancients (Empedocles, Democritus) that, as only like knows like, sensation is the union of the material elements with the elements that correspond to them in us. Things are in the soul as form, but not as matter. The soul becomes what it perceives, it is all things—the form of the stone, of the house—and it is the dwelling place of the forms (τόπος τῶν εἰδῶν). Therefore it is not necessary to assume behind each sense the existence of a second sense, which feels what we feel by means of the first. The being in seeing becomes so to speak the colour which it sees. The same sense, we learn, enables us to know both the object and its own activity, which are in fact the same thing. But where then is the sensible quality: where is the whiteness or blackness? Aristotle replies, the sensible quality is in the soul. "For just as active motion is produced in that which is moved passively, so the act of the sensible object and that of the sensibility both take place in the being that is sensitive" (*De Anima*, III, 2, 6). But this sensible quality is the common activity of the sensible object and of that which perceives it. Thus the colour red was, before I saw it, potentially in my eye and in the sun. Where there is no eye there is no redness. This does not mean that sensible qualities have no

existence at all in things, for they are there potentially; but it is in the soul that they attain actuality (*De An.* 425 *b* 25 *sq.*). What we are to understand by Aristotle's theory is, I think, that the sensible qualities are subjective in the sense that they only exist through us, but nevertheless there is something in the objects corresponding to them. In sensible perception it is the form which presents itself to us, and hence, according to Aristotle, the essence, the true reality: but it is form mixed with the matter. It is the function of thought more and more to disengage this form which is the essence and truth of all things. Sensible knowledge is therefore a sort of symbolism of reality, and is to rational knowledge what the reflected ray of light is to the direct ray.

Epicurus returns to the Theory of Democritus.—Proof of the Veracity of the Senses.

Epicurus returned to the theory of the εἴδωλα of Democritus (Diogenes Laertius, X, *Letter to Herodotus*) and to his distinction of primary, and secondary qualities. In the critical part of his system he tries to prove the veracity of the senses. His arguments are as follows:

Firstly, through the senses we only receive some external thing into ourselves. The senses do not move themselves, they can therefore neither add to nor diminish the motion communicated to them; therefore, if I have a sensation of redness, there must exist a red εἴδωλον. This argument presupposes that the senses are entirely passive. Secondly, sensation is an immediate act unaccompanied by reflection or memory, therefore it gives the impressions just as they are, without being able to alter them. This is the first argument in another form. Thirdly we must accept our sensations, since we have no means of controlling them. No sense can control itself, much less two distinct senses. Lastly, the senses cannot be controlled by reason, because it only exists through them. To these theoretical arguments Epicurus adds the practical reflection, that if we were to doubt the veracity of the senses, *tollitur omnis ratio vitae gerendae* (Cicero, *De Fin.* II, 64).

Stoicism: Mental Activity necessary to Sensible Knowledge.—Principle of Indiscernibles.—Objections of the New Academy.

According to the Stoics, every thing that is real is corporeal,

hence all reality is perceived by a sense. But in this, as in all other matters, they disagree with the Epicureans: in opposition to the passivity of the latter, they insist on activity; and in contradiction to the Epicurean relaxation (ἄνεσις) they urge the necessity of effort, tension (τόνος). Only voluntary activity on the part of the mind can transform sensation into knowledge. In the first place, the external object makes an impression on the soul (τύπωσις ἐν ψυχῇ). Cleanthes took this expression literally, and believed in a τύπωσις that was hollow and in relief. Chrysippus only admitted an alteration, a change in the state of the soul, ἑτεροίωσις ψυχῆς; the impression leaves in the soul an image, φαντασία, *visum* (Cicero, *Acad.* I, 11). This was a passive phenomenon, πάθος; and in order to have knowledge, there must be added to the φαντασία the συγκατάθεσις, or the assent of the mind. Knowledge only exists owing to the assent which we give to an image, in referring it to an external object. Our sensations are themselves so many assents; *sensus ipsos assensus esse* (Cicero, *Acad.* II, 33), and they presuppose the exercise of a force which is in our power, and which depends on ourselves alone. *Sed ad haec quae visa sunt, et quasi accepta sensibus assensionem adjungit Zeno animorum; quam esse vult in nobis positam et voluntariam* (Cic. *Acad.* I, 11). By this act of assent the φαντασία becomes φαντασία καταληπτική, *comprehensio*. Just as light manifests both itself and the objects it illumines, so the φαντασία καταληπτική enables us to know both itself and its cause. It comes from a reality and represents ἰδιώματα, the special qualities which distinguish each object from all others (principle of indiscernibles) and it cannot deceive. The φαντασία καταληπτική, is recognized by its own evidence, by the force of its impact upon the soul; it is ἐναργὴς καὶ πληκτική, and in contrast with the φαντασία ἀμυδρά or ἔκλυτος is a sensation that forces us to assent. But we must remember that the force of the external impression is proportionate to the voluntary tension of the sense that receives it, to the energy with which the regulating principle reacts against the impulse coming from without. "*Mens, quae sensuum fons est, naturalem vim habet, quam intendit ad ea quibus movetur*" (Cic. *Acad.* II, 10). What strikes us most in this theory of the Stoics is the keen sense it shows of the part played by mental activity in perception.

In opposition to the Stoics, the philosophers of the new Academy, Arcesilaus and Carneades, maintain, firstly, that perception is passive: secondly, that there are indiscernibles and consequently inevitable confusions, and that it is impossible through *συγκατάθεσις* to obtain evidence of this *φαντασία ἐναργής*, which is the guarantee of sensible knowledge.

Mediæval Philosophers, owing to a Misinterpretation, ascribe to Aristotle the Theory of Representative Ideas, or εἴδωλα.

The Schoolmen adopted the Epicurean theory of representative ideas, which they ascribed to Aristotle. They thought that by the *form* of objects he meant their images, their εἴδωλα, and they endeavoured to reconcile this hypothesis with the spirituality of the soul. Objects emit images, forms (*species*), and these forms are, so to speak, their substitutes (*vicarios*); but since they emanate from matter, they must be material. How then do these corporeal forms act on the incorporeal soul? First, they affect the organs physically, and then they are *species impressæ*; and the mind afterwards, by its own activity, transforms them into *species expressæ*—that is to say, species drawn from the organs and spiritualized.

Descartes: Physiology of the Senses.—The Existence of the World proved by the Divine Veracity. Primary and Secondary Qualities.

There are, according to Descartes, three kinds of notions. Notions of spiritual substances, notions of extended things, and notions connected with the union of mind and body. These last notions constitute sensibility. Descartes distinguishes seven senses: an internal sense, a sort of vital sense by which we localize sensible data within the body—hunger, thirst, pain, etc.; the five external senses by which we localize sensations coming from without; and lastly, the passions, with which we are not here concerned.

Descartes' physiology of the senses is very remarkable. Whatever the external apparatus which receives the impression may be, the media of sensation are always the nerves, and nothing but the nerves. The skin is no more the organ of touch than are the gloves when we handle some body with our gloves on. Passed evenly over a body, the nerves of touch give

the sensation of a smooth body, passed unevenly, of a rough, unequal surface. Likewise, according to the divers ways in which they are affected, they will give us all the other qualities belonging to touch in general—humidity, weight, dryness. Smell and taste are only more delicate kinds of touch. Descartes made a special study of the sensations of hearing and sight (*Compendium musicæ; Dioptrique*). The perception of a harsh or soft sound depends on the force with which the ear is struck. Harmony or discord depend on the intervals between the small vibrations or agitations of the air. By sight we perceive from a distance the external qualities of bodies; therefore between vision and a distant object there must be a medium. This medium is what is called light.

"In the bodies that we call luminous, the light is simply certain motions, or a very prompt and lively action, which passes to our eyes through the medium of the air and of other transparent bodies, just as the motion or resistance of the bodies which a blind man meets reaches his hand through the medium of his walking-stick."

Descartes examines the anatomy of the eye, and analyzes with great accuracy its different layers and humours, and then shows by experiment how it is that objects come to be painted on the retina (*Dioptrique*, p. 42),—his inference being that in vision the eye plays the part of a *camera obscura*.

The duality of the organs of sight and hearing, and also the connection which we establish between the data of the different senses, oblige us, Descartes says, to admit the existence of a single centre, a kind of *sensorium commune*. External impressions act on the nerves, which are tubes filled with animal spirits. The latter are a kind of subtle fire, a material substance in a state of commotion, an elastic fluid, vapours of the blood elaborated in the heart and set in motion by the slightest shock. All these tubes go up to the brain and meet in the pineal gland, which is the principal seat of the soul.

"Since we only see one and the same thing with our two eyes, and only hear one sound with our two ears, and, lastly, have never more than one thought at a time, it must necessarily be that the species which enter by our two eyes or by our two ears join somewhere in order to be considered by the mind, and in the whole head it is impossible to find any place where this could happen except the pineal gland" (Éd. V. Cousin, vol. VIII, p. 200).

And now, what are the inferences to be drawn from sensible knowledge? As the notion of extension is itself a distinct notion, an external world is *possible*. But the idea of extension does not, like the idea of God, involve existence. We have, therefore, to prove that there is a reality corresponding to our sensations. (*a*) In the first place, sensations are more vivid than images, But this criterion is insufficient: for in dreams, images are often as clear as are our perceptions when awake. (*b*) But while this is true, a man does not link the images of his dreams together, still less does he connect different dreams together, whereas our perceptions, on the contrary, are linked together according to the laws of nature. And hence we are able to distinguish between our dreams and our waking hours. Nevertheless, to distinguish between dreams and perceptions is not to prove the reality of a world that is external to the mind that thinks it. The connection between our sensations does not enable us to get outside ourselves. (*c*) My sensations are involuntary: it is not I who gave them to myself. To every idea there must correspond a reality, which contains formally (really) as much perfection as the idea contains objectively (represents). As I do not give myself my own sensations, there remain two hypotheses. Either the reality corresponding to my sensations is an external world relative to them, or it is God who causes these sensible modifications in my mind. But as on the occurrence of sensations we are irresistibly led to imagine the existence of an external world, to suppose that God deceives us by causing directly in us sensations to which there corresponds no real extended thing, would be to doubt His veracity.

Are we then to understand that all our sensations are qualities of objects outside ourselves—that the heat is in the fire; that the perfume is in the rose? This inference was prohibited to Descartes both by his theory of knowledge and by his mechanical conception of the universe. The omnipotence of God makes it permissible to assert that there is a reality corresponding to every clear and distinct idea. On the other hand, our sensations of smell, taste, sound, light, and heat, are only lively but confused affections. Of all that we know of the material world, extension alone, with which geometry has

to do, is a clear and distinct notion. Extension, therefore, is the only real and objective thing in the material world. It is as extension and motion, or changes of situation in space, that we are to conceive the universe. But the sensations of sound, heat, and light have no immediate relation to extension, and consequently have no existence in things. They have no basis except certain movements, concerning which we learn nothing through them (6th *Médit.*). Moreover, every other theory leads to absurd consequences. To regard heat as a quality of bodies would be to suppose that fire has alternately contrary qualities, according as we go nearer to or further from it and find its heat pleasurable or painful: or that the pin has a sensation of being pricked analogous to that which it causes us to feel. There are, therefore, secondary qualities without which matter is conceivable, and which only exist through the relation of things to us; and one primary quality, namely, extension, without which it is impossible to conceive matter, since extension alone constitutes its reality.

Malebranche applies the Theory of Occasional Causes to External Perception. He is the Precursor of the Associationists.

Descartes' physiology and his theory of animal spirits were adopted by Malebranche: he accepted the Cartesian mechanism, and hence the distinction of primary and secondary qualities. But to him external perception was only a particular case of the general problem of the intercommunion of substances. How do bodies communicate with the soul? In the first place, he refutes with much force the mediaeval theory, and ridicules those material ambassadors which are sent out by things, and find their way in space so well that they never get mixed. The doctrine of the εἴδωλα is therefore false, but this does not mean that we perceive objects directly. There is no direct action of matter on mind. A reciprocal influence between two unrelated substances is inconceivable. The immediate object in our mind "when it perceives the sun, for instance, is not the sun, but something closely united to our mind, and this is what I call an *idea*" (*Recherche de la Vérité*, Vol. III, Pt. 2, Ch. I). What produces these ideas in us? Here Malebranche applies the theory of *occasional causes*. In the world of spirits, as well as in the world of bodies, all positive

action comes from God. The ideas corresponding to an impression come therefore neither from objects nor from me. It is God "who, on the occasion of the impressions made on the brain," reveals to us, as far as he deems it proper, his own ideas of objects. Sensations are merely obscure and confused modifications of the idea of extension, which is the one clear intelligible idea. The senses only make us know things in so far as they are related to the preservation of our bodies, and not as they are in themselves (*Ibid.* I, Ch. V, 3).

But is there a real world corresponding to these sensations? To this question reason gives no answer.

The foregoing theory in itself proves the superfluousness of an external world. Objects are not known directly. When I am affected in a certain way, God suggests to me, for instance, the idea of a rose. If we did away with the external world everything would go on as before. It is enough if by a direct action God produces the ideas which He suggests to me on the occasion of there being such or such an object. But if this be the case, the world must be composed of ideas, and this in fact is the hypothesis of Malebranche. The object, instead of having a real existence, would be a collection of sensations constantly associated with one another. This is the hypothesis of Berkeley. Thus to reason the existence of bodies is problematic, and even useless; but, on the other hand, it is proved by faith and by revelation.

"Faith alone can convince us that there are bodies. It is not even possible to know with certainty that God is the creator of the world, for such a certainty can only arise from the perception of necessary relations, and there are no necessary relations between God and such a world. *Fides ex auditu*: this at first applies only to human appearances. But what we have learnt through these appearances is incontestable. Now the appearance of Holy Writ teaches us that God created a heaven and an earth, etc. Therefore through faith it is certain that there are bodies, and through faith these appearances become realities" (6e *Entret. mét.*).

With regard to the illusions of the senses (*Rech. de la Vér.* Vol. I, Chap. VII, 9), Malebranche was one of the first philosophers who analyzed some of our apparently simple and irreducible perceptions to composite sensations or subconscious acts of judgment. He was the first to offer those psychological explanations, the use of which was with Berkeley and the

English psychologists, and is to-day with physiologists (*e.g.* Helmholtz), a regular method. Malebranche points out, for example, that no physical reason can be found for the fact that the moon appears to us larger at the horizon than at its zenith. There must in this case be an unconscious mental act, founded on the association of ideas—an illusion strengthened by habit. By this explanation, Malebranche reduces what appears at first to be an immediate and simple perception to a complex mental act, and this is the method that has been adopted by our contemporary English psychologists.

Spinoza.

In Spinoza's system the divine substance reveals itself to us in two parallel attributes, extension and thought. To every mode of extension there corresponds a mode of thought. The human soul is only the idea of the human body. When our bodies are affected we perceive the foreign body as acting upon us. This is a corollary of the parallelism of the two divine attributes. But this knowledge, which is acquired through the senses, is necessarily inadequate and confused, for it only represents the relation of our body to another body.

Leibnitz makes External Perception depend on Pre-established Harmony.

The monads of Leibnitz have no windows looking out by which the *species* might reach them. The monad is a simple spiritual force, and its essential attributes are perception and appetition. All its acts are spontaneous and represent its own development; but as the acts of each monad have been calculated by God in relation with all the acts of all the other monads, all the monads represent the universe, each from its own point of view. Hence Leibnitz, like all the other Cartesians, defines sensation as a confused perception. "It is our confused perception of the logical and true relations between things that causes them to appear to us as objects in space and time" (E. Boutroux, *Monadologie*, p. 60). The external world as it appears to us is, therefore, the product of our imagination. Nevertheless the real world is not a dream; for, in the first place, the monads and their relations are symbols of it—they are phenomena well founded *bene fundata*, (Erdmann, 426 *b*).

In the second place, our perceptions are linked together according to general rules which make prediction possible.

" . . . The ground of our certitude in regard to universal and eternal truths is in the ideas themselves, independently of the senses; just as ideas pure and intelligible do not depend on the senses—for example, those of being, unity, identity, etc. But the ideas of sensible qualities, as colour, sense, etc. (which in reality are only phantoms), come to us from the senses, *i.e.* from our confused perceptions. And the basis of the truth of contingent and singular things is in the succession which causes these phenomena of the senses to be rightly united as the intelligible truths demand" (*New Essays on the Human Understanding*, Bk. IV, Ch. IV).

Locke: Empirical Study of the Data of the Senses.

In the Cartesian school, the problem of external perception was treated as part of the metaphysical problem of the relations of mind and matter, the same solution being applied to both. Locke, on the other hand, took the empirical point of view. In the first place he separates Psychology entirely from Physiology. He does not, like Descartes and Malebranche, insist on the existence of animal spirits, and on the mechanical nature of perception. According to him, perception takes place when the impression made on the organ is transmitted to the mind. The mind is a purely passive faculty, it cannot do otherwise than perceive what it perceives. Sensible qualities are simple ideas, that is to say, they are not "distinguishable into different ideas" (*On the Human Understanding*, Vol. I, Bk. II, Chap. II). Some of these simple ideas "have admittance to the mind only through one sense, which is peculiarly adapted to receive them" (*Ibid.* Chap. III), such are colours, sounds, smells, tastes, solidity. The ideas we get by more than one sense are, of space or extension, figure, rest, and motion; for these make perceivable impressions both on the eyes and touch" (*Ibid.* Ch. V). Locke explains the education of our sight by a process of induction, which owing to habit has become unconscious. "A round globe appears at first to the eye as a flat circle variously shadowed. . . . Habits come at last to produce actions in us which often escape our observation" (*Ibid.* Ch. V).

As regards what we really know by the senses, Locke says:

"It is evident the mind knows not things immediately, but only by the intervention of the ideas it has of them. Our knowledge therefore is real only so far as there is a conformity between our ideas and the reality of things" (Bk. II, Ch. IV).

How can we be sure of this conformity? Sensible knowledge is neither a simple intuition nor a knowledge capable of proof, but there are good reasons for believing that a reality corresponds to our ideas: sensations are involuntary, they are not produced by one's self, they are more lively than images, they corroborate one another's testimony. Like Epicurus, Locke arrives at the conclusion that knowledge derived from sensation is as certain as pleasure or pain (*Ibid.* Ch. II). "But we must not think that our ideas are exactly the images and resemblances of something inherent in the object." Sensible qualities are of two kinds: firstly, the original or primary qualities, as solidity, extension, figure, and mobility: these are so inseparable from the body that it keeps them always, whatever other changes it may undergo: secondly, the secondary qualities, such as colours, sounds, tastes: these secondary qualities have no reality.

"Such qualities, which in truth are nothing in the objects themselves, but powers to produce various sensations in us by their primary qualities . . . the ideas of primary qualities of bodies are resemblances of them, and their patterns do really exist in the bodies themselves; but the ideas produced in us by Secondary qualities, have no resemblance of them at all . . . they are only the power to produce those sensations in us.' (Bk. II, Ch. VIII).

Berkeley: Psychological Method. Influence of Malebranche and Locke. Idealism.

What Stuart Mill calls the *psychological* method, and opposes to the *introspective* method, was first introduced by Berkeley. The peculiarity of the psychological method is, that instead of being content with the mental analysis which arises out of the reflection of the ego on itself, it discerns in apparently simple and direct intuitions an already complex collection of elementary phenomena fused and fixed into a combination, the complexity of which, owing to habit, we do not suspect.

"The Psychological Theory maintains that there are associations naturally, and even necessarily generated by the order of our sensations,

which, supposing no intuition of an external world to have existed in consciousness, would inevitably generate the belief, and would cause it to be regarded as an intuition" (Mill's *Examination of Hamilton's Philosophy*, Chap. XI, p. 190).

This is exactly Berkeley's thesis. He endeavours to explain our apparent intuition of an external world, which, according to him, does not exist, by the association of constantly connected sensations. In Malebranche and Locke we find the antecedents of Berkeley's theory. Locke denies that we know sensible things directly, and reduces the notion of substance to a collection of qualities that are always perceived together. In Malebranche's theory the reality of an external world was, as we have seen, superfluous. It would have been better to do away altogether with this unnecessary medium, and to admit an immediate action of the Divine mind on the human mind, a direct suggestion of ideas, whose constant relations are exactly the same as those which we observe in the world of phenomena. Berkeley's idealism is merely the theory of Malebranche simplified, and combined with Locke's empiricism.

That the secondary qualities depend on the subject seemed, after Descartes' demonstration, to be undeniable. The same water seems to be at one time hot and at another cold, or even cold to the left hand and hot to the right, if our hands happen to have a different temperature. Are we then to ascribe more reality to the primary qualities? According to Berkeley, the primary as well as the secondary qualities are merely sensations—or ideas, as he calls them. An idea, he says, can only exist in the mind perceiving it (*Principles of Human Knowledge* § 33). If this is the case, if neither the secondary nor the primary qualities have any existence outside ourselves, when we imagine that we perceive an object we are in reality only combining elementary sensations. In the opinion of the vulgar, there is, for instance, a connection between the visible and the tangible extension of this table: they are two qualities of the same object, two modes of the same substance. Berkeley declares that there is a visible extension and a tangible extension, that the two are of an entirely different nature, and that there is no necessary connection between them.

"The ideas of sight and touch make two species entirely distinct and heterogeneous . . . so that, in strict truth, the ideas of sight, when we

apprehend by them distance and things placed at a distance do not suggest or mark out to us things actually existing at a distance, but only admonish us what ideas of touch will be imprinted on our minds at such and such distances of time, and in consequence of such or such actions. . . . visible ideas are the language whereby the governing Spirit, on whom we depend, informs us what tangible ideas He is about to imprint upon us, in case we excite this or that motion in our bodies" (*Prin. of Human Knowledge*, 1st part, 44).

"We perceive distance not immediately, but by mediation of a sign which hath no likeness to it or necessary connection with it, but only suggests it from repeated experience, as words do things" (*Alciphron*, 4th Dialogue). The Divine will has established a constant relation and correspondence between the visible size and figure of objects and their tangible size and figure. To every modification of the one there corresponds a parallel modification in the other, and owing to this correspondence we learn by experience to know the tangible size and figure of an object by its visible size and figure. Such judgments are so familar and habitual to us, that we are quite unconscious of them, and that we imagine ourselves to have an immediate perception of the tangible qualities, which through habit we infer from the visible qualities that have become to us a sign of them. What is true of touch and vision is equally true of all the other sensations. They are so many ideas, and have no connection with one another, beyond that which has been established by the divine Will and Intelligence. What then is an object? It is a collection, a sum of sensations, which experience has always given to us together, and which owing to habit we are unable to dissociate in our minds.

Berkeley foresaw an objection which must inevitably be brought against his theory. If there is no real object outside us corresponding to those purely mental modifications which we call the sensations, how are we able to distinguish fact from fancy, sensations from images? The first mark which enables us to make this distinction is the liveliness of our sensations as compared with images. Sensations are awakened in us directly by the divine action, whereas images are only the reflections of these ideas. In the second place, there is more order and coherence in things than in the fictions of our brain, for they succeed each other and are linked together by necessary laws which correspond to the laws observed by the Supreme Mind.

It is the invariability of certain purely ideal relations that constitutes the objective value of our perception. (*Principles of Knowledge*, § 33). The permanence of sensible things implies the existence of a permanent and unchanging Providence. We are therefore able to distinguish real things from the chimeras of phantasy; but these real things are none the less ideas, and ideas can only exist in the mind. Berkeley's conclusion is that what we feel are our sensations themselves, and there is no need to look for anything beyond these; for the world is nothing more than the sum total of these sensations. "*Esse est percipi.*"

Berkeley's Idealistic Analysis resumed and developed by David Hume.

Berkeley's analysis was continued and developed in a masterly manner by Hume.

"It seems evident that men are carried by a natural instinct or prepossession to repose faith in their senses; and that, without any reasoning or even almost before the use of reason, we suppose an external universe which depends not on our perception, but would exist though we and every sensible creature were absent or annihilated. . . ." (*Inquiry concerning the Human Understanding*).

As long as men follow this instinct they never have any suspicion that these objects are nothing but representations of the mind. Whether I am here or not this table will exist: it is not my presence that gives it being. This is the first stage.

"But this universal and primary opinion of all men is soon destroyed by the slightest philosophy, which teaches us that nothing can ever be present to the mind but an image or perception, and that the senses are only the inlets through which these images are conveyed, without being able to produce any immediate intercourse between the mind and the object" (*Ibid.*).

Thus we advance from the opinion of common sense to the first stage in philosophical reflection.

". . . No man who reflects ever doubted that the existences which we consider, when we say, *this house* and *that tree* are nothing but perceptions in the mind, and fleeting copies or representations of other existences which remain uniform and independent."

But it is difficult to persist in this reflective and philosophical realism.

"By what argument can it be proved that the perceptions of the mind must be caused by external objects, entirely different from them, though resembling them (if that be possible), and could not arise either from the energy of the mind itself, or from the suggestion of some invisible and unknown spirit, or from some other cause still more unknown to us?" (*Ibid.*). "It is acknowledged that, in fact, many of these perceptions arise not from anything external, as in dreams, madness, and other diseases. And nothing can be more inexplicable than the manner in which body should so operate upon mind as ever to convey an image of itself to a substance supposed of so different and even contrary a nature. . . ."

"It is a question of fact whether the perceptions of the senses be produced by external objects resembling them: how shall this question be determined? By experience surely, as all other questions of a like nature. But here experience is and must be entirely silent. The mind has never anything present to it but the perceptions, and cannot possibly reach any experience of their connection with objects" (*Ibid.*).

To these arguments Hume adds those that can be drawn from the analysis of perception. It is universally allowed that the secondary qualities only exist in the mind, and all the arguments that are employed to prove this apply also to the primary qualities. "The idea of extension is entirely acquired from the senses of sight and feeling."

But if we only know our own mental states, how is it that we are able to distinguish what we imagine from what is real, or, as Hume puts it, fiction from belief?

"The difference between *fiction* and *belief* lies in some sentiment or feeling, which is annexed to the latter, not the former, and which depends not on the will nor can be commanded at pleasure. It must be excited by nature like all other sentiments and must arise from the particular situation in which the mind is placed at any particular junction" (*Inquiry concerning the Human Understanding*, Sect. V, Part II).

Everyone knows what is meant by belief: it is a feeling as difficult to define as would be "the feeling of cold, or passion of anger to a creature who had never had any experience of these sentiments." It must be admitted that this is not very satisfactory. The following is more clear:

"The sentiment of belief is nothing but a conception more intense and steady than what attends the mere fictions of the imagination, and that this *manner* of conception arises from a customary conjunction of the object with something present to the memory or senses" (*Ibid.*).

Hume's distinction rests, then, on the difference between the livelier and the feebler consciousness, and on the habitual connection between ideas. For instance, a present sensation will, in accordance with the laws of association, awaken such and such an idea, and this idea is distinguished from mere fancy by its connection with the actual sensation.

"When I throw a piece of dry wood into a fire, my mind is immediately carried to conceive that it augments, not extinguishes the flame. This transition from the cause to the effect proceeds not from reason. It derives its origin altogether from custom and experience. And as it first begins from an object present to the senses, it renders the idea or conception of flame more strong and lively than any loose floating reverie of the imagination. That idea arises immediately, the thought moves instantly towards it, and conveys to it all that force of conception which is derived from the impression present to the sensation" (*Ibid.*).

Thus, according to Hume, belief is distinguished from fancy by an unanalyzable feeling. This feeling corresponds to certain livelier, more intense states of consciousness, and also to an expectation of these states of consciousness under certain circumstances. Berkeley had said the same. Sensations are more lively than images, and are linked together according to certain laws. But in Berkeley's doctrine these laws are rules which the Divine will imposed on itself, whereas with Hume our expectation is merely the result of experience and custom.

The consequence of this doctrine would be absolute phenomenalism: but having got so far, Hume appears to have been seized with doubts. The constant agreement between nature and mind arouses his wonder. Why does the course of nature correspond to the law of association by which our ideas are governed? We expect that the same antecedents will be followed by the same consequents, but why do facts correspond to our expectation? Hume here departs from the mere sceptical empiricism with which his philosophy is usually associated. In virtue of the relations established by nature, he says, every idea calls up in the mind a correlative idea, and by an easy and imperceptible transition draws our attention to it.

"Here then is a kind of pre-established harmony between the course of nature and the succession of our ideas; and though the powers and forces by which the former is governed be wholly unknown to us, yet our thoughts and conceptions have still, we find, gone on in the same train

with the other works of nature. . . . As nature has taught us the use of our limbs without giving us the knowledge of the muscles and nerves by which they are actuated, so has she implanted in us an instinct which carries forward the thought in a corresponding course to that which she has established among external objects, though we are ignorant of those powers and forces on which this regular course and succession of objects totally depends" (*Ibid.* Sect. V, Pt. II).

Kant's Criticism: Space an a priori *form of Sense.—Real Existence of Things in themselves.—Refutation of Idealism.*

To Hume must be given the credit of having awakened Kant from his "dogmatic slumber." Kant wished to escape from the scepticism which, by a logical and necessary evolution, had been the result of the empirical doctrines of the school of Locke, and this he did by distinguishing two things in knowledge: its *matter* and its *form*. The matter is the manifold variable element, the form is the totality of the necessary laws by which alone thought is possible. Even in the mental act that appears to be most simple, namely, the perception of external objects, the distinction between matter and form applies. External perception is not a faculty with which we have been endowed: it is a form of the mind, it is space. To perceive external things is to add the quality of externality or of being spatial to our sensations. Sound, colour, and resistance are only mental modifications. The external world only exists for us when these modifications are situated in space, and it is the mind that provides the space: therefore it is the mind that makes the external world. To be capable of perception, and to provide the form of space, are one and the same thing.

Spatium non est aliquid objectivi et realis, nec substantia, nec accidens, nec relatio, sed subjectivum et ideale, e natura mentis stabili lege proficiscens, veluti schema omnia omnino externe sensa sibi coordinandi (*De mundi sensibilis atque intelligibilis forma et principiis*, 1770).

Hence when we try to reach through our sensations a world which is really extended, and forms a whole independent of the mind, it is not surprising that we should fall into hopeless contradictions. Not that Kant was an idealist in the usual sense of the word. The mind supplies the form of knowledge, but not its matter. If we cannot reach this matter, it is

because it is beyond our grasp, because it is in itself unattainable, and only reaches us when it has passed through the forms of sense. The matter of our knowledge has none the less a real and separate existence.

Kant confirms this doctrine of the real existence of things by his refutation of Idealism. There are, according to him, two kinds of Idealism: firstly, the *problematical* Idealism of Descartes, who asserts nothing as to the existence of external things, but merely says that we are unable to prove any existence except our own: secondly, the *dogmatic* Idealism of Berkeley, "who maintains that space, together with all the objects of which it is the inseparable condition, is a thing in itself impossible, and consequently the objects in space are mere products of the imagination."

Berkeley's Idealism is unavoidable if we regard space as a property of things in themselves; for space thus conceived being non-existent, all those things of which it is a condition melt away with it. Kant considered that he had adequately refuted this form of idealism when he proved in the Transcendental Aesthetic that space is not a property of things, but a form of the mind.

There remains *problematical* Idealism. In order to refute this, we have to prove that "we have *experience* of external things, and not mere *fancies*. For this purpose, we must prove that our internal, and to Descartes indubitable, experience is itself possible only under the previous assumption of external experience." Kant's conception is, then, that our internal and external experience are interdependent; that we only know ourselves by knowing something external to ourselves; and, consequently, that we have an immediate consciousness of external things as well as of ourselves. Hence this theorem of Kant's. "The simple but empirically determined consciousness of my own existence proves the existence of external objects in space." The proof is as follows: "I am conscious of my own existence as determined in time. All determination in regard to time presupposes the existence of *something permanent* in perception. But this permanent element cannot be in the representation themselves, none of which are permanent, since they are manifold, distinct from each other, and fleeting. There must therefore be something permanent

that is distinct from my representations, namely, an external existence. Why should this permanent something not be within me as well, instead of being external to me? Kant's explanation of this is most obscure. At any rate, according to him, "the consciousness of my own existence is at the same time an immediate consciousness of the existence of other things without me" (*Critique of Pure Reason*).

Thomas Reid, in order to escape from Hume's Scepticism, returns to Realism. Striking Analyses and Descriptions.

Thomas Reid, alarmed at the inferences that had been drawn by Berkeley and Hume from Locke's empiricism, endeavoured to escape from scepticism by bringing philosophy back to common sense. He dwells more especially on the psychological problem, and gives some remarkable analyses and descriptions of psychological facts. He describes the physiological conditions of external perception (the impression, the organ, the brain), and distinguishes between the faculty of perceiving and the organ of perception. He points out that sensation, a subjective feeling, is not to be confused with perception, which is a knowledge. He distinguishes our original perceptions, which are ultimate and may be compared to a natural language, from our acquired perceptions, which are the result of the association of ideas and which he compares to an artificial language. Lastly, he gives some very ingenious and correct explanations of the so-called illusions of the senses.

In the critical part of his work he refutes at great length the doctrine of representative ideas, which, according to him, was accepted by all philosophers without exception, from Plato down to Hume. The seed of scepticism lies, he says, in every theory that admits the existence of media, of ideas or images of the real object, between the object perceived and the perceiving subject. Against this hypothesis, according to which the existence of bodies would have to be proved, Reid urges firstly its inconvenient consequences, and secondly the testimony of common sense. Men believe that they see not the images of objects, but the objects themselves. Reid's own theory is therefore that of *immediate perception*. But what, on

his theory, is this perception? Merely a necessary suggestion, a belief.

"If, therefore, we attend to that act of our mind which we call the perception of an external object of sense, we shall find in it these three things: *first*, some conception or notion of the object perceived; *secondly*, a strong and irresistible conviction and belief of its present existence; and *thirdly*, that the conviction and belief are immediate and not the effect of reasoning" (Reid *On the Intellectual Powers*, Essay II, Chap. V).

Thus sensations, according to Reid, are not *images* but *signs*. Our original perceptions are like a natural language, our acquired perceptions like an artificial language. But can this be called immediate perception?

"A third class of natural signs [our sensations] comprehends those which, though we never before had any notion or conception of the thing signified, do suggest it or conjure it up as it were by a natural kind of magic, and at once gives us a conception and creates a belief of it" (Reid, *On the Human Mind*, Ch. V, Sect. III). "In what manner the notion of external objects and the immediate belief of their existence is produced by means of our senses, I am not able to show. I do not pretend to show. If the power of perceiving external objects in certain circumstances be a part of the original constitution of the human mind, all attempts to account for it will be vain" (*On the Intellectual Powers*, Essay II, Ch. V).

The whole difference between the primary and secondary qualities is that, "of the primary we have by our senses a direct and distinct notion; but of the secondary only a relative notion, which must, because it is only relative, be obscure" (*Ibid.* Chap. XVII). In both cases there is first a sensation, then the suggestion of a cause: but with the primary qualities the cause is clearly represented, whereas with the secondary it is hidden. Reid's theory does not exclude the medium which is necessary to any knowledge of an object external to the ego; in fact he virtually admits the necessity of a medium in saying that sensations are signs. In the second place, he should, to be logical, have shown the cause of the immediate suggestion by which the mind passes from the sensation to a reality which has no connection with the sensation, and this would have led him back to some hypothesis similar to that of Malebranche or of Berkeley.

Hamilton: We have an Immediate Consciousness of External Objects.

Hamilton declares that we have not merely a suggestion but a direct, immediate intuition of external things. I am conscious at once of subject and object: the intuitive knowledge which I have of perception also extends to the object of perception: the ego and the non-ego are given in an original antithesis.

"We are immediately conscious in perception of an ego and a non-ego, known together and known in contrast to each other. In this act I am conscious of both existences in the same indivisible moment of intuition. . . . We may therefore lay it down as an undisputed truth that consciousness gives as an ultimate fact a primitive duality—a knowledge of the ego in relation and contrast to the non-ego, and a knowledge of the non ego in relation and contrast to the ego. The ego and the non-ego are thus given in an original synthesis, as conjoined in the unity of knowledge, and in an original antithesis as opposed in the contrariety of existence. In other words, we are conscious of them in an indivisible act of knowledge together and at once, but we are conscious of them as in themselves different and exclusive of each other" (*Lecture* XVI, pp. 288, 292).

Hamilton objects to treating consciousness as a special faculty, which looks on while the mind acts. Consciousness he holds to be the universal form of mental facts. If we can be said to have an immediate knowledge of external objects, it is in the sense that we are *conscious of an external world.* We must not understand Hamilton to mean that the external object is known in itself, for he holds that we never reach things in themselves. External objects are only appearances and modes of the external thing in so far as they are relative to our powers of knowing. Thus consciousness in one and the same act gives us both subject and object, and also the immediate conviction that they are distinct from one another; but our knowledge is still relative knowledge.

The French Psychologists: Destutt de Tracy: External Perception dependent upon our Motor Activity. Maine de Biran: Theory of Effort. Victor Cousin.

The French psychologists, Destutt de Tracy, Laromiguière, Maine de Biran, and Adolphe Garnier, attach great importance to the part played by our motor faculty in external percep-

tion. This is a correct theory, the germ of which is first to be found in Stoicism, and it has been adopted and developed by Alex. Bain, W. Wundt, and by all the physiologists and psychologists of our time. Destutt de Tracy makes a distinction between active and passive touch; the perception of resistance has its origin, according to him, in our sense of effort. He maintains that in order to acquire the notion of externality we must first have the experience of motion (*Mém. de l'Institut*, 1798). His theory is summed up in the significant title, which he gives to Chap. XII of his *Éléments d'idéologie*: "That it is to the faculty of motion that we owe our knowledge of bodies."

These ideas were further developed by Maine de Biran, who distinguished sensation, as a mere sensible affection, from perception, which is due to our own activity, and even regards them as opposed to one another. Examining each of the senses separately from this point of view, he showed that the proportion of the two terms varies in the different senses, and that the senses are higher or lower according as their organs depend more or less on our activity.

The organic sensations rank lowest: next come the sensations of taste, "which more nearly resemble a perception, inasmuch as they are less emotional and depend more on the voluntary, slow, and protracted motion of their special organ." After these come smell, then hearing, which owes its importance to the connection that exists between our auditory and vocal organs; then there is vision, the organ of which is so varied in its motions. Lastly, the sense of touch in the hand, that earliest and most marvellous instrument of analysis (*Mém. sur l'hab.*). It is on the part played by activity in our knowledge that Maine de Biran based the transition from the ego to the external world. The primary fact of consciousness is that of voluntary effort, which in its unity comprises two things: the act of will and the resistance of the organ that is set in motion. Through this resistance the ego discovers that it is limited, and thus with the consciousness of itself it acquires the consciousness of a not-self, as of a necessary term opposed to the ego. This is an original antithesis, in which both terms are given at the same time, so that the external reality is as certain as the internal.

Victor Cousin adopted a theory similar to that of Reid. Reid reached the external world by immediate suggestion, based apparently on the principle known as that of substance. "I cannot conceive extension without an extended subject." Victor Cousin arrives at the external world through the principle of causality, which is, he says, "the bridge by which we pass from the ego to the world"—the "father" of external things. My ego is modified by a sensation: but it is not I who have willed this modification; hence my mind is forced by an immediate application of the principle of causality to infer an external cause of the sensation, that is to say, an external world. We are compelled by reason to refer the phenomenon of sensation to an existing cause, and since this cause is not the ego, and the action of reason is irresistible, we must necessarily attribute the sensation to another cause, one different from me, *i.e.* to an external cause. Cousin thought that by this argument he had, with one stroke, proved our sensible knowledge to depend on rational knowledge, and refuted sensationalism.

Recent Progress in Physical and Physiological Knowledge of the Senses.

In our times the *physical* antecedents of sensation are being determined with increasing accuracy by science. The vibration of the air and of the ether have been observed, together with the harmonious relations which are expressed by and translated into the language of sensation (Helmholtz). The unity of physical forces which was suspected by Democritus, and by Descartes inferred from his mechanical theory of the universe, has now been established on scientific grounds (Grove, Meyer, Joule, Hirn). And thus the distinction between the primary and secondary qualities of matter has received further corroboration.

The results arrived at by physical science are carried still further by physiology, which enquires into the nervous system and the organic antecedents of sensation. To physiology we owe the distinction between the sentient and motor nerves (Magendie, Flourens, Cl. Bernard); the description of the organs of sense; the occasional discovery of some marvellous apparatus, such as the fibres of Corti (a kind of keyboard or resonator in the inner ear), also the discovery of a difference in the degrees of

sensitiveness in different surfaces, as in the various parts of the eye—the blind spot, etc. Physiologists are endeavouring to specify the sensorial centres in the brain; they are determining, with increasing exactness, the relation between the organs of sensation and those of motion, thereby showing the full significance of Maine de Biran's psychological observations; finally, by the law of the *specific energy of the nerves*[1] (discovered by Muller), Physiology has confirmed the psychological results of the law of the unity of physical forces, and thus shown that the same cause will, if applied to different senses, produce different sensations.

The progress made by physical and physiological science suggested the idea of extending to psychology itself the exact methods of the physical sciences, that is, experiment and measurement. The psycho-physics of contemporary German physiologists and psychologists—Weber, Fechner, Hering, Wundt (who were preceded in this line in France by Delezenne and de Lille, 1827) aims, generally speaking, at determining with mathematical accuracy, the ratios between physical or physiological antecedents and their psychological consequents. In psycho-physics sensation is regarded as a fact having a certain duration and intensity, and consequently susceptible of measurement. As variations in sensations cannot be effected directly, the external phenomenon is acted on so as to vary the internal phenomenon. Attempts have been made to measure the duration of psychical states, allowing for the time required for the transmission of the nervous current (Donders, Wundt), and even to measure sensation itself, by observing the connection between the changes perceived by consciousness in sensation with the changes discovered through delicate instruments of measurement in the stimulation of the nerve. Hence Weber's law: "Sensations increase by equal quantities when the stimuli increase by quantities that are *relatively* equal," a law of the greatest significance which had already been used by Laplace, and applies exactly to all mental phenomena. Hence, also Fechner's law, which is merely Weber's stated differently: "That the sensations vary in the same proportion as the logarithms of their respective stimuli."

[1] The expression is incorrect, for the nerves are never conductors: he should say, "the specific energy of the sensorial centres."

Parallel Progress in Psychology and in the Criticism of Sensible Knowledge.

Meanwhile, Psychology proper has advanced on similar lines. Starting from the general principle, that we must not be misled by seemingly immediate intuitions, nor take our actual consciousness as a type of primitive consciousness, psychology now subjects to analysis all those phenomena which, though they now appear to be simple, may, nevertheless, be discovered to be complex. "Psychology to-day finds that it has to deal with supposed simple sensations, just as Chemistry had in its infancy to deal with the so-called elements of the ancients" (H. Taine, *De l'Intelligence*). A single sensation of vision, or of hearing, may be decomposed into a considerable number of elementary sensations (Taine). Furthermore, what appears to be merely a sensation, is frequently a complex, though unconscious act of judgment (Helmholtz, *Optics*). But, if sensation is complex, perception is still more so. In order to distinguish the elements of perception, it is necessary, according to Wundt (*Psychol-Physiol.*), to employ experiment, as in physical science, and to follow two methods: the one being direct or synthetic, the other indirect or analytic. The first, which consists in the reconstruction of a perception (for instance of sound), given its elements, can be applied only in rare cases. The second, or analytic method, consists in varying the antecedent conditions of perception, and in drawing from the results of these experiments conclusions as to the elements combined in sensation. (See Wundt's interesting work on Vision, and notably on the functions of the different points of the retina, and of the motor muscles of the eye.) Finally, if the experimental method cannot be applied, there is the psychological method of analysis, that of the English school, which rests on the laws of the association of ideas and on habit, the two principles of the education of the senses which so transform the original data of the latter as to render them irrecognizable. The perception through vision of extension and of the tangible forms, the localization of sensations in the body and in space, are thus regarded as so many complex acts which psychology has to analyze and reduce to their original elements.

The criticism of sensible knowledge has been facilitated by the results of these purely scientific inquiries. Even if we

refuse to accept Mill's doctrine of the world as a permanent possibility of sensations, or as reducible into expectations of the same sensations under the same circumstances, we still owe to his theory an admirable description of the processes by which the mind builds up the idea of objects and an external world. Herbert Spencer has returned to the realism which is implied in evolution as he conceives it. According to him the arguments of metaphysicians are complicated, and frequently incorrect. Why, he says, should indirect knowledge be preferred to direct knowledge? Why accept the evidence of our reason and not that of our senses? (Here we have an improved form of the argument of the Scottish school.) The realistic hypothesis is the clearest, the simplest, and most natural, while the longer the chain of reasoning, the more chances there are of error. Moreover, ideas or conceptions (which are mental states of the faint order) have become possible only through the previous occurrence of perception (vivid mental states, *1st Principles*, Part II, Chap. II, § 43), and between these two terms there are differences which make it impossible to reduce the latter to the former. The final proof of the reality of an external world is to be found in force and resistance. We have as much reason to believe in an external world as in the existence of other men. Not that our sensations are an image or exact reproduction of things, but each of our representations correspond to some real (external) force. This is his *Transfigured Realism*! Helmholtz expresses a similar conception when, having pointed out the difference between sensation and the vibrations which precede it, he adds: "We should be grateful to our senses for conjuring up (*hervorzaubern*) colours and sounds out of vibrations, and for bringing us in sensations as in a symbolic language, news of the external world."

CHAPTER IV

REASON

Is the mind a kind of *tabula rasa*, a blank page on which phenomena are inscribed from without? Or is it not rather a primordial activity, an original faculty which acts according to its own laws? Is human knowledge purely empirical, or does it not presuppose certain notions, certain principles, which are always present in the mind, govern all its acts, and are a guarantee of their validity? Is the mind, in short, gradually built up of those phenomena which, owing to their constant relations, stand out, as it were, in relief from the confused mass of facts; or rather, shall we not find in it some *primary notions* which go beyond experience, some universal and necessary principles which govern the relative, and enable us to establish fixed relations between phenomena, to bind together their fluctuating matter, and to construct out of it the systematic edifice of human knowledge? It is proximately in these opposite ways that the problem of the nature of reason has been stated and developed in the course of the history of philosophy.

Heraclitus and the Eleatics. Earliest Forms of the Opposition of the Sensible and the Rational.

The problem of knowledge was not clearly recognized by the first of the Ionic philosophers, nor even by the Pythagoreans. With Heraclitus the opposition of rational to sensible knowledge appears for the first time. He complains bitterly of the ignorance of men. "An ass prefers bran to gold, and a dog barks at every one he does not know" (*Fr.* 28). What is the

reason of this folly? It is that men rely on their senses. "The senses make bad witnesses when they are in the service of irrational minds," *βαρβάρους ψυχάς* (*Fr.* 11). Wisdom consists in comprehending reason which governs all things, in discovering the nature of Fire, the law of contraries, the harmonious unity which arises unceasingly out of strife and change. This Divinity, this law of the world, this primordial reason is not distinct from the substance of things, from the primitive fire, for it constitutes us as well as all other things; therefore we must follow the ideas that are common to all (*ἕπεσθαι τῷ ξυνῷ*) and not particular opinions (*ἰδίαν φρόνησιν*, *Fr.* 7). Thought is common to all men (*ξυνόν ἐστι πᾶσι τὸ φρονεῖν*, *Fr.* 123). Reason is both the element out of which all beings are made, and the universal law of all that exists.

The theory of the absolute unity of Being is so opposed to the reports of the senses, that it was natural that the Eleatics also should attack this means of acquiring knowledge. Pythagoras discriminates clearly between the things of opinion (*τὰ πρὸς δόξαν*) and the things of truth (*τὰ πρὸς ἀλήθειαν*). True science with him is the deduction of the attributes of Being. The idea of Being is not an abstract idea, but one that is suggested by sensible intuition. The real is the plenum, that which fills space. When Parmenides speaks of the identity of Being with Thought, he means that Thought only exists through Being, is not distinct from it, but comprised within its unity.

Empedocles, Democritus, and Anaxagoras also began, each from his own point of view, to make the distinction between reason and the senses. But in reality reason itself was confused by them with sensible knowledge, thought being only distinguished from sensation by its contents. Both were a function of the organism. The reproach made by each of these philosophers against the senses is that they contradict his theory. Nevertheless, these early criticisms of the senses were the first step towards a theory of rational knowledge.

Socrates calls Attention to the Activity of the Mind in Knowledge.

The Sophists had noticed the part played by the subject in knowledge, but, as we have seen, they drew sceptical conse-

quences from this fact. In order to overthrow their dangerous conclusions, Socrates sought in the subject itself for the cause of knowledge and for the guarantee of its validity. By a thorough investigation of the nature of the mind, he hoped to discover the necessary conditions of true knowledge. "Know thyself" was his first precept. Knowledge, according to him, depends primarily on the activity of the mind. The first result of self-knowledge in a man is the discovery and avowal of his own ignorance. But this avowal implies the idea of true knowledge and the possibility of attaining it. Truth is innate in the mind; therefore to learn is, once more, to know one's self. Hence his *maieutic* or spiritual midwifery. This hypothesis of the inateness of truth appears to have been in Socrates a presentiment of a rational faculty, which is anterior in a manner to sense-knowledge, and gives it systematic form. "He proceeded upon propositions of which the truth was generally acknowledged, thinking that a sure foundation was thus formed for his reasoning" (*Mem.* IV, 6). The principal steps in the *maieutic* were induction, definition, and deduction, three operations that are closely related to each other. The business of Philosophy is διαλέγειν κατὰ γένη, to resolve things into general conceptions which represent their essences. The first step in the Socratic method being induction, there might seem to be a contradiction between his way of procedure and his general theory of the inateness of knowledge, and it is perhaps true that Socrates is not very clear on this point. He meant, no doubt, that truth is reached only through the action of the mind, that it is due to its own activity, that the mind creates it itself, and consequently that it is by knowing itself that the mind gets to know the conditions of truth.

Plato: Knowledge innate in the Soul.—Dialectical Progress towards Truth.—Reminiscence.—Ascending and Descending Dialectic.

Socrates had said that knowledge is innate, but in his purely discursive method he seemed to derive knowledge from phenomena quite as much as, or even more than from mind. The theory of Socrates was completed and perfected by Plato. With the latter, knowledge is truly innate, and has to do neither

with sensible and ephemeral things, nor even with the general notions that are abstracted from the data of experience by the discursive understanding. Science is attained by rising out of the world of sense, and entering into the world of Ideas which are the eternal, immutable principles of both reality and knowledge, and can only be revealed to the soul when it has, so to speak, learned to know itself. But this intuitive act is not accomplished all at once, or without difficulty, for it requires a preparation, an initiation. Imagine prisoners chained in a cave who are accustomed to watch the shadows of things passing on the side of the wall opposite to them on which the light falls. Bring them out into the daylight and they will be dazzled by it. A long education is needed before they are able to discern real objects and to face the splendour of the sun (*Rep.* VII).

The refutation of false theories is a purification (*κάθαρσις*) and at the same time a first effort towards knowledge, but the real starting point of the dialectical ascent towards truth is sensation. There are sensations which, by their contradictions and their very inability to solve these contradictions, surprise the mind and awaken reflection in us. The same thing is one or many, great or small, according as we compare it to different other things. What, then, the mind asks, is the one or the many, the large or the small? The true way to rise from sensible things to the ideas, from opinion (*δόξα*) to knowledge (*ἐπιστήμη*), is to cultivate the sciences, which rest on these notions of the one and the many, of the equal and the unequal (*Rep.* VII,): it is to study arithmetic, geometry, music, astronomy—always provided that these sciences are not treated empirically or as a kind of routine, and that the mind is fixed on mathematical and intelligible relations, on proportion, on number and measurement. The soul being prepared in this way, by the consideration of that which in sensible things is analogous to the Ideas, feels within itself the awakening of the veritable Ideas.

Plato's reminiscence is a direct, or immediate intuition of the Idea which is in the soul. It is, properly speaking, a kind of awakening in which the soul regains possession of what it had formerly known, of what it even now virtually knows. To learn is to remember (*ἀνάμνησις*). When we say that two

things are equal, we have a conception of an equality that is absolute, invariable, and unique, and with it we compare the equality of the things themselves which is always imperfect. We must possess the measure before we can apply it.

"Then before we began to see or hear or perceive in any way, we must have had a knowledge of absolute equality, or we could not have referred to that standard the equals which are derived from the senses?—for to that they all aspire, and of that they fall short" (*Phaedo*, 75 *b*).

This theory appears in an allegorical form in the *Phaedrus*, in the hypothesis of a former life of the soul in the world of essences, when it used to mingle in the choir of the gods.

"But when the soul is unable to follow, and fails to behold the truth . . . her wings fall from her, and she drops to the ground. . . . But the soul, which has never seen the truth, will not pass into the human form. For man must have intelligence of universals, and be able to proceed from the many particulars of sense to one conception of reason—this is the recollection of those things which our soul once saw while following God —when, regardless of that which we now call being, she raised her head up towards true being" (*Phaedrus*, 248, 249 *c*).

Does Plato intend us to take this myth literally? It is not easy to know how far poetry was by him distinguished from philosophy in those early days of youth and daring.

The exercise of the rational faculty (*νόησις*) was not limited by Plato to the intuitive act of reminiscence. It is completed by a special kind of discursive and dialectical process (*διάνοια*), by which the intuition of the Ideas is made fruitful. The rational dialectic comprises an ascending progress and a descending one. The first consists in abstracting from sensible things this general notion, in finding the principles, the sufficient reasons (*ἱκανόν τι*) of things, in rising step by step to that which suffices to itself and presupposes nothing else (*ἀνυπόθετον*). This Idea of the Ideas is the Good. The descending dialectic is more important than the ascending. It consists in dividing (*διαίρεσις*) the general idea into its genera and species (see the *Sophist* and *Parmenides*), these divisions being made by a sort of *a priori* analysis. The dialectic, and consequently thought, is possible, because the Ideas interpenetrate, and combine with one another (*Parm.* 129, *Soph.* 251 *a*, 253 *c*). Is not a proposition the blending

(μῖξις) of the subject and its attribute? But since the Ideas are Being itself, dialectic is metaphysic. By disentangling the μῖξις εἰδῶν, dialectic gives at once the primary elements of things through the simple notions, and, by the combination of the latter, the knowledge of reality and of its elements. Plato was the first to urge strongly the necessity of a reasoning faculty, of an *a priori* element in knowledge. He saw that knowledge is possible only through the universal and the necessary, and, above all, he recognized the *rôle* of the *ideal* in human activity. But, as Aristotle objected to him, instead of explaining things, he only doubled them; and since there was no way from the knowledge of Ideas to the knowledge of the sensible worlds, from dialectic to physics, Plato was driven to saying that in physics we must be satisfied with probabilities, the world being no doubt only a kind of symbolism in itself unknowable. The problem left to Plato's successors was how to effect this connection between dialectic and physical science, to explain by what laws, by what synthesis of ideas and principles, knowledge of the world of appearances becomes possible.

Aristotle. Necessity of Experience and of Reason. Passive and Active Intelligence.

To Aristotle, as to Plato, the object of knowledge is the essence, the being in itself. In sensation we only reach what is relative; therefore true knowledge does not come to us through the senses (*Post. An.* I, 31). Man gives it to himself through the original activity of thought (νοῦς). Aristotle is, however, more concerned with reality than Plato. He urges against the separate Ideas (χωριστά) that they do not explain our knowledge of the world; and he compares his master to a man who, finding it difficult to count a certain number of things, would double them in order to make his task easier. The possibility of knowledge should be explained by reason. Knowledge cannot be a reminiscence which takes us out of the present world. The intelligible forms are contained in sensible things (ἐν τοῖς εἴδεσι τοῖς αἰσθητοῖς τὰ νοητά ἐστιν, *De Anima*, III, 8). It is therefore from sensible impressions that general notions are to be abstracted. Rational knowledge implies knowledge by means of the senses, but we must know what

we mean, and not mistake the condition for the cause. We do not get knowledge through vision, but in consequence of vision; not through experience, but in consequence of experience. Let us trace the steps by which the mind gradually ascends to the intelligible forms, until as pure activity, free from all matter, it becomes one with the Divine Spirit. Without an image there can be no notion (*οὐδὲν νόημα ἄνευ φαντάσματος. De Anima*, III, 7). But before it becomes an element of thought, the sensible image has to be subjected to a mental operation. It must become *φαντασία λογιστική*; so that instead of being a slavish reproduction of such and such a sensation, it represents something of the universal, that is, the general qualities. The image thus transformed is to the concept what a geometrical figure is to the truth demonstrated by means of it (*De Anima*, III, 10). The mathematician employs a figure, but he goes further by taking away from this figure all that is sensible and limited. If thought is always supported, as it were, by an image, it is because the intelligible forms (*εἴδη νοητά*) are contained in the sensible forms (*αἰσθητά*), and it is the business of the *νοῦς*, of thought, to abstract the one from the other. We have to distinguish in the *νοῦς* two parts that are closely related to each other, one being, as it were, the matter of which the other is the form: the *νοῦς παθητικός* and the *νοῦς ποιητικός*, the passive intellect and the creative intellect.

"Now in nature there is, on the one hand, that which acts as material substratum to each class of objects, this being that which is potentially all of them. On the other hand, there is the element which is causal and creative in virtue of its producing all things, and which stands towards the other in the same relation as that in which art stands towards the materials on which it operates. Thus reason is, on the one hand, of such a character as to *become* all things; on the other hand, of such a nature as to *create* all things" (*De Anima*, III, 5, 430 *a*. Trans. of E. Wallace).

What is the nature and what are the functions of the *νοῦς παθητικός*? The passive intellect is a kind of *tabula rasa*, a blank page on which originally there is as yet nothing written (*De An.* III, 4): *γραμματεῖον ᾧ μηθὲν ὑπάρχει ἐντελεχείᾳ γεγραμμένον*. It is potentially all the intelligible forms, and only attains actuality through experience. Its functions correspond approximately to those ascribed to the discursive intellect.

"From sense, therefore . . . memory is produced, but from repeated remembrance of the same thing, we get experience, for many remembrances in number constitute one experience" (*Post. Annal*, II, 19).

The general ideas are gradually arrested and fixed in the *νοῦς παθητικός*.

"As when a flight occurs in battle, if one soldier makes a stand, another stands, and then another, until the fight is restored" (*Ibid.*).

Induction abstracts the universal from sensation and gives us the terms that are to become the attributes, the predicates of the syllogism, of which Aristotle constructed the theory. Induction which gives the elements of the syllogism, deduction which puts them into operation, herein is contained the whole of knowledge *ἐπιστήμη*, which rests on experience and is the fruit of reason.

So far, we do not seem to have got beyond empiricism, but the lower is only understood by means of the higher, matter through form which is its end. As the world is unintelligible until we have reached God, so it is with knowledge until we have recognized the function of the divine element in the mind. Induction as well as the syllogism presupposes principles. All knowledge therefore depends on reason as much as on experience.

". . . It is impossible to have scientific knowledge through demonstration without a knowledge of first principles . . . but since the principles are the better known, and all science is connected with reason, there cannot be a science of principles; but since nothing can be more true than science except intellect, intellect is the faculty of demonstrative principles, and . . . it is evident also that as demonstration is not the principle of demonstration, so neither is science the principle of science. . . . As, then, the intellect is the principle of science, it must also be the principle (of the knowledge) of its principle" (*Post. Annal.* II, 19).

Thus knowledge involves the immediate intuition of principles by the *νοῦς ποιητικός*, upon which everything ultimately depends.

The passive intellect receives the form only because the creative intellect gives it. It is indeed on the occasion of sensible representations that notions are formed in the *νοῦς παθητικός*; but these notions are abstracted from the sensible representations only because the *νοῦς ποιητικός* has produced them. The active intellect is to the intelligible element contained in sensible forms, what the light itself is to the

light reflected by bodies (*De An.* III, 5). Light, whether it comes directly or is reflected from bodies, acts on the sense of vision, and gives actuality to the colours which this sense contained potentially. In the same way the active νοῦς acts either directly or by a sort of reflexion (by means, that is, of the intelligible element which is in sensible things either as essence, law, cause, or end) on the passive intellect, and causes the intelligible forms which are in it potentially to become actual; the active intellect is thus itself what is intelligible, but it is the intelligible that has become thought. It produces every intelligible idea in the mind, either directly or by perceiving itself in the intelligible forms contained in the sensible forms. If the light is extinguished there will no longer be any colour. If the νοῦς ποιητικός is extinguished there will be no truth, no knowledge. We may say further that the active intellect, *i.e.* the intellect in the form of thought, can alone discover by a kind of contact and sympathy the truly intelligible principle in the world.

Aristotle does not enumerate the primary notions, those highest principles which are apprehended immediately by the νοῦς and are the necessary conditions of thought. He contents himself with stating that every science has its own *special principles* (definitions), and involves hypotheses regarding its particular object, and the essence thereof, which it is unable to establish by demonstration; he also acknowledges the existence of some *common principles* (axioms) which cannot be subjected to demonstration, but without which demonstration would not in any case be possible. Highest amongst these ranks the most evident and general principle of thought: the principle of contradiction which lies at the root of the syllogism.

All that is positive in knowledge is then really due to the νοῦς ποιητικός. Being itself the intelligible, living and active in the mind, it alone is capable of recognizing itself in the world, of abstracting itself from sensible forms. But the νοῦς ποιητικός does not reach its highest realization in knowledge, for knowledge still implies a matter, an image.

Above all reasoning, higher than dialectical process is the intuition of reason by which man, free at last from all matter, reaches pure actuality. This pure actuality unmixed with potentiality, this matterless form, this necessary and single

being is God. God, pure actuality, is no longer separated by matter from the mind which thinks it. For what is sensation? It is the form of the object without its matter. In pure thought, the object itself has no longer any matter to prevent it from existing entire in the soul. In this intuition, the object of knowledge and the soul which knows it are one and the same thing. It is a veritable communion of the human mind with the pure form, with God, on Whom the whole universe depends.

It is more difficult to determine exactly the metaphysical nature of this active νοῦς. Is it the last effort of nature, moving towards God, and reaching Him at last without departing from her laws? Or is it God Himself who enters into the human mind by some kind of supernatural intervention? One text seems to confirm this second interpretation. The νοῦς exists before the body and enters into it from without like something divine: λείπεται τὸν νοῦν μόνον θύραθεν ἐπεισιέναι καὶ θεῖον εἶναι μόνον (*De Gen. et Corr.* II, 3). What is certain is, that the νοῦς has a separate existence, χωριστός; that it is pure, unmixed, impassable, always by its essence actual; that it alone is immortal, eternal, whereas the passive intellect is perishable, ὁ δὲ παθητικὸς νοῦς φθαρτός: lastly, that reason is itself the intelligible, and consequently the soul contains in itself the principle and measure of all that is intelligible.

"The reason of the resemblances between things is in their relation to common principles, and these depend ultimately on pure intelligence. The mind in passing from the particular to the general merely goes back to relations, of which it finds within itself the basis, and returns from sensible things, which are one with it only potentially, to the actual reality of its own nature" (Félix Ravaisson, *Essai sur la Métaph. d'Aristote*, t. II, p. 133).

In the aspiration after God, matter gradually becomes imbued with reason, and because, in its inmost nature it itself is God, the soul has the power of discovering the intelligible principle in things and in itself.

Empiricism of the Stoics.—Activity of the Mind in Knowledge.

In the systems of the Stoics and the Epicureans, these high conceptions were abandoned for an empiricism more

timid and of no great originality. Theirs was the theory of Aristotle, without his *νοῦς ποιητικός*. The Stoics placed the *ἡγεμονικόν*, the superior part of the soul, in the heart. At the beginning of life the *ἡγεμονικόν* is a kind of *tabula rasa*, a blank page ready to receive the impressions of things (*χαρτίον ἐνεργὸν εἰς ἀπογραφήν*). The first impressions are made by sensation, and sensation is followed by memory. Out of several memories of the same kind experience is formed (*τὸ τῶν ὁμοειδῶν πλῆθος ἐμπειρία*). General ideas are divided into notions, properly so called *ἔννοιαι*, and anticipations *προλήψεις* or *κοιναὶ ἔννοιαι*. The first are the result of an operation of the mind which combines (*combinatione*), or grasps resemblances (*similitudine*), makes comparisons and establishes relations (*collatione rationis*). The second are formed by a kind of spontaneous act; they are natural (*φυσικαί*), and in this sense they are as it were innate (*ἔμφυτοι προλήψεις*); not that they are anterior to all sensation, but that they are common to all men and express the invariable relations of things. Science consists in forming out of the general notions a system (*σύστημα*) which shall bind together and give coherence to the ideas furnished by sensation. This is a work of art, an act of will. Science is a possession (*ἕξις*) of the representations which is firm and unshaken by reasoning, and which consists entirely in tension and energy, *ἐν τόνῳ καὶ δυνάμει* (Stobaeus *Ecl.* II, 128). Thus science is measured by force or energy, and force by a kind of material tension of the soul. The Stoics deserve credit for having thus emphasized the necessity of activity in knowledge. Their conception of God corresponds to their theory of reason; God with them was the material, subtle world-soul, to be conceived after the image of man as a rational animal. The existence of God was established, and his attributes determined, not by rising above experience, but by interpreting and developing experience through reasoning and analogy.

Epicurus: Sensation the Principle of all Knowledge.

Epicurus regards sensation as the primary source of all knowledge, as the ultimate criterion of all truth. His second criterion is anticipation (*πρόληψις*), meaning that by which we anticipate or forestall sensation. It is the general

notion derived from the memory, from the impression (*τύπος*) of many similar sensations (D. L. X, 33). Without this *πρόληψις* there is no knowledge, but we must not forget that knowledge has its origin in sensible perception, which is its only guarantee. Opinion (*δόξα*), the hypothesis (*ὑπόληψις*), formed by means of anticipation, may be either true or false. Opinion refers either to the future *προσμένον*, in which case it is a prevision, an anticipation (for instance when I judge from a distance of the shape of a tower, or again that I see Plato), or to things imperceptible to the senses *ἄδηλον*, for instance the atoms, the void. When the opinion is an anticipation, it is correct if the sensation confirms or bears witness to it (*ἂν ἐπιμαρτυρῆται*); when it refers to *ἄδηλον* it is correct if the facts do not contradict it (*μὴ ἀντιμαρτυρῆται*), as for instance the theories of Epicurus (D. L. X, 33—Sext. Emp. *Adv. Math.* VII, 211). This inadequate criterion shows clearly his contempt for science. The existence of the gods is revealed to us by sensible intuition. We see them in fact. From their bodies, as from all others, flow out emanations (*εἴδωλα*), which bring us a palpable proof of their reality.

Neo-Platonism. Metaphysic of the νοῦς: Gradual Ascent from Sensation to Discursive Thought, Rational Intuition, and Ecstasy.

In Neo-Platonism we find an attempt made to reconcile, in one vast syncretism, the three great philosophic systems of Greece. Each of these is, so to speak, realized in one of the primordial hypostases (*ἀρχικαὶ ὑποστάσεις*), and all three were reconciled and blended in their Trinity. Platonism is represented by the One, the ineffable Being from whom all things proceed; Peripateticism, by the first emanation, the *νοῦς*, reason; and Stoicism by the world-soul. The *νοῦς* is Aristotle's pure activity, the thought of thought. Above the sensible world there is the world of Ideas, the intelligible world composed of Ideas, where the things represented to us by the world of sense as extended and dispersed in Space and time, exist in their essence, concentrated into an incorporeal simplicity. The Ideas are intelligences for ever given up to self-contemplation, whose whole Being is in fact this self-contemplation; and they are not only involved in one another, but also ascend to a highest Idea, which embraces and includes

them all. The intelligible world and the intelligence are one; reason is thought become actual, pure actuality, thought thinking itself.

As the νοῦς contains within itself a multitude of ideas, so also does the Universal Soul contain within itself a multitude of individual souls. Deceived by a kind of mirage, these souls descend "as if summoned by a herald's voice," into the bodies that are appropriate to them. The soul, once it has fallen into a body, may find delight in its degenerate state, forgetting its Heavenly Father. But it may also be withdrawn from its own body, and, even here below, turn to God; it is never entirely separated from the Universal Soul, and though it is not clearly conscious of it, its dwelling-place is still in the Intelligence. In order to return to God, it is therefore not necessary for the soul to go out of itself.

As a middle term between the perception of sensible things and the contemplation of the Ideas, there is on the Alexandrian System discursive thought (διανοητικόν). Reason (νοῦς) is the same in every individual, but that which discursive thought reveals of its contents varies in different individuals. Knowledge, which is based on reasoning, partakes of the nature of both rational and sensible intuition, and is the connecting link between them. By the application of intuition to experience in knowledge the unity of the Idea is destroyed; but, on the other hand, knowledge enables us to perceive the intelligible in the sensible, and prepares the way for the emancipation of the soul. Corresponding to knowledge, in practical life are the *political* virtues (temperance, courage, prudence, justice), which had been preached by the Stoics. Knowledge is followed by contemplation of the ideas, and the political virtues by the *purifications* (καθάρσεις) which free the soul from all error, from all illusion. Once returned to its own nature, to the Unity of the Intelligence, the soul is able to contemplate the pure Ideas in all their spiritual splendour, and itself also without any intervening obstacle or medium. Finally, there are the virtues by which men become divine (ἡ σπουδὴ οὐκ ἔξω ἁμαρτίας εἶναι ἀλλὰ θεὸν εἶναι). This is the contemplation of the One, of the Ineffable Being, the highest term both in the practical and speculative life; and the soul reaches it, not by intuition, but by rising above every intellectual act—for all

thought still implies motion (κίνησις) and a certain duality of subject and object—by an *ecstasy*, by setting itself free of every form, even the most ideal, by returning to the absolute unity, ἔκστασις-ἁπλωσις-ἀφή. Thought has value only because it lifts us gradually to heights whence we can discover God. Logical thought is the intelligible, developed, as it were, by the false show of sensible things; pure thought is an intuition of the intelligible, in its unity and ecstasy incapable of further description. Thought is like a wave which bears us on its crest, and swelling lifts us so that all at once we are able to see (Enn. VI, vii, 36; Félix Ravaisson, *Ess. sur la Métaph. d'Aristote*, t. II, pp. 451-452). The soul is then God, and finds in Him the source of life, the principle of Being, its own origin. It is the Being, the Being is in it, it is filled, intoxicated with love, and is perfect felicity. This state is seldom experienced, and then only for a brief moment. Plotinus admits that he himself only reached it three times in his life.

Christian Platonism. St. Augustine.—St. Anselm.—Peripatetic Realism.—Thomas Aquinas.—Nominalism.

As they were chiefly concerned with the higher truths and with the salvation of souls, it was natural that the Christian thinkers should only give a small part of their attention to the physical sciences and their principles. There was, moreover, at the beginning, an affinity between the Christian teaching and the Platonic and Neo-Platonic doctrines. Among the early fathers who followed Plato, St. Augustine is the most renowned. He despised physical science, because it was of no use for the bliss of the soul; what he sought was knowledge of God and of himself; and consciousness or internal experience became with him the centre and heart of philosophy. To doubt that one possesses the truth is still to have the idea that the truth exists. Human reason apprehends itself as variable, uncertain; but it has, at the same time, both the idea of, and the desire for a truth that is immutable and eternal. What the mind has to do, therefore, is to rise above itself, to ascend towards the source of all light. The immutable truth is God. He is the Intelligence, the Reason which illumines us. (*Confess.* X, 65; XII, 35. *De Trinitate*, XII, 24). He is

the eternal principle of all the forms in which His creatures appear. He is the absolute Unity, the Supreme Beauty. In Him are the Ideas.

"The Ideas are the immutable forms or reasons of things (*rationes rerum*); they are uncreated, eternally self-identical, and are contained in the divine intelligence. And since they are not born, and never perish, it is on the model of the Ideas that all things that perish are formed, all that which is born and dies (*De Ideis*, 2). For neither are there many wisdoms, but one,—in which are untold and infinite treasures of things intellectual, wherein are all invisible and unchangeable reasons of things visible and changeable, which were created by it" (*De Civ. Dei.* XI, 103).

This is the theory of Plato, without his dialectic and without the intermediate world of mathematics, which enables us to have at least a glimpse of the connection between the sensible and the intelligible things, and of the way in which our knowledge of the world has its principle in the Ideas.

In the Middle Ages the problem of reason formed part of the great discussion on the reality of general ideas, and of the violent disputes between the realists and the nominalists. The Platonic realists of the first period, St. Anselm, William of Champeaux, etc., asserted with Plato the reality of the general ideas and their existence prior to things (*universalia ante rem*). The idea of humanity is anterior to individual men. Since knowledge has to do with general ideas, if these did not exist knowledge would be concerned with the non-existent, with nothing. St. Anselm (and later the Platonists of the twelfth century, Bernard of Chartres, Gilbert de la Porrée) thought to demonstrate even revealed truths on rational grounds. His realism was founded on St. Augustine's theory of Ideas. The Ideas, he taught, exist eternally in God. "They are the intercourse of God with Himself, as thought is man's intercourse with himself" (*Monol.* Ch. XXVII). Thus all knowledge has its source in God. He is the supreme truth which makes all truth, the sovereign good which involves all particular goods, the absolute through which alone the relative is comprehensible. We always speak comparatively of greatness, of goodness; there must exist therefore a model, an immutable type to which we refer. In order that the existence of the absolute should not be made to depend on the existence of the relative, St. Anselm sought a direct and immediate proof of the existence of God.

This he thought to have found in the ontological argument, in the idea of the greatest good that could possibly be conceived. (*Aliquid bonum quo majus cogitari nequit*). This idea is present in every mind, and it involves existence; therefore, for the sole reason that we have a conception of it, perfection must exist (*existit ergo procul dubio aliquid quo majus cogitari non valet, et in intellectu et in re*). This argument is the boldest application that has ever been made of the theory of realism.

The Realists of the second period, being influenced by the teaching of Aristotle, were more moderate. To Albertus Magnus, Thomas Aquinas, and Duns Scotus universals have no substantial existence outside things. As Aristotle said, they exist in the individuals and through them, *non ante rem, sed in re*: not that the doctrine of ideas was to be rejected. Universals exist *ante rem*, not as independent and actual beings, but as exemplars or intelligible forms in the Divine Reason. According to Thomas Aquinas, man cannot think without images. The forms received by the passive intellect from sensible impressions, are only made truly intelligible through the active intellect, just as light alone makes the colours of bodies visible. By a sort of abstraction, the active intellect makes the images received through the senses intelligible. *Intellectus agens facit phantasmata a sensibus accepta intelligibilia per modum abstractionis cujusdam* (*Summa Theol.*, I, quæst. 84). This is Aristotle's theory deprived of some of its force. The principles of Thomas Aquinas are not in agreement with Anselm's ontological proof. As it is from the sensible that he abstracts the intelligible, so also it is from the world that he reaches God, whose existence he proves by the necessity of a first mover, by the impossibility of infinite regression in the series of secondary causes, by the design manifest in nature which is of itself unintelligent.

Nominalism in the Middle Ages represents or corresponds to empiricism, and consequently, as has always been the case, implied a certain scepticism. The Nominalists, since they refused to attach any value to general ideas, could not admit any more than an entirely relative value in knowledge; reason being impotent could not be reconciled to faith; the two terms tended to become divergent. The great opponent of realism in the first scholastic period was Roscellinus. In the 14th

century William of Occam, born in England and the precursor both of Luther and of English empiricism, gave to nominalism a new lustre. His doctrine was that the universal does not exist in things but in the mind, as a concept uniting in one word several singulars, *conceptus mentis significans univoce plura singularia*. Nor have the ideas more reality in the mind of God, being no more than His knowledge of particular things which alone exist. Since only individual things are real, intuition, either of the senses or of consciousness, is the only source of knowledge. Science was reduced to formal logic the principles of which were arrived at by induction, and which dealt with conventional signs, the epitome of particular intuitions. The attempted reconciliation of Faith and Reason was unnecessary, for in truth the latter was non-existent; and all truth was relative, for it was based on individual intuition,

Arabic Theory: Identity of the Creative Intellect in all minds; Averroes.

We cannot leave the philosophy of the Middle Ages without giving some account of the great Arabic theory regarding the creative reason. The name of Averroes (born at Cordova, 1126-1198) became in the Middle Ages symbolic of infidelity and blasphemy. To him is attributed the famous book of the three impostors (Moses, Mahommed, Jesus Christ), which no one has ever seen, but which was the cause of the burning of so many philosophers. The old Italian painters represent Averroes being cast into hell, grimacing in a demoniacal manner, and again as conquered and utterly crushed by the dialectic of the triumphant Aquinas. The doctrine of Averroës, which was attacked by all the great peripatetic and orthodox Scholastics (Albertus Magnus, Thomas Aquinas and his disciples), and later by the Platonists of the Renaissance (Ficinus, *pref. to trans. of Plotinus*) prevailed as early as the middle of the 14th century in Northern Italy, especially in Padua, and held its ground there until the middle of the 17th century. Thomas Aquinas sums up the doctrine of Averroës in these terms: "It is not in the power of God to create more than one intellect. The intellect is a power entirely distinct from the soul, and it is one in all men." Aristotle had said

(*De Anima*, III, 5) that the active intellect enters into the soul from without, and that it alone is distinct, imperishable, eternal. This doctrine of the master was developed by Averroes and his disciples. He tried to reconcile the opinion of Alexander of Aphrodisias with that of Themistius. According to Alexander the passive intellect is only a disposition, a potentiality belonging to animal life to which the active intelligence, that is God Himself, gives actuality. Themistius, on the other hand, taught that these two intelligences are in each man of the same substance, and distinct from the body, and this ensures the individual immortality of souls. The doctrine of Averroes was, that the potential or material intellect was more than a passing disposition, but at the same time there could not exist more than one active intellect. Man has in himself merely an aptitude to be affected by the active understanding. The potential intellect is the result of the contact of this aptitude with the active intellect. The latter is therefore a kind of mixture or compound of the aptitude which is in us, and the active intellect outside us The active intellect is to the plurality of souls what light is to the objects which reflect it without depriving it of its unity. The potential intellect attains actuality by means of the active intellect after it has also in a manner been created by the latter, which at the same time absorbs it; and consequently, as the active intellect is imperishable, our νοῦς is immortal: not, it is true, as an individual substance, but in as much as it is a moment of the universal understanding. This universal understanding is a divine emanation, it flows from the lunar sphere, from the mover of the last of those heavenly circles which, rising one above the other, finally reach up to God.

With Bacon and Descartes the Object of Knowledge no longer General Notions.—Mathematical Rationalism of Descartes. Primary Notions and Truths.

In their inquiries concerning reason, the ancient and mediaeval philosophers had occupied themselves mainly with the problem of general notions. By them science was conceived as a system of classification, as a means of arresting the flow of sensible phenomena, of finding a fixed object for thought, of gradually lifting thought up to the immutable, to

God. But with the progress of science, which in the 16th century extended in every direction, the problem underwent a change. Broadly speaking, the aim of philosophy now was to abstract from complex phenomena the simple elements of which they are composed, to find the laws governing their combination so as to be in a position to reproduce it. The theory of induction was discovered by Bacon, and he (as well as his followers) was possessed by the idea of the advancement of the natural sciences. Descartes was more ambitious, and as a confident rationalist with a very clear conception of the scientific ideal, hoped to effect the completion of science by giving to it from the beginning the desired deductive form. He tried to reduce the universe as it appears to us, to a combination of intelligible elements. Mathematics was, in his opinion, the model and the type of science, which should be a vast encyclopaedia, all the branches of which should be related to one another and to one common principle. His object was to "imitate those long chains of quite simple and easy reasoning which mathematicians are in the habit of employing in order to reach their most difficult proofs."

"All things to the knowledge of which man is competent are mutually connected in the same way, and there is nothing so far removed from us as to be beyond our reach, or so hidden that we cannot discover it, provided only we abstain from accepting the false for the true, and always preserve in our thoughts the order necessary for the deduction of one truth from another" (*Disc. de la Méthode*, 2nd Part).

Natural science should be made as clear as that two and two make four, and hence it must be founded on notions that are, in the first place, intelligible in themselves, and, secondly, linked together in accordance with evident relations.

In this conception of science, as independent of the senses and of experience, which are merely its occasion, the most important part is assigned to reason, since it is to reason that we owe simple and primitive notions, and the principles which rule the combination of these intelligible elements. In Descartes' method there are two steps. Firstly, intuition; not indeed sensible intuition, which only gives us notions that are confused and already very complex, but rational intuition, to which we owe, besides simple notions, primary truths and axioms. Secondly, deduction, which is the source of progress

and movement in thought, a succession of intuitions revealing the relations between ideas.

Which, then, are the *a priori* notions, the primitive, innate ideas? The most important primary notion, and the most natural to us, is that of God, of Infinity, of perfection. "By the name of God I understand a substance infinite, eternal, immutable, independent, all-knowing, all-powerful, by which I myself, and every other being that exists, if any such there be, were created" (*Meditation*, III). The characteristics of our idea of the Infinite are as follows: Firstly, it is a positive notion. It is an error to maintain that this notion is only acquired by the negation of what is finite, as rest and darkness are conceived only by the negation of motion and light.

"On the contrary I clearly perceive that there is more reality in the infinite substance than in the finite, and therefore that in some way I possess the notion of the infinite before that of the finite. . . . For how could I know that I doubt or desire, that something is wanting to me, and that I am not wholly perfect, if I possessed no idea of a being more perfect than myself, by comparison with which I know the deficiencies of my nature?" (*Medit.* III).

It cannot therefore be asserted that this idea represents nothing to me, and may consequently arise out of nothing, since, on the contrary, this idea represents more reality than any other.

2.° Not only is this idea positive, but it is also clear and distinct. It is true that I do not understand the Infinite; but on the one hand I know that he possesses all the perfections of which I have an idea; and on the other, I understand very well that the Infinite cannot be perfectly understood by a finite being like myself. Hence I have an idea of the infinite which is quite distinct, though very imperfect (*Ibid.*).

3.° Might not the perfection which I attribute to God be merely my own perfection magnified? Perhaps it exists potentially in me. This power of acquiring, by degrees, all the perfections is enough possibly to produce the idea of them even now.

"Although it were true that my knowledge daily acquired new degrees of perfection, although there were potentially in my nature much that was not as yet actually in it, still all these excellencies make not the slightest

approach to the idea I have of the Deity, in whom nothing exists in a state of mere potentiality, but everything exists actually and really" (*Ibid.*).

In the second place, the Infinite cannot be reached by successive additions. It is contradictory to suppose that a finite being could ascend by degrees to the Infinite.

"I readily perceive that the objective being of an idea, *i.e.* that which is represented by an idea, cannot be produced by a being that is merely potentially existent (which, properly speaking, is nothing), but only by a being existing formally or actually" (*Ibid.*).

It is therefore impossible to derive from a potential infinity the idea of actual infinity.

4.° Could our idea of the Infinite or of the Absolute be explained then by adding together all the perfections of which the universe is composed?

"But," says Descartes, "It cannot be supposed that several causes concurred in my production, and that from one I received the idea of one of the perfections I attribute to Deity, and from another the idea of some other, and thus that all those perfections are indeed found somewhere in the universe, but do not all exist together in a single being, who is God; for, on the contrary, the unity, the simplicity or inseparability of all the properties of the Deity is one of the chief perfections I conceive Him to possess; and the idea of this unity of all the perfections of the Deity could certainly not be put into my mind by any cause from which I did not likewise receive the ideas of all the other perfections" (*Ibid.*).

To sum up: according to Descartes (3rd *Medit.*) our idea of the Infinite, or of God, being an eminently positive idea, cannot be obtained by negation. 2nd. Being positive, it is therefore clear and distinct, although imperfect. 3rd. Since it is the idea of an absolute actuality it cannot be derived from what is merely potential. 4th. As it is the absolute unity of all perfection, it cannot be the sum of the perfections that are to be found scattered throughout the universe. Seeing, therefore, that it is not attainable through either external or internal experience, the idea of infinity is one of those original innate ideas which are not formed by us; and it is, moreover, the first of these ideas, the idea by which both reality and our knowledge are established.

As regards the other primary ideas or intelligible elements, Descartes distinguishes three kinds of ideas: adventitious

ideas, *i.e.* those derived from the senses, factitious ideas (for example, a *centaur*, *Pegasus*) and innate ideas (as of God, of mind, spirit, body, or of a triangle) (Vol. VIII, pp. 510, 511).

Elsewhere he goes so far as to say, "I hold that all those [ideas] which involve neither affirmation nor negation are innate" (Vol. VIII, p. 534). By this he means that all primitive notions are innate. The adventitious part is the particular knowledge of the moment, the experience in which we see such and such a figure realized in space. "We have within us the material of our thoughts: what we learn by experience is the manner in which this material is shaped" (*Lectures of M. J. Lachelier in the École normale*). The understanding alone would give us the corporeal world without any actual determination, extension without motion. From our senses we learn that extension actually takes such and such a shape through motion. The object of science is to trace back what is adventitious to what is innate, to explain experience by reason, what is sensible by what is intelligible, by discovering the rational laws which are the cause of the actual determinations of space.

In what sense are these simple ideas, these intelligible elements, innate? On this point Descartes' doctrine is quite clear.

"When I say that an idea is born with us, I merely mean that we have within us the faculty of producing this idea. I have never held nor written that the mind requires natural ideas distinct from its powers of thinking. But as I perceived that there are certain thoughts which proceed neither from external objects nor from the determination of my will, but solely from my faculty of thinking, I called these ideas natural; but I merely said so in the same sense as we say that generosity or some disease is natural to certain families" (*Letters*, Cousin's Edition, Vol. X, p. 70).

If after this assertion a further proof were needed, we have only to point out that Descartes, by his demonstrations of the existence of God, of the distinction between the soul and the body, by his reduction of the secondary qualities of matter to extension, repeatedly makes the mind discover ideas which it possesses implicitly.

We have still to determine the rational principles which enable us to connect together simple notions. The first of these principles, the one which governs all knowledge, is the principle of divine veracity. Man, by only reflecting on his

own nature, arrives at the idea of a perfect Being, of God. This perfect Being cannot wish to deceive us and we may therefore without fear accept as the expression of reality all that we conceive clearly and distinctly.

"The existence of God is the first and the most eternal of all possible truths, and from it alone all other truths proceed (*Letter to M. Mersenne*) The knowledge of an atheist is not true science, because any knowledge that could be made doubtful cannot be called by the name of science" (*Answer to 2nd Objection*).

The real alone being intelligible, Descartes does not see the necessity of enumerating all the rational principles. That is true which, after we have taken every precaution, appears so to us. The primary truths are the axioms—those self-evident propositions which make deductive reasoning possible—and the most important of these is the principle of contradiction. The problem of our knowledge of the world may be stated as follows: given a composite thing (for example, the world as it appears to us) to find an equation that will express it in simple and intelligible notions. The only clear and distinct notion which we have of the world is that of extension. Physical science should therefore be a mathematical system. "The world is a machine in which we have nothing to consider beyond the figure and motion of its different parts." The world being a mechanism, the science of it is deductive. The principles governing this science are innate, but only in the sense that reflection of itself reveals them to us.

"I have also observed certain laws established in nature by God in such a manner, and of which He has impressed on our minds such notions, that after we have reflected sufficiently upon these, we cannot doubt that they are accurately observed in all that exists or takes place in the world" (*Discourse on Method*, Pt. V).

In what does this reflection by which we discover the laws of nature consist?

"I have pointed out what are the laws of nature; and with no other principle upon which to found my reasonings except the infinite perfections of God, I endeavoured to prove all those of which there could be any doubt, and to shew that even if God had created more worlds, there could have been none in which these laws were not observed" (*Ibid.*).

God is the principle of motion and He is Himself immutable,

hence the law of the permanence of the quantity of motion in the world.

To sum up: the problem of science was for Descartes not only to discover generalities, to reach the immovable, but also to find the explanation of things as they appear to us. Experience is no more than the occasion of this science, which consists in reducing the sensible world to simple and intelligible notions (such as extension), these being combined according to natural laws, all of which depend on the idea of God.

Bossuet and Fénelon: the Eternal Truths are in God; they are God Himself present in the Human Mind.

Bossuet was influenced by Descartes, but he was at the same time mindful of the doctrines of St. Augustine and Thomas Aquinas. "Reason," he says, "is the light given to us by God for our guidance" (*Conn. de Dieu et de soi-même*, I, 7), and it has for its object the eternal truths. Which are these truths? Bossuet cites (*Ibid.* IV, 5) the mathematical truths—the laws of motion and the principles of morality. "There is an extremely close connection between law and reason. Order could not exist in things if it were not for reason, and it can only be comprehended by reason; law is the ally of reason, and its special object."

Bossuet is never weary of repeating that the eternal truths, the principles of our understanding, are "something of God, or rather are God Himself" (*Ibid.* IV, 5). He thus holds with Fénelon and Malebranche that every relation of our reason to an eternal truth is a direct intercourse of the human mind with God. But he probably would not have agreed with the former that reason is something external to us, and he certainly would not have held with the latter the doctrine of passive vision in God. What he, as well as all the Cartesians, asserted was that our idea of perfection is the positive idea *par excellence*, and that imperfection necessarily implies the perfection from which it has, so to speak, fallen away (*Ibid.* IV, 7).

Fénelon appears to have had beside him a copy of the *Traité de la connaissance de Dieu et de soi même* when he wrote his *Traité de l'existence de Dieu*. He adopted Bossuet's theory, giving to it, however, a more mystical and idealistic expression. He begins by declaring that our idea of the Infinite is a real

and positive idea, and that it is implied in all our other ideas. "It is true, I am not able to exhaust the infinite, nor can I understand it, that is to say, I cannot know it to the extent that it is intelligible. . . . But such as it is, my idea of the infinite is not confused, nor is it a negative one" (2nd Part, Chap. II). "It is not a confused idea, for I affirm all that is predicable of it: I deny all that is not predicable. If one were to say to me that the Infinite is triangular I would reply without any hesitation that what is without limits can have no shape" (1st Part, Chap. II). "It is not a negative idea, because it is not by excluding indefinitely all limits that I form an image of the Infinite in my mind. He who speaks of limits merely makes a negative statement, and, contrariwise, he who denies this negation affirms something very positive indeed: a double negation is equal to an affirmation" (2nd Part, Chap. II). This idea of the Infinite is not without an object. "Besides the idea of the Infinite" says Fénelon, "I have also universal and immutable notions which rule all my judgments": and he gives as examples the mathematical and ethical truths.

Malebranche gives a Systematic Form to the Ideas of Bossuet and Fénelon: Vision in God.

Neither Bousset nor Fénelon made any attempt to establish the relation between the universal truths and our idea of the Infinite, or of perfection. They merely asserted the two terms to be identical. Malebranche's treatment of the question was more strictly philosophical. He adopted the Cartesian system, at the same time giving it a simpler form. Descartes had separated the object from the idea; with him the divine veracity is our warrant of the agreement between our clear and distinct ideas and their objects. Thus in his system there were three terms to be considered—God, the object, and the idea. With Malebranche, these three terms are reduced to one, namely, the idea, which he regards as the sole object of knowledge. God is the source, the reality, the *place* of ideas. Whenever we think clearly and distinctly, we are in God, we see God: this is the theory of Vision in God.

"God alone is known in Himself. Him alone do we see with an immediate and direct perception. Note well that God, or the Infinite, is not visible through the medium of an idea. The Infinite is its

own idea, and has no archetype. It is only creatures that are perceived through ideas which represented them even before they were made. One may perceive a circle, a house, a sun where no such thing exists, for anything that is finite may be perceived in the Infinite, which contains its intelligible ideas. *But the Infinite can only be seen in itself*, for nothing can represent the Infinite. If we think of God, it must be that God exists" (2nd *Entret. Métaph.*).

Thus God is the only Being immediately present to our thought. I do not know Him in the same way as other things, *i.e.* through the medium of an idea: I know Him immediately in Himself. Now, "God contains the intelligible world, where are found the ideas of all things . . . the archetype which I behold of the created world in which I live. In Him is reason, which enlightens me through purely intelligible ideas, with which it abundantly provides my mind and the minds of all men." I am not distinct from Him; He is "the place of Spirits as space is the place of bodies: I am immediately united to Him" (*Rech. de la Vér.* Pref.). All that is positive in the world is effected by Him (doctrine of occasional causes), and in the same way it is He who acts in me: He is the author of truth as well as of reality. As on occasion of the heat of the sun He makes the plant to grow, so also does He on occasion of diverse movements in myself, of which He is the ultimate cause, condescend to reveal to me something of the world of ideas which is in Him. The mind's attention is as it were devotion, a prayer in which I summon the divine aid: it is an effort of the mind turning to God for light. We have of ourselves only an imperfect and confused inner feeling. We do not perceive our soul in its idea, we observe its modifications, but are unable to reduce them to simple intelligible notions. Sensations, as such, only relate to the perservation of the body, but on their occurrence God reveals to us the idea of intelligible extension, the relation between His modifications and His essence, which is the archetype of the world we inhabit and the sole object of true science. The theory of Vision in God results in an entirely mathematical view of physical science like that of Descartes.

Spinoza: Four Degrees in Knowledge.—His Contempt for Empirical Science.—Rational and Intuitive Knowledge.

Spinoza, like Malebranche, was a disciple of Descartes, and he also regards mathematics as the ideal of all knowledge.

Mentis enim oculi quibus res videt observatque, sunt ipsæ demonstrationes (*Eth.* V, Note to Prop. 23). True science should therefore be entirely rational and deductive. Spinoza distinguishes four kinds of knowledge: 1st, *per auditum*, by hear-say, by which I know, for instance, the day of my birth. 2nd, *per experientiam vagam*, ordinary induction, chance and methodless generalizations from sensations. 3rd, rational knowledge (*ratio*), which corresponds to the ἐπιστήμη of Aristotle, that is, to demonstrative science. In this rational knowledge we pass from an effect to its cause without apprehending the mode of generation of the effect by the cause, or, again, we apply a general rule to a particular case. 4th, there is the *intellectus*, *scientia intuitiva*, that is the immediate knowledge of principles, the νοῦς ποιητικός of Aristotle. Spinoza explains his theory by means of an illustration. Let it be given that $2 : 3 :: 4 : x$. Tradesmen know that 3 is to be multiplied by 4 and divided by 2, this is knowledge *per auditum*. By operating upon simple numbers, it is easy to discover the practical rule: this is knowledge *per experientiam vagam*. If we formed our knowledge on the demonstration of Euclid, it is of the 3rd kind, that is *per rationem*. Perfect knowledge, the *scientia intuitiva*, consists in perceiving directly and without calculation that 4 being twice 2, x is twice 4. This knowledge is not only the most direct but also the only kind that explains the generation of the 4th term (*De Emendatione Intellectus.—Ethics*, II, Note 2 of Prop. 40).

Empirical knowledge is necessarily inadequate because it only expresses the relation of our bodies to foreign bodies, and consequently expresses neither the one nor the other clearly. It is founded on a medley of impressions to which correspond only confused and inadequate representations. Hence Spinoza is led to despise both general ideas, which are abstracted from sensations, and inductive science as we understand it now. General notions according to him are merely enfeebled sensations, fainter images, which become more confused in proportion as their extension is greater. We do not arrive at anything through abstract ideas, such as those of Being, of the One, the True, the Good, all of which are only modes of thinking. Spinoza is in fact a nominalist. He allows that empirical science has its uses, but he is not concerned with it, because it

is not true knowledge, because it has to do only with appearances, with the outside of things, and merely connects phenomena with phenomena, carrying on the infinite series of finite modes, each of which is determined by another, without ever reaching anything that is conceivable in itself and of itself.

True science, that is to say, rational knowledge (*ratio*), rests not on abstract and general notions, but on the properties which are common to the whole and to its parts, and which consequently can be abstracted from all experience. These common notions or properties, of which we have an adequate idea, are the mathematical properties: extension, figure, motion, rest. The first effort towards scientific knowledge is therefore the endeavour to acquire simple and adequate notions, which are clearly and distinctly understood without any possibility of error. It is the function of reason to resolve compound things into these intelligible elements. Thus, like Malebranche's theory of Vision in God, Spinoza's *ratio* brings us back to the mathematical physics of Descartes, in which our confused sensations, the complex properties of bodies are translated into simple intelligible notions, whose relations have been established by deduction. This science, which deals with general properties that are above time, is deductive, and reveals the necessary relations between ideas, and cannot therefore consider things as contingent (*Ethics*, 2nd Part, Prop. 44). It is the nature of reason to perceive things *sub specie æternitatis*, under the form of eternity (*Ibid.* Coroll. 2).

But with Spinoza reasoned knowledge is not the highest form of knowledge. Simple ideas and their relations express only the possible: true science is knowledge of the real, of effects by their causes. Hence the necessity of a knowledge that shall be not demonstrative but intuitive (*scientia intuitiva*), and this is the knowledge of God, to whom all things are to be referred and from whom all things are to be deduced. In knowledge of this fourth kind the essence of each thing is known as having its necessary foundation in the essence of God. The mind is passive when it is subject to the influence of things (as in sensation and imagination), but does not apprehend their generation: and it is active when it reproduces the movement of nature, of the divine thought which engenders all that is. Spinoza was a kind of nominalistic Plato. True

science, he taught, is not concerned with the sequence of phenomena, but it constructs the world by means of simple notions and adequate ideas. True deduction deduces things in their essence.

"*Ut mens nostra omnino referat naturæ exemplar, debet omnes suas ideas producere ab ea, quæ refert originem et fontem totius naturæ, ut ipsa etiam sit fons cæterarum idearum*" (*De Emend. Intell.*, Chap. VII).

The ideas that are innate to the mind, and above all others their common principle, namely, the idea of God; the principles of deductive reason which render possible the concatenation and combination of these ideas (*concatenatio intellectus*): these are the functions of the intellect (*scientia intuitiva*, pure reason), the elements and the object of true knowledge.

Leibnitz endeavours to reconcile Descartes and Locke.—Experience and Reason: First Principles: Degrees of Knowledge.

Leibnitz was an eclectic and liked to reconcile different schools of thought. Like Descartes he was a rationalist, and had a passion for deductive and mathematical methods, but at the same time he sought to expand the Cartesian rationalism by the introduction of new elements. Descartes held that our primary ideas and principles were innate, imprinted in us by God. Locke traced them to experience either internal or external. Leibnitz now endeavoured to reconcile these two theories. Locke's attack was of service inasmuch as it went against that facile philosophy which proceeds by multiplying principles. And when he objected to Descartes, that children have no consciousness of these so-called innate ideas, he was irrefutable.

But on the other hand, since the objects we reach by experience have only a contingent existence, experience can do no more than provide us with examples or particular facts: it never gives us necessary truths or principles. What escape is there from this dilemma? The difficulty disappears if we distinguish between two things which were confused by these philosophers, namely, *perception* and *apperception*, or distinct consciousness. As middle term, between mere potentiality and perfect actuality there is *virtuality*. Our innate principles are not always objects of apperception to us, but this does not

mean that we do not always possess them virtually. The mind has special possessions, and these are the innate principles, but experience is needed before what is thus virtually in us can attain actuality. Inateness does not lie in an explicit knowledge, but in potentialities and tendencies. The mind is not a *tabula rasa*; it resembles rather a block of marble, the veins of which prefigure the statue, which will be carved out by experience.

But how is the part thus assigned to experience by Leibnitz to be reconciled with that other theory of his, according to which the monad has "no window to the outside," and must therefore be the principle of all its own modifications? The essence of the monad is perception and appetition, or the tendency ever to rise to a more distinct perception: and since owing to the *pre-established harmony*, the acts of one monad are in agreement with all the acts of all the other monads, every perception represents dimly the whole universe. If all the potentialities of a monad were suddenly to be realized, if all that is within it were developed, the monad would be the equal of God. The life of the mind is a continual progress from confused to more distinct perceptions. Distinct perception presupposes then confused perception, but the confused perception is the one which in a monad represents the other monads, and arises in the mind from its relations with other monads; in other words, our confused perception is experience. We may therefore grant with the empiricists that there is nothing in the intellect which was not in the senses: *nihil est in intellectu, quod non prius fuerit in sensu*. But, on the other hand, although all our ideas are in one sense acquired and imply experience, they all have their origin in our own minds as well, and express that spontaneity and productiveness which is peculiar to the mind. We must therefore make the formula of the sensationalists complete by adding *nisi ipse intellectus*. Experience is thus only a moment of our own development.

"A little reflection leads us to believe that we neither act nor think except under the influence of things; but deeper reflection shows that even our perceptions and passions originate with perfect spontaneity in our own minds" (Erd.'s Edition, 591 *b*).

Which are now, according to Leibnitz, the innate principles,

and how do they harmonize with his conception of science? Leibnitz, like Aristotle and the Scholastics, distinguishes necessary truths from contingent truths. Necessary truths which are found not only in mathematics, but also in logic and metaphysics, and even in ethics, are distinguishable by the sign that their negation is self-contradictory. They are the necessary, eternal truths, the contrary of which is impossible: and all that is deduced from them has the same characteristic. But as they only unfold by the attribute what is already contained in the subject, without establishing the reality of the latter, these truths refer to the possible, not to the real. Things do not exist, whatever Spinoza may say to the contrary, in virtue merely of their conception. There are in God an infinite number of possibles which express every form of being that is exempt from internal contradictions, but they do not attain actuality. Contingent truths, or truths of fact, are those which we know by our senses, or by our own consciousness. For example, Descartes' "*Cogito ergo sum.*" The necessary, then, is that of which the contrary involves contradiction, as that $2 + 2 = 4$. The contingent is that the contrary of which involves no contradiction, as, for instance, that Spinoza died at the Hague. To these two kinds of truths two laws correspond. The law of Contradiction governs rational knowledge, and applies to the possible. The law of Sufficient Reason relates to contingent truths, which become intelligible to us the moment we are conscious of the reasons of that which is given to us as real in experience. It is in obedience to the principle of the Best that God, by a wise and intelligent choice, in which the maximum of perfection is realized, causes certain possibles to pass into existence. Everything is determined, for this is the necessary condition of the harmony which God has pre-established between all the acts of all the monads; but there is agreement between the order of efficient causes and the order of final causes, and this agreement results from the subordination of efficient to final causes (Erd. 144 *a*). There are thus, so to speak, three worlds: the world of possible things, which is governed by the law of contradiction; the world of existing things, which is governed by the principle of Sufficient Reason; and the world of phenomena, the mechanical world, which is

subject to the law of efficient causes, and which in the last resort is only a symbol of the law of final causes.

The conception of science formed by Leibnitz is in harmony with his theory of reason. Induction only applies to a greater or less number of particular cases, and it results in an empiricism, a collection of general rules, rather than in a science. But in mathematics we have the model of true science, and philosophy should imitate it by finding exact definitions, and then proceeding regularly by syllogisms (Erd. 381, 487). Hence the idea always present to Leibnitz of a philosophical language, a language truly scientific, a universal symbolism (*caractéristique universelle*) which would make it possible to prove by a sort of algebraical calculation the truth of every proposition, and even to discover new truths. For this purpose it would only be necessary to discover those concepts from which others are formed, and to determine the possible combinations of these concepts. This is the dream of a mathematician, and is in keeping with his liking for mechanical physics. He rejects the methods of the Platonists and theosophists, who made God, or spiritual principles, or ἀρχαί, intervene directly in individual phenomena (Erd. 694 *b*). He attacks Newton's theory of attraction as an occult quality, and he tries to explain weight, elasticity, and magnetism mechanically by a current of light or of ether emanating from the sun. But even in this mechanical physics he is obliged to go beyond the law of contradiction and pure mathematics. It is only in the Principle of Convenience, or of the Best, that he finds the foundation of the laws of nature. The laws of continuity, of the persistence of force, of indescernibles, are not absolutely necessary or geometrically demonstrable. They are the maxims of a higher philosophy, applications of the principles of Sufficient Reason (*Theod.* 345 *ff.*). Thus Leibnitz regards science as a continuous whole, which, starting with common experience and induction, leads up to mathematics and to a mechanical explanation of the world; and thence, through its very inadequacy, to metaphysics, to the principle of reason, to the discovery that the laws of motion, and consequently the laws of nature, are subordinate to the law of design.

Finally, all these ideas depend on the idea of God: the idea of God is therefore the most intimately one with the mind, the

idea to which it is constantly brought back. The law of Sufficient Reason is the supreme principle of philosophy, and the one truly Sufficient Reason is God.

Locke attacks the Doctrine of Innate Ideas. Reason reduced to Discursive Understanding.

In his *Essay on the Human Understanding*, Locke seeks, by an application of the inductive method, to determine the origin of human knowledge.

The Cartesian philosophers had been throughout influenced by the mathematical ideal which they took to be the ideal of every science. To the English empiricists, who were in this preceded by Telesius and Campanella, the natural sciences were the model, and the inductive method was the condition of every science. At the same time, theories concerning reason underwent a change. Locke begins by attacking Descartes' theory of innate ideas. Neither in the speculative nor in the practical sphere is it possible, he says, to discover a notion or a truth that can rightly be called innate. Take the most self-evident propositions, as that "A is A": "Do unto others as you would be done by": they are so far from being innate that neither children nor savages, nor idiots, possess them. The mind must, in that case, possess ideas of which it is unconscious; and, indeed, how could propositions or truths be innate when the concepts joined by them are not innate? The ideas of identity, of difference, of the possible and the impossible, are extremely abstract ideas, which we are so far from possessing at birth that we only acquire them after long experience. Even the idea of God is not innate; for, not to speak of the different conceptions that man has formed of the divine Being, there are races who have no suspicion even of His existence. The partisans of Descartes object that there are theoretical and practical truths on which all men are agreed. But by the errors that were for centuries universally accepted, by the strange customs of barbarous and even civilized races, history proves that there are no such truths. And even if this supposed agreement between men did exist, it would not prove the innateness of our ideas. For men may have been led by other reasons to agree upon certain principles.

But the best way to prove that there are no innate ideas

is to show that all our knowledge is derived from experience. The mind is, at the beginning, a *tabula rasa*, and acquires simple unanalyzable ideas, the elements of all knowledge, through the senses and through reflection (which reveals to us the operations of our own mind). All our other ideas are compound. The mind is passive when it receives simple ideas: but it operates on these simple ideas, and, by diverse processes, forms out of them complex ideas. Thus reason is, by Locke, reduced to the operations of the discursive understanding: to those of distinction, comparison, abstraction, combination. All our knowledge is, according to him, explained by empirical analysis and synthesis, and our complex ideas of modes, substances, and relations have no other origin.

" . . . Not imagining how these simple ideas can subsist by themselves, we accustom ourselves to suppose some substratum wherein they do subsist, and from which they do result, which therefore we call substance . . . so that if any one will examine himself concerning his notion of pure substance in general, he will find he has no other idea of it at all, but only a supposition of he knows not what support of such qualities, which are capable of producing simple ideas in us" (*Essay on the Human Understanding*, Bk. 11, Ch. 23).

In our daily experience we perceive alterations in the objects of our simple ideas: we notice that a thing has ceased to be, that another has taken its place; we observe the perpetual changes in the representations of consciousness brought about either by external impressions or by our own will, and everything leads the human mind to the conclusion that the same changes will take place in the future whenever the same causes are present. In this way the idea of causality and, in general, all our ideas of relations are formed in the mind.

Even our idea of the infinite can be explained by experience. The idea of the infinite is a mode of quantity, and is applied chiefly to things that have parts and are capable of being greater or less, such as the ideas of space, of duration, and of number.

" . . . When we apply to that first and supreme Being our idea of infinite in our weak and narrow thoughts, we do it primarily in respect to His duration and ubiquity" (*Ibid.* Ch. 17). "How do we come by the idea of infinity? Every one that has any idea of any stated lengths of space, as a foot, finds that he can repeat that idea, and joining it to the former make the idea of two feet, and by the addition of a third, three feet, and

so on without ever coming to the end of his addition. The power of enlarging his idea of space by further additions remaining still the same, he hence takes the idea of infinite space" (*Ibid.*).

Even our idea of God has an empirical origin according to Locke.

"Though God has given us no innate ideas of Himself, though He has stamped no original characters on our minds wherein we may read His being; yet, having furnished us with those faculties our minds are endowed with, He hath not left Himself without witness: since we have sense, perception, and reason, and cannot want clear proof of Him as long as we carry ourselves about us" (Bk. IV, Ch. 10).

Through reflection on our nature and intelligence we reach by a kind of analogy the idea of an intelligent Creator; by extending indefinitely our ideas of power, duration, understanding, and will, we come to form an idea of God. What Locke undertook to prove was that out of the simple ideas given to us by sensation and reflection the activity of our understanding builds up all our ideas, including those of the infinite, of God, all the principles of mind, even those which appear to be the necessary condition of experience.

David Hume: The Principle of Knowledge explained by Association and Habit.

Hume did away with the small amount of activity which even Locke allowed to mind in cognition. In order that the science of mind might resemble the natural sciences, he tried to find general laws that would be analogous to the physical laws, and according to which the data of knowledge could be proved to be combined by a kind of mental necessity. Locke had reduced the notions of substance and essence to a collection of images associated in the mind and summarized in words. David Hume seized upon this idea, developed it, and made it the principle of his whole philosophy. Impressions (the data of sense, emotions, volitions), and ideas, *i.e.* faint images of sensations: these were according to him the only original data of knowledge. How then is knowledge possible? By what principles are these scattered elements bound together? Ideas, Hume answers, are associated in our minds without any intervention on our part, and in accordance with laws of their own. These laws are to mental phenomena what the law of

gravitation is to physical phenomena. The relations which arise between ideas rest on the three laws of association: *resemblance*, *contiguity in space and time*, and *causality*. The natural sciences are nothing else than a perpetual application of the principle of causality. It is important, therefore, to know what is the origin of this law and what is its value. The law of causality is not innate to the mind, for nothing is innate. Nor is it a perception, an immediate knowledge of a secret power by which one thing produces another. Experience gives us, indeed, the succession of two phenomena, but it does not show the necessary connection by which one is the effect of the other. We see that two billiard balls move successively, but we do not see how the motion of the first produces the motion of the second. How is it, then, that we expect that the same antecedents will be followed by the same consequents? The relation of causality is, Hume says, not even an ultimate law of the association of ideas: for there are only two primary relations, those of similarity and contiguity in space and time. The relation of causality can be reduced to the two former, from which it is derived. And it may be stated as follows: The same antecedent is always followed by the same consequent —a formula which embraces contiguity in time (sequence) and similarity (same causes, same effects). If therefore we expect that the same causes will be followed by the same effects, it is solely owing to a custom or habit, strengthened by repetition. When similar cases arise the mind is forced, by *habit* and in virtue of the inevitable laws of association, to expect the same consequents and to believe that they will be produced in reality. The principle of causality is a subjective habit, an expectation in us, which we have come to look upon as a law of things. Thus, for Hume there could be neither necessary truths nor true principles; since he makes everything reducible to experience and habit. It is therefore by a merely arbitrary distinction that he attributes to mathematical truths, which refer to relations of ideas and not to facts, an absolute validity, under the pretext that truths of this kind are discovered by simple operations of thought, and do not depend on anything outside our minds; for, as we have seen, he traced all the operations of thought to impressions and ideas that are associated with one another according to relations depending on experience.

The Doctrine of Kant. Mind legislative over Things. Analytic and Synthetic Judgments. Are there any a priori *Synthetic Judgments?*

Kant treated the problem of reason from an entirely new point of view. Struck by the impotency of metaphysics, of "this old and worm-eaten dogmatism," and by the inadequacy of "the physiology of the human understanding" as conceived by Locke and his successors, he sets out to examine *de novo* in all its elements, and without any prejudice, the great problem of reason, no satisfactory solution of which had hitherto united philosophers in a common doctrine. "It has hitherto been assumed that our cognition must conform to objects. . . . Let us then make the experiment whether we may not be more successful in metaphysics if we assume that objects must conform to our cognition" (*Critique of Pure Reason*, Preface to 2nd edit.).

This is the leading idea in Kant's philosophy. He himself compares the revolution which he sought to bring about in philosophy to that brought about in astronomy by Copernicus.

"When he found that we could make no progress by assuming that all the heavenly bodies revolved round the spectator, he reversed the process, and tried the experiment of assuming that the spectator revolved while the stars remain at rest" (Pref. to 2nd edit.).

It is not in things that we are to look for the reasons of the laws of mind. It is, on the contrary, in the mind that we must seek the reason of the laws of things.

The questions on which empiricism and rationalism are divided may be briefly stated in the following terms: Is an *a priori* knowledge, that is, a knowledge independent of experience, possible; and if so, how? In order to answer this question we must first distinguish between two kinds of judgments, namely, *analytical* and *synthetical* judgments. Judgments that are analytical or explicative (*Erlauterungsurtheile*) add nothing to the subject, which they only develop and resolve into its divers elements by means of analysis. Synthetical or augmentative judgments (*Erweiterungsurtheile*) add to the conception of the subject a predicate that was not contained in it, and that could not be drawn from it by any analysis.

"Judgments of experience as such are always synthetical. For it would be absurd to think of grounding an analytical judgment on experience, because in forming such a judgment I need not go out of the sphere of my conceptions, and therefore recourse to the testimony of experience is quite unnecessary" (Introduction, IV).

The association of ideas accounts for synthetical, *a posteriori* judgments. We can easily understand that, having seen water first in a liquid and then in a solid state, we should say the water is frozen. This is a synthetical judgment, but *a posteriori*. As for analytical judgments, they are all *a priori*, for they are all necessary. But they in no way extend our knowledge, since they only draw the predicate from the subject, according to the law of contradiction. We can understand that it is possible to say *a priori*: the whole is greater than its parts, for he who says "whole" says "greater than its parts." But to say that every phenomenon has a cause is, in the first place, a synthetical judgment, for the predicate, *having a cause*, is not contained in the subject, *phenomenon*. In the second place, it is an *a priori* judgment, for experience cannot tell us that *every* phenomenon has a cause. Here then we really have *a priori* knowledge. We have added to our knowledge without having had recourse to experience. But how can we possess *a priori* and without having learnt it the attribute of a proposition? The problem which we set before ourselves, 'Is *a priori* knowledge possible'? may then be stated as follows: Are synthetical *a priori* judgments possible?

Kant does in fact prove the existence of such judgments, and he divides them into three kinds. First, mathematical judgments are all synthetic *a priori*. Second, the science of nature or physics (*Naturwissenschaft*) has for its principles synthetic *a priori* judgments: and Kant gives as examples the following propositions: "The quantity of matter is invariable"; "Action and reaction are equal to one another." Third, and lastly, metaphysics, whether it be possible or not, must contain synthetic *a priori* cognitions, since its object is not only to analyze given concepts, but to develop and extend our knowledge *a priori*. The criticism of pure reason will have then to solve this triple problem: First, how are pure mathematics possible? Second, how is pure natural science possible? Third, and finally, as metaphysics has a real

existence, if not as a science, then at least as a natural disposition of the mind, one may ask: how is metaphysics possible as a natural disposition of the human mind? (Introd. to the *Critique of Pure Reason*).

Synthetic *a priori* cognition cannot relate to the object which we only know through experience; it can only relate to the subjective forms or the conditions of thought. "We only cognize *a priori* in things that which we ourselves place in them" (*Critique of Pure Reason*, Pref. to 2nd edit.). Instead of assuming that all our knowledge conforms to objects, Kant, as we have seen, starts with the assumption that it is, on the contrary, objects that must conform to our knowledge; and this, according to him, is the only hypothesis on which the existence of *a priori* knowledge is comprehensible. "If the intuition must conform to the nature of the objects, I do not see how we can know anything of them *a priori*" (*Ibid.*).

But, on Kant's hypothesis, "experience itself is a mode of cognition which requires the aid of the understanding. Before objects are given to me, that is *a priori*, I must presuppose in myself laws of the understanding which are expressed in conceptions *a priori*. To these conceptions then all the objects of experience must necessarily conform" (*Ibid.*). These *a priori* laws, these forms of thought, presuppose a content which can only be given by experience.

"For how is it possible that the faculty of cognition should be awakened into exercise otherwise than by means of objects which affect our senses, and partly of themselves produce representations, partly rouse our powers of understanding into activity, to compare, to connect or to separate these, and so to convert the raw material of our sensuous impressions into a knowledge of objects which is called experience" (*Critique of Pure Reason*, Introd.).

Consequences of this Hypothesis. The Distinction between Matter and Form in Knowledge.

From this follow several important results, the first being that:

"In respect of time no knowledge of ours is antecedent to experience, but begins with it" (Introd.).

Secondly, "It is not possible, through our *a priori* faculty of cognition, to get beyond the limits of possible experience, since it is precisely the

part which we bring *a priori* into our knowledge of nature that serves to make this knowledge possible, and outside this use it can have no signification."

Thirdly, "It is quite possible that our empirical knowledge is a compound of that which we receive through impressions, and that which the faculty of cognition supplies from itself (sensuous expressions giving merely the occasion)" (*Ibid.*).

In other words, in knowledge we have to distinguish between the matter which is given by sense, and the form which is supplied by the mind. Experience is the fusion of matter and form. It is in this view that the great originality of Kant's doctrine lies, that which distinguishes him from the mere idealists, and gives a practical value to his theory. His object was to prove the possibility of a science of the world as it appears to us.

"The thesis of all true idealists, from the Eleatics down to Bishop Berkeley, is contained in the following statement: All knowledge acquired through the senses and experience is a mere illusion, and the truth exists only in the ideas furnished by pure understanding and reason. The principle that governs and determines the whole of my idealism is, on the contrary, that any knowledge of things that proceeds from pure understanding or reason is a mere illusion, and that truth is found in experience alone."

We now know what we are to understand by this. The forms of thought have no significance without phenomena. Their value lies in the fact that they are the conditions of knowledge. In order to grasp Kant's conception we must distinguish it from the doctrines held by other philosophers. In what, then, do his *a priori* forms differ from the innate ideas of Descartes and Leibnitz? In this, that for Descartes, as well as for Malebranche, and even Leibnitz, the understanding is *intuitive*. Its ideas reach the real being (whether of mind or of God) immediately. But in Kant the understanding is *formal*. It has no object of its own, but merely provides the laws which connect phenomena and brings unity into the multiplicity of experience.

"All our knowledge begins with sense, proceeds thence to understanding, and ends in reason." Firstly, sense gives the object, the phenomenon. Secondly, our understanding gives us the principles by which we are able to connect these phenomena with one another, and to make out of them a systematic

whole. Thirdly, the ideas of pure reason merely express the desire for unity felt by the human mind, which would pursue the chain of phenomena beyond all possible experience, and consequently set itself insoluble problems. Hence there are three divisions in the *Critique:* 1st. The Transcendental Aesthetic, in which the *a priori* principles of sensuous perception are considered. 2nd. The Transcendental Analytic which determines the categories of the understanding, the necessary conditions of experience. 3rd. The Transcendental Dialectic which proves the impossibility of a scientific metaphysic or of an *a priori* knowledge transcending experience.

The Transcendental Aesthetic: Space and Time.—The a priori *Forms of Sense.*

". . . All thought must directly or indirectly, by means of certain signs, relate ultimately to intuitions, and consequently, with us, to sensibility, because in no other way can an object be given to us (*Critique of Pure Reason,* Introduction). But our perceptions contain more than what is given by our senses. We have to abstract from sensation the forms under which we experience them, and which are provided by the mind. These *a priori* forms of sense are space and time. Sensations such as those of resistance, smell or taste do not constitute an external world, for the characteristic of an external world is that it has extension. Kant's theory is, that it is the mind that furnishes space, and thus becomes capable of perception. In the same way I can only perceive the phenomena which are within myself under the form of time. Time is the immediate condition of internal phenomena and the mediate condition of external phenomena, since these only exist for us in as much as we are conscious of them.

". . . If we take away the subject, or even only the subjective constitution of our senses in general, then not only the nature and relations of objects in space and time, but even space and time themselves disappear" (*Transcendental Æsthetic,* II, 59).

The immediate result of this profound and novel theory is, that we know only phenomena, and not things in themselves. And the theory has considerable advantages. It would, if universally accepted, in the first place, do away with the insoluble problems arising from any theory in which an abso-

lute reality, either as substance or as quality, is attributed to space and time. In the second place, the *a priori* determination of space by the mind explains the universality and necessity of the mathematical propositions. Thus the existence of mathematics becomes a proof of Kant's theory, which alone, according to him, makes them possible.

Transcendental Analytic: Phenomena in order to be thought must be subjected to the Conditions on which Experience is possible.

But if perception is to become experience it is not enough that phenomena should co-exist in space and succeed each other in time. It is not enough that objects are given to us, they must also be thought. Space and time being indeterminate or unlimited, phenomena would float about in them like scattered dust. Phenomena must have a fixed order, they must be linked to one another by invariable relations. The principle of this connection cannot be in the things themselves, for we only know them through experience; and although experience gives us existing relations it tells us nothing of the necessary relations, of the universal inviolable laws, in virtue of which knowledge is possible. It follows that it must be our understanding itself, with its conceptions and principles, that is the author of experience, and that we ourselves through the unity of our consciousness give the necessary connection to phenomena. All thought, every exercise of the understanding, involves the representation to ourselves of this connection. The primitive unity of self-consciousness expressed in the "*I think*" is the first principle of the exercise of the understanding. All the forms of thought are only forms that reduce the multitude of sensible perceptions into the unity which makes consciousness possible; in other words, thought presupposes self-consciousness. The conditions that make consciousness possible are therefore the laws that govern the world, since the world only exists for us as it becomes an object of our thought.

This universal form of consciousness is subdivided into a certain number of particular forms representing the divers logical judgments, and corresponding to the same number of categories of the understanding. The function of the categories is to give to the matter of knowledge (sensible perceptions)

the form that is necessary in order that they may be knowledge. "Thus the same understanding, by the same operations, whereby in conceptions, by means of analytical unity, it produced the logical form of judgment, introduces by means of the synthetical unity of the manifold in intuition, a transcendental context into its representations, on which account they are called pure conceptions of the understanding" (*Transcendental Logic*, III). In order to obtain the categories of the understanding, we have only to take the table of the logical forms of judgment. Kant recognizes twelve forms of judgment. There are therefore twelve categories, that is to say twelve fundamental notions, twelve *a priori* conceptions. These categories applied to phenomena become the *principles* of pure understanding.

How Phenomena are brought under the Categories of the Understanding. Transcendental Schematism.

But how can sense and understanding work in concert? How can the manifold of sense be reduced to the unity of the concept? The two terms seem to be utterly opposed. "For it is impossible to say, for example, that causality can be intuited through the senses and is contained in the phenomenon" (*Transcendental Analyt.* Bk. II, Ch. I). There must therefore be a third term which shall act as medium, "which, on the one side, is homogeneous with the category, and with the phenomenon on the other, and so makes the application of the former to the latter possible" (*Ibid.*). This middle term is time. It is a product of the imagination, and Kant calls it a *transcendental schema*. Time as an *a priori* form is of the same nature as the categories, as a form of sense it is of the same nature as the phenomenon. It is therefore through a transcendental determination of time that the application of the categories to phenomena is possible. The understanding furnishes the categories, but the manifold (that is to say phenomena), is given to us in time. If the categories are to be applied to phenomena there must first be a general application of these categories to time. To each category there corresponds a certain modification of the intuition of time. This is what Kant calls a *schema*. But the *schema* must be distinguished from the image. The *schema* of a dog

is not a confused image of a dog, but a product of the imagination, of a kind of instinctive art by which the mind traces the characteristic lines of every dog. The general idea of body is not an image of body, but a rule for its construction, for tracing the outlines of body with a regard for its proportions. In the same way, in the transcendental schematism imagination traces, as it were, in time certain figures or forms which shall apply universally to all the phenomena considered under a category, and thus determines the relations by which the passage from sense to understanding is possible. To take an example: In order to conceive any magnitude we must add part to part, and the process of adding part to part, and so producing number, is the *schema* of quantity. The *schema* is here a general rule by which I construct *in time* a certain magnitude. The schema of reality is *existence in time*, the *schema* of substance *the permanence of the real in time*; the *schema* of causality is the *regular succession of phenomena in time*.

Application of the Categories to Phenomena. The Principles of Pure Understanding.

Owing to the schematism, that first and most general application of the categories to the intuition of time, these are capable of being further applied to phenomena, which themselves belong to time, since they are necessarily perceived in time. Hence come the *principles* of pure understanding, the *a priori* conditions of all experience through which it is possible to combine our perceptions into a whole, by means of concepts, and thus to reduce their variety to the essential unity of consciousness. There are four kinds of principles corresponding to the four classes of categories: *quantity, quality, relation*, and *modality*. 1st. *Quantity*. "All objects of sense are extensive magnitudes." 2nd. *Quality*. "In every phenomenon the real, which is an object of sense, has intensive quantity, that is *degree*." 3rd. The categories of *relation* are of the greatest importance. Applied to objects of a possible experience they result in this general principle: Experience is possible only through the conception of a necessary connection between perceptions. On this general principle the three following depend: (*a*) "The substance remains the same amid all the changes of phenomena and neither diminishes

nor increases in quantity." (*b*) "All changes obey the law of the connection of cause and effect." (*c*) "All substances, in so far as they are perceived as co-existent in space, act reciprocally." 4th. In the category of *modality* we have the three following principles: (*a*) "What agrees with the *formal* conditions of experience (the forms of sense and the categories of the understanding) is *possible*." (*b*) "What agrees with the *material* conditions of experience (sensation) is *actual*." (*c*) "What is connected with the real through the universal conditions of experience is *necessary*."

We are now able to understand Kant's point of view and to perceive the part he assigned to the mind in knowledge. The matter alone is given to us; we ourselves provide the form. It is not our mind that is subject to the laws of things, but things that obey the laws of our mind. The world only exists for us in so far as we think it. The conditions of thought must therefore be the necessary laws of the world, the violation of which would cause both our thought and the world which is its object to disappear. Sensations are given to us; they are the matter of our perceptions. But to them we add the *a priori* forms of sense, space, and time. It is through the operation of our understanding and imagination that phenomena appear to us as subject to universal laws, as linked together by causality, by a determinism, which blends them, as it were, into a single phenomenon, and that at the same time our own mental states are concentrated in the unity of a permanent ego.

Transcendental Dialectic: Reason. We only know Phenomena. The Soul, the World, God.

Space and time are only forms of sense. The categories of the understanding are only forms of thought, and these forms are only the laws of things in so far as they are objects of knowledge to us. It is our mind that imposes on things these forms which are the conditions of experience and which have no significance without experience. For, he says,

"They (these principles of the pure understanding) would not even be possible *a priori*, if we could not rely on the assistance of pure intuition in mathematics, or on that of the conditions of a possible experience" (*Transcendental Dialectic*, II, A).

As the sole function of the understanding is to make experience possible, it were absurd to expect to transcend experience by means of the forms of the understanding. Since we only see things under these forms it is evident that we only know *phenomena* and not *noumena*, or, in other words, we only know things as they appear to us and not as they *are in themselves*. Over against the idea of the sensible world, we have thus the idea of a world of noumena, of things in themselves: a purely negative idea, but one that has at least the advantage of abating the pretensions of sense. The latter would pass off its world of phenomena as being the world of things in themselves; but criticism, on the contrary, leaves a place for a reasonable belief. Metaphysics, as the science of noumena, has already been condemned in the investigation of the understanding.

The object of the Transcendental Dialectic is to show that the mind, is by its nature, at once both forced to pursue the absolute and incapable of attaining it. The logical function of Reason (*Vernunft*) is ratiocination. But an act of reasoning is not in itself sufficient, for it starts from a general principle which should itself be derived from another principle, until at last a principle is reached which would contain the totality of the conditions of all that is thinkable. Thus the idea of the unconditioned, of the absolute, is in a sense implied in every act of reasoning, and is the special datum of reason. The understanding connects phenomena together; its categories have an objective validity, apply to things given, are controlled by experience. But reason would follow up the chain of phenomena beyond all possible experience; reason aspires after complete and absolute unity, after a perfect understanding; reason furnishes *ideas* to which no sensible perception can correspond. The *ideas* of reason are only demands, *a priori* needs of the mind. Their sole function is to lead on the understanding, and to sustain it in the effort ever to rise to a more complete synthesis of phenomena. The moment it attempts to do more than this, reason is bound to fall into error: into a kind of error, moreover, that results from its very nature, and "which it is as impossible to avoid as to prevent the moon from seeming bigger at the horizon than at its zenith." Reason, then, is the faculty of the absolute; the

absolute merely represents a need, a demand of the mind. And "*Transcendental illusion*" consists in that we convert this subjective need into an objective reality.

The object of the Transcendental Dialectic is, as far as possible, to expose this illusion. Since the absolute is the condition of reasoning, there are, according to Kant, as many kinds of absolute as there are kinds of reasoning. Now, there are three forms of logical reasoning: the *categorical*, the *hypothetical*, and the *disjunctive*; and consequently the Absolute has three forms. Categorical reasoning presupposes a subject that is not itself an attribute: this is the ego, the soul. Hypothetical reasoning implies a supposition that presupposes nothing further, and consequently embraces the whole of the conditions of phenomena; this is the universe. Disjunctive reasoning, which embraces totality, implies the ultimate condition of totality, namely, the supreme Being, the Being of beings, God. These three absolutes give rise to three forms of the dialectic reasoning, named by Kant respectively: *The Paralogisms of Pure Reason*; *The Antinomies of Pure Reason*; *The Ideal of Pure Reason*. To these three absolutes correspond Rational Psychology, Rational Cosmology, and Rational Theology.

Rational Psychology rests on mere paralogisms. The mind has no immediate perception of itself, it perceives itself in time, and is to itself a phenomenon. The substance, soul, is like the substance, body, merely the product of the forms of the understanding which reduce the manifold phenomena to the unity of thought. What right have we, then, to pass from the subject as it appears to an ego in itself; or from the unity and identity of thought, which are purely formal,to infer the existence of a substance, single, simple and self-identical?

If Rational Psychology results in paralogisms, Rational Cosmology only leads to contradictory propositions, insoluble *antinomies*. In order to reach the absolute, or the totality of the conditions of phenomena, we have to assume either a highest term on which all things depend and which itself depends on nothing, or a series in which each term is in itself relative, but which, taken as a whole, is necessary. In the first case we assume the commencement of the world in space and time—of simple elements, of a first cause, of a necessary being. In the second case, the world has no limits either

in space or time; there are no simple elements, the series of secondary causes goes back *ad infinitum*; and only contingent interdependent beings exist. And Kant declares that reason cannot escape from these antinomies. For example, if we admit that the world has no commencement in time, we must suppose that up to every given time an eternity, an infinite series of successive periods, has elapsed; but this is self-contradictory, because the infinity of a series consists in the fact that it can never be completed by a successive synthesis. If, on the other hand, we admit that the world had a beginning in time, then an empty time must have preceded this beginning of things; but there is nothing in an empty time to account for the appearance of things.

Rational Theology attempts to prove that the Ideal of pure reason, the perfect reality, the principle of all reality, actually exists. Now all the proofs of the existence of God are, Kant says, nothing but different forms of the *ontological* proof, and, in this proof, existence is, without any grounds, inferred from the idea: an Ideal of reason, a subjective need, is transformed into a real being, into a substantial and personal God. We are unable to reflect on the possibility of anything without ascending to the notion of a primary being, whom we call the supreme Being, the Being of beings; but this does not prove that we must necessarily admit the existence of such a being. We remain in this respect in a state of complete ignorance.[1]

Conclusions arrived at in the Critique of Pure Reason. Possibility of Mathematics and Pure Physics: Impossibility of Scientific Metaphysics.

To sum up: in his criticism of pure reason Kant endeavoured to establish at once the possibility of mathematics and pure physics and the impossibility of a science of metaphysics. The most remarkable thing in his philosophy is, that whereas the majority of rationalists make light of experience and regard it only as a confused knowledge, Kant, on the contrary, adopting the point of view of science, sought to prove the validity of our knowledge of phenomena and of their laws, *i.e.* the reality of the world as it appears to us.

[1] This part of the Critique will be further dealt with in the History of the Religious Problem.

Principle of the Particular Laws of Nature: The Critique of Judgment.

But if the most general laws of Nature have their root in our understanding (which, in thinking nature, imposes them on her), the particular laws, since they cannot be deduced *a priori* from the forms of thought (from the universal determination), are all empirical and contingent. It follows that induction is not a scientific method; it is founded on no principle, and there is no warrant for its validity. The laws of this determination might be observed, and there yet might be no order, no harmony in the universe. They leave room for an infinity of empirical laws, and even for disorder. But induction presupposes the recurrence of the same phenomena, the fixity of genera and of their relations. Kant saw this difficulty, and endeavoured to solve it in his *Critique of Judgment* (1790). The human mind is forced by its very nature to regard the empirical laws as having been established by a mind similar to itself, and it aims at making a system of experience possible. Design can be proved neither by experience nor *a priori*. In virtue of the laws of the understanding all design implies mechanism; but there is only one way of understanding why the determination of causes gives rise to one combination rather than to another, and this way is to assume that the idea of the combination itself has determined the movements in which it is realized. We do not know if there is really design in nature, but where a mechanical explanation is impossible, we are authorized and forced to assume design, order in nature, the fixity of genera, and consequently laws expressing their relations. The notion of design as the condition of the empirical laws, and consequently of induction, is then, only a regulative principle, a subjective need, the objectivity of which remains unproved. In allowing only a hypothetical value to the principle of final causes, the basis of the inductive sciences, Kant seems to go back to the Cartesian ideal of a mechanical and mathematical philosophy.

Kant substitutes Moral Faith for Scientific Metaphysics. Critique of Practical Reason.

The result of Kant's philosophy would seem to be the imprisonment of the mind in our present life; for is not the

supersensible world according to him necessarily beyond our knowledge? But what is prohibited to *Pure* reason is not prohibited to *Practical* reason. The moral law and duty, these are the special data of practical reason. The characteristic of this law is that it does not, like a law of nature, realize itself, but that it has to be realized by us, that it is a *categorical imperative.* This law is an *a priori* law, and therefore purely formal, since no real object can be given us outside experience. Practical reason commands us to bring our actions under the form of Duty. But if the moral law is universally binding it must be that all are able to realize it; "thou canst, because thou oughtest," says Schiller after Kant. The consequence of obligation is possibility: the first postulate of morality is therefore freedom. We should work towards the realization of the sovereign good, which would be the harmony between morality and felicity. Therefore we must believe that this harmony is possible, for here again obligation implies possibility. Now the sovereign good which contains both holiness and happiness is not of this world; and hence the second postulate of morality is the immortality of the soul. But in Nature there is nothing to convince us of the ultimate triumph of the good, and yet we find ourselves forced to believe in this triumph, and consequently, in what is for us its necessary condition, namely, the existence of God, which is the third postulate of morality. Thus, for metaphysical science, Kant substitutes a moral faith resting upon the certainty of duty; and for a dogmatism that is always insecure and open to attack, beliefs which, being bound up with human morality, can never be shaken by speculative doubt.

Fichte, Schelling, Hegel.—Metaphysical Theories of Reason.

Of all the solutions of the problems of Reason which had hitherto been proposed, that of Kant was perhaps the first in which all the elements of the problem were included, and an effort made to bring them to unity. But the evolution of philosophic thought was not to be arrested. Kant's method was the source of new speculation; and his criticism gave birth to a dogmatism more bold than any that had ever yet been formulated. For, said his successors, why assume the existence of a thing in itself when we know

nothing of it? Fichte accordingly abolished it. There remained on his theory only the *absolute ego* as source both of the content and the form of knowledge. The object of philosophy was, he said, to start with a single principle, and from it to deduce all things. Philosophy discovers the necessary acts of mind, in which it finds the basis of all the particular sciences, and establishes their possibility and their principles. The terms of a deduction are necessary only when they are derived from the ultimate and necessary principle, and this principle is the absolute activity of the ego. In positing itself, and in order to posit itself, the ego sets up against itself the non-ego. The categories are only the necessary forms of this creative activity. The special function of reason, properly so called, is, by the abstraction of all objects, to attain consciousness of the absolute ego as the sole and only reality, the principle of principles.

Schelling takes as his starting point the Absolute, which is immediately reached by intellectual intuition (*intellectuelle Anschauung*), an intuition above consciousness and understanding, and in which the distinction between subject and object, the antithesis between knowledge and existence disappear. The absolute is absolute indifference, the identity of the subjective and the objective. It is the principle of the conscious and the unconscious, of Nature and of mind. Everything is contained in Reason, which is identical with the Absolute itself, and outside which there is nothing. From this Absolute all things must be deduced. "To philosophize on nature is to create nature." The function of reason is not only to provide science with principles; its work is science itself, absolute science.

Hegel, like Schelling, claims to deduce from the Absolute absolute science; and instead of proceeding at random he sought to establish both the necessity of this speculative method and its fixed laws, its dialectic processes. Logic and metaphysics, as well as the real and the intelligible, are made identical. This is called Panlogism. All that is required is to give oneself up to the dialectical movement of thought, in order, by means of theses, antitheses, and syntheses, to construct the whole of reality.

With these three great German idealists, Reason, which by Kant had been reduced to the modest *rôle* of a regulative

principle, resumed its supremacy; and at a time when positive science was discouraging all attempts at a knowledge of the Absolute, a last endeavour was made to construct the universe, and to formulate a theory which should be final.

Scottish School: Reason reduced to Common Sense.

While Kant had opened out a new road in philosophy as a means of escape from Hume's scepticism, the Scottish School, on the other hand—Reid (1710-1796), Beattie (1735-1803), Dugald Stewart (1753-1828)—contented themselves with bringing forward in opposition to Hume's conclusions the deliverances of common sense. They developed a theory that had already been propounded in France by P. Buffier in his *Traité des premières vérités* (1724). They accepted without discussion all such principles as are generally accepted by all men, and are so necessary in the conduct of life, that without belief in them a man must be led into a thousand absurdities in practice (Reid on *The Intellectual Powers*, Essay VI, Ch. IV). These principles, which were neither classified nor made to depend on any higher principle, comprised matters of fact, gratuitous assumptions (*e.g.* everything which is affirmed by conscience really exists: the thoughts of which I am conscious are the thoughts of a substance which I call my mind, my thought, my ego: we have some power over our actions, etc.), the principles necessary to the mathematical or positive sciences, the laws of aesthetic taste, the first principles of ethics and of metaphysics (substance, cause, design). This common-sense solution of the problem of reason which scandalized Kant so much is not a solution at all, but an abandonment of the problem.

Nevertheless, amid the sensualistic and sceptical views which at that time prevailed in France and England, it was something to have re-asserted, even if only under the somewhat vague designation of common sense, the claims of a higher faculty.

Victor Cousin: Reason is Spontaneous and Impersonal.

In France the leader of the Eclectic School, Victor Cousin, having first borrowed from Kant the principles of his polemic against the empirical school, then endeavoured to return to an

ontological doctrine of reason. He dwelt especially on two distinctive characteristics of reason—its *spontaneity* and its *impersonality*. By establishing and proving the spontaneity of reason, Cousin hoped to escape from Kant's subjectivity, even while he admitted with the latter the existence of *a priori* principles, which he calls absolute truths. He regarded Kant's subjectivism as the result of contemplating the laws of mind at the reflective instead of at the spontaneous stage. The impossibility of denying, or, as it is now expressed, the inconceivability of the opposite was the criterion of truth adopted by Kant. This criterion is, however, merely relative and subjective, and if we confine ourselves to it, these *a priori* principles are mere forms of the understanding, laws of mind. But this mark of necessity only appears in a later stage of the mind's development, that is, the reflective stage. It is through reflection that the subjective element is introduced into any knowledge. Before reflection is possible, there must be an anterior act of mind, a spontaneous act which cannot be questioned. Victor Cousin calls this the *Pure Apperception* of truth. It is only when this first apperception comes to be doubted and contested that the intellect brings itself to the proof of the truth. It is then, and not till then, that the subjective powers of understanding or the categories appear. Before this, the truth presents itself to us not as necessary but simply as true. "All subjectivity disappears in the spontaneous apperception of pure reason." Spontaneous reason is, in short, nothing but an inspiration.

Reason is not only spontaneous, it is also impersonal. If reason were an individual faculty it would be free like our will or variable and relative like our senses. But I do not say *my* truths. Reason is the truth manifesting itself in each man. In order to grasp the meaning of this doctrine, which reminds us of that of Averroës concerning the *unity of intellect*, we must remember that it was put forward in opposition to Lammenais, who was against all freedom of investigation or of thought, maintaining that it implied an appeal to the individual as supreme. But if individual reason is supreme, then the individual is the only judge of things, and there would no longer be any criterion of truth; the spiritual unity of society would be broken up and anarchy

would reign in the world of thought as of politics. Hence the necessity of an external authority for the making of laws. In order to avoid this conclusion, Cousin had to prove that an appeal to reason is not an appeal to the mere individual, that there is something common to all individuals, namely, reason, whose authority is the supreme judge, and which is the bond of union between the minds of men. But Cousin did not confine himself to this general theory. He also attempted a reduction of the primary notions to two, namely, Substance and Cause, which, according to him, are represented by the absolute and the relative, the one and the many, the real and the phenomenal, the finite and the infinite. To these two fundamental ideas he added in 1828 a third, namely, the relation between the Infinite and the finite, though on his doctrine, the idea of the Infinite and Absolute, that is, of God, or of Being in itself, is the foundation even of reason and of thought.

"Leibnitz had said that there is being in every proposition. Now a proposition is only the expression of a thought, and there is being in every proposition, because there is being in every thought. But the idea of being in its lower degree implies a more or less real but clear idea of Being in itself, namely, God. To think is to know that one thinks, to trust one's thought, to believe in the principle of thought, to believe in the existence of this principle . . . so that all thought implies a spontaneous belief in God, and there is no such thing as natural atheism."

Hamilton, in Opposition to the Successors of Kant and to Victor Cousin, adheres to the Theory of the Relativity of Knowledge.

Whilst Schelling and Hegel in Germany, and Victor Cousin in France were making the whole theory of knowledge dependent on the principle of the absolute, the last representative of the Scottish School of Philosophy, Sir W. Hamilton, interpreting Reid's doctrine in a Kantian sense, was bringing forward many forcible arguments to prove the relativity of knowledge. "Our whole knowledge of mind and of matter is relative, conditioned, relatively-conditioned. Of things absolutely or in themselves, be they external, be they internal, we know nothing, or know them only as incognizable; and we become aware of their incomprehensible existence only as this is indirectly and accidentally revealed to us through certain qualities related to our faculties of knowledge" (*Discussions,*

p. 644). In his arguments against Cousin and Schelling, who maintained that we have knowledge of the infinite and absolute, Hamilton endeavoured to prove that these ideas are irreconcilable with the laws of consciousness, and the conditions of thought. He makes a distinction between the absolute and the infinite, regarding them as two species of one genus, *i.e.*, the unconditioned. He defines the infinite as the unconditionally unlimited, and the absolute as the unconditionally limited, a complete whole; and he declares these two terms, which were identified by Cousin, to be contradictory. He even denies the possibility of these ideas, first, because they are purely negative; secondly, because they are contrary to the fundamental law of mind, which is that "*to think is to condition.*"

"The unconditionally unlimited or the *Infinite*, the unconditionally limited or the *Absolute*, cannot positively be construed to the mind; they can be conceived only by a thinking away from, or abstraction of those very conditions under which thought is realized; consequently, the notion of the Unconditioned is only negative—negative of the inconceivable itself (p. 13). . . . He [Kant] ought to have shown that the Unconditioned had no objective application, because in fact it had no subjective affirmation . . . because it contained nothing even conceivable; and that it is self-contradictory, because it is not a notion, either simple or positive, but only a fasciculus of negations" (*Discussions*).

This is Hamilton's first argument. The ideas of the absolute and the infinite are only a negation of the finite, of the relative. His second argument, which is closely connected with the first, runs as follows:

"To think is to condition. . . . For as the greyhound cannot outstrip his shadow . . . nor . . . the eagle outsoar the atmosphere in which he floats and by which alone he is supported; so the mind cannot transcend that sphere of limitations within and through which exclusively the possibility of thought is realized. . . . How, indeed, it could ever be doubted that thought is only of the conditioned may well be deemed a matter of the profoundest admiration. Thought cannot transcend consciousness, consciousness is only possible under the antithesis of a subject and object of hought, known only in correlation and mutually limiting each other" *Ibid.* p. 14).

In short, the second argument amounts to this: Every act of thought or of consciousness consists in establishing distinctions and relations, therefore the infinite, which admits of

no distinction, and the absolute which *ex hypothesi* excludes all relations, are inconceivable terms. Hamilton's third argument refers to the theory of Cousin, which represents the absolute as cause. The idea of cause implies a relation, therefore the absolute when conceived as a cause becomes relative.

"What exists merely as a cause, exists merely for the sake of something else,—is not final in itself, but simply a mean towards an end. . . . Abstractly considered, the effect is therefore superior to the cause" (*Ibid.* p. 35).

Hamilton connects the principle of causality with his theory of the impossibility of conceiving the absolute. He explains our belief in causality as derived "not from a power, but from an impotence of mind," that is to say, he explains it by the law of the conditioned, by our incapacity to conceive an absolute beginning.

Hamilton, however, gives back in his theory of belief, all that he seemed to have irrevocably taken away by his theory of knowledge.

"The sphere of our belief is much more extensive than the sphere of our knowledge, and therefore when I deny that the infinite can be by us known, I am far from denying that by us it is, must, and ought to be believed" (*Lectures*, Vol. II, p. 530).

He recognizes that the governing principles of the mind themselves rest on belief.

"But reason itself must rest at last upon authority; for the original data of reason do not rest on reason, but are necessarily accepted by reason on the authority of what is beyond itself. These data are therefore in rigid propriety beliefs or trusts. Thus it is that in the last resort we must perforce philosophically admit that belief is the primary condition of reason, and not reason the ultimate ground of belief. We are compelled to surrender the proud *intellige ut credas* of Abelard, to content ourselves with the humble *Crede ut intelligas* of Anselm" (*Dissertations on Reid*, p. 760).

Maine de Biran. Relation between Consciousness and Reason.

The doctrine of Thomas Reid was accepted by a certain number of French psychologists, but the teaching of Maine de Biran suggested a more scientific and fruitful method. Maine de Biran followed Kant in the distinction between the matter

and the form of knowledge, but with the former the form of knowledge was not a collection of empty categories anterior to all experience. The categories were only divers points of view of reflection, or of internal experience. Thus, for instance, the consciousness of our activity gives us the notion of cause, which becomes the principle of causality. "The whole mystery of *a priori notions* is dispelled by the light of internal experience, by which we learn that our idea of cause has its primitive and only type in the consciousness of the ego identified with that of effort." Here he adopts the theory of Leibnitz, inasmuch as he says that the mind is innate to itself and contains as the laws of its own activity the principles which render all things intelligible. But Maine de Biran does not tell us by what right the laws of our empirical consciousness are thus transformed into universal laws. Ravaisson makes consciousness a metaphysical faculty. He identifies reason with reflective consciousness, the principles of knowledge with those of being, and these, according to him, we apprehend immediately within ourselves, in an experience which is unique. To connect the categories with the activity of the mind, and the mind itself through its necessary laws with the absolute; to reconcile Leibnitz with Kant, by showing that the principles of all the sciences were to be found in this theory: this was the task attempted by the French spiritualists—a formidable task, which was not pursued by them with a sufficiently resolute and systematic spirit. We can here only mention the recent original theories of Messieurs Vacherot (antithesis between the infinite which is realized in the universe and the Perfect, the existence of which is purely ideal), Lachelier, Renouvier, etc. M. Taine represents in France doctrines similar to those of Stuart Mill.

English Empirical School: Stuart Mill. Psychological Explanation of our Belief in Universal and Necessary Laws.—Basis of Induction.—Axioms and Definitions.

Meanwhile, in England, the philosophical tradition which had begun with Hume had not been interrupted (T. Brown, James Mill). Out of this tradition, combined with the influence of Comte's positivism, according to which the whole history of the human mind goes to prove that we can only

know facts and their relations, the English contemporary school of thought arose. Kant's *Critique* called for a reply on the part of the Empiricists, and awakened them to the necessity of perfecting their system. According to Kant, the distinctive characteristic of the primary truths is, that they are universal and necessary. Experience, indeed, tells us what is, but not what must be; it shows what exists at a given time, but not what must be always and everywhere. Stuart Mill does not deny this fact. Men believe themselves to possess universal and necessary principles, but he traces this belief to a subjective illusion, of which he gives a psychological explanation. Two ideas that have always presented themselves together, or in succession, tend to suggest each other. This is the law of the Association of Ideas. Two ideas that have always occurred together, and that have never occurred the one without the other, become so strongly associated that their union becomes indissoluble, and by the very nature of the human mind they appear incapable of existing apart.

As regards the possession by all men of the primary truths, it is sufficiently explained by the fact that there are experiences which all men have, and which they cannot but have. Thus, as Hume had already discovered, these primary truths are only habits of the mind which time and repetition have rendered irresistible. It is a fact that anything which is violently opposed to our habits of mind appears to us to be inconceivable, and that what seems to us to be inconceivable we also think of as impossible. But the inseparable associations created by experience may also be destroyed by experience. In the history of science we find that many of the theories which are now universally accepted were once declared to be absurd, such as the existence of the antipodes, the law of the permanence of force, etc. The criterion of certitude is *the inconceivability of the opposite*, a principle which is itself founded on habits of mind, on associations of ideas created by experience.

We have now to discover the origin of the principles of human knowledge. The basis of Induction is our expectation that under the same circumstances the same phenomena will arise, and this is our belief in the *uniformity of nature*. That the same antecedents will always be followed by the same

consequents is the principle 'upon which the positive sciences are based. But this principle, according to Mill, is itself only the result of an inseparable association. We observe gradually from time to time that under the same conditions the same facts arise. All our experiences go to confirm this law of the regular sequence of events. Every law discovered by science bears witness to it, repeats it in a different form; in short, this law impresses itself on our minds as the universal result of experience.

But if the principles of positive science can be traced to experience and association, can the same be said of the science of mathematics and its axioms? Did not even Hume place this science on a different footing, and admit that its principles are self-evident? But Mill, who is more consistent and more daring, maintains that even mathematics is an experimental science. He tries to show how from real forms we abstract clearly defined mathematical figures, and that the mathematical axioms are the result of an indissoluble association of ideas, which has its origin in experience. If we affirm that two intersecting straight lines cannot enclose a space, "it is because we cannot look at any two straight lines which intersect one another without seeing that from that point they continue to diverge more and more." As to the law of identity, it is merely a generalization from experience founded on the fact that "belief and disbelief are two different mental states excluding one another" (*Log.* II, 7).

Herbert Spencer completes the Theory of the Association of Ideas by his Theory of Evolution and Heredity, and the Psychological by the Physiological View.

Mill, from the point of view of psychology and logic, traced the principles of thought to individual experience, by the progressive association of ideas in a given mind. Herbert Spencer, as a biologist and evolutionist, substitutes the experience of the race for the experience of the individual, hereditary habits for inseparable associations. Intelligence is a vital function, and, like life itself, a continuous adjustment of mind to its environment, a harmony or correspondence ever advancing towards perfection, between thought and nature. The activity of thought is not distinct from the activity

of the cerebral organs. Two associated ideas represent the connection between cerebral cells. These connections correspond to impressions and their relations within us; to phenomena, and their relations outside us. Heredity is a law of life. As generations succeed one another the human brain is modified transformed in its organization, and expresses ever more clearly certain principles corresponding to the universal law of things. Leibnitz was right when he declared, in opposition to Locke, that there is something innate in the mind. To rest with the unqualified assertion that, antecedent to experience, the mind is a blank, is to ignore the questions—whence come the powers of organizing experience? Whence arise the different degrees of that power possessed by different races and by different individuals of the same race? (*Psych.* IV, 7).

These instincts originate, like others, in association and habit, but that which is habit with the father is nature with the child. The principles of reason require not only a psychological but also a biological explanation, namely, that of hereditary transmission.

"The universal law that, other things being equal, the cohesion of psychical states is proportionate to the frequency with which they have followed one another in experience, supplies an explanation of the so-called 'forms of thought,' as soon as it is supplemented by the law that habitual psychical successions entail some hereditary tendency to such successions, which under persistent conditions will become cumulative in generation after generation" (*Ibid.*).

Stuart Mill on the Idea of the Absolute and the Infinite.

It is curious that Stuart Mill and Herbert Spencer, the two great expositors of later empiricism in England, should have maintained, in opposition to Hamilton, that the absolute is not inconceivable. Mill shows that Hamilton's arguments fall through, if instead of saying the infinite or the absolute, we say "something infinite, something absolute." "When we are told of an absolute in the abstract or of an absolute Being, even though it be called God, we are bound to ask, absolute in what?" The absolute Being should possess in his plentitude all the attributes: he should be absolutely good and absolutely bad. Such a conception is "worse than a fasciculus of

negations, it is a fasciculus of contradictions." In the same way the abstract infinite would have to be infinite in greatness and infinite in littleness. It is evident that we cannot think this mass of contradictions. But it is not contradictory to think an absolute Power and an absolute Intelligence.

"Hamilton has not shown that we cannot know a concrete reality as infinite or as absolute. Infinite space, for instance: Is there nothing positive in that? The negative part of this conception is the absence of bounds. The positive are the idea of space and of space greater than any finite space. . . . The conception of the infinite, as that which is greater than any given quantity, is a conception we all possess sufficient for all human purposes, and as genuine and positive a conception as anyone need wish to have. . . . If I talk of an Absolute Being, I use words without meaning, but if I talk of a being who is absolute in wisdom and goodness, that is, who knows everything, and at all times intends what is best for every sentient creature, I understand perfectly what I mean. . . . The leading argument of Hamilton . . . holds good only of an abstract unconditioned which cannot possibly exist, and not of a concrete Being supposed infinite and absolute in certain definite attributes" (Mill's *Exam. of Sir W. Hamilton's Philosophy*, Ch. IV).

As regards Hamilton's statement that the Absolute cannot be a cause, that is to say enter into a relation, Mill remarks that the only relation that must be excluded from the notions of the Absolute is the relation of dependence. Hamilton was right in saying that to think is to condition. We cannot escape from the relativity of knowledge, but we can conceive the infinite and the absolute under the form of relativity. We have a positive conception of absolute knowledge in the same sense that we have a conception of absolutely pure water.

"To think a thing is thus to think it as conditioned by attributes which are themselves conceivable; but it is not necessarily to think it as conditioned by a limited *quantum* of such attributes; on the contrary, we can think it under a degree of these attributes which is higher than any limited degree, and this is to think it as infinite" (*Ibid.*).

Herbert Spencer: We cannot comprehend the Absolute, nevertheless the Absolute is a Positive Notion.

Herbert Spencer also adopts the theory of the relativity of knowledge, using the same arguments as Hamilton and Mansel. To think the Absolute is to place oneself in opposition and to it, and consequently to limit it. To be known, the absolute

would have to be given in consciousness, hence to enter into relation with consciousness, and hence to cease to be absolute. Moreover, Spencer adds, every act of knowledge implies relations of difference and resemblance. Again, intelligence is a vital function, and, like every function, is co-ordinate with its environment, and involves a perpetual adjustment of internal relations to external relations, and is therefore essentially relative. It would seem that we are now for ever imprisoned in the relative.

At the same time Spencer agrees with Descartes and Fénelon in declaring that the absolute and the infinite are the most positive of our notions. His theory is that we cannot comprehend the absolute, but that nevertheless the absolute is a positive notion.

"Besides that *definite* consciousness of which logic formulates the laws, there is also an *indefinite* consciousness which cannot be formulated" (*First Principles*, I, Ch. IV).

All the arguments employed to prove the relativity of knowledge presuppose something beyond the relative.

"To say that we cannot know the Absolute, is by implication to affirm that there is an Absolute. The noumenon, everywhere named as the antithesis of the phenomenon, is throughout necessarily thought of as an actuality. It is rigorously impossible to conceive that our knowledge is a knowledge of appearances only, without at the same time conceiving a reality of which they are the appearances" (*Ibid.*).

The absolute is not a mere negation of the relative. "Take for example the limited and the unlimited. . . . In the antithetical notion of the Unlimited, the consciousness of limits is abolished, but not the consciousness of some kind of being." This argument is similar to that of Fénelon, namely, that the infinite is the negation of a negation, and consequently an affirmation.

"It is forgotten that there is something, which alike forms the raw material of definite thought, and remains after the definiteness which thinking gave to it has been destroyed. And this indefinite something constitutes our consciousness of the non-relative or absolute. Impossible though it is to give to this consciousness any quantitative and qualitative expression whatever, it is none the less certain that it remains with us as a positive and indestructible element of thought" (*Ibid.* pp. 90, 91).

Our conception of the relative disappears if we assume our conception of the absolute to be a mere negation. "How can there possibly be constituted a consciousness of the unformed and the unlimited, when by its very nature consciousness is possible only under forms and limits." In everything we think there is something which persists under all modes; this permanent element we are unable to grasp or determine or isolate: we cannot think that by means of which we think. But if we abolish it we abolish thought. The absolute is, therefore, the substance of thought.

"This consciousness is not the abstract of any one group of thoughts, ideas, or conceptions: but it is the abstract of all thoughts, ideas, or conceptions. That which is common to them all and cannot be got rid of, is what we predicate by the word existence. Dissociated as this becomes from each of its modes by the perpetual change of those modes, it remains as an indefinite consciousness of something constant under all modes. . . . By its very nature, therefore, this ultimate mental element is at once necessarily indefinite and necessarily indestructible. . . . An ever-present sense of real existence is the very basis of our intelligence. . . . At the same time that by the laws of thought, we are rigorously prevented from forming a conception of absolute existence, we are by the laws of thought equally prevented from ridding ourselves of the consciousness of absolute existence: this consciousness being, as we here see, the obverse of our self-consciousness" (*Ibid.*).

Conclusion.

We have now followed the history of the problem of reason in its gradual development, from the vague declamations of the earlier philosophers against sensuous knowledge to the Cartesian theories, the criticism of Kant, and the empiricism of Mill and Herbert Spencer. The problem of reason is at any rate now clearly defined. On what principles are the mathematical sciences based, and what is the origin of these principles? Do they not, by their universality and necessity, lead our minds up to the primary notions of the infinite and the absolute, being at the same time a warrant of the validity of our knowledge of the phenomenal world? These are the elements, or data of the problem. According to the empiricists, these principles of knowledge are habits of mind, corresponding to the most universal relations between phenomena. Our primary notions they explain by generalization and abstraction, or by a kind of

addition to and extension of experience. Herbert Spencer, however, makes the notion of the absolute arise out of the nature of the mind itself. The Kantians uphold the universality and the necessity of the principles of knowledge, but for them, these principles are forms of thought which have significance only when applied to phenomena, and so cannot put us in possession of the absolute. Finally, the Rationalists would endeavour to establish a relation between the necessary principles of thought and the necessary principles of things, and thus give as much certainty to our knowledge of phenomena as to mathematical deductions, and the higher ethical or metaphysical truths. This is how the problem stands to-day. In his theory of heredity, Herbert Spencer has pursued the arguments of empiricism to their utmost limits, but by his defence of the notion of the absolute, which was abandoned by Kant and Hamilton, he has restored a part, and that the larger part, of the disputed ground.

CHAPTER V.

ON MEMORY.

Plato: the ἀνάμνησις and the μνήμη.

The problem which the earlier philosophers set before themselves was too vast to allow them to give much attention to the details of psychological phenomena. Democritus may have anticipated the Epicurean materialistic theory of memory, but it is not till Plato that we find texts directly bearing upon the subject, and his theory is clothed in such obscure metaphysical language that its meaning is not easily discovered. It is, however, clear that there were for him two kinds of memory, one of which may be called transcendental memory, and the other empirical memory. The first is *rational reminiscence*. Awakened by contact with the intelligible elements in this world, the mind sees once more the world of the Ideas, which it had known in a former life, and which since then had slumbered within it. If we discover once more the Ideas in our soul, it is because they have never ceased to exist there, because they have always been in us in a latent state unillumined by the light of consciousness. There is then an entirely spiritual memory, to which the body cannot serve as instrument. But what then is the nature of *empirical* memory?

"'And memory may, I think, be rightly described as the preservation of consciousness,' 'Right.' 'But do we not distinguish memory from recollection'—'I think so.' 'And do we not mean by recollection the power which the soul has of recovering, when by herself, some feeling which she experienced when in company with the body?'" (*Philebus*, 34 *a*, *b*).

What we have called Plato's *empirical* memory involves

then two steps, the mere persistence of sensations, and active recollection which is characterized by the independent effort of the mind. As regards the nature of the process by which former cognitions are preserved and revived in the mind, the theory of reminiscence (ἀνάμνησις), whether it be rational or empirical, assumes that Ideas that have once been present to the mind form, as it were, a part of it, and that the mind has the power of reviving them by an act of spiritual energy. On the other hand, the comparisons used by Plato to illustrate memory would seem to indicate a physiological theory. The soul, he says, is a book and memory, a scribe (γραμματεύς), who writes therein what the senses dictate, and a painter (ζωγράφος), who illustrates the text with corresponding pictures (*Phil.* 39 *a*).

"I would have you imagine then," Plato says elsewhere (*Theætetus*, 191), "that there exists in the mind of man a block of wax which is of different sizes in different men; harder, moister, and having more or less purity in one than another, and in some of an intermediate quality. . . . Let us say that this tablet is a gift of Memory, the mother of the muses; and that when we wish to remember anything which we have seen or heard or thought in our own minds, we hold the wax to the perceptions and thoughts and in that material receive the impression of them as from the seal of a ring; and that we remember and know what is imprinted as long as the image lasts; but when the image is effaced, or cannot be taken, then we forget and do not know."

Aristotle: Description of the Phenomena of Memory. Distinction between Memory and Imagination. Spontaneous and Voluntary Memory.

Aristotle devoted to the subject of memory a special treatise (*De Memoria et Reminiscentia*), in which he gives a remarkably accurate desciption of the phenomenon.

"Let us first see what are the objects with which memory is concerned. In the first place, we cannot remember the future; the future can only be to us an object of conjecture, of expectation (ἐλπίς). Nor has memory anything to do with the present, for that is the object of sensation. Memory is concerned with the past only. . . . When, the objects themselves being absent, we have the knowledge and sensation of them, then it is memory that acts. . . . Every time we make an act of memory we say to ourselves that we have heard that thing before, or that we have felt it or thought it. . . . Thus memory is not to be confounded

with sensation or with intellectual conception, but is the possession (ἕξις or the modification of either one or the other with the condition of pas time. There is no memory of the present moment at that moment itself as has just been said, but only sensation as regards the present, expecta tion as regards the future, and memory as regards the past. Thu memory is always accompanied by the notion of time" (*De Mem. e Remin.* Ch. I).

In short, memory relates to the past as distinguished from the present and the future. Memory and imagination (φαντασία) resemble each other in some cases so much that it is impossible to distinguish them. They both depend on the *sensus communis* and not on the thinking mind, and both result from and are continuations of the motion of the senses. This motion, which is the original occasion of the sensation, leaves in us an impression of the object perceived as the impress of a seal is left on wax. Thus it is preserved in the organs and may spontaneously recur. We can, it is true, recall acts of reasoning, or demonstrations, as, for example, that the three angles of a triangle are equal to two right angles; but these intellectual conceptions are always joined to some image (φάντασμα). What then is it that distinguishes memory from imagination? It is that the latter does not imply recognition, or the return to past perceptions that it does not present the image as a copy. In memory, on the contrary, we recognize that what is at this moment present to our mind is a copy of something that was present to it before, either as a perception of the senses or as actual knowledge.

But if memory is only the knowledge of the movements which have determined sensations, how are we to explain the fact that the remembrance differs from the sensation itself? Aristotle replies by a comparison.

"An animal in a picture is at once an animal and a copy, and though one and the same it is nevertheless both these things at the same time. . . We may represent this picture to ourselves, either as an animal or as the copy of an animal. We must suppose that the image which is painted in us exists there in exactly the same manner, and that the notion which is contemplated by our soul is something in itself, although it is also the image of some other thing. Thus inasmuch as it is considered in itself it is a mental representation, while inasmuch as it is relative to another object, it is as it were a copy of a recollection" (*De Mem. et Rem.* Ch. I).

The object of memory is therefore a present image assimilated to a past impression. "Memory is the possession (ἕξις) of an image as copy of the object of which it is the image."

Memory (μνήμη) is a property of the sentient soul, a function of the *sensus communis*, and is consequently to be found in a great many animals. But no animal except man possesses the faculty of reminiscence (ἀνάμνησις). Reminiscence is memory under the direction of the will, and, like the syllogism, can only belong to a mind capable of reflection and calculation. Memory is a movement which begins in the *sensus communis* and extends to the soul. Reminiscence is a movement the reverse of this, and goes from the soul to the organs of sense. When we wish to recall something we have once known, we succeed because the psychical movements, like the physical movements, have a regular sequence, and their consequents follow their antecedents in obedience to certain laws. In this way, when, for instance, we wish to recall a verse or a phrase that we have forgotten, we begin by repeating the first word. Success in reminiscence depends on the association of ideas and of movements. This theory of Aristotle is remarkably exact, at least as regards the description of the phenomena. We must observe, however, that in reality the association of ideas plays as great a part in spontaneous recollection as in voluntary and reflective reminiscence.

Theories of the Stoics and Epicureans.

The soul being on the doctrine of the Stoics a material thing, Memory could be for them only an impression left by sensation. But just as sensation, to be perceived, presupposes the activity, the *assent* of the mind, so is memory also due to an action of the mind, which stores up, as it were, the sensations it is to revive (*visa quasi recondit*, Cic. *Acad.* II, 10, 30).

The Epicurean theory is so far original that it offers a different explanation of imagination and memory. "The soul, an eminently mobile substance (*mobilis egregie*), is composed of atoms which are small, smooth, and round" (Lucr. III, 205). This material soul enters into relation with the external world by means of simulacra (Lucr. IV, 34), which detach themselves like small membranes from the surface of the body and fly about in the air. These images, these thin shapes, are

like the rinds (*cortex*) of things, and have the same form and the same appearance as the bodies from which they are detached.

". . . Like the gossamer coats which at times cicadas doff at summer, and the vesture which the slippery serpent puts off among the thorns," (Lucr. IV, 56 *sq.*).[1] These *simulacra* are not only the cause of our sensations. There are some yet more thin: "these enter into the porous parts of the body and stir the fine nature of the mind within and provoke sensation" (Lucr. IV, p. 101 of trans.). The simulacra are of such a fine tissue that "when they meet they readily unite like a cobweb or piece of gold leaf." " . . . Therefore we see centaurs and limbs of scyllas and cerberus —like paws of dogs and idols of those that are dead."

Thus images do not arise in our minds spontaneously—they are not a reproduction of past sensations, but correspond to external phantoms which mingle in a thousand different ways. The visions (*φαντάσματα*) of insanity and sleep have a real object, for they act upon us, and that which has no reality can produce no action (D. L. X, 20). To the objection that our mental images correspond to our desires, that in sleep our dreams correspond to our individual and subjective pre-occupations, Lucretius replies:

"Because they are so thin the mind can see distinctly only those which it strains itself to see . . . and whenever men have given during many days in succession undivided attention to games, we generally see that after they have ceased to perceive them with their senses, there yet remain passages open in the mind through which the same ideas of things may enter" (IV, 780 *sq.*).

This is the Epicurean explanation of the imagination. As for memory it is merely the impression (*τύπος*) left by a sensation that has been frequently repeated (*μνήμη τοῦ πολλάκις ἔξωθεν φανέντος*). Even general ideas are images, exact copies, and it is for this reason that they have the intuitive evidence and the infallible certainty of sensation (D. L. X, 21, 22). This impression, once it has been made on our mind, enables us to read the future by the past, and becomes anticipation. This *πρόληψις* of the Epicureans resembles the *expectation* of contemporary English associationists. At the same moment that we utter the word man, we conceive the figure of man, in virtue of a preconception which we owe to the preceding operations of the senses (D. L. X, 21).

[1] Munro's trans.

Thus memory as well as every other mental process is reduced by Epicurus into an organic phenomenon.

Metaphysical Theory of the Neo-Platonists.

This materialistic theory held by the Epicureans and Stoics could not possibly be accepted by the Neo-Platonists. According to the latter the individual soul is not separated from the universal soul from which it emanates, but is still part of this universal soul, and through it belongs to the second hypostasis, that is, to Reason (νοῦς).

It is in Intelligence, which alone knows itself, that we are conscious of ourselves. Reason is therefore the ultimate basis of memory (*Enn.* IV, iii, 26, 30; viii, 6, 13). But as we are united to the body, before what takes place in the superior part of the soul can reach our consciousness or be preserved in memory, Reason extracting indivisible thought from the depths where it lay concealed must unfold its complexity and display it to our imagination as in a mirror (*Enn.* IV, iii, 30).

Platonic Theory of St. Augustine: Memory Rational and Empirical. Latent Memories in the Mind.

St. Augustine divides the faculties of the soul into three great powers: *memoria, intellectus,* and *voluntas.* He assigns to memory an important part in cognition, for according to him it is memory and not phantasy or imagination (φαντασία) that acts as medium between the senses and the intellect. He gives the following poetic description of memory:

"These things do I within that vast chamber of my memory; for there I call up to my sight heaven, earth, sea, and whatever I have received from them, excepting those things which I have forgotten. There, also, do I meet with myself—what, where, and when I did a thing, and how I was affected when I did it [Law of Association—cf. Hamilton's Law of Redintegration]. These are all which I remember, either by personal experience or on the faith of others. Out of the same supply do I myself with the past, weave a tissue of the likeness of things, which either I have experienced, or from having experienced have believed; and thence again future events and hopes, and upon all these again do I meditate as if they were present. . . . Great is this power of memory, exceeding great, O my God! An inner chamber, large and wondrous! Who has plumbed the depths thereof? Yet it is a power of mind and appertains to my nature; nor do I myself grasp all that I am. Therefore is the mind too

narrow to contain itself. And where should that overflow which it cannot contain within itself? Is it outside and not in itself?" (St. Aug. *Conf.* X, Ch. VIII).

St. Augustine's theory appears then to be that we are not conscious of all the ideas that are in us, that some of these live, as it were, in a latent condition in the mind, which contains infinitely more than we are conscious of. This interpretation is confirmed by his doctrine of a metaphysical memory or reminiscence, in the Platonic sense, which is not a distinct faculty, but a function of memory. Memory is thus a consciousness of the eternal truth in which time, with its three periods, the present, the past, and the future, has no longer any meaning, and in fact disappears.

"Behold, how I have ransacked my memory seeking Thee, O Lord; and out of it have I not found Thee, nor have I found ought concerning Thee but what I have retained in memory from the time I learned Thee. For from the time I learned Thee I have never forgotten Thee. For where I found truth there I found my God, who is truth itself. Thus, since the time I learnt Thee Thou abidest in my memory, and then do I find Thee whensoever I call Thee to remembrance and delight in Thee" (*Ibid.* X, xxiv).

Thus for St. Augustine, as for Plato, memory has two functions: it preserves and revives the data of experience, and it also enables us, in certain states of attention, love, and goodwill, to discover the Eternal Ideas which have been deposited in the soul by God, the immutable truth. This theory implies that we have within us a multitude of latent ideas which are visible, but remain dim until revealed to us by the light of consciousness.

Descartes: Physiological Explanation of Memory. The Animal Spirits and their Traces.

The peculiarity of the Cartesian theory of memory is that it is entirely physiological. According to the teaching of this school, thought and extension are two clear and distinct notions, and consequently there correspond to them two antithetical realities which, being opposites, can have no direct or immediate action on one another. The soul dwells in the body, but does not mingle with it. The body is a perfect machine, all the functions of which

are explained by the working of its component parts. "The nerves are like little threads or little tubes which all start from the brain, and contain, like the brain, a kind of air or very subtle wind, which is called the animal spirits" (*Des Passions*, I, 7). "The animal spirits are merely the most lively and subtle parts of the blood which have been rarefied by heat in the heart, and unceasingly enter in large quantities into the cavities of the brain" (*Ibid.* I, 10). As new animal spirits continually rise to the brain, others are continually being forced out through the pores of the brain "into the nerves, and thence into the muscles, by means of which they move the body in all the divers ways in which it can be moved" (*Ibid.* I, 10).

Animals being only bodies are mere automata. But in man, when the nerves are set in motion by the action of external objects, this motion spreads to the brain, which is the seat of the soul, and which represents these objects to the soul. But it may happen that "these animal spirits being set in motion diversely, and meeting the traces of divers impressions which have preceded them in the brain, may chance to take their course through certain pores rather than through others" (*Ibid.* I, 21). Thus, "all those things which the soul perceives by the medium of the nerves may also be represented to it by the fortuitous course of spirits, without there being any difference except that the impressions coming from the brain through the nerves are usually more lively and more clear than those awakened by the animal spirits. On which account I have said (I, 21) that the latter are a shadow as it were and picture of the former" (I, 26). Descartes explains his theory clearly in the following passage which occurs in one of his letters:

"The traces left in the brain incline it to move the soul in the same way as before and also to recall something to the soul, just as the folds in a piece of paper or linen make it more apt to be folded again in the same way than if it had never been folded so before."

This theory of Descartes was the one that was current in the 17th century. Gassendi, the atomistic philosopher and opponent of Descartes, had already expounded it, and it was also adopted by Bossuet, Malebranche, and Spinoza. According to the latter,

"The mind imagines a body because the human body is affected and disposed by the impressions of an external body, just as it was affected when certain of its parts received an actual impulse from the external body itself. . . . We clearly understand by this what memory is. It is nothing else than a certain concatenation of ideas, involving the nature of things which are outside the human body, a concatenation which corresponds in the mind to the order and concatenation of the affections of the human body" (Spinoza, *Ethics*, Bk. II, Prop. XVIII).

According to Spinoza and Malebranche, the phenomena of memory and of the association of ideas are intimately related and may be explained on the same principles.

Incompleteness of the Cartesian Mechanical Theory. Descartes' Admission.

In order rightly to understand the Cartesian theory, it must be remembered that according to it the body does not act directly on the soul, and therefore that acts of memory are spiritual phenomena which occur on occasion of and in agreement with physiological modifications.

It is certain that without the body there would be neither memory nor association of ideas: there would remain, as Spinoza would say, only the vision in the eternal. Does not this physiological theory leave unexplained the phenomenon most characteristic of memory, namely, recognition? In order to have memory it is not enough that an idea be reproduced, it must also be recognized. This Descartes himself admits. Arnauld had objected that, if the mind always thought, a child would be able to remember his earliest thoughts. To this Descartes replies:

"All vestiges left by former thoughts are not of a kind to permit of recollection by us, but only those which enable the mind to know that they have not always been in us, but were formerly freshly impressed on the mind. For the mind to be able to recognize this, I consider that the first time these impressions were made, the mind must have employed *a pure conception*, and by this means was able to perceive that the thing which then came into it was new, that is to say it had never before been in the mind, for there can be no trace by which we can recognize that the thing is new." (*Letter to Arnauld*, édn. Cousin, Vol. 10).

On this theory the true principle of memory would be a sustained action on the part of the mind, and the physiological

phenomenon would merely be the occasion of the mental action or fact of recognition which, properly speaking, would constitute memory.

Locke: The Conditions of Memory. Its Use and its Defects. Memory the Principal Basis of Personal Identity.

Locke gives a very good description of the phenomena of memory (*Essay on the Human Understanding*, II, Chap. iii. *On Retention*).

"This laying up of our ideas in the repository of memory signifies no more than this, that the mind has a power in many cases to revive perceptions which it once had, with this additional perception annexed to them, that it has had them before. And in this sense it is, that our ideas are said to be in our memories when indeed they are actually nowhere" (Bk. II, Ch. X).

Attention and repetition, pleasure and pain help to fix ideas in the mind. Those which only occur once, or a few times, frequently grow faint and even disappear, never to return; those with which the mind is continually occupied (such as the qualities of bodies, existence, duration, number), remain as long as a man has a gleam of intelligence. Sometimes ideas recur spontaneously—"they are roused and tumbled out of their dark cells into open daylight by some sudden passion." Frequently "the mind sets itself on work in search of some hidden idea, and turns, as it were, the eye of the soul upon it." The two great defects of memory are complete oblivion and an excessive difficulty in recalling the ideas which the memory has, so to speak, stored up. As regards the explanation of this faculty, Locke refuses in the chapter on *Retention* to enter into the Cartesian theory. "How much the constitution of our bodies and the make of our animal spirits is concerned in this, whether the temple of the brain makes this difference that in some it retains the characters drawn on it like marble, in others like freestone, and in others little better than sand, I shall not here inquire." But in his chapter on the Association of Ideas, he is less guarded, and adopts the opinion of Descartes as the most probable.

As to explaining memory itself, that is to say the fact of recognition, Locke will not attempt it. All that he can say of

it is, that the soul has the power of awakening its ideas whenever it wills. But as Leibnitz said, is not this power a kind of scholastic entity? And indeed Locke regards memory as an ultimate inexplicable fact. In his famous chapter on *Identity* (Chap. XXVII), he even goes so far as to make memory the basis of personal identity.

"As far as consciousness can be extended backwards to any past action or thought, so far reaches the identity of that person." . . . "For as far as any intelligent being can repeat the idea of any past action with the same consciousness it had of it at first, and with the same consciousness it has of any present action, so far it is the same personal self." . . . "[Personal identity] consists not in *identity of substance*, but . . . in the *identity of consciousness*, wherein, if Socrates and the present mayor of Queensborough agree, they are the same person" (II, Ch. XXVII).

Leibnitz: Explanation of Memory by Latent Perceptions. Memory Implies Personal Identity.

The universe for Leibnitz is composed of monads, or spiritual atoms whose whole essence is perception and appetition. Each of these monads has an independent existence, and is only related to other monads by a pre-established harmony between its own acts and the acts of all the other monads. If a monad were to know itself in all its relations, it would know the entire universe in the present, the past, and the future. To know is thus to reveal the self, to unfold in the light of consciousness the perceptions dimly contained in ourselves. The existence of unconscious sensible perceptions is not an exception, but the rule. Thus we are able to understand how it is that ideas we have once had, remain unperceived in our minds until some occasion brings them once more into consciousness. " . . . These are dispositions which are the remains of past impressions in the soul as well as in the body, but of which we are conscious only when the memory finds some occasion for them. And if nothing remained of past thoughts, when we no longer think of them, it would be impossible to explain how the memory can preserve them" (*Nouv. Ess.* II, Ch. X). "The insensible perceptions preserve the seeds of memory" (*Ibid.* Ch. XXVI).

Leibnitz maintains, moreover, against Locke, that *apparent identity* has its foundation in *real identity*, that is to say that

memory is only comprehensible if we assume the identity of a spiritual substance, all the states of which are linked together in a series.

"An immaterial being or a spirit cannot be stripped of all perception of its past existence. There remain to it some impressions of all that has formerly happened to it, and it even has some presentiments of all that will happen to it; but those feelings are most often too small to be capable of being distinguished and perceived, although they may perhaps sometime be developed. This continuation and bond of *perceptions* constitute in reality the same individual, but the *apperceptions* (*i.e.* when past feelings are perceived), prove besides a moral identity, and make real identity appear" (*Ibid.* II, Ch. XXVII).

Thomas Reid: We have an Immediate Knowledge of the Past.

The Scottish and French Psychological School could not fail to devote some attention to the phenomena of memory, and it is also not surprising, considering the method of self observation which they exclusively practised, that they were against the physiological hypotheses which are again coming into fashion. In lieu of this material symbolization of psychical facts, they have left us some excellent descriptions and a collection of all the observations that consciousness is capable of, when reflectively aware of its processes. Reid holds that, as consciousness is an immediate knowledge of the present, so memory is an immediate perception of the past.

"Memory is always accompanied with the belief of that which we remember, as perception is accompanied with the belief of that which we perceive. . . . Memory is an original faculty, given us by the Author of our being, of which we can give no account, except that we are so made. The knowledge which I have of things past by my memory seems to me as unaccountable as an immediate knowledge would be of things to come, and I can give no reason why I should have the one and not the other, but that such is the will of my Maker" (*On the Intellectual Powers*, III, Ch. I and II).

Thus Reid regards memory as an intuitive original faculty, no explanation of which need be sought. Memory is a looking backward, and is not more difficult to conceive than a looking forward into the future. He denies Locke's doctrine of personal identity as a consequence of memory, but does not think of reversing the terms and making identity the basis of memory.

"What evidence have you that there is such a permanent self which has a claim to all the thoughts, actions, and feelings which govern all yours? To this I answer that the proper evidence I have of all this is remembrance. . . . It may be here observed that it is not my remembering any action of mine that makes me be the person who did it. This remembrance makes me to know assuredly that I did it, but I might have done it though I did not remember it. . . . To say that my remembering that I did such a thing, or as some choose to express it, my being conscious that I did it, makes me to have done it, appears to me as great an absurdity as it would be to say that my belief that the world was created made it to be created" (*Ibid.* Ch. IV).

Hamilton refutes Reid: Memory is a Knowledge of the Present with a Belief in the Past. Latent Ideas.

Hamilton declares that Reid's doctrine concerning memory is not merely false, but "involves a contradiction in terms" (*Lect. on Metaph.* I, 218-221). Memory is an act, and an act "only exists in the present," therefore memory can only have knowledge of what exists now, and in memory what is present is not the object remembered but the image of the object. "An act of memory is merely a present state of mind, which we are conscious of, not as absolute but as relative to, and representing another state of mind, and accompanied with the belief that the state of mind as now represented has actually been. . . . All that is immediately known in the act of memory is the present mental modification, that is, the representation and the concomitant belief. . . . While in philosophical propriety it is not a knowledge of the past at all, but a knowledge of the present and a belief of the past" (p. 219 *sq.*). Hamilton follows Leibnitz in his theory that all the ideas acquired by us remain in a latent state in the mind. "I know a language or a science not merely while I make a temporary use of it, but inasmuch as I can apply it when and how I will. Thus the infinitely greater part of our spiritual treasures lies always beyond the sphere of consciousness hid in the obscure recesses of the mind." In support of this theory of the survival of all our ideas in a latent state, Hamilton quotes some pages from the German writer, H. Schmidt, who was himself inspired by the theories of Leibnitz.

"But the mental activity, the act of knowledge of which I now speak . . . is an energy of the self active power of a subject one and indivisible:

consequently a part of the ego must be detached or annihilated, if a cognition once existent be again extinguished. Hence it is that the problem most difficult of solution is not, how a mental activity endures, but how it ever vanishes" (*Lectures on Metaphysics*, II, pp. 211, 212).

Thus, the explanation of memory is that the mind is a truly self-identical force, an activity which cannot be interrupted or resolved into scattered elements, and which communicates its own continuity to all its acts. We have now to account for the phenomenon of oblivion.

"The solution of this problem is to be sought for in the theory of obscure or latent mental modifications (that is, mental activities, real but beyond the sphere of consciousness, which I formerly explained). The disappearance of internal energies from the view of internal perception does not warrant the conclusion that they no longer exist; for we are not always conscious of all the mental energies whose existence cannot be disallowed. . . . To explain therefore the appearance of our mental activities, it is only requisite to explain their weakening or enfeeblement. . . . Every mental activity belongs to the one vital activity of mind in general, it is therefore indivisibly bound up with it, and can neither be torn from nor abolished in it. But the mind is only capable, at any one moment, of exerting a certain quantity or degree of force. This quantity must therefore be divided among the different activities, so that each has only a part; and the sum of force belonging to all the several activities taken together is equal to the quantity or degree of force belonging to the vital activity of mind in general. Thus, in proportion to the greater number of activities in the mind, the less will be the proportion of force which will accrue to each; the feebler, therefore, each will be, and the fainter the vivacity with which it can affect self-consciousness. . . . In these circumstances, it is to be supposed that every new cognition, every newly-excited activity, should be in the greatest vivacity, and should draw to itself the greatest amount of force; this force will in the same proportion be withdrawn from the other earlier cognitions, and it is they consequently which must undergo the fate of obscuration" (*Ibid.* pp. 212-14).

Royer-Collard: We can only remember Ourselves. F. Ravaisson: Metaphysics of Memory.

Royer-Collard adopted the theory of Reid, with some happy modifications.

"The objects of consciousness are the only objects of memory. Properly speaking, we never remember anything but the operations and diverse states of our minds; we never remember anything that has not been an immediate intuition in consciousness. . . . This assertion appears con-

trary to common sense, according to which we do not hesitate to say : '*I remember such a person*,' but the contradiction is only apparent. 'I remember such a person,' means 'I remember *having seen* such a person.' The vision of the person is therefore both the object of consciousness and of memory ; but for the latter the act of seeing is the immediate object and the person the mediate object, for it would not be the object of immediate perception except to the senses" (*Fragments* de Royer-Collard, *Works* of Reid, trans. by Jouffroy, IV, p. 357-398).

The theory of Royer-Collard may be summed up as follows : We only remember our own states : memory is a prolonged consciousness.

F. Ravaisson, influenced by Leibnitz, gave this theory a deeper meaning, and connected it with his metaphysical principles. It is in the activity of the mind, he says, that we are to seek for the principle of memory. In the rational laws by which the mind, as well as the world, is governed we must look for the ground of the relations according to which ideas revive one another.

"The cause of oblivion is the materiality under the dominion of which our senses are partly placed. The pure spirit, on the contrary, being all action, and hence all unity, all duration, all memory, always present to everything and to itself, having before it unremittingly, unceasingly all that it is, all that it was, and if one may go as far as Leibnitz, all that it will be, sees all things, according to a saying we have already quoted, under the form of eternity. The doctrines of positivism or mere empiricism profess to explain the formation of our cognitions and memory by accumulated sensations alone. They forget the intellectual action, which having, out of sensible elements, formed such or such a perception makes out of several perceptions groups, wholes, the different parts of which subsequently recall one another" (*Rapport sur la Philosophie Française* au 19me siècle, p. 166).

In a word, it is the activity and the identity of mind that constitute memory : and as regards the relations between ideas that suggest each other, these are merely the relations between the mental acts. Hence if we admit that the laws of spiritual activity, in their agreement with the laws of things, are rational laws, one may say that "the principle of association and memory is in fact *Reason*."

Revival of the Cartesian Hypotheses. Hartley and Charles Bonnet.

To the Scottish and French psychological schools we owe

some excellent descriptions of the phenomena of memory. They pointed out the characteristics which distinguish memory from perception and imagination, determining its qualities (facility, tenacity, promptitude), its conditions (physiological, psychological, and metaphysical), its function in knowledge, and its laws (vividness of the impression, attention, repetition, association of ideas), which they endeavoured to reduce to one general law, namely, the activity of the mind. But the progress of physiology could not fail to cause a revival of the Cartesian hypotheses, which had never indeed been altogether abandoned. Hartley, one of the founders of the associationist theory, tried to prove that the mental mechanism depended on a cerebral mechanism which was subject to the laws of matter and motion.

"External objects impressed upon the senses occasion, first in the nerves on which they are impressed, and then in the brain, vibrations of the small, and as one may say, infinitesimal medullary particles.

"The vibrations mentioned in the last proposition are excited, propagated, and kept up, partly by the ether (*i.e.* by a very subtle and elastic fluid) and partly by the uniformity, continuity, softness and active powers of the medullary substance of the brain, spinal marrow and nerves" (*Observ. on Man*, Part I, Props. 4 and 5).

These vibrations are connected with and excited by one another, and the sensations and ideas arising from them are in their turn also associated and recall one another. The doctrine taught by Charles Bonnet of Geneva was very similar. "The cerebral movements are, as it were, natural signs of the ideas they excite, and an intelligence that was able to observe these movements would read them like a book. . . . Not only is the original formation of ideas due to these movements, but the reproduction of them would seem also to depend on the same cause" (*Ess. de Psych. Introd.* Part 2). "Owing to the action of a fluid which is almost as elastic and subtle as light or ether, the fibres are again set in motion just as before in the presence of the objects themselves, and, in virtue of the hidden law of their union, the sensations belonging to these vibrations are instantly revived. The degree of force and vividness with which this recurrence of the sensations takes

place always depends on the intensity of the vibrations caused by the object, the frequency of their recurrence, and the constitution of the fibres" (*Ibid.* Ch. XXVII).

Theory of Evolution: Memory a Fact as general as Life.

The theories of the transmutation of energy and of evolution gave a new importance to the physiological explanations of memory, and to the fact of memory itself. In this theory mind and body, intelligence and life, follow a parallel development. There is a close connection between the organ and its function: the function creates the organ which is its necessary instrument.

Whoever undertakes to explain the genesis and progress of the nervous system is bound to explain by the same principle the genesis and evolution of thought. Now, it is habit which, by modifying the organism, gives fixity to the modes of activity which heredity then transmits as instincts. But habit and memory are identical phenomena. It follows that memory can no longer be regarded as a physiological phenomenon presupposing consciousness. Memory is a fact that is co-extensive with life, it is the very principle by which organisms rise from the lowest to the most complex forms. And thus the question became wider and the method of treating it different. "Psychological memory," says M. Ribot, "is merely a particular case of biological memory." By re-establishing the continuity of apparently unrelated phenomena, the psychologists of the physiological school come unintentionally nearer to the metaphysicians than those psychologists who, having separated man from nature and mind from life, confine themselves to the method of introspection.

Herbert Spencer: Relation of Memory to Instinct.

"Instinct," says Herbert Spencer, "may be regarded as a kind of organized memory; and memory, on the other hand, may be regarded as a kind of incipient instinct. The automatic actions of a bee building one of its wax cells answer to outer relations so constantly experienced that they are, as it were, organically remembered. Conversely, an ordinary recollection implies a cohesion of psychical states which becomes stronger

by repetition, and so approximates more and more to the indissoluble, the automatic, or instinctive cohesions" (*Principles of Psychology*, I, Ch. VI, p. 15). "This truth that memory comes into existence when the involved connexions among psychical states render their succession imperfectly automatic is in harmony with the obverse truth, that, as fast as those connexions among psychical states which we form in memory grow by constant repetition automatic, they cease to be part of memory. We do not speak of ourselves as *recollecting* relations that have become organically registered. We recollect those relations only of which the registration is incomplete. No one remembers that the object at which he looks has an opposite side, or that a certain modification of the visual impression implies a certain distance, or that the thing he sees moving about is a live animal" (*Ibid.* p. 450).

Th. Ribot: Memory the Universal Function of Organic Matter; Physiological Conditions of Memory; Localization of the Object of Memory in the Past.

M. Ribot has summed up with great clearness all the modern physiological theories of memory. "By common usage the word *memory* has a triple meaning: the conservation of certain conditions, their reproduction, and their localization in the past. This, however, is only a certain kind of memory, that which we call perfect. The three elements are of unequal value: the first two are necessary, indispensable; the third, which in the language of the schools is called '*recollection*,' completes the action of memory, but does not constitute it. Suppress the first two, and memory is annihilated; suppress the third, and memory ceases to exist in an objective, but not in a subjective sense" (*Diseases of Memory*, p. 10, Eng. trans., *International Scientific Series*).

Even in the inorganic world, and in the vegetable world, we find phenomena which resemble those of memory. In the animal kingdom the muscular tissues, and even more so, the nervous tissues present the two properties, conservation and reproduction. Memory would thus appear to be a "general function of organic matter" (Hering, quoted by M. Ribot). But the true type of organic memory is to be found in those acquired movements which are accomplished unconsciously (such as,

seeing, walking, writing, etc.). If we examine its mode of acquisition, preservation, and reproduction, we shall find that this organic memory resembles psychical memory in all things except one, and that is the absence of consciousness. Ideas, like movements, are acquired more or less quickly, retained more or less perfectly, and reproduced with greater or less ease and promptitude,—a thing which causes either skill or awkwardness.

As regards the modifications of the organism implied in organic memory, M. Ribot says: "If organic memory is a property of animal life, of which psychical memory is only a particular phase, all that we are able to conjecture with regard to its ultimate conditions will apply equally well to memory as a whole" (*Ibid.* p. 19).

In the first place, what is the seat of memory? Bain says "that we may almost regard it as proved that the renewed feeling occupies the very same parts, and in the same manner, as the original feeling." Wundt gives the following proof of this fact: If we close our eyes and hold up before our imagination a picture of a very vivid colour, and then open our eyes suddenly, and turn them on to a white surface, we shall see for an instant the image beheld in imagination, but with a complementary colour. Thus we have not one but several memories: there is not only one seat of memory but special seats for each individual act of memory.

The general physiological conditions of memory are reduced by M. Ribot to two: 1st, A particular modification of the nervous elements (cells): 2nd, An association, a special connexion between these elements. These *dynamical associations* are of great importance. The seemingly most simple act of memory involves the working of a very large number of nervous elements. Each nervous element may enter into different combinations. "The secondary automatic movements employed in swimming or dancing require certain modifications of the muscles and joints already used in locomotion, already registered in certain nervous elements: they find, in fact, a memory already organized, many of whose elements are turned to their own use, causing them to enter into new combinations and concur in the formation of another memory. . . ." Ribot compares the modified cell to a letter

of the alphabet, which, itself remaining unchanged, has helped to form millions of words.

Add consciousness to these phenomena and we have psychical memory. Consciousness is a fact, the conditions of which are a nervous phenomenon, a certain intensity, and a certain duration. "If every state of consciousness implies as an integral part a nervous action, and if this action produces a permanent modification of the nervous centres, a state of consciousness will also be recorded in the same place and manner" (p. 40). Whenever, for one cause or another, the same nervous condition recurs, the condition of consciousness will also recur. In physiological language, a good memory is: "A great number of nervous elements, each modified in a special manner, each forming part of a distinct association, and probably ready to enter into others; and each of these associations containing within itself the conditions essential to the existence of states of consciousness" (p. 45).

The distinctive characteristic of psychical memory is *recognition*. How are states of consciousness recognized, and attributed by the individual to himself, which would seem to imply either the identity of a being which comprehends and directs its own successive states or the paradoxical hypothesis of "a series of feelings which can be aware of itself as a series?" (Mill's *Examination of Hamilton*, p. 235). For this question, M. Ribot substitutes the following: By what mechanism is an object of memory localized in time? The explanation given by him is very ingenious. States of consciousness have a certain duration; they are, moreover, as it were, joined together end to end, the present by its anterior end is joined to the past, by its posterior end to the state that is about to arise. "The image travels backwards and forwards along the line of the past" (Taine, *de l'Intell.*, II 1, Ch. 2, § 7), until after a number of oscillations more or less extended, it is fixed. "We determine position in time, as we determine position in space—by reference to a fixed point, which in the case of time is the present" (p. 49).

We judge distance in the past to be greater or less according as we travel back more or less along the line of the past, and according as the intervening number of memories is, consequently, larger or smaller. Localization in time is, therefore,

no more a primitive fact than is localization in space, and it may be said that "memory is a *vision in time*." In practice we very rarely pass through all the intervening stages, we simplify the process by the use of *reference points*. The most important events of my life exist for me at a known distance from the present moment; given a memory, it is sufficient for me to refer it to one of these great divisions, in order to localize it with sufficient accuracy in the past. The art consists, therefore, in passing rapidly over long intervals, as with one glance. "We arrive, therefore, at this paradoxical conclusion, that one condition of memory is forgetfulness. Without the total obliteration of an immense number of states of consciousness, and the momentary repression of many more, recollection would be impossible" (Ribot, p. 61).

The Physiological Theory confirmed by the Diseases of Memory.

To sum up, the physiological theory is that, memory is a biological fact. In its highest stage it comprises recollections that are fully conscious and partially organized (for instance, a language that one is engaged in learning). These tend to retire from the sphere of consciousness and to approach organic memory (*e.g.* native language). Next comes the completely organized, and almost unconscious memory (*e.g.* the musicians' art). Lower still there are the registered experiences that imply the exercise of our senses (*e.g.* sight, touch, locomotion). Below the compound reflex action representing organic memory in its lowest term, there are simple, reflex impressions which result from innate physiological conditions. It may be that even these reflex impressions have been acquired and fixed by long continued experience in the evolution of species, and are thus the result of a *specific memory*.

In the investigation of *Diseases of Memory*, M. Ribot finds a confirmation of his theory. *Partial amnesia* (*e.g.* the loss of a group of recollections, of a foreign language, of a class of words, etc.) proves that there is not one only but several memories. *Progressive amnesia*, which by a slow and continuous process of dissolution leads to complete loss of memory, follows an equally interesting law. The destruction of memory "advances progressively from the unstable to the stable. It begins with the

most recent recollections, which, being imperfectly fixed upon the nervous elements, rarely repeated, and consequently having no permanent associations, represent organization in its feeblest form. It ends with the sensorial instinctive memory, which, having become an integral part of the organism, represents organization in its most highly developed stage. From the first term of the series to the last, the movement of amnesia is governed by natural forces, and follows the path of least resistance—that is to say, of least organization. Thus pathology confirms fully what we have already asserted of memory, viz. that it is a process of organizations varying between the two extreme limits of a new state on the one hand and organic registration on the other (*Ibid.* pp. 121, 122). According to Ribot, this law of reversion, or regression, is further confirmed by the fact that when memory is re-instated it follows an order the inverse of that in which it was lost.

Conclusion: Progress of the Psychology and Physiology of Memory. The Mechanical Theory explains everything in Memory, except Memory itself.

From the above historical survey it is easy to perceive the progress which has been made in the physiology and psychology of memory. This progress is above all due to the labours of the Scottish and French psychologists, and to the Associationist school. The connection between, or one might almost say, the identity, of memory and habit, the physiological conditions, the psychological laws, the diseases of memory and their regular course, are now well known. But we must not forget that memory involves the idea of time, that it also seems to imply personal identity, and that consequently, like most of the problems of psychology, it leads to a criticism and metaphysic of mind. Everything in memory is explained by mechanical laws except memory itself, *nisi ipsam memoriam.* How do we recognize the revived phenomenon? How are we to explain the persistence and resurrection of a fact which, *ex hypothesi,* is nothing but a mere fact, which has no special reality, and which ceases to be for ever the moment it passes out of our perception?

CHAPTER VI.

THE ASSOCIATION OF IDEAS.

By the Association of Ideas is meant the fundamental law in virtue of which ideas in the absence of their objects suggest each other, and are linked together in memory and imagination. As Reid remarks, the expression 'Association of Ideas' is inaccurate, since not only ideas, but volitions, feelings, and all mental operations in fact, are linked together in this way. "An idea awakens a judgment which gives rise to a feeling: from this feeling is born a resolution; the resolution in its turn awakens other judgments, and so on. Thus all the different kinds of mental phenomena are linked together and mutually suggest one another." The history of this law is the more interesting, that from having been first noticed by psychologists in connection only with memory and imagination, it has gradually invaded, as it were, the whole realm of intelligence. For the English Associationist school, this law is the most general principle of the intelligence, the law that explains the increasing complexity of mental phenomena, and makes it possible to find by analysis the elementary facts of consciousness, and by synthesis to trace their progressive complication.

Plato: Empirical Reminiscence.

Plato was the first to draw attention to the law of association. Reason with him is reminiscence of the Ideas, a re-awakening within us of the intelligible. But there is an empirical reminiscence which, in the realm of opinion, is

analogous to the rational processes whereby we come into possession of true knowledge. In the *Phaedo*, Plato, by starting from the laws of empirical reminiscence, arrives at the formulation of the laws of rational reminiscence.

"And what is the nature of this knowledge or recollection? I mean to ask, whether a person, who, having seen or heard or in any way perceived anything, knows not only that, but has a conception of something else which is the subject, not of the same but of some other kind of knowledge, may not be said to recollect (ἀνεμνήσθη) that of which he has the conception" (*Phaedo*, 73).

Here we have the Association of Ideas in general. Plato gives two examples of it.

"The knowledge of a lyre is not the same as the knowledge of a man? 'True'! 'And yet what is the feeling of lovers when they recognize a lyre, or a garment, or anything else which the beloved has been in the habit of using? Do they not from knowing the lyre, form in the mind's eye an image of the youth to whom the lyre belongs?' And this is recollection. In like manner anyone who sees Simmias may remember Cebes; and there are endless examples of the same thing'" (*Ibid.*).

In this passage Plato refers to cases where two objects having been perceived simultaneously, the idea of one calls up the idea of the other. This is what we now call the *law of contiguity in time*.

"'And from the picture of Simmias you may be led to remember Cebes?'—'True.' 'Or you may also be led to the recollection of Simmias himself?'—'True.'

This is an example of the law of similarity, to use the expression of the English Associationists. Plato concludes that,

'In all these cases, the *recollection may be derived from things either like or unlike*'" (*Ibid.* 73 *d*)

It must be admitted, however, that, though the facts were correctly observed by Plato, his statement of them is wanting in precision.

Aristotle: the Association of Ideas is the Principle of Reminiscence; Laws of Association; Suggestion by Resemblance, Contrast and Contiguity.

In his treatment of this question, Aristotle gives an example of his marvellous powers of observation. Hamilton

claims for him the honour of having discovered the three great laws of association (Reid's *Works*, Note D), and on this point A. Bain agrees with him (*Aristotle's Psychology: The Senses and the Intellect*, Appendix). Aristotle discriminates between memory (*μνήμη*) and recollection (*ἀνάμνησις*). The *μνήμη* is passive memory, the spontaneous reproduction of past perceptions. The *ἀνάμνησις* is the active reproduction of these same perceptions and implies an effort or will to recover a past cognition. It is peculiar to man, who is the only being capable of judgment and reflection. The problem then is, How is it possible to recover a lost cognition? The solution of this problem is to be found in the association of ideas, in the relations connecting them with one another, which tend to form a continuous series (*De Memor. et Reminisc.* Ch. II). Phenomena follow each other in a regular sequence, and likewise impressions, and the movements communicated by them to our bodies (*ὡς γὰρ ἔχει τὰ πράγματα πρὸς ἄλληλα τῷ ἐφεξῆς οὕτω καὶ αἱ κινήσεις*). The Soul is the form of the body, and can only be separated from the body by an act of mental abstraction. Hence, there is between the two terms a continuous parallelism, and what are impressions in the soul are in the body sensations and images. The series of external phenomena become, in the body, a series of movements, and, in the mind, a corresponding series of sensations and images. Thus there is a regular order in the succession of mental facts. Cognitions tend to be reproduced in the same order as that in which they were acquired. The consequents follow their antecedents either by a necessary sequence (*ἐξ ἀνάγκης*), or owing to habit which is more frequently the case (*ἔθει ὡς ἐπὶ τὸ πολύ*).

In the sequence that arises from habit, the consequent either resembles its antecedent (*ἀφ' ὁμοίου*), or is the contrary of it, the law of contrast (*ἢ ἐναντίου*), or has been perceived in contiguity with it (*ἢ τοῦ σύνεγγυς*). It is easy to see how these relations between our ideas render reminiscence possible. We look for the required idea by starting from some antecedent with which it is connected, then we proceed from one remembered object to another, until we come on the one in which we are interested. When, for instance, we wish to recall a forgotten line or verse, we begin by repeating the first word. The same antecedent may, it is true, reawaken

different consequents at different moments, but it generally recalls the one that habitually followed it in the past. We may then conclude with Hamilton:

1° "That Aristotle observed the relation of succession which in the reproduction of internal movements connects the consequent with the antecedent; 2° that he observed the similarity between the movements attending reproduction, and those which accompany the production of cognitions, and also the harmony between the order of cognitions and the order of objects; 3° that he made a distinction between necessary sequences in the chain of mental images, and sequences that are contingent and formed through habit; 4° that he noted the relation in virtue of which the facility of recollection is subordinate to the order of the ideas; 5° that having first, drawn a distinction between voluntary and involuntary reminiscence, he reduced the general laws of reproduction to the three relations of similarity, contrast, and contiguity in space and time" (Luigi Ferri, *Theories of Association*, p. 340).

We must, however, not forget that the association of ideas is a universal law, which governs passive memory as well as voluntary and human memory. The characteristic of what Aristotle calls reminiscence or active memory is not so much the association of images as the act of making use of these laws with a definite object in view.

Stoics: Law of Similarity. The Epicureans: Double Function of Association.

The theory of the Stoics concerning intelligence was purely empirical. The processes by which they explain the formation of general ideas, of the προλήψεις or anticipations, the elements and principles of reasoning, are laws of association.

"All our thoughts [according to the Stoics] are formed either by indirect perception, or by similarity, or analogy, or transposition, or combination, or opposition. By a direct perception we perceive those things which are the object of sense; by similarity those which start from some point present to our senses; as, for instance, we form an idea of Socrates from his bust. We draw our conclusions by analogy, adopting either an increased idea of the thing, as of Tityus, or the Cyclops; or a diminished idea, as of a pigmy. So, too, the idea of the centre of the world was one derived by analogy from what we perceived to be the case of the smaller spheres. We use transposition when we fancy eyes in a man's breast; combination when we take in the idea of a centaur; opposition when we turn our thoughts to death" (*D.L.* VII, 52, 53).

These statements of Diogenes Laertius are confirmed by a passage in Cicero. Cicero mentions four different ways in which the προλήψεις are formed: *usu* by experience, through which we acquire the most general and common notions, as of red, white, etc., *conjunctione* by combination, *similitudine* by resemblance, *collatione rationum per analogiam* by comparison of relations. From this we see that the Stoics gave most prominence to the law of similarity, as it is now called, and to its divers forms, namely, to resemblance, properly so called, analogy, or the discernment of the relations amongst difference, and combinations and contrast.

Although they did not admit the existence of any *a priori* principles, or principles anterior to experience, the Stoics attributed the principal part in cognition to the mind's activity. The more crudely empirical Epicureans, on the other hand, based the whole of empirical knowledge on sensation.

"Every notion proceeds from the senses either directly or in consequence of some analogy, or proportion, or combination" (*D.L.* X, 32).

What Epicurus calls προλήψεις or antecedent notions, *notitia rerum* (Cic. *Acad.* II, 44), are the

"Recollection of one or more external objects often perceived before. Such, for instance, is this idea: 'Man is a being of such and such a nature.' At the same moment that we utter the word man, we conceive the figure of a man in virtue of a preconception which we owe to the preceding operation of the senses" (*D.L.* X, 33).

Does not this amount to saying that all intelligence can be traced to the association of ideas? First we have sensations, then the general notions, man, animal, etc., abstracted from sensations by resemblance, analogy, and combination; lastly, we apply these general notions to particular cases. For instance, before we can judge whether a distant object is a horse or an ox, we must first have an idea of these two animals. From the sensations produced by a large number of oxen, we have disengaged by means of analogy, resemblance, and composition the general idea of an ox; and whether we hear the word ox pronounced, or perceive in the distance an animal of the species, the general idea of the ox and the images which are condensed into it are suggested to us by

association. To sum up, association plays a double part in the theory of Epicurus. It is by association that we abstract from sensations the antecedent notions, the general principles by which phenomena are comprehensible and have orderly coherence. Again, it is by association that we apply these antecedent notions, these general forms to particular cases. It is impossible to deny the analogy between this doctrine and that of modern empiricists. In its details it is less complete, but the principle is the same. Experience provides us with the notions and general laws by which it is possible to comprehend experience, and these notions and laws are merely habits which correspond in the mind to analogy and to the resemblances and combinations of sensation.

Thus we see that the law of the association of ideas was not unknown to the ancients, and that in the Stoic and Epicurean theories of cognition this law plays a most important part. These schools had, however, directed their attention chiefly to the associations of similarity, and they neither attempt to make any strict classification of the laws of association, nor to connect them with any universal law of thought. Aristotle alone gave the problem a psychological solution, and his successors were able neither to adopt nor to develop it. It was left to modern philosophy to accomplish this task.

Descartes: The Association of Ideas depends on the Relation of Mind to Body. Physiological Theory.

Experience, in the Cartesian school, was only a confused knowledge depending on the union of mind and body. The association of ideas, as well as memory (see above), resolves itself into the laws of this union. The two problems were confounded by the Cartesians, who treated the association of ideas, like memory, as both a psychological and physiological fact. "All the most lively and subtle elements of the blood," says Descartes, "which are rarified by the warmth of the heart, enter continually in large quantities into the cavities of the brain. . . . These extremely subtle elements of the blood constitute *the animal spirits*" (*Passions*, I, A, 10). By the impulse of external objects the animal spirits are moved in divers ways, and, being diffused through different

channels, ascend to the pineal gland, the seat of the soul. Hence arise sensations. But "it must be observed that all the things which the soul perceives through the medium of the nerves may also be represented to it by means of the fortuitous course of the spirits" (*Pass.* I, A, 26).

The repetition of nervous vibration modifies the cerebral matter, and a path is formed in which the animal spirits will in future travel more easily. Now, in virtue of the laws of the union of mind and body, the animal spirits cannot meet and fall into these tracks and open ways, so to speak, without awakening in the mind an image corresponding to the original sensation.

Malebranche: The Traces in the Brain, and their Connection with Ideas: Relations between the Ideas themselves.

The Cartesian theory was developed by Malebranche and Spinoza, and applied by them to the association of ideas. According to Malebranche, the body does not act on the mind, nor the mind on the body. "The only connection between them is a natural and mutual correspondence between the thoughts of the mind and the traces in the brain" (*Rech. de la Vérité*, 1st Part, V). The problem of the association of ideas is therefore twofold. We have to discover the laws which govern—1st, the connection between ideas and the traces in the brain: 2nd, the connection between these traces, and, consequently, between the ideas themselves.

Malebranche reduces the causes of the connection between the traces in the brain and the ideas to three:

"The first and most general cause is *the identity of time*. If, when the idea of God arose in my mind, my brain was at the same time struck by the sight of those three letters *Jah*, or by the sound of that same word, it will be enough that the tracks produced by these letters or their sound should recur, in order to make me think of God; and it will be impossible for me to think of God without there appearing in my brain some confused tracks of the letters or the sounds which accompanied the thoughts I had of God. The second cause of the connection between the ideas and the traces (and this second cause always presupposes the first), is the *human will*. As an example of this, we may mention language. Without the constant will of men, the connection between signs and ideas would be a fortuitous and, consequently, ephemeral one. The third cause of the connection between the ideas and these tracks is *Nature or the constant and immutable*

will of the Creator. There is, for instance, a connection which is natural and in no wise dependent upon our will, between the two traces produced by a tree or a mountain which we see, and the ideas, tree, or mountain. These natural connections are the strongest of all; they are, in general, the same in all men, and they are absolutely necessary for the preservation of life" (*Ibid.*).

The traces in the brain and the ideas being of a heterogeneous nature and there being no point of contact between them, they cannot act upon one another. But according to the theory of occasional causes, there is no movement of the body on the occasion of which a movement does not occur in the mind; and conversely. There is, therefore, a constant relation between the traces in the brain and the ideas. This connection has three causes. The first, which is involved in the two others, is the identity of time. The second is the human will, which, utilizing the identity of time, creates, for instance, language. The third is the Divine institution, by which the same traces always correspond to the same ideas.

Let us now consider the association of ideas, properly so called.

"This relation consists in that the traces in the brain are so closely connected one with the other, that it is impossible for any of them to recur without all those also recurring which were impressed at the same time. If a man, for instance, assists at some public ceremony, observes all the circumstances and all the principal personages present at it, the time, the place, the day, and every other detail, it will be enough for him to recall to his memory the place or some circumstance belonging to the ceremony even less remarkable, in order that all the others may also come back to his mind. . . . The cause of this connection between several tracks is the identity of the time in which they were impressed upon the brain; for it is enough that several traces were produced at the same time, to make it impossible for any of them to be reproduced without all the rest; for the reason that the animal spirits, finding the path made by all the traces left at the same time open, continue to travel along this path, because they can do so there more easily than in any other part of the brain; and this is the cause of memory and of other bodily habits which we have in common with animals" (*Ibid.*).

Besides the case of contiguity in time, as it is called by the Associationists, Malebranche also noticed what they call the law of similarity, but he saw in it only the most common cause of the confusion and deceptiveness of our ideas.

"We imagine things more vividly according as the tracks are more deeply and better engraven, and the animal spirits have travelled along them more frequently and with more force; and when the spirits have passed several times through them they enter into them with more ease than into other places which are quite near, but through which they have either never passed or have not passed so often."

What is the result of this?

"The animal spirits which have been set in motion by the action of external objects, or even by command of the soul, in order to produce certain tracks in the brain, frequently produce other tracks which, in truth, *resemble* the first in something, but are not the tracks of exactly the same objects, nor those which the soul desired to represent to herself; because the animal spirits finding some resistance in the parts of the brain whereby they should pass, are easily turned aside, and crowd into the deeper tracks of ideas that are more familar to us. Thus it is, for instance, that some short-sighted persons think they see a face in the moon. This is because we often look at faces, and that the spirits enter more easily into the tracks to which the ideas of face are connected by nature" (*Rech. de la Vérité*, II, I, 2nd Part, Ch. II).

In a word, there are in the brain, as it were, paths traced out. When the animal spirits, in making for themselves a new road, intersect one of these widely opened paths, they are carried away in it by their own force, and it is thus that association by similarity is caused, as when the mind passes, for instance, from the idea of the moon to the idea of a face. Association by similarity is ultimately traceable to association by identity in time. Two ideas which suggest one another by similarity are ideas which have common elements, the traces of which, consequently, intersect each other at a given point. What awakens the idea of a face when I see the moon is the element common to a face and the moon. If the idea of the face reappears, it is because the common element in the face and the moon was perceived in the face and the moon *at the same time*, and because this element and the other elements in the face formed part of the same act of cognition. Thus Malebranche anticipated the reduction of the laws of association into what Hamilton calls the *law of redintegration*.

Malebranche anticipates the Associationist Doctrine.

Malebranche not only pointed out the laws of association, and gave an ingenious physiological explanation of these laws,

but he was also, in fact, the precursor of modern associationism. We recognize in his work the two leading ideas of this doctrine: that of the complexity of phenomena that appear simple to consciousness, and the reduction of causality to constant succession. In connection with the illusions of the senses, he applied what Mill called the *psychological method*, in contrast to the *introspective method*. How is it that the moon appears larger at the horizon than at its zenith? This seems to be a simple intuition, immediately given by the senses. In reality the moon appears to us larger because we think it is further off, and this unconscious and natural judgment, as Malebranche calls it, is a complex fact implying a large number of anterior experiences.

Malebranche does not, it is true, deny causality, but he will not admit that it is to be found anywhere except in God, who alone acts in the universe. He has consequently to account for the delusion which makes us attribute causality both to the bodies which surround us and to our own minds; and the arguments by which he refutes our supposed knowledge of causes are the same as those used by Hume later, and, like Hume, he reduces the idea of cause to the idea of constant succession. What does the knowledge of causes imply? A true cause is a cause between which and its effect the mind perceives a necessary connection (*Rech. de la Vér.*, VI, 2nd Part, Chap. II, 3). But do we ever apprehend such a positive effectual action, such a real production of one thing by another? Can we in physical phenomena find the effective action of created things?

"Let us suppose that a ball is moved, and that in its line of motion it meets another ball which is at rest, experience tells us that this other ball will infallibly be moved, and that to an extent which can be exactly calculated" (7th *Entretien métaph.*).

But experience cannot tell me that it is the first ball that moves the second. Shall we be more successful if, instead of things, we consider ourselves?

"Because they are inwardly affected by the consciousness of their own efforts, men are led to believe that the soul is the true cause of the movements of the body (7th *Entret. mét.*). But what connection is there between my volition and the movement of my arm, between that spiritual act and the motion of the animal spirits, which out of a million others

choose certain nervous channels which are unknown to me, in order to cause in me the movement I desire, by means of an infinity of movements which I do not desire?" (*Rech. de la Vérité*, 15th Eclaircissement).

How is it, then, that something outside us seems to correspond to our notion of causality? How is it, for instance, that my volition to move my arm is always followed by a movement of my arm? The constant relations which we observe between phenomena rest "on the immutable foundation of the divine decrees" (7th *Entretien métaphysique*).

"God willed, and still unceasingly wills, that the modes of the mind and of the body should be in mutual correspondence. Herein lies the union and the natural interdependence of the two elements of which we are composed. God has bound together all His works; not that He has created in them connecting entities; He has made them subordinate to one another without investing them with efficient qualities" (7th *Ent. métaph.*).

In a word, God alone acts: He is the only cause. But in His supreme wisdom He does not act at random: His universal action is in conformity with universal immutable laws. In the world of phenomena the notion of causality is, therefore, reducible to the idea of law, or of constant relation, and this is also the theory of modern science. The illusion of the human mind lies, as Hume said afterwards, in changing constant succession into a cause. To use Malebranche's own words, "We consider that a thing is the cause of some effect when it is always accompanied by the latter" (*Rech. de la Vérité*, IV, Ch. X).

"Men never fail to imagine that a thing is the cause of a certain effect when the two are joined together, even in cases where the true cause of that effect is unknown to them. It is for this reason that every one infers that a ball which is in motion and meets another ball is the true and principal cause of the motion which it communicates to the second ball; that the will of the soul is the true and principal cause of the movement of the arm, and other similar prejudices; because it always happens that a ball is set in motion by the impact of another ball, that our arms are moved every time we will it, and that we cannot sensibly perceive what other thing could be the cause of this movement" (*Rech. de la Vérité*, III, 2nd Part, Ch. III).

Thus the origin of our idea of cause, although Malebranche does not say it in so many words, is to be found in the law of association by identity of time. Historically, Malebranche

is the forerunner of the associationist theory. The idealism of Berkeley was derived from the doctrine of occasional causes; and the scepticism of Hume, who himself profited by the teaching of the French philosophers, is merely the logical development of the idealism of Berkeley.

Spinoza: Distinction between Empirical and Intellectual Association.

Spinoza adheres closely to the Cartesian theory, of which he gives an accurate exposition. "Memory," he says, "is nothing else than a certain concatenation of ideas, involving the nature of things which are outside the human body, a concatenation which corresponds in the mind to the order and concatenation of the affections of the human body" (*Ethics*, Part II, Prop. XVIII, Scholium). The human body has only to be once affected simultaneously by two external bodies, for the image of one to be suggested by the image of the other. It is a mere matter of accident, and varies with individuals.

"In this manner each person will turn from one thought to another, according to the manner in which the habit of each has arranged the ideas of things in the body. The soldier, for instance, if he sees the footsteps of a horse in the sand, will immediately turn from the thought of a horse to the thought of a horseman, and so to the thought of war. The countryman, on the other hand, from the thought of a horse will turn to the thought of his plough, his field, etc."

Spinoza distinguishes this connection "which takes place according to the order and concatenation of the affections of the human body," "from the concatenation of ideas which takes place according to the order of the intellect and enables the mind to perceive things through their first causes, and is the same in all men" (*Eth.* II, 13, Schol.). As external objects do not always follow one another in the same order, the imagination is subject to a kind of fluctuation, and represents things belonging to the future as contingent. For instance, a boy will see, several days in succession, Peter in the morning and Simeon in the evening, but one evening he sees James instead of Simeon. "Therefore, his imagination will fluctuate, and will connect with a future evening, first one, and then the other" (*Ibid.* 44, Schol.).

The peculiar characteristic of reason, that which distinguishes it from mere empirical expectation, is that it perceives

things as necessary and under the form of eternity, *sub specie æternitatis*. Thus the association of ideas varies with individuals and in the same individual: it depends on the succession of phenomena in time and creates the appearance of contingency. Reason is self-identical, immutable, sees things under the form of eternity, and, in the consciousness of an absolute necessity, dispels the illusion of chance or accident in things.

Leibnitz: The Association of Ideas the Basis of Animal Intelligence.

Such was the theory of the great Cartesian School. The association of ideas was, like memory, referred to organic modifications. But we must notice two things. The first is, that what is spiritual in the phenomenon does not depend on the body, but on its union with the soul. The second is, that the association of ideas, which is purely empirical and only reproduces the sequence of external phenomena, could in no case furnish the principles by which the consciousness of it is possible. Leibnitz regards the association of ideas as being characteristic of animal intelligence (*New Essays*, II, 33; *Monadology*, 26, 27, 28). "Memory furnishes the soul with a kind of consecutiveness which resembles (imitates) reason, but which is to be distinguished from it" (*Monad.* 26).

"Man as well as the animal is inclined to put together in his memory and imagination what he has observed united in his perceptions and experience. It is in this that all the reasoning, if so it may be called, of animals consists, and often that of men, so far as they are empirical, and govern themselves by the senses and examples, without examining whether the same reason still has force" (*New Essays*, II, 33).

These "non-natural" associations of ideas are due to the repetition of an experience, or to a single very violent impression. "For often a strong impression produces all at once the same impression as a long-formed habit, or as do many, or oft-repeated ordinary impressions" (*Monad.* 27).

Increasing Importance of the Part played by Association in the Empirical Theories of Cognition. Hobbes: Discursus Mentalis.

In the English empirical school, the association of ideas assumed an importance which went on increasing until this law came to be regarded as the sole principle of life and

of thought. In a chapter of the *Leviathan* (Chap. III, *de consequentia sive serie imaginationum*), Hobbes reduces the series of psychical phenomena, which he calls *discursus mentalis*, to a series of physical movements. He traces thought back to images, these images to the sensations of which they are a continuation, and sensations to the movements which cause them. "The order of the images is the same as that of the sensations, which in its turn follows the order of the motions in the brain, and those motions that immediately succeed one another in the sense continue also together after sense: in so much as the former coming again to take place and be predominant, the latter followeth by coherence of the matter moved, in such manner as water upon a plane table is drawn which way any one part of it is guided by the finger" (*Leviathan*, Chap. III).

The train of thoughts, or *discursus mentalis*, is irregular in reverie and in dreams, "regular when it is regulated by some desire and design. . . . From desire ariseth the thought of some means we have seen produce the like of that which we aim at" (*Ibid.*). Even the inquiry into the unknown, which is peculiar to man, is nothing else than the establishment of a train of thought going from consequent to antecedent, or from antecedent to consequent. The principal relations which govern this train of thought are those of resemblance, time, space, of cause to effect, principle to consequent, means to end, sign to the thing signified.

Locke distinguishes between Natural and Accidental Association of Ideas. He allows a Place to the Activity of the Mind in Association.

In the chapter which he devotes to the association of ideas (*Essay on the Human Understanding*, II. 33), Locke comes near to the doctrine of the Cartesian School. He adopts the physiological explanation by the animal spirits, "which once set agoing, continue in the same steps they have been used to;" and he distinguishes clearly between the rational relations established by reason and those which are due to a chance simultaneous perception.

"Some of our ideas have a natural correspondence and connection one with another; it is the office and excellency of our reason to trace these,

and hold them together in that union and correspondence which is founded in their peculiar beings. Besides this, there is another connection of ideas wholly owing to chance or custom ; ideas that in themselves are not at all of kin come to be so united in some men's minds that it is very hard to separate them ; they always keep in company, and the one no sooner at any time comes into the understanding, but its associate appears with it, and if they are more than two thus united, the whole gang, always inseparable, show themselves together" (*On Human Understanding*, Bk. II, Ch. 33).

Locke traces to the association of ideas a great many superstitions and prejudices, but he never thought of professing to find an explanation of mind, of its faculties, and of the whole mechanism of thought in this principle. It is by the activity of the mind itself that he accounts for the combination of the elements of thought. This mental composition, as he understands it, is quite distinct from mere passive association. But having made these reservations, it must be acknowledged that his works contain theories which justify us in regarding him as one of the precursors of the associationist doctrine. The primary elements of thought are, he teaches, the simple ideas furnished by sensation and reflection. All the complex ideas are compounded of these ideas, and can be reduced to three classes: ideas of modes, of substances, and of relation. The simple modes are composed of simple ideas belonging to the same species (number, space, duration). The mixed modes are composed of simple ideas belonging to different species. The ideas of these mixed modes, such as those of beauty, justice, obligation, and in general, all the ideas we have concerning theology, morality, and jurisprudence, are composed of several simple ideas joined together, which the mind by a kind of illusion regards as a single idea. Can we not here discern the germ of the associationist's explanation of things?

And Locke comes still nearer to these philosophers in his theory of substance as a collection of simple ideas, which are always present together, and which, consequently, the mind joins in a supposed substance which it regards as their *substratum*. Matter, mind, all particular substances are thus to him combinations of simple ideas that are always present together at the same time, and end by becoming blended into one idea which embraces them all, but has no meaning or

content without them. We must observe, however, that Locke does not deny the existence of substances. He only declares that we know nothing about them, that as far as we are concerned, they are reducible to a collection of associated simple ideas.

Berkeley: Our Knowledge of the Sensible World explained by Association.

Berkeley goes even further than Locke. He is not content to point out, in his theory of vision, the part played by association in the acquisition of ideas of magnitude, shape, distance; he also tries to prove that sensible things are merely associated ideas. He maintains that material substances have no existence, that their whole being is in our perception of them, their *esse est percipi*. "Take away the sensations of softness, moisture, redness, tartness, and you take away the cherry. Since it is not a being distinct from these sensations, a cherry, I say, is nothing but a congeries of sensible impressions or ideas perceived by various senses; which ideas are united into one thing (or have the name given to them) by the mind;—because they are observed to attend each other" (*3d Dial. of Hylas and Philon*).

Sensations are pure ideas which we passively receive by the direct action of the Divine mind. The sensations belonging to the different senses have no real relations, or necessary connection with one another. They are not different modes of a same reality, or of a same substance; but owing to experience and habit, we associate those sensible ideas which are always accompanied by one another.

"And as several of these [ideas] are observed to accompany each other they come to be marked by one name, and so to be reputed as one thing. Thus, for example, a certain colour, taste, smell, figure, and consistence having been observed to go together, are accounted one distinct thing, signified by the name *apple*; other collections of ideas constitute a stone, a tree, a book, etc." (*Principles of Human Knowledge*, Pt. I, 1).

Given the human mind, the ideas produced therein by the action of the Divine mind, the constant relations which are shown by experience to exist between these ideas and which come finally to be indissolubly associated in our minds, and the existence of a material world are easily explained.

David Hume: Association of Ideas the Universal Principle of Life and of Thought; the Notion of Causality.

The foregoing theories were generalized and made into a complete system by Hume. The fundamental principle in Hume's doctrine is that we must not accept as original and ultimate all that actual consciousness reveals to us. Many complex acts, many ideas which were gradually formed by experience and habit, now appear to us to be simple acts and ideas, or primary data of thought. "Such is the influence of custom that where it is strongest it not only covers our natural ignorance, but even conceals itself, and seems not to take place merely because it is found in the highest degree" (*Inquiry concerning the Human Understanding*, Sect. IV, Part I). Therefore the method, which in the positive sciences is applied to physical phenomena, should also be applied to psychical phenomena. That is to say, we must first analyze them into their elements, and then determine the laws according to which these elements are combined.

"We may," says Hume, "divide all the perceptions of the mind into two classes or species, which are distinguished by their different degrees of force and vivacity" (*Ibid.* Sect. II). By the term *impression* he means "all our more lively perceptions when we hear, or see, or feel, or love, or hate, or desire, or will." *Thoughts* or *ideas* are "the less lively perceptions of which we are conscious when we reflect on any of those sensations or movements above mentioned. Thus the elements of our spiritual life are impressions and ideas which are enfeebled images of impressions . . . all our ideas or more feeble perceptions are copies of our impressions or more lively ones." Hence every idea to which we are not able to assign a corresponding impression is a complex whole, an artificial compound, the elements and origin of which can be discovered by analysis. As regards the laws by which these elements are combined, Hume says: "To me there appear to be only three principles of connection among ideas, namely, Resemblance, Contiguity in time or place, and Cause and effect" (*Ibid.* Sect. III). "All reasonings concerning matter of fact seem to be founded on the relation of Cause and Effect" (Sect IV).

To explain the notion of causality by the laws of association

is therefore to trace to the same source all the knowledge which bears upon anything that is not a mere abstraction. What is, then, the origin of our notion of cause? No intuition reveals to us "the secret power" by which one object produces another. A billiard ball moves and knocks against another billiard ball, which then begins to move also. There is nothing in the motion of the first to suggest the necessity of the motion of the second. All we see is that one phenomenon follows the other. Our senses cannot, then, give us the idea of power or of a necessary connection. Let us see whether this idea is derived from reflection on the operations of our own minds; whether we shall not find in our own consciousness the original impression from which the idea of cause is copied (Sect. VII, Part I). "The motion of our body follows the command of our will. Of this we are every moment conscious. But the means by which this is effected, the energy by which the will performs so extraordinary an operation,—of this we are so far from being immediately conscious, that it must forever escape our most diligent inquiry" (*Ibid.*). We observe a fact, or rather the succession of two phenomena—nothing more.

But, it will be said, are we not conscious of power, of energy, when by a command of our will we call up an idea and fix our mind on it? It would seem that here there was no medium. To know a power would be to know that which in the cause renders it capable of producing the effect, and this would be to know both the cause and the effect by apprehending the relation between them. Now, we perceive no necessary connection between the command of the will and the appearance of an idea. Here again all we know is the fact: all we know is that the command of the will is followed by an idea. And do we owe to reasoning this idea of cause which cannot be given to us by intuition? Certainly not; for it is impossible to say *a priori* what will be the effects of any given object. "Adam, though his rational faculties be supposed at the very first entirely perfect, could not have inferred from the fluidity and transparency of water that it would suffocate him" (Sect. IV). "The mind can never possibly find the effect in the supposed cause by the most accurate scrutiny and examination, for the effect is totally different

from the cause, and, consequently, can never be discovered in it" (Sect. IV).

Reason cannot even authorize us to expect that the same causes will be followed by the same effects. Where is the medium that will enable the mind to go from the proposition: "'I have found that such an object has always been attended with such an effect,' to this other proposition, 'I foresee that other objects which are in appearance similar will be attended with similar effects'? . . . It is impossible, therefore, that any arguments from experience can prove this resemblance of the past to the future, since all these arguments are founded on the supposition of that resemblance" (Sect. IV).

"Upon the whole there appears not, throughout all nature, any one instance of connection which is conceivable by us. All events seem entirely loose and separate. One event follows another, but we never can observe any tie between them. They seem *conjoined*, but never *connected*. . . . But as we can have no idea of anything which never appeared to our outward sense or inward sentiment . . . we have no idea of connection or power at all" (*Ibid.* Sect. VII, Pt. II).

It is in experience and the association of ideas that we must look for the origin of our notion of cause and of the principle of causality. "Similar objects are always conjoined with similar. Of this we have experience. Suitably to this experience, therefore, we may define a cause to be an object followed by another, and where all the objects similar to the first are followed by objects similar to the second. We may, therefore, suitably to this experience, form another definition of cause, and call it an object followed by another, and whose appearance always conveys the thought to that other" (*Ibid.*).

The relation of causality which Hume had first distinguished as original is thus ultimately reduced by him to the double relation of similarity and succession. The principle of causality was for him therefore not an *a priori* law of thought, but merely a habit of mind, having its origin in experience and the association of ideas. As to the consciousness of determination joined to it, it is only a subjective illusion, which no doubt characterizes our idea of causality, but for that very reason makes it false. Our idea of power, of force, arises partly from the sensation of effort, and partly from the sensa-

tion accompanying the habit. In both cases it is illusory, and only shows the tendency we have to attribute to external objects, feelings analogous to those which they cause in us.

"No animal can put external bodies in motion without the sentiment of a *nisus* or endeavour; and every animal has a sentiment or feeling from the stroke or blow of an external object that is in motion. These sensations, which are merely animal, and from which we can, *a priori*, draw no inference, we are apt to transfer to inanimate objects and to suppose that they have some such feelings whenever they transfer or receive motion. With regard to energies, which are exerted without our annexing to them any idea of communicated motion, we consider only the constant experienced conjunction of the events; and, as we feel a customary connection between the ideas, we transfer that feeling to the objects, as nothing is more usual than to apply to external bodies every internal sensation which they occasion" (*Ibid.* Note).

Thus, the determining habit is not the cause any more than the effort is, but merely a sensation arising from and depending upon the conjunction of phenomena, which by a common illusion we project into external things.

The Association of Ideas accounts for our Belief in the Existence of an External World, of the Ego, and of Volitions and Emotions.

But it is not only the principle of causality that Hume reduces to the association of ideas. The whole of our mental life, our knowledge of matter and of mind, and the phenomena of the emotions and the will are all explained by him in the same way. "Here is a kind of attraction, which in the mental world will be found to have as extraordinary effects as in the natural, and to show itself in as many and as various forms" (Green's *Hume*, Vol. I, p. 321).

Here again Hume sets forth all the principles that were to be developed by the associationists of to-day. We have no more notion of substance than of cause. There is no impression corresponding to substance. Hume takes Locke's criticism of this question to be final. We only know modes or qualities. Bodies are therefore merely groups of sensations bound together by association, and it is we ourselves who convert a constant relation into a reality. The idea of substance, like that of cause, is a superadded idea, a subjective illusion

which corresponds to a habit of mind; and everything that is said of matter may with equal truth be said of mind. "There are some philosophers who imagine we are every moment intimately conscious of what we call our Self; that we feel its existence, and its continuance in existence" (*Treatise on Human Nature*, Part IV, Sect. VI). But this is another subjective illusion which can by analysis be traced to custom and association. "It must be some one impression that gives rise to every real idea. But self or person is not any one impression, but that to which our several impressions and ideas are supposed to have a reference." The case is therefore the same as with matter. We convert the relations which bind our states of consciousness together, into a substantial reality. And if we turn from the intellect to the emotions we shall find that the association of ideas also plays the most important part in the generation of our passions (See Ch. VIII). As to our notion of will, it is explained not by the chimerical idea of cause, but by the constant relations between volitions and the motives which precede them. The same motives are always followed by the same actions.

Hume did not, it is true, invent the whole of his method of critical analysis. He had precursors in Berkeley and Malebranche, but he was the first to attempt a general explanation of our mental life by the association of ideas. He stated the problem, and supplied a method for its solution. His successors had only to continue his work. For him, as for Mill, our apparently most simple intuitions are in reality very complex mental acts: our natural beliefs are subjective illusions.

In order properly to study the mind, we must apply the method of analysis, and seek thereby to discover the original elements of thought and the laws according to which these elements are combined. We have no original faculties. There is no such thing as power. There are only phenomena and constant relations between these phenomena. Consequently, we have no innate principles, no *a priori* laws. The principles of experience are derived from experience. The principle of causality can be reduced to the expectation of the same phenomena in the same circumstances. Our certainty is there-

fore altogether subjective, and rests on habits of mind, on the impossibility of getting rid of certain associations of ideas. The associationists have not been able to add anything to Hume's method or to his principles. There is only one inconsistency with which Hume can be reproached, and that is his distinction between *relations of ideas* and *matters of fact.*

"All the objects of human reason or inquiry," says he (*Inq. on Hum. Understanding*, Sec. IV, Pt. 1), "may naturally be divided into the two kinds, to wit, *Relations of Ideas* and *Matters of Fact.* Of the first kind are the sciences of Geometry, Algebra, and Arithmetic, and in short, every affirmation which is either intuitively or demonstratively certain *That the Square of the hypotenuse is equal to the Square of the two sides*, is a proposition which expresses a relation between these figures. That *three times five* is *equal to the half of thirty*, expresses a relation between these numbers. Propositions of this kind are discernible by the mere operation of thought, without dependence on what is anywhere existent in the Universe. Though there never were a circle or triangle in nature, the truths demonstrated by Euclid would for ever retain their certainty and evidence."

Hartley: Thought explained by Association, and Association by Cerebral Vibrations.

D. Hartley, a doctor, also made an endeavour to prove that the whole of our spiritual life was the result of association. But while Hume was above all things a psychologist and a logician, whose method foreshadowed that of Stuart Mill, Hartley was, on the other hand, as much a physiologist as a psychologist: and he inaugurated the method which has been adopted by Alexander Bain, and more especially by Herbert Spencer. In parallelism with the theory of ideas, he proposed a theory of cerebral vibrations, and tried to prove that there was a close and continual correspondence between the two terms. Vibrations, like ideas, become associated when they occur simultaneously or successively. Hartley thought he could explain all mental facts in terms of relations of co-existence and succession, and, simplifying Hume's doctrine, he abolished resemblance as an original and ultimate relation. He returned, in fact, to the doctrines of Descartes and Malebranche, only substituting the vibrations of the nerves themselves for the circulation in the nerves of the animal spirits.

Reid: Reaction against Hume's Doctrines; Influence of the Will on the Sequence of Ideas.

In order to escape from Hume's scepticism, Reid multiplied the primary principles of thought, the necessary truths which cannot be derived from experience. Association could thus only play a secondary part in his system. He very properly remarks that:

"Memory, judgment, reasoning, passions, affections, and purposes—in a word, every operation of the mind, excepting those of sense, is exerted occasionally in this train of thought . . . so that we must take the word idea in a very extensive sense, if we make the train of our thoughts to be only a train of ideas. . . . The trains of thought in the mind are of two kinds. They are either such as flow spontaneously . . . without any exertion of a governing principle to arrange them; or they are regulated and directed by an active effort of the mind, with some view and intention. . . . These two kinds, however distinct in their nature, are for the most part mixed in persons awake and come to years of understanding" (*On the Intellectual Powers*, IV, Ch. IV).

"To account for the regularity of our first thoughts, from motions of animal spirits, vibrations of nerves, abstractions of ideas or from any other unthinking cause, whether mechanical or contingent, seems equally irrational" (*Ibid.*). Reid maintains that the sequence and tendency of our thoughts can to a great extent be controlled by the will. He denies that our intellectual life can be explained by inevitable laws of association, or a kind of fatal attraction. As against the "natural and disorderly course of the ideas," he insists on the sequence, "the order, which is produced by reflection, and an act of Will," and does not find in the former the principle of the latter.

"We seem to treat the thoughts that present themselves to the fancy as a great man treats those that attend his levee. . . . If we pay no attention to them, they pass with the crowd, and are immediately forgot as if they had never appeared. But those to which we think proper to pay attention, may be stopped, examined, and arranged for any particular purpose we have in view" (*Ibid.*).

Through habit, a train of thought which had at first cost much labour and reflection ends by occurring of itself to the mind, by becoming, as it were, spontaneous. This explains the differences in the talents, aptitudes, and opinions of men. But the first origin of these series of ideas was not something

special, irreducible, a mere collection of inevitable laws, but "the will setting in action the faculties of the intellect."

Dugald Stewart: Distinction between Associations through Accidental and Necessary Relations; Association the Cause of Habit.

Dugald Stewart, a disciple of Reid, gives a minute description of the phenomenon of the association of ideas. He thinks, however, that it is not possible to enumerate all the causes of association, and then to reduce all the relations between our ideas to one or two laws, as Hume did. His reason for this is based on a misapprehension. "There is," he says, "no possible relation among the objects of our knowledge which may not serve to connect them together in the mind, and therefore although one enumeration may be more comprehensive than another, a perfectly complete enumeration is scarcely to be expected" (*Elements of the Philosophy of the Human Mind*, Ch. V). Hume might have replied that it matters little what the objects of our knowledge are; that, for example, whatever the objects may be to which our ideas correspond, those ideas which have occurred together or successively will suggest one another. Dugald Stewart himself attempts, however, to distinguish and classify the relations by which ideas are associated.

"The relations upon which some of them are founded are perfectly obvious to the mind; those which are the foundation of others are discovered only in consequence of particular efforts of attention. Of the former kind are the relations of Resemblance and Analogy, of Contrariety, of Vicinity in time and place, and those which arise from accidental coincidences in the sound of different words. These, in general, connect our thoughts together, when they are suffered to take their natural course, and when we are conscious of little or no active exertion. Of the latter kind are the relations of Cause and Effect, of Means and End, of Premises and Conclusion; and those others which regulate the train of thought in the mind of the philosopher when he is engaged in a particular investigation" (*Collected Works* of Dugald Stewart, Vol. II, p. 263).

This distinction between relations that are accidental and purely subjective, and logical and necessary relations which have an objective validity, was adopted by the majority of the French psychologists of the spiritualistic school. Dugald Stewart showed also that the action of our will on the

sequence of ideas is an indirect one, and merely consists in profiting by those laws of association that have most influence on mind, character, and conduct. Finally, instead of tracing the connection between ideas to habit, he thinks it "more philosophical to resolve the power of habit into the association of ideas than to resolve association of ideas into habit." Habit does not seem to him to be "an ultimate fact nor incapable of analysis." The facility engendered by it is precisely due to the fact that through repetition, ideas, feelings, and movements tend to become associated in a more and more irresistible manner.

"In the case of habits which are purely intellectual, the effects of practice resolve themselves completely into this principle, and it appears to me more precise and more satisfactory to state the principle itself as a law of our constitution than to slur it over under the concise appellation of habit, which we apply in common to mind and body" (*Elem. of the Philosophy of the Human Mind*, Ch. V).

Hamilton reduces all the Laws of Association to one.

Hamilton endeavoured to simplify the theory of association. First he reduced all the relations between ideas to two, namely, simultaneity and resemblance or affinity. Then he reduced even these two laws to one, which he calls *the law of redintegration* or *totality*, and states as follows: "Those thoughts suggest each other which had previously constituted parts of the same entire or total act of cognition."

Consciousness obeys two laws: the laws of succession and of variation. This successive variation being a continuous one, there is between the modes or acts of the mind a law of dependence or determined consecution. Each successive modification in the mental series is the effect of its immediate antecedent.

This law of dependence implies a law of relativity and integration. Thoughts depend on one another only inasmuch as they stand with regard to one another in the relation of parts of the same whole. But this whole is of two kinds: subjective or psychological, and objective or logical. Hence the distinction between extrinsic or contingent connections, and intrinsic or necessary connections. The latter explain themselves; since they are a consequence of the nature of mind, and are based on the logical impossibility of separating the

terms joined together by them. But the subjective consecutions, association properly so called, cannot be explained by the necessary connection between ideas. They are the result of the unity of the mental act of which they previously formed a part. Ideas are connected together when they have formed part of the same integral act of cognition. As regards association by simultaneity, there would seem to be no difficulty. Ideas acquired together at the same time are, as it were, parts of the same whole, elements of a single mental act which preserves its integrity (*law of redintegration*).

But in the case of associations by similarity, the theory is less obviously applicable. How can it be said that two ideas whose relations resulted in the discovery of something new to the mind, were included in the same mental act? The answer is, that here the middle term which connects the two ideas is the element common to them both, an element which belonged to each of them as a part of its whole; consequently it is this common element, this identical act, which, while reconstituting at the same moment the two different ideas, connects them with one another. Thus association by similarity may also rightly be said to be reducible to the law of redintegration.

The Associationist Tradition: Thomas Brown.

The Scottish School,—Reid, Dugald Stewart, and Hamilton,—while investigating the laws of association, and allowing to them a share in the explanation of phenomena, refused to regard these laws as the sole and exclusive principle of intellectual facts: for these philosophers were opposed to the associationist theory of Hume. In the meantime, this theory had always had its representatives. Erasmus Darwin (1731-1802),—a naturalist, and the ancestor and precursor of Charles Darwin,—and the scientist, Joseph Priestley (1733-1804), had accepted the psychological doctrines of Hartley. Even the Scottish School itself, as represented by Thomas Brown, a disciple of Reid, and the friend and successor of Dugald Stewart, returned to the explanations of the associationist school. Brown's doctrine marks "the transition between the decline of this school at the end of the eighteenth century, and its restoration by James Mill at the beginning of

the nineteenth" (Luigi Ferri, *The Psychology of Association*, p. 80).

Brown does not, like his predecessors, regard the laws of association as being merely laws of the reproduction of our thoughts. He makes them play a part in the production of our cognitions, attributing to them the formation of a certain number of faculties, which he does not admit to be original. As the term 'association' appeared to him to be ill-chosen, he substitutes for it the term 'suggestion.' He draws a distinction between *simple suggestion* and *relative suggestion*, and deduces from these two principles all our intellectual faculties. A simple suggestion is an accidental association (such and such a place reminds me of such and such an individual). Relative suggestion is the perception of relations, the foundation of general ideas and of reasoning,—as, for example, when thinking of a right-angled triangle my mind goes from the square on the hypotenuse to its proportion to the squares on the two other sides.

James Mill: Inseparable Association; Contrast between the Psychological and the Intuitive Methods.

James Mill, says his son, accomplished the task which Brown had proposed to the psychologist, for he shows that chemical decomposition is the model of the method of analysis which would lead to the discovery of the elements that go to make up the phenomena of mind. We have already come across this doctrine in Hume; but where James Mill was original was in his theory of inseparable association as the principle of the subjective illusions of which our common sense beliefs are made up, and which are the foundation of the doctrines of the intuitionists. In the first place, he says, when two ideas, owing either to the force or the frequency of their association, are closely connected in our minds, they irresistibly suggest each other. This would explain many of our so called ultimate and innate principles. In the second place,

"Ideas, also, which have been so often conjoined, that whenever one exists in the mind, the other immediately exists along with it, seem to run into one another, to coalesce as it were, and out of many to form one idea; which idea, however in reality complex, appears to be no less simple than any of those of which it is compounded" (*Ass. of Ideas*, Ch. III).

This kind of chemical mental synthesis explains, for instance, the formation of what we call external objects, which are only inseparable combinations of sensations. Even the will he traces to association. The object of our desire is always pleasure and the avoidance of pain. The means employed vary according to the experiences we have made and the associations between the end and the circumstances which enable us to attain it.

John Stuart Mill: Laws of Association; Illusions of Intuition; Psychological Theory of our Belief in Matter and in Mind.

John Stuart Mill took up his father's work, developed and expanded his theory, and gave it new force. In his hands Associationism came to be not merely an English doctrine, but one of the great systems of philosophy. The following are, according to him, the laws of the association of ideas:

"1st. Similar phenomena tend to be thought of together. 2nd. Phenomena, which have either been experienced or conceived in close contiguity to one another, tend to be thought of together. The contiguity is of two kinds, simultaneity and immediate succession. Facts which have been experienced or thought of simultaneously recall the thought of one another. Of facts which have been experienced or thought of in immediate succession, the antecedent or the thought of it recalls the thought of the consequent, but not conversely. 3rd. Associations produced by contiguity become more certain and rapid by repetition. When two phenomena have been very often experienced in conjunction, and have not in any single instance occurred separately either in experience or in thought, there is produced between them what has been called inseparable or, less correctly, indissoluble association. . . . 4th. When an association has acquired this character of inseparability – when the bond between the two ideas has thus been firmly riveted, not only does the idea called up by association become in our consciousness inseparable from the idea which suggested it, but the facts or phenomena answering to those ideas come at last to seem inseparable in existence: things which we are unable to conceive apart appear incapable of existing apart, and the belief we have in their co-existence, though really a product of experience, seems intuitive" (Mill's *Examination of Sir W. Hamilton's Philosophy*, Ch. XI).

Given the human mind as we now know it, a complex whole, a synthesis of elements so blended that they appear as an indivisible unity, we have next, with the help of these laws, to

dissolve by analysis the compact mass of coherent facts, and to discover the original phenomena in their primitive simplicity. This task Stuart Mill accomplished in the most ingenious manner. The external world, the ego, the laws of thought, the principles of the mathematical and positive sciences, our ethical ideas, all these apparently simple intuitions were by his analysis resolved into their elements, the laws of their connection being at the same time revealed.

Our belief in the existence of an external world is explained by the association of ideas. The external world seems to have an existence independent of our sensations, and to be perceived by an immediate intuition. The problem here is to prove that this belief is irresistible only on account of the force of the inseparable associations which have produced it in the mind. With the sensation that I feel in the present instant, I contrast the multitude of sensations which I might experience under other circumstances. "I see a piece of white paper on a table. I go into another room, and though I have ceased to see it, I am persuaded that the paper is still there" (*Ibid.* pp. 192, 193). In other words, there exists for me a possibility of sensations in given circumstances, and what characterizes this possibility of sensations, what distinguishes it from any actual sensation, is that it is permanent. "These various possibilities are the important thing in the world. My present sensations are generally of little importance, and are moreover fugitive." One can follow here the mechanical process which ends by placing the substance, which is permanent, in opposition to the actual, fleeting sensation. Moreover, these possibilities of sensation are co-ordinated groups of sensations belonging to different senses (*e.g.* the smell, colour, form, etc., of a rose), and by this again they are distinguished and separated from the particular sensation. What I call a body is a group of co-ordinated sensations, and it is between these groups that experience has shown constant successions. For instance, fire, which is a group of sensations, melts wax, which is another group of sensations.

"Hence our ideas of causation, power, activity do not become connected in thought with our sensations as *actual* at all . . . but with groups of possibilities of sensation . . . the sensations, though the original foundation of the whole, come to be looked upon as a sort of accident

depending on us, and the possibilities as much more real than the actual sensations, nay, as the very realities of which these are only the representations, appearances, or effects" (*Ibid.* p. 195).

As we reify groups of sensation into bodies, we refer the whole of our sensations to a material substance as its principle or cause. Thus our belief in an external world is not the result of an immediate, primitive or ultimate intuition. Psychological analysis resolves it into a necessary illusion, which is explained and produced by the laws of association.

The distinctive characteristic of our notion of mind as of matter is the idea of something "whose permanence contrasts with the perpetual flux of the states of consciousness which we refer to it."

"The belief I entertain that my mind exists, when it is not feeling or thinking, nor conscious of its own existence, resolves into the belief of a permanent possibility of these states. . . . Thus far, there seems no hindrance to our regarding mind as nothing but the series of our sensations (to which must now be added our internal feeling) as they actually occur, with the addition of infinite possibilities of feeling, requiring for their actual realization conditions which may or may not take place, but which as possibilities are always in existence, and many of them present" (*Ibid.* Ch. XII, pp. 205, 206).

The explanation of the fact that the mind regards itself as something distinct from the facts of consciousness is that our actual states of consciousness have only the minimum of importance as compared with the imposing mass of past facts reproduced by memory. The process is the same as in the formation of our idea of matter. The association of ideas co-ordinates the states of our consciousness into a sort of substance which we call the Ego, and thus gives them a cohesion which explains everything. Mill, however, himself admits that in this respect his theory is not quite satisfactory, since it accounts neither for the facts of memory nor of foresight, both of which imply the identity of the subject that remembers and foresees.

"If, therefore, we speak of the mind as a series of feelings, we are obliged to complete the statement by calling it a series of feelings which is aware of itself as past and future; and we are reduced to the alternative of believing that the mind or ego is something different from any series

of feelings or of possibilities of them, or of accepting the paradox that something which *ex hypothesi* is but a series of feelings can be aware of itself as a series" (*Ibid.* Ch. XII).

Psychological Explanation of the so-called Rational Principles; Theoretical and Practical Principles.

Besides our notions of matter and mind, Mill also explains the laws of thought, our so-called rational and *a priori* principles, by the laws of association. They constitute for him the same problem. We have before us notions or truths which appear to be original or ultimate, and acquired by an immediate intuition; these must be analysed into their simple elements, and the laws by which these elements are combined so as to produce the illusion of an *a priori* knowledge, must be discovered. The great objection brought against empiricism by its opponents is the necessity and universality of our rational principles; "but," says Mill, "as for a *feeling* of necessity, or what is termed a necessity of thought, it is . . . of all mental phenomena the one which an inseparable association is most evidently competent to generate."

When two ideas have always occurred together, when one has never occurred without the other, they become inseparably associated in our minds, and we are unable to conceive one without the other immediately appearing also. As for the universality of the necessary truths, that is to say, the existence of these associations in every mind, it is explained by the fact that there is in the experience of all men something common, which imposes on them the same principles. Thus J. S. Mill does not deny that men think they discover in themselves universal and necessary principles, only he reduces this belief to an illusion.

The mathematical as well as the positive sciences are derived from experience. Geometrical figures are not *a priori* constructions; they have their origin in real forms, in which certain features are either exaggerated or omitted. The mathematical axioms are experimental truths. Two straight lines cannot enclose a space. Why not? Because I have never seen two straight lines enclose a space, and I cannot, by looking back on my past experience, find any image which would enable me to resist this inseparable association.

Every science, therefore, rests ultimately on induction. But what is the basis of induction? It is, says Mill, our foresight and expectation that the same antecedents will be followed by the same consequences. Thus the basis of induction is the law of causality, or, in other words, it is the principle of the uniformity of Nature, or of invariable succession. Is this principle *a priori*? No. Like every other principle it is explained by the association of ideas. "We learn by experience that there exists in nature an invariable order of succession, and that every fact in nature is always preceded by another fact. We call the invariable antecedent cause, and the invariable consequent effect."

In virtue of the law of the association of ideas, our imagination tends to reproduce phenomena in the same order as that in which they first appeared to our senses. This is the first form of induction, induction *per enumerationem simplicem*, in which from what has been we reason to what will be, without criticism or hesitation. Hence such practical judgments as "fire burns," "water quenches thirst." But every fact that confirms a particular law deposes at the same time in favour of the law of causality, which thus collects for itself as many favourable witnesses as all the others taken together. In this way, the association which from the beginning joins the ideas of the antecedent with that of the consequent, and tends to make them suggest one another, becomes an inseparable association, a universal and necessary law.

We must not omit to mention the important part played in all these explanations by what Mill calls the laws of oblivion. What does not interest me disappears almost immediately from my consciousness. I do not remember, for instance, having turned the leaves of the book I am reading. It is in this way that the facts of consciousness to which the association is due are forgotten, and, as the association alone remains, it appears to be a primary law.

The same explanation applies to practical life. Our ethical ideas of virtue, of disinterestedness, our moral sentiments, such as remorse, are so many complex groups of ideas and feelings which have been combined according to the laws of association. Things originally indifferent, but which serve for the satisfaction of our primitive desires, or which were formerly

associated with these, become in themselves sources of pleasure more precious than the primitive pleasures, owing to their stability, to the space of time during which we are able to enjoy them, and also owing to their intensity. This is a form of the law of oblivion. We love virtue as the miser loves money, on account of an illusion founded on the laws of association. In the beginning man had no other reason to desire and practise virtue except its tendency to produce pleasure, and, above all, as a means of avoiding pain; but, owing to this association, virtue has come to be regarded as a good in itself and to be as desirable as any other good.

What we love is pleasure. From our childhood the idea of virtue has been connected with the idea of reward. We forget that in virtue we sought pleasure, and we have come to love virtue for its own sake.

Herbert Spencer: Evolutionist Theory of Association.

As J. S. Mill was the logician and psychologist of associationism, so Herbert Spencer is its naturalist and physiologist. Taking up the hypotheses of Hartley, he studies the human mind in its relations to the organism and to the whole of nature. Two great scientific laws dominate his psychology: the law of the persistence of force and the law of evolution, transmutation or change. Consciousness implies an unceasing change of states, a continuous differentiation. Consciousness is the perception of difference. A sensation can only be perceived in contrast to another sensation which it follows, and from which it is distinguished. But by change alone I could neither remember nor foresee things. In order that thought may be possible, the sensation must leave a residuum after the external cause has ceased to act. This residuum, this faint copy of the original sensation, becomes then a term of comparison, by which we are able to perceive resemblances.

"Differentiation, integration of states of consciousness, these are the two antagonistic processes by which consciousness subsists—the centrifugal and centripetal actions by which its balance is maintained. That there may be material for thought, consciousness must every moment have its state differentiated. And for the new state hence resulting to become a thought, it must be integrated with before experienced states" (*Prin. of Psych.*, Vol. II, p. 301).

"This perpetual alternation is the characteristic of all consciousness," and it explains the constitution of the mind. Thought is the continuous assimilation and integration, according to fixed relations, of states of consciousness that are constantly changing. Herbert Spencer is led by this theory to reduce the relations according to which our ideas are associated, to those of difference and resemblance, from which by an ingenious analysis he derives the relations of contiguity, co-existence, and succession.

But in order to understand the process by which the intellect ascends by successive *complications*, we must consider mind in its relation with the organism and with the external environment. Thought is accompanied by a change in the nervous current: there is a relation of equivalence between the two terms. To each sensation there corresponds a cerebral modification, and to the connections between sensations there correspond connections between the nerves. The progress of intelligence is thus a gradual perfecting of the cerebro-spinal system, a gradual adjustment of the internal to the external, and, at the same time, a more and more perfect correspondence between the cerebral mechanism and the external phenomena by which it has been gradually formed. In a word, the relations between internal phenomena become relations between nervous elements, which in their turn are the same as the relations between our thoughts. The laws of mind are merely laws of phenomena which have been gradually organized into the nervous system.

The strength of the tendency with which the antecedent of any psychical change calls up its consequent is proportionate to the persistence of the union between the external things they symbolize (*Prin. of Psych.* IV, Ch. II, § 186).

As the nervous system is transmitted by heredity, habits are gradually fixed in the organism, the structure of which has been modified by them. Thus the progress of thought is only comprehensible on the evolutionist theory of the more and more perfect adaptation of beings to their environment. "If creatures of the most elevated kinds have reached those highly integrated, very definite and extremely heterogeneous organizations they possess, through modifications upon modifications accumulated during an immeasurable past—if the developed

nervous systems of such creatures have gained their complex structures and functions little by little; then, necessarily, the involved forms of consciousness, which are the correlatives of these complex structures and functions, must have arisen by degrees" (*Ibid.* III, Ch. I, § 129).

The hypothesis of a *tabula rasa* is false. There is something innate in the individual, namely, the acquisitions of the race which are fixed in the structure of his cerebro-spinal system.

To sum up: Herbert Spencer holds that every act of intellect is an association, but he does not, like Mill, confine himself to subjective consciousness; he denies that the experience of the individual can account for intellectual life. It is the experiences of the race which, according to him, by an infinite repetition in innumerable successive generations, have established certain sequences as organic relations.

Since he evolves thought from the external world, Herbert Spencer cannot define the external world in terms of thought or reduce it, as did Mill, to a permanent possibility of sensations. Herbert Spencer therefore had to return to realism, but to a transfigured realism in which psychical and physical facts, in a constant parallelism, are the symbols of a double aspect of a reality which itself remains unknowable. In short, while Mill supplied the psychological method, and the chief steps in the explanation, Herbert Spencer, with greater power of synthesis, has expanded and transformed this method, co-ordinating the laws of mind with the laws of things.

Conclusion.

We have seen in the history of the law of the association of ideas how it has gradually risen from being the law that governs the reproduction of mental phenomena, to the rank of a universal law of thought. In our time Empiricism is synonymous with Associationism, and association with universal evolution. It is impossible not to recognize the services that have been rendered by the English school, from Locke and Hume down to Herbert Spencer. The task this school achieved was the application to human thought of the processes of scientific analysis and synthesis. It considered the mind as an object among objects, and even the Kantian idealists allow that this view contains a certain degree of truth. The question remains

whether the mind is merely an object amongst objects, whether the fact that it knows itself does not give it a place apart among objects; and secondly, whether the very act of examining the mind as an object does not involve the introduction into this examination of certain notions, certain *a priori* forms (space, time, causality), which are the very conditions of all thought.

We have seen that while Herbert Spencer explains experience by the laws of the knowable, he at the same time places apart, under the name of the unknowable, a higher notion, which is no other than the Absolute. Notwithstanding these reservations, the English school must still be given the credit of having applied the methods of science to mind, of having at any rate shown by what steps, by what succession of experiences, the mind determines, fixes, and defines its data.

CHAPTER VII.

LANGUAGE.

A LANGUAGE is a collection of signs which are used to express thought, or, in general, any state of consciousness,—that is to say, feelings and volitions as well as ideas. A sign is a fact that is perceived by the senses, and reveals another fact which, owing to accident, or by its very nature, is not perceptible by the senses. Thus, the smoke we see is a sign of the fire we do not see. A cry is a sign of pain which, by its nature, is invisible.

The signs used in language may be perceived either by touch (tactual language), or by sight (visual language), or by hearing (oral language). The tactual language has been employed in the education of deaf and dumb blind children, *e.g.* in the case of Laura Bridgeman: and we have an example of visual language in the collection of signs by which the deaf and dumb communicate their thoughts. But the most valuable language of all, the one best adapted for the following of all the movements of the mind, is the oral language. It consists of inarticulate sounds or *cries*, and articulate sounds or *words*.

If now, instead of the nature of the sign, or the material of language, we consider the connection between signs and thought, we find that there are two kinds of languages as there are two kinds of signs, namely, a *conventional* and a *natural* language. A conventional or artificial language is a language invented by man, one that he has deliberately chosen and systematically formed. A natural language is, on the contrary, a collection of signs that are used involuntarily and without know-

ledge of the end to be attained, by which man in the beginning, without any act of volition, expresses his states of consciousness. As examples of artificial language we may mention the scientific language (chemical nomenclature, algebraical terms, etc.), the stenographical language, the deaf and dumb language. As for the natural language it consists chiefly of (1) cries; (2) facial expressions; (3) gestures and movements, and in general bodily attitudes. Speech is the language *par excellence*, for it not only expresses thought, but assists in the formation and development of thought. Indeed, the two terms have for us become inseparable. "Thought," says Plato, "is an interior and silent conversation of the soul with herself" (ὁ ἐντὸς τῆς ψυχῆς πρὸς αὑτὴν διάλογος ἄνευ φωνῆς γιγνόμενος).

We may study the language of speech in its development and changes, compare the various vocabularies and forms of syntax, and, from this comparison, elicit general laws. This is called *Philology*. But the only problem connected with language, in which psychology is directly concerned, is that of its origin and relations to thought. Is speech a natural or an artificial language? Is it to a divine revelation, to an original faculty, that man owes the power of expressing his thoughts and of understanding those of his fellow creatures by signs, or did he acquire this power himself: and, if so, was it through an arbitrary convention, or through the natural development of a primitive, spontaneous language? These are the questions that have always arisen out of the subject, and have, with time, become more clearly defined. We shall now proceed to give an account of the different solutions of them which have successively been proposed.

The Problem of Language before Plato. Heraclitus and Democritus; Hermogenes and Cratylus.

Heraclitus took pleasure in play upon words and in derivations, as we can see from the fragments of his writings which have come down to us. Are we to suppose that in this analysis of terms he sought a confirmation of his philosophical theories, that he held that speech was given to men by the gods, and that the essence of things is revealed by their names? This doctrine, which was held by some of his followers, can scarcely be traced to Heraclitus. We know, at any rate,

that, for Democritus, language was an arbitrary institution, that names did not depend on the nature of things, but were chosen by convention (*θέσει*). In proof of this he points out, firstly, that many words have more than one meaning (*πολύσημον*); secondly, that many objects have more than one name (*ἰσόῤῥοπον*); thirdly, that there are other objects which by analogy ought to have a special designation and have none (*νώνυμον*) (Proclus, *Comment. on the Cratylus*, Zeller's edition).

Plato devotes a whole dialogue (*The Cratylus*) to the subject of language. We find that even in his time there were already two distinctly opposite theories on the problem of the origin of language. He puts into the mouth of Hermogenes the theory of Democritus:

"I cannot convince myself that there is any principle of correctness in names other than convention and agreement (*ξυνθήκη καὶ ὁμολογία*); any name which you give, in my opinion, is the right (*ὀρθόν*) one, and if you change that, and give another, the new name is as correct as the old—we frequently change the names of our slaves, and the newly-imposed name is as good as the old" (*Cratylus*, 384 *d*, *e*).

This is the first theory, the theory of the arbitrary institution of language.

According to Cratylus, a disciple of Heraclitus, names are, on the contrary, "natural and not conventional; not a portion of the human voice which men agree to use; but that there is a truth or correctness in them, which is the same for Hellenes as for barbarians" (*Cratylus*, 383 *a*). Words reveal to us the nature and essence of things. Therefore, by studying words we can arrive at knowledge of things. Nay, more, "he who knows the one will also know the other" (*Ibid.* 435 *d*).

Finally, Cratylus is driven by Socrates' logic to saying:

"I believe, Socrates, the true account of the matter to be, that a power more than human gave things their first names, and that the names which are thus given are necessarily their true names" (*Ibid.* 438 *c*).

Plato refutes the Theories of Hermogenes and Cratylus.

Plato will not allow that words are arbitrary. As each thing has its special nature, independently of our way of feeling, it is evident that our actions are determined, not by our caprice, but by the nature of the things to which we apply them. In order to cut or burn, one must use the appropriate

instrument. In the same way, the action of naming must have its special nature. For every action we have a special instrument; for piercing, for instance, we have the awl, for weaving, the shuttle, for naming, the name. Just as the shuttle is an instrument for distinguishing the threads of the web, so a name is an instrument for distinguishing the natures of things (*Cratylus*, 388 *c*). The shuttle is the work of a particular artizan, the carpenter, and can only be made by one who is skilled in that art. The name is the work of a superior artizan, for not everyone is able to give a name; and this artizan is the legislator. Now, as the carpenter in making the shuttle looks to the nature of the operation of weaving, and, on the other hand, imitates a form of shuttle of which he has the idea, and which may be called the true, or ideal shuttle, so the legislator should look to the nature of the things to be named, without ever losing sight of the idea of the name (*τὸ ἑκάστῳ φύσει πεφυκὸς ὄνομα*, *Ibid.* 389 *d*). But as a smith can make excellent instruments without always using the same iron, so names can be made out of different sounds and syllables, provided they are properly applied to each thing. Finally, as the best judge of a shuttle is he who uses it, so the best judge of a name will be he who is to use it, that is, he who is to question and answer, namely, the dialectician. What constitutes the propriety and suitability of a word is imitation, not external and sensible imitation, but imitation of the special nature of each thing. "If one could express the essence of each thing in letters and syllables, would he not express the nature of each thing?" (*Ibid.* 423 *c*). The letter "ρ," for example, expresses motion; the sibilant letters give an idea of blowing; the letters "d" and "t" are expressive of binding and resting in a place.

This being the case, must we not agree with Cratylus that he who knows words knows things, reduce the dialectic to etymology, and give to the gods the credit of having invented speech? Plato will admit none of these inferences. He rejects the hypothesis of a divine revelation: in the first place, many particular words are badly formed; in the second place, if we look into language as a whole for the conception of nature, we shall find that among etymologies some favour the theory of Heraclitus, that is to say, of universal becoming, and others

the unity and immobility of Parmenides. Are we then to believe that the gods contradicted themselves? Or can it be granted that the science of words is the science of things? Everything is not capable of being expressed in its essence by a corresponding letter. Who could find for the name of every number a natural and appropriate form? In this case and in many others, the meaning of the words has been determined by custom and convention. How then could the study of words instruct us as to the nature of things? Moreover, shall not he who confines himself to the study of language be reduced to accepting only the thought of those who made languages? But those who made the first words made them in accordance with their particular way of conceiving things, and if they were mistaken, we must be mistaken too. Again, how did the first inventors of language form it, if they had not already the knowledge of things? And how could they have had this knowledge, if things are only known by their names? It is impossible, then, to find in names the measure and the absolute sign of truth: things must be studied, not in their names, but in themselves.

Thus, according to Plato, it is possible to conceive a perfect, ideal language, which would be the adequate expression of truth; and, so far, Cratylus is right. In truth, it was not a dialectician who presided at the formation of language; therefore, it must be partly conventional, partly arbitrary, and partly the result of chance, and truth is not to be sought in the analysis of words. Setting aside the puerile attempts at etymology in the *Cratylus*, we find that Plato recognized, in the first place, that words are instruments of analysis, the name is an instrument of instruction used to distinguish the nature of things; secondly, that language is natural, and not, as Democritus thought, conventional, although in many cases convention and use have determined the meaning of words; thirdly, that thought does not spring from language, but language from thought. Before we can name things, we must first know them.

Aristotle: Speech is a Natural Faculty, Language a Convention.

We have only a few lines of Aristotle on the psychological theory of language. From them we see that he opposed Plato's

theory, without, however, accepting that of Democritus in a literal sense. "Speech," Aristotle said, "is a representation of the affections of the soul" (*σύμβολον τῶν ἐν τῇ ψυχῇ παθημάτων*), as writing is a symbol of the modifications of the voice. The affections of the soul, expressed by words, are the same in all men, but the representation of them by words is a matter of convention, and, consequently, varies in the different races, like the written symbols.

Thus, Aristotle does not hold that words reveal the nature of things. His definition of a name implies that he rejects Plato's view, and, *a fortiori*, that of Cratylus. *Ὄνομα μὲν οὖν ἐστί φωνὴ σημαντικὴ κατὰ συνθηκὴν ἄνευ χρόνου ἧς μηδὲν μέρος ἐστὶ σημαντικὸν κεχωρισμένον.* A name is a word whose entirely conventional meaning does not involve the idea of time, and no part of which has any meaning when taken separately. The proof of this is that the name has not a natural existence, that it only acquires existence the moment it is used as a symbol (*ὅταν γένηται σύμβολον*). From which it follows that speech itself, which is composed of a noun and a verb, has, like its component parts, only a conventional meaning. This being the case, it is absurd to expect to find knowledge of things by an etymological analysis of the terms used to indicate them. At the most, one might by this means find an image of the different states of mind caused by things. Aristotle does not seem to have made the most of this connection between the states of the soul and the words which represent them, in his explanation of the origin of language. We must not suppose, however, that Aristotle carried to an extreme the theory of language as an arbitrary institution. For him man alone among animals has been endowed with the faculty of speech. Nature has given us speech as well as motion. Speech consists of words, as dancing consists of bodily movements. Thus the origin of speech is providential and natural, it is only the use made of it that is fortuitous and voluntary.

The theory of the arbitrariness of language appears to have been exaggerated in the Peripatetic school. Alexander of Aphrodisias regards speech as a sound produced by an animated being, on the occasion of an image or an emotion, the character of which is, moreover, not determined by the

nature of the internal phenomenon, for the latter depends altogether on convention (*De Anima*, 132*a*).

The Stoics insist on the Connection between Language and Thought.

As Empiricists and Nominalists, the Stoics naturally identified language with thought in its general and abstract form. Their doctrine may be summed up in two equally true though apparently contradictory statements: Man speaks because he thinks, and thinks because he speaks. Dialectic is the science or the art of *speaking well* (ἐπιστήμην τοῦ εὖ λέγειν); but to speak well is to speak what is true (τὸ ἀληθῆ λέγειν), and fitting (προσήκοντα). Correctness of expression is the same as correctness of thought: for the thought and the word are one and the same thing regarded from different points of view. The λόγος, which is thought considered as inward, hidden in the breast, becomes a word in being uttered (προφορικός). Voice (φωνή) may be defined in a general way as air that has been struck (ἀὴρ πεπληγμένος); an animal's voice is the air smitten by passion; human speech is different, inasmuch as it is articulate (ἔναρθρος) and emitted by thought (καὶ ἀπὸ διανοίας ἐκπεμπομένη).

The Stoics held that discursive thought was necessarily connected with language (διάνοια ἐκλαλητική) (D. L. VII, 49), and this theory is the logical consequence and the expression of their Nominalism.

Formal Logic, according to the Stoics, has to do with what is expressed, what is said, τὸ λεκτόν. By the word λεκτόν they meant the content of thought, the idea, as distinct, in the first place, from the external thing to which it refers (τὸ τύγχανον); secondly, from the sound by which it is expressed (φωνή); thirdly, from the activity of the thinking mind. The object, the word spoken, the activity of the mind even, which is merely a modification of the πνεῦμα or psychic breath, are all material things. The λεκτόν alone is incorporeal. But, in the teaching of the Stoics, what is not corporeal is not real; therefore, the idea for them is only an abstraction, it is nothing until fixed by the word which gives it body and reality. Thought has a content which can only be expressed by speech, and deserves more especially

to be called by the name of λεκτόν, that which is said The Stoics' theory may be summed up by saying that reason was with them discursive in the proper sense of the term, and the λόγος was at once both reason and speech.

And now, was language, thus identified with abstract thought, arbitrary? The Stoics held that from the heart, which is the centre of the governing principle (the ἡγεμονικόν) there emanates a breath which extends and reaches the vocal organs. Hence the faculty of speech. But if man has by nature the faculty of speech, are not, at any rate, the words themselves arbitrary? Words, as Plato said, are not formed by chance, the sounds of which they are composed imitate the properties of things, and these can be discovered by etymological analysis.

It is difficult to see how the Stoics could reconcile this theory with their grammatical observations. They had noticed that dissimilar words are used to indicate similar things, that each term has several meanings, and that the same thing is designated by several synonymous terms—facts which had been used by Democritus to prove the arbitrary origin of words. But this school gave more attention to questions that were purely grammatical than to the philosophy of language.

Epicurus: First Attempt at a Psychological Theory of the Origin of Language.

So far, the question whether spoken language is conventional or arbitrary, was merely a question as to whether words do, or do not, imitate the nature and essence of things. The Epicureans were the first to consider language as a historical fact, and to seek a psychological solution of the problem of its origin. The nature of man, with his needs, his emotions, and his experience, explains the origin and development of languages. In the first place, the hypothesis of the arbitrariness of language must be rejected (τὰ ὀνόματα ἐξ ἀρχῆς μὴ θέσει γενέσθαι), (Epic. *apud* D. L. x. 75). To suppose that someone first distributed the names of things, and then taught these names to men, is absurd (Lucretius, V, 1040). For by what privilege could this man have done a thing of which others were incapable? How, in the second place

could he have made himself understood by men who had no acquaintance with speech? Finally, how could he have propagated his invention? By violence? but he was one against the whole world: Through reason? but he could not have persuaded those who were deaf (Lucr. V, 1040-1055). Thus, every theory of a conventional creation of language presupposes language.

The true origin of languages is to be found in the nature of man and in his needs.

"Nature prompted men to utter the various sounds of the tongue, and convenience drew from them the names of things, almost in the same manner as inability to use the tongue seems to excite children to gesture, when it causes them to point with the finger at objects which are present before them. For every creature is sensible that it can use its own faculty. Even before horns are produced on the forehead of a calf, it butts and pushes fiercely with it when enraged; and the young of panthers and whelps of lions contend with their talons, and feet, and teeth, when their teeth and talons are yet scarcely grown. . . . Lastly, what is there so wonderful in this matter, if the human race, whose voice and tongue were in full vigour, distinguished various objects by sounds, according to their various feelings; when dumb cattle, and even the tribes of wild beasts, are wont to utter different and distinct cries when terror or pain affects their hearts, and when joy prevails in them? . . . If various feelings, therefore, impel the inferior animals, though they are destitute of speech, to utter various sounds, how much more consonant is it to reason, that men, even in those early days should have been able to distinguish different objects by different names'" (Lucretius, 1027 ff.).

Every emotion affects the organ of breathing in a special manner; the earliest language was an emotional language resulting solely from the nature of man. Each race, on experiencing the emotions (ἴδια πασχούσας πάθη) and receiving the images (ἴδια λαμβανούσας φαντάσματα) peculiar to it, uttered sounds related to these sentiments and impressions. Hence the diversity of languages (Epic. *apud* D. L. X, 75).

The first foundation of language, was thus, not the result of an arbitrary institution, but, as it were, a kind of product of nature. This first foundation being given, convention, stimulated by the wants of men, may then intervene. Each race has agreed to impose certain names on things in order to make them known to others in a less equivocal way, and to express them as shortly as possible (Epic. *apud* D. L. X, 75). It was then also that individual influence had an opportunity

of making itself felt, and it especially affected the formation of words indicating abstract conceptions. In short, the Epicureans regarded speech as a natural language. On their theory, every man possesses in his vocal organs the instrument of language, and tends to make use of it. There is nothing artificial in the expression of feelings and ideas by sounds. If each race has its own language, it is because every race has its own peculiar emotions and ideas. Convention can only modify, and prune, and give precision to the natural language. The influence of individuals is only felt in the formation of terms that correspond to abstract conceptions, because these conceptions themselves are the result of reflection.

Summary: Conceptions of Language formed by the Ancients.

To sum up, we find among the ancients two theories concerning the origin of language. The first, that of the innateness of a primitive language, appears to have been held by the vulgar only. It was not adopted by any philosopher, but it is implied in the experiment made by the Egyptian King Psammetichus, who, in order to discover whether the Egyptians or the Phrygians were the older race, ordered two children to be brought up by goats, and forbade their guardians to let them hear the sound of any language. "The first word uttered by these children, *βεκός*, which in the Phrygian language means bread, thus proving, it was supposed, that the Phrygian was the primitive language of mankind, is probably derived from the same Aryan root which exists in the English, to bake. How these unfortunate children came by the idea of baked bread, involving the ideas of corn, mill, oven, fire, etc., seems never to have struck the ancient sages of Egypt"[1] (Max Müller, *Science of Language*, Vol. I, Ch. 14).

In general, all the ancient philosophers, except Cratylus, agreed in regarding language as a human creation; but, while, to some, words were purely artificial signs, to others they were an imitation of the essence and nature of things,—a hypothesis which only the fantastic etymology of which we find an example in the *Cratylus* would justify. The Epicureans, who

[1] Similar experiments are said to have been made by the Swabian Emperor Frederick II., by James IV. of Scotland, and by the Mongolian Emperors of India (Max Müller).

had a conception of a psychological study of language, held that words do not imitate the nature of things, but rather correspond to the mental states of the men who made the language.

Christianity: Divine Revelation of Language.

In Christian philosophy we find the hypothesis of a divine revelation of languages for the first time clearly expressed. The heresiarch Eunomius (fourth century) accused St. Basil of having denied Providence, because he would not admit that God created the names of things, but attributed the invention of language to the faculties which God gave to man. St. Gregory defended St. Basil. In the Book of Genesis it is not the Creator who gives names to all things, but Adam: "And out of the ground the Lord God formed every beast of the field, and every fowl of the air; and brought them unto Adam to see what he would call them: and whatsoever Adam called every living creature, that was the name thereof" (Gen. II, 19). Though God has given to human nature its faculties, St. Gregory writes: "It does not follow that therefore He produces all the actions which we perform. He has given us the faculty of building a house and doing any other work; but we surely are the builders, and not He. In the same manner our faculty of speaking is the work of Him who has so framed our nature; but the invention of words for naming each object is the work of our mind" (Max Müller, *Science of Language*, Vol. I. p. 30).

Throughout the middle ages, names were considered more especially from the point of view of their generality and connection with general ideas. The history of the Nominalistic theories belongs, however, to grammar and logic rather than to philosophy.

Bacon on Signs and Language.

Bacon observes that speech is not the only possible language.

"Whatever can be divided into differences sufficiently numerous to explain the variety of notions (provided those differences be perceptible to the senses) may be made a vehicle to convey the thoughts of one man to another. For we see that nations which understand not one another's language carry on their commerce well enough by means of gestures. And, in the practice of some who had been deaf and dumb from their birth, and were otherwise clever, I have seen wonderful dialogues carried

on between them and their friends who had learnt to understand their gestures" (*Advanc. of Learning*, Ed[n] Ellis and Spedding, Vol. IV, p 439).

Speech is then only one species of the genus sign. Among signs, some are founded on analogy, as gestures and hieroglyphics; others, such as the characters in handwriting, are purely conventional and arbitrary.

But is the spoken language conventional or arbitrary? Bacon does not at all approve of inquiries into the original imposition of names, or such etymologies as those of Cratylus.

"That curious inquiry . . . concerning the exposition and original etymology of names; or the supposition that they were not arbitrarily fixed at first, but derived and deduced by reason and according to significance; a subject elegant indeed, and pliant as wax to be shaped and turned" (*Ibid.*).

Bacon allows, however, that names are "the vestiges of reason," and he dreams of a philosophical grammar, based on a comparison of the different idioms. Such a grammar would lead to the formation of a perfect language, in which "the several beauties of each [language] may be combined (as in the Venus of Apelles), into a most beautiful image and excellent model of speech itself, for the right expressing of the meanings of the mind" (*Ibid.*). This curious theory presupposes the possibility of creating a language, merely by convention and artifice, and this in fact would seem to have been Bacon's theory: "New words," he says, "being commonly framed and applied according to the capacity of the vulgar" (*Novum Organum*, § 59). In his classification of errors, Bacon mentions those which result from the use of language, the *idola fori*, idols of the market-place. We have words for some things which do not exist, and no words for others that do exist. Moreover, there are confused names corresponding to casual and inexact abstractions. "For men believe that their reason governs words: but it is also true that words react on the understanding; and this it is that has rendered philosophy and the sciences sophistical and inactive" (*Ibid.*).

Locke connects the Study of Words with the Study of Ideas.

The empirical school was obliged by its theory of the intelligence to unite, in the closest way, the study of language

with the study of thought. Admitting the existence of neither first principles, nor of ideas innate to the mind, they were forced to seek in the instrument of thought, that is in speech, the principle which fundamentally transforms knowledge.

"I find," says Locke, "that there is so close connection between ideas and words, and our abstract ideas and general words have so constant a relation one to another, that it is impossible to speak clearly and distinctly of our knowledge, which all consists in propositions, without considering first the nature, use, and signification of language" (*On the Human Understanding*, Bk. II, Ch. 33, end).

God, having made man a sociable being, endowed him with the faculty of speech, "which was to be the great instrument and common tie of society. Man, therefore, had by nature his organs so fashioned as to be fit *to frame articulate sounds*, which we call words" (Bk. III, Ch. 1). The first condition of speech is, therefore, a natural aptitude of the organism. But that is not enough, as we see by the example of parrots and other birds. Man must, in the second place, "be able to *use these words as signs of internal conceptions*, and to make them stand as marks for the ideas within his own mind" (*Ibid.*). Given these two conditions, a language might exist, but it would still be imperfect. The multiplication of words would have perplexed their use, had every particular thing a distinct name to be signified by: "to remedy this inconvenience, language had got a further improvement in the use of general terms, whereby one word was made to mark a multitude of particular existences."

As man possesses by nature the faculty of forming articulate sounds, it is for him to use and develop this faculty, to invent words, in fact, and their meaning. The invention of language arose out of the need of communicating to others, through external and sensible signs, ideas which are invisible. There is no natural connection between particular articulate sounds and particular ideas. It is by an arbitrary convention that such and such a word has become the sign of such and such an idea. This can be proved in two ways: 1st, if there were any natural connection between sounds and ideas, all men would speak the same language; 2ndly, it is a fact that words often fail to excite in others (even that use the same language) the same ideas that we take them to be signs of (Bk. III, Ch. 2).

It is, therefore, through an illusion, arising from the association of ideas, that men are inclined to think that there is a connection between words and ideas. We can even conceive how language came gradually to be formed. The law of this process was the gradual passage from the particular to the general, from the sensible to the spiritual. We see this in children; their first ideas are evidently particular.

"The ideas of nurse and mother are well framed in their minds; and, like pictures of them, only represent these individuals. . . . The names they first gave to them are confined to these individuals; and the names of *nurse* and *mama* the child uses, determine themselves to those persons' (Bk. III, Ch. 3).

Observing subsequently a large number of other beings who resemble their father and mother in shape and other qualities, they form an idea in which all these beings participate, and they call this idea, as well as the former, by the new name of man. In so doing they invent nothing new; but merely abstract from the complex idea which they had formed of Peter, James, Mary, and Elizabeth, the qualities which were peculiar to each of them and only retain what is common to all. In this way they arrive at a general idea and a general name.

Thus, in the beginning, words must have been particular, and applied to individuals. By degrees, general ideas were formed and the general terms, which by connection express these ideas, were invented. There is another fact which may throw light on the origin and progress of language, namely, the fact that "those [words] which are made use of to stand for actions and notions quite removed from sense, have their rise from them, and from obvious sensible ideas are transferred to more abstruse significations, and are made to stand for ideas that come not under the cognizance of our senses: *e.g. to imagine, apprehend, comprehend, adhere, conceive, etc.*, are all words taken from the operations of sensible things and applied to certain modes of thinking. Spirit in its primary signification is *breath*; angel, *messenger*; and I doubt not but, if we could trace them to their sources, we should find in all languages the names which stand for things that fall not under our senses to have had their first rise from sensible ideas."

In short, Locke's theory is, that if our faculty of uttering articulate sounds is natural, the invention of names is con-

ventional and arbitrary. In the beginning, words were, in the first place, particular and only used to indicate individuals, and, in the second place, they only signified notions of sensible things. Owing to the progress of thought, general terms were created to correspond to general ideas, and words which had their origin in sensible ideas were, by analogy and metaphor, *transferred* to spiritual notions.

Cartesian School: Descartes. Bossuet.

With their rationalistic theories of the nature of language as well as of the origin of ideas, the Cartesians were naturally opposed to Locke's empiricism. Descartes does not go much into the question of language,[1] he merely mentions in confirmation of his theory of the automatism of animals, the absence of signs among them.

"For it is highly deserving of remark that there are no men so dull and stupid, not even idiots, as to be incapable of joining together different words, and thereby constructing a declaration by which to make their thoughts understood; and that, on the other hand, there is no other animal, however perfect or happily circumstanced, who can do the like. . . . And this proves not only that the brutes have less reason than man, but they have none at all: for we see that very little is required to enable a person to speak" (*Discourse on Method*, Pt. V).

Thus, in Descartes' opinion, speech is not only the sign of thought, but the proof of its existence. The being who thinks, speaks; thought creates language. Descartes does not say whether primitive words were particular or general: but he does not wish words to be confounded with "those natural movements which express the passions, and may be imitated by machines, as well as by animals." Thus speech was not originally the cry of emotion, but was from the beginning the expression of thought.

Bossuet (*Logique*, I, Ch. III) holds that words are arbitrary. "Thought is natural and the same in all men; terms are artificial, that is to say, artificially invented, and each language has its own." By use and habit, ideas are now so joined to terms as to make them inseparable in our minds. Bossuet's theory differs from that of the empiricists in that, for him,

[1] He was, however, interested in the question of a universal language [Edn. Cousin, VI, p. 61].

words, instead of being a condition of understanding, only serve to fix ideas in the mind. Language depends on thought which precedes and creates it.

"There can be no doubt that the idea is separable from the term, and the term from the idea. For we must understand things before we can name them, and moreover, the term, if it is not understood, suggests no idea. *The idea comes before the term, which is invented for the purpose of indicating it:* we speak in order to express our thoughts."

Leibnitz, the Founder of Scientific Philology.

Among the Cartesians, Leibnitz was the only one who occupied himself especially with the problem of language. He did not confine himself to advancing a rationalistic theory in opposition to Locke's empirical theory. He is the true founder of scientific philology, whose method he fixed with marvellous acuteness of mind.

The traditional view had been that Hebrew was the original language of the human race; and hence many vain attempts on the part of philologists to trace Latin, Greek and all the languages to the Hebrew. Leibnitz was the first who tried to destroy this prejudice. "There is as much reason," he said, "for supposing Hebrew to have been the primitive language of mankind, as there is for adopting the view of Grotius, who published a work at Antwerp, in 1380, to prove that Dutch was the language spoken in Paradise" (Max Muller, *Science of Language*). But Leibnitz not only rejected the theological assumption which had rendered the labours of previous philologists fruitless, he also both pointed out the proper method of the science (*i.e.* the comparative method), and the light which it might be expected to throw on the early history of the world.

"And if there were no longer an ancient book to examine, languages would take the place of books, and they are the most ancient monuments of mankind. In time all the languages of the world will be recorded and placed in the dictionaries and grammars, and compared together; this will be of very great use both for the knowledge of things, since names often correspond to their properties (as is seen by the names of plants among different peoples), and for the knowledge of our mind and the wonderful variety of its operations: not to

speak of the origin of nations, which is known by means of sound etymologies which the comparison of languages will best furnish" (*Nouv. Ess.* III, Chap. IX).

Languages in general being the most ancient relics we have of the races of men—being older, that is, than literature and art—give us most information as to their origin, relationships and migrations. Leibnitz himself began this collection of facts, which is the necessary preliminary to a science of language. He applied to missionaries, ambassadors, and travellers; he wrote to Peter the Great, with the request that "dictionaries, or at least small vocabularies should be collected of the numerous languages" which were current in his empire. Later, Catherine II, following out this idea, had a comparative glossary published of "all the languages of the world." This glossary contained a certain number of words in nearly three hundred languages. (See Max Muller).

Leibnitz: Words were originally general; their Institution not entirely arbitrary.

In the *New Essays*, Leibnitz gives his views on the philosophy of language, in opposition to those of Locke. Locke's theories may be reduced to two formulae: 1st, words originally refer to individual objects and to sensible ideas; 2nd, words are arbitrary. Leibnitz will not accept either of these formulae. The first he emphatically rejects, maintaining that words, in the beginning, do not refer to individuals. "*General terms* serve not only for the perfection of languages, but they are necessary even to *their essential constitution*. For if by *particular things* we mean individual things, it would be impossible to speak if there were only *proper* names and not *appellatives, i.e.* if there were words only for the individuals" (*Nouv. Ess.* III, Chap. I).

How, indeed, could the mind give names to individual things, of which there is an indefinite multitude? It would be overwhelmed by the number of the words it would have to create. It is as natural to employ general terms as to observe resemblances between things. "And, indeed, the most general, being less burdened with relation to the ideas or essences they include, although they are more comprehensive in relation to the individuals to which they apply, were very often the easiest to form and are the most useful" (*Ibid.*). Experience

goes to confirm this opinion. "Thus you see that children and those who know little of the language which they wish to speak, or of the matter of which they speak, avail themselves of general terms as thing, plant, animal, instead of employing the proper terms which they lack" (*Ibid.*).

A philological investigation of proper names would make the proof of this theory complete. Particular terms are so far from having preceded general terms that individual or proper names were all originally appellative or general (*e.g.* Brutus, Caesar, Augustus).

"Thus I would venture to say that nearly all words are originally general terms, because it will only rarely happen that an express name will be invented without reason, to indicate one such individual. We can say then that the names of individuals were names of a species which was given *par excellence* or otherwise to some individual, as the name *large head* to that one of the whole city who had the largest or who was the most important of the large heads which were known."

In the second place, Leibnitz only accepts the theory of the arbitrary origin of speech with certain reservations. He does not believe speech to be innate or to have been directly revealed to us by God, but he thinks that there must generally be some reason for words being what they are.

"I know it has been customary to say in the schools, and almost everywhere else, that the *meanings* of words are arbitrary (*ex instituto*), and it is true that they are not determined by a natural necessity; but they are, nevertheless, determined by reasons sometimes natural, in which chance has some share, sometimes moral, where choice enters" (*Ibid.* Ch. II).

To prove this, he returns to the hypothesis advanced in the *Cratylus*, and points out in words a kind of imitation of the things named.

"It seems that the ancient Germans, Celts, and other peoples allied to them, have employed, by a natural instinct, the letter R to signify a violent movement and a noise like that of this letter. It appears in ῥέω, *rao*, *rinnen*, *ruren* . . . the *Rhine*, *Rhone*. . . . Now, as the letter R signifies naturally a violent movement, the letter L designates a gentler one. . . . Not to speak of an infinite number of other similar appellations, which prove that there is something natural in the origin of words, which indicates *a relation between things and the sounds and movements of the vocal organs*" (*Ibid.*).

Nevertheless, he admits the possibility of languages that

are "artificial, dependent on choice, and entirely arbitrary, as the language of the Chinese is supposed to be."

All his life Leibnitz dreamed of the possibility of what he calls a "*caractéristique universelle*," a philosophical language analogous to the language of mathematics. To achieve this, it would be necessary, first, to discover the elementary concepts of which all others are forms; secondly, to determine all possible combinations of these concepts, so that, simply by a mathematical calculation, it would be possible not only to prove the truth of every proposition, but to find new propositions. To simple concepts and their combinations there should correspond signs of an absolute value, which would be capable of constituting a universal language.

The Eighteenth Century Philosophers. Condillac: Languages are Analytical Methods; To Reason is to Calculate; Marks of a well-formed Language.

It is in the eighteenth century that we find philosophers attaching most importance to the study of language and its relation to thought. Condillac exaggerated the importance of signs to a paradoxical extent. He went so far as to subordinate thought to language, even saying that we have an innate language, although we have no innate ideas. To reason well is to speak well. Science is nothing more than a well-constructed language. Is not speech the condition of abstract and general ideas; and are not these ideas the condition of reason?

"If we had no names, we should have no abstract ideas; and if we had no abstract ideas, we should have neither genera nor species; and if we had neither genera nor species, we could not reason about anything. Now, if we can only reason with the help of these names, this also proves we only reason well or ill because our language is a good or an inferior one. Analysis will therefore teach us to reason only in so far as, by teaching us to determine abstract and general ideas, it teaches us to construct our language well, and the whole art of reasoning may be reduced to the art of speaking well" (*Log.* 2nd Part, Ch. V).

Let us try to understand Condillac's theory. According to him there is only one method, the method of analysis. The whole work of thought consists in analysing confused and complex knowledge, in abstracting, by this means, its

simple elements, and the relations between them, in proceeding, in short, from the unknown to the known; and this is possible only if what is unknown is contained in what is known, and can be discovered there by means of analysis.

"Every language is an analytic method, and every analytic method is a language (*Langue des calculs*, Préface). It is impossible to speak without resolving thought into its different elements, in order to express them singly one after another; and speech is the only instrument by which this analysis of thought is possible. Languages are therefore, properly speaking, methods. Reasoning can be perfected only in so far as they are made perfect, and, when reduced to its simplicity, the art of reasoning can be nothing else than a well-constructed language" (*Log.* 2nd Part, Ch. VII).

Condillac's theory is, however, not altogether paradoxical. It rests on his conception of science and of the processes of logic. Descartes aimed at the imitation of "the long chains of simple and easy reasonings, by means of which geometers are accustomed to reach the conclusions of their most difficult demonstrations" (*Disc. de la Méthode*, 2nd Part), and Condillac was a Cartesian inasmuch as he would only admit the existence of one method—the mathematical. "We have in Algebra," he says, "a striking proof of the fact that the progress of science depends solely on the progress of languages" (*Log.* 2nd Part, Ch. VII).

To the objection that algebra deals with quantity, and proceeds by equations and not by propositions, Condillac boldly replies: "*Equations, propositions, and judgments* are in reality the same thing, and consequently the same method of reasoning is used in every science" (*Log.* 2nd Part, Ch. VIII). He gives a more precise statement of his theory when he adds that, "to calculate is to reason and to reason is to calculate. We have here two names, but not two operations" (*Langue des calculs*, I, Ch. XVI). We find what we do not know in what we do know, for the unknown is in the known, because it is the same thing as the known. To go from the known to the unknown is, therefore, to go from the same to the same. To pass from one proposition to another identical proposition, and to reason, is the same thing. What is called progress of thought is merely a progress of expression. To reason is to translate a proposition which implicitly contained

a truth into another proposition in which we have a glimpse of this truth, and the second proposition into another in which it is completely revealed (Laromiguière, *Paradoxes de Condillac*).

"Every act of reasoning consists in the substitution of one expression for another, the same idea being preserved in both. Now, in calculation, *sums*, *differences*, *products*, and *quotients* are only abridged expressions, which are substituted for other less convenient ones, but which contain the same idea. Therefore, to reason is to substitute, and to calculate is also to substitute" (Laromiguière, *Ibid.*). "Reasoning is merely a calculation, and the operations of calculation are mechanical, therefore the operations of reasoning are in every science mechanical. To say that reasoning is mechanical is to say that it refers to words and signs, hence a chain of reasoning or a science is merely a language. It may perhaps be objected that the inference from this is that the general ideas of metaphysics are not ideas, that they are only signs, and that, consequently, the reasonings of a metaphysician, like the calculations of a mathematician, are mechanical operations. This is true. No one is more convinced than I am of this truth, which is confirmed by my experience every day" (*Langue des calculs*, I, Ch. XVI).

In his *Langue des calculs*, a work which was unfortunately never finished, Condillac tried to prove by examples that "to create a science is nothing else than to construct a language" (*Langue des calculs*, I, Ch. XVI). In this work he proceeds without any fixed plan, allowing himself to be guided by the analogy of terms. He shows us the unknown in the known, by a substitution of expressions. "Thus we see that mathematics are formed according as language is formed" (*Ibid.*).

A science is therefore nothing but a well-constructed language. What then are the marks of a good language? In the first place, it must be simple, so that the mind may not be overwhelmed by the signs, which it should be able to manipulate with ease. What would a man do in whose language there were a hundred different words for the first hundred numbers? In the second place, the signs must be rigorously determined. Their meaning must be exact, unique, and well defined. Lastly (and this quality is implied in and implies the two others), a language must be formed according to the laws of analogy. The words, when analysed, must correspond to the elementary ideas they express. It is only on this condition that language can be a guide to the mind,

or that one sign can lead to another according to the laws of analysis.

"The whole art of reasoning, like the whole art of speaking, may be reduced to analogy" (*Langue des calculs*, Préf.). Everything depends on the order. One expression leads to another and truths are followed by truths when nothing intervenes. There is no great mystery in genius. "A man of genius begins at the beginning, goes straight ahead. His whole art is in this" (*Ibid.* II, Ch. I). A good language would fill the place of genius.

"To reason mechanically does not mean to reason like a machine or an automaton. Mechanical reasoning is the employment of a language so clear, so exact, so definite, in a word, so perfect, that without any trouble, analogy alone calls up and brings together the signs, and merely by bringing them together shows us the truth."

Origin of Language according to Condillac; The Language of Action and of Speech.

In his *Essay on the Origin of Human Knowledge* (1746), Condillac, unwilling to go against the religious traditions, accepts the theory that Adam and Eve, "when newly created by God, were, by an extraordinary gift, in a condition to reflect and to communicate their thoughts" (2nd Part). But he supposes that some time after the deluge two children of different sexes lost their way in the desert before they had learnt the use of any sign; and, "who knows," he says, "that there is not a race which owes its origin to such an event? The question is, how did this new nation invent a language for itself?" Condillac admits, then, that language may have had a natural origin. In his *Logique* (published in 1781, after his death), he does not even allude to the divine revelation of language.

The earliest form of language is the language of action. The soul and the body are closely united. "Our external structure is designed to express everything that takes place in the soul" (*Logique*, 2nd Part, Ch. II). The characteristics of this language are that it is, in the first place, synthetic and confused. "It does not belong to action to be analytic. As our action only represents our feelings because it is the effect of them, it represents all together those which we feel at the same time" (*Ibid.*). In the second place, this language

is neither conventional nor voluntary. Men obey nature. "They begin to speak the language of action as soon as they feel; and they speak it then, without the object of communicating their thoughts" (*Ibid.*).

"We can see, now, in what sense language precedes thought. Man cannot think without signs, therefore he does not invent his first language but discovers it. The elements of the language of action are born with men, and these elements are the organs which the Author of our nature has given us. Thus, there is an *innate language*, although there are no innate ideas; for it was necessary that the elements of some kind of language should precede our ideas, because without some kind of signs it would be impossible for us to analyse our thoughts" (*Ibid.*). Thought presupposes language, and language thought. How are we to avoid this contradiction? By the innateness of the language of action. In bodily movements, which are the natural expression of his mental states, man possesses a language even before he knows it, or has the desire to use it. But there is no language of action in the proper sense of the word until the movements of the body are interpreted, and understood as *signs* of mental states. And the principle of this development is need. Men need one another's help, hence they must be able to make themselves understood, and consequently to understand themselves. Without being conscious of it, and without willing it, he who "listens with his eyes" analyses the action of another in order to observe his successive movements. Sooner or later he observes that in order to understand others he analyses their actions, and in order to be understood, he analyses his own. And in analysing his action, man analyses his thought, for himself, as for others, and henceforth becomes "the language of action is an analytic method" (*Log.* II).

By obeying the laws of analogy, there is no reason why this kind of language should not be given an increasing exactness. "There are no ideas that cannot be rendered by the language of action, and it will render them with the more clearness and precision according as the analogy will be more sensibly apparent in the series of signs chosen" (*Ibid.*).

Speech, in succeeding the language of action, preserves the character of the latter.

"Thus, as a substitute for violent gestures, the voice rose and fell at clearly perceptible intervals. . . . One language did not suddenly supplant the other; there was for a long time a mixture of both, and it was not till much later that speech prevailed. Now each one of us knows by his own experience that the inflections of his voice are more varied, in proportion as his gestures are more varied" (*Essai sur l'Orig. des Connais. Hum.* 2nd Part, Sect. I, Ch. II).

The first language must then have been a kind of chant, with violent inflections accompanying the movements of the body. As nature has prepared in gestures the elements of the language of action, so she has also provided in cries the elements of the spoken language. "To express their feelings, men had for a long time only natural signs, to which they gave the character of conventional signs" (*Ibid.*). In the beginning, therefore, speech consisted only of interjections, or of cries varying in different notes according to the feelings expressed. By the imitation of the cries of animals and of the sounds of nature they enriched their vocabulary. There were at first only names of things (water, tree, etc.), then the different sensible qualities of objects were gradually noticed, and the circumstances under which they might be found,—in this way adjectives and adverbs were invented. "The first verbs were invented to express passive or active states of mind only;" their meaning was undetermined, as in the case of the infinitives *to go, to act:* the accompanying action supplied the rest, that is to say, tense, mood, number and person (*Essai sur l'Orig. des Connaissances Hum.* 2nd Part, Sect. I, Ch. IX). Abstract words (*e.g.* magnitude, vigilance) were created much later, and are all derived from some adjective or verb. Finally, Condillac, like Locke, asserts that words indicating abstract or spiritual ideas had their origin in sensible ideas.

To sum up: language is not a purely arbitrary institution. Nature has, in the movements of the body, given the elements of the language of action, and in the cry of passion she has given those of the language of speech. Man finds through experience that, impelled by need, he speaks before he has willed to speak. Convention, therefore, only perfects and extends what was begun by nature.

"Men know not what they are able to do until experience has taught them the things they do quite naturally. This is why the only things

they ever do intentionally are things they have already done without having formed the intention of doing them. . . . They thought of analyzing only when they observed that they had already done so; they thought of making themselves understood by the language of action only when they noticed that they had already made themselves understood by it. In the same way, they must have thought of speaking by articulate sounds, when they observed that they had already spoken by means of such sounds, and languages began to exist before the project of making them was formed. . . . Everything was begun by nature, and well begun; this is a truth which cannot be too often repeated" (*Log.*, Part II, Ch. III).

Originally languages were narrow in extent, but well constructed. "Their methods were exact so long as only things concerning needs of primary necessity were spoken of." Mistakes were then immediately followed by punishment. In order to make languages perfect we must proceed as men did in those days; that is, "we must endeavour to find new words by analogy, only when a correct analysis has really given us new ideas" (*Ibid.*).

De Brosses: Mechanical Formation of Languages.

De Brosses, first president in the Parliament of Burgundy (born at Dijon, 1709, died 1777), published in 1765 an *Essay on the Mechanical Formation of Languages*. Like all the philosophers of the 18th century, he thought that language was very poor in the beginning and developed slowly. But he denied that the origin of words was arbitrary. The reason of words lies in the nature of the vocal organs by which they are uttered, and of the things which they designate. To speak is to act: an action is not due to chance, but determined by the instrument by which it is accomplished, and the end for which it is accomplished. What the President de Brosses wished to show was then that words are not formed by chance; that, given the structure of the vocal organ and the things to be named, words were what they had to be and could not have been otherwise.

"The system on which language was first built up and names imposed upon things was not, as is generally supposed, arbitrary and conventional; but a truly necessary system which was determined by two causes: the first is the construction of the vocal organs which can only utter certain sounds corresponding to their structure, the second is the nature and the properties of the things to be named."

It must therefore be proved that there is a connection between the "external and physical object, the impression left by its image on the brain, and the expression of this image by a vocal sound, which has either a real or a conventional connection with it."

Feelings are connected with the vocal organs and naturally expressed by certain interjections. As regards things, man can only have named them "by sounds which describe them, establishing between the thing and the word a relation by which the word may excite an idea of the thing. The first fabric of the human language must have consisted of a more or less incomplete description of the things, named, as far as it was possible for the vocal organ to effect this, by a sound imitative of real objects." Language then, according to de Brosses, was originally *onomatopoeic.*

But how, on this hypothesis, were men able to name objects that cannot manifest themselves to the organ of hearing by any sound?

"This imitative description extended step by step, advancing from one shade of meaning to another, by every possible means, good or bad, from names of things that were most susceptible of imitation by vocal sounds, to those that were least easy to imitate in this way. That the spread of language took place in one way or another on this plan of imitation as dictated by nature is proved by experience and observation."

If this view is correct, if it is true that not only are words not of arbitrary origin, but that their form was inevitably determined by the structure of the vocal organs, and by the nature of the things to be named, it follows as a logical consequence that there can only have been one primitive language; that given man, and such and such an individual thing to be named, this thing could only have one name, which would be produced, as it were, by a kind of mechanism. De Brosses saw this consequence of his doctrine and accepted it. "This being the case," he says, "there exists a language which is primitive, organical, physical, and necessary; a language which is common to the whole of mankind, which is not known or practised in its original simplicity by any race, but which is spoken nevertheless by all men, and constitutes the first foundation of language. This foundation, owing to the immense edifice of accessories built on it, is now scarcely recognizable."

As proof of this thesis, he instances certain expressions, "which are first regularly developed, as soon as the faculty of speech begins to be exercised; expressions native to the human race, and resulting necessarily from the physical structure of the vocal organ, and from the product of its simplest exercise." De Brosses proceeds by the comparative method, and gives a large number of derivations. His theory was most ingenious, and the fruit of a truly scientific mind, but he exaggerated and falsified it. The structure of the organ has no doubt a part in the creation of words, but does this necessitate the use of a particular sound to represent a particular object? Will all men imitate the same sound in nature in identically the same way? Up to the present, at any rate, the hypothesis of a primitive language common to the whole human race, has not been confirmed by science.

Adam Smith develops Locke's Theory.

In his *Essay on the Origin of Language*, Adam Smith adopts Locke's theory, and gives it further development. Condillac had shown that the first rudiments of language are provided by nature: the President de Brosses, going further, had introduced the hypothesis of mechanical necessity. Adam Smith returns to the idea of a purely conventional origin. Man, he thinks, must have lived for a time in a mute state, his only means of communication consisting in gestures of the body and in changes of the countenance; so that at last, when ideas multiplied that could not be counted on the fingers, *it was found necessary to invent artificial signs of which the meaning was fixed by mutual agreement.* Adam Smith would wish us to believe that the first artificial words were verbs. Nouns, he thinks, were of less urgent necessity, because things could be pointed at or imitated; whereas mere actions, such as are expressed by verbs, could not. He therefore supposes that when people saw a wolf coming they pointed at him, and simply cried out, 'He comes' (Max Muller, *Science of Language*, 2nd Lesson).

In the beginning, according to Locke, every word indicated an individual object. Imagine two savages who had lived far from any other human beings, "the particular cave whose covering sheltered them from the weather; the particular tree

whose fruit relieved their hunger; the particular fountain whose water allayed their thirst, would first be denominated by the words cave, tree, fountain, or by whatever other appellations they might think proper, in that primitive jargon, to mark them. . . . Afterwards, when the more enlarged experience of these savages had led them to observe, and their necessary occasions obliged them to make mention of, other caves, and other trees, and other fountains, they would naturally bestow upon each of those new objects the same name by which they had been accustomed to express the similar object they were first acquainted with. . . . When they had occasion, therefore, to mention, or to point out to each other many of the new objects, they would naturally utter the name of the correspondent old one, of which the idea could not fail, at that instant, to present itself to their memory in the strongest and liveliest manner. And thus those words, which were originally the proper names of individuals became the common name of a multitude. A child that is just learning to speak calls every person who comes to the house its papa or its mamma; and thus bestows upon the whole species those names which it had been taught to apply to two individuals. I have known a clown who did not know the proper name of the river which ran by his own door! 'It was *the river*,' he said, and he never heard any other name for it. His experience, it seems, had not led him to observe any other river. The general word river therefore was, it is evident, in his acceptance of it, a proper name signifying an individual object. If this person had been carried to another river, would he not readily have called it *a river?*" (*Ibid.* Ch. XII).

This, as we see, is the exact reverse of the view held by Leibnitz.

Jean-Jacques Rousseau. Discourse on the Origin of Inequality: Essay on the Origin of Languages.

In his *Discourse on the Origin and Grounds of the Inequality of Men* (1753) J. J. Rousseau was led by his subject to treat of the origin of language. On this matter he accepts and at the same time criticises the theory of Condillac, a theory which, although incomplete, would seem to have appeared to him the only possible hypothesis. The first

language was the natural cry. When ideas multiplied men multiplied also the inflexions of the voice, and added gestures to them. "They expressed visible and mobile objects by gestures, and those that struck the ear by imitative sounds. But because gestures can hardly do more than indicate objects that are present or easily described, because, also, they are not universally used, since darkness or the interposition of another body renders them useless, it occurred at last to men to substitute for them the articulations of the voice, which, although they are not connected in the same way with some of our ideas, are, as established signs, more adapted to the expression of them all."

In the beginning each word signified a whole proposition. When the subject began to be distinguished from the attribute and the noun, which required no small effort on the part of the human mind, substantives were at first only so many proper names, for general ideas presuppose the existence of signs; and the present of the infinitive was the only tense used. As for adjectives, they only appeared much later, because abstraction is a troublesome and unnatural operation. This is exactly Condillac's theory, and the only one which would account for the origin of language. But what a number of difficulties it involves! In the first place, if men lived scattered about in a state of nature, what need had they of language? In the second place, if men required speech in order to learn how to think, "they required much more to know how to think before they could discover the art of speaking." Lastly, the substitution of articulate sounds for cries and gestures implies a common consent and agreement; but there must have been a reason for this general accord, and speech would thus appear to have been necessary for the establishment of the use of speech.

J. J. Rousseau's conclusion amounts to the hypothesis of a divine revelation, although he does not expressly say so.

"As for me, alarmed as I am by the increasing difficulties of the subject, and being yet convinced that it is almost proved that languages cannot possibly owe their origin or establishment to purely human means, I leave to whomsoever will undertake it the discussion of the following difficult problem: Which was most inevitable, that society, being already established, should proceed to institute language, or that language, already invented, should be the cause of the establishment of society?"

In his *Essay on the Origin of Languages* J. J. Rousseau shows more originality, and also states his views more clearly. Instead of repeating Condillac's arguments he makes his views concerning the first language depend on his theory of the predominance of feeling in the primitive man. He accepts a common thesis of the 18th century, namely, that "speech, being the first social institution, must owe its form to natural causes." But he does not think with de Brosses that words are mechanically determined by the structure of the vocal organ and the impressions of things: he recognizes the existence of a special faculty of language. Sight, hearing, and even touch are capable of providing signs of thought. Animals have an organization which is more than sufficient for communication between themselves: those which are gregarious have a kind of natural and instinctive language.

"Conventional language belongs to man alone. The discovery of the art of communicating ideas depends therefore less on the organs which serve for this communication than on a faculty peculiar to man which causes him to use his organs in this manner" (*Ibid.* Ch. I).

As regards the origin and nature of the earliest language, J. J. Rousseau differs from Condillac. He says:

"It is probable that the first gestures were inspired by need, and that the first sounds were drawn from men by passion (Ch. II). Men are divided, set one against the other by their needs. Passion draws them together. Men, who by the necessity of struggling to live are forced to fly from one another, are, by all their passions, drawn together. It was neither hunger nor thirst, but love, hatred, pity, and rage that drew from them the first sounds."

Condillac was wrong in maintaining that the first language was a perfectly-formed language, an analytic method expressing by analogies the relations between ideas.

"We are told that the language of the first men was a language of mathematicians, and now we see that it was a language of poets (Ch. II). The first language was figurative; it expressed the passion roused by an object rather than the object itself. The word *giant* was created by terror before comparison gave the word *man* (Ch. III). The first language was much more like singing than speech; most of the root-words were sounds which imitated either the accent of passion or the effect of sensible objects; we constantly trace onomatopoeia in them (Ch. IV). J. J. Rousseau connects the difference in languages with the differences in climate. The southern languages are the daughters of

pleasure and not of need, they are lively, sonorous, well accentuated; the languages of the north, where life is harder, are harsh and strong, rough and inarticulate" (Ch. IX, X, XI).

Reaction against the Philosophy of the 18th Century. De Bonald: Divine Revelation of Language.

As we have seen, the hypotheses of the philosopers of the 18th century were far from agreeing in every particular, but they had one common characteristic, that of representing language as *an invention* comparable to any other human invention. "There was a time when, as the ancients thought, man was no more than a '*mutum et turpe pecus*.' The simplest needs of society first brought about the creation of a *natural language* consisting of certain facial expressions, certain movements of the body, and certain intonations of the voice. According as ideas were multiplied, men perceived how inadequate such a language was, and they sought a more convenient means of communication. Then the idea of speech occurred to them; they agreed together, an amicable arrangement was made (*on s'arrangea à l'amiable*), and in this way artificial or articulate language was established" (E. Renan, *Origine du Langage*, pp. 78, 79).

The reaction in philosophy felt at the beginning of the 19th century naturally affected the solution of the important problem of language in which the thinkers of the preceding century had been so deeply interested. "The 18th century had attributed everything to the freedom, or rather to the caprice, of man. One of those schools which endeavoured to uphold the cause of spiritualism and religion attributed everything to God" (*Ibid.* pp. 80, 81).

But two remarks are necessary here. The first is, that the theological solution was not without antecedents, and had in fact always had its partizans. In ancient times this view of the question was attributed to Heraclitus, and certainly upheld by Cratylus. The polemic of Eunomius againt St. Basil proves that it had defenders in the early Christian schools. Father Lami (*l'Art de parler*, 1670) maintained that man could never have produced anything but inarticulate cries if God had not expressly taught him to speak. Warburton, the English philosopher, quoted by Condillac, adopts a middle course. According to him, the hypothesis of an artificial

creation of language would seem, judging merely from the nature of things, to be the most acceptable. "God, we there find (*i.e.* in Scripture), taught the first man religion, and can we think He would not at the same time teach him language? But though, from what has been said above, it appears that God taught man language, yet we cannot reasonably suppose it any other than what served his present occasions, he being now of himself able to improve and enlarge it as his future necessities should require" (*Divine Legislation of Moses*, Vol. II). The second thing to be remarked is, that de Bonald, the boldest and most brilliant of the defenders of the theological theory, starts from principles that were borrowed from Condillac. In his later works, Condillac appears to be more than ever convinced of the importance of the part played by language. "Language," he says, "is anterior to thought—it explains mind and the processes and evolution of intelligence.' De Bonald starts from the same principles, but reverses Condillac's interpretation of them. The problem of language is, for him, not a special problem, but the whole problem of philosophy. Man cannot get to know himself by reflection on his own consciousness, a thankless labour, a working of thought on itself which can produce nothing.

"As God, the supreme intelligence, *can only be known through His Word*, which is the expression and image of His substance; so man, a finite intelligence, is only known through his speech, which is the expression of his mind; and this means that the thinking being is explained by the speaking being. The following rational proposition: Thought can only be known through its expression, that is to say through speech, contains the whole of human science, just as the Christian saying that God can only be known through His Word contains the whole of divine science, and for the same reason" (*Législation primitive*, Disc. préliminaire).

In order to understand de Bonald aright, we must bear in mind that he does not propose merely to solve one particular problem. For him the problem of language is the whole of philosophy, and the solution of this problem is the solution of the philosophical problem in general. "The mystery of an intelligent being" is explained by the fact that an original language was given to man at the moment of creation.

Man only thinks because he speaks. Meditation is an inward and silent speech.

"The solution of the problem of speech may be stated as follows: Man *must necessarily think his speech before he speaks his thought* (*Législ. prim.*, Disc. prélim.). An intelligent being conceives his speech before he produces his thought. . . . External speech is only a repetition, the echo, so to speak, of the inner speech. . . . What does the mind seek when it is seeking a thought? The word that expresses it, and nothing else."

We require speech, "not only for the communication of our knowledge to others, but in order that we ourselves may have intimate knowledge or consciousness." J. J. Rousseau had said, "One must enounce propositions, one must speak, in order to have general ideas; for as soon as imagination comes to a standstill, the mind can only advance with the assistance of speech." De Bonald takes up this idea and expands it.

"Just as man cannot think of material objects without having in his mind an image of them, so also he is unable to think of incorporeal objects (spirits, relations, general conceptions) without having within himself and before his mind the words that are the expression of these ideas. That is to say, it is possible to conceive animal intelligence without speech, but not human intelligence. The idea presupposes the word. Their appearance is simultaneous; but nevertheless, the idea must be prior to the word, since every object is necessarily prior to its image. But although it is true that the idea is logically prior to the word, the former only appears in the light of consciousness with the word and through the word. Ideas dwell in us unperceived, latent, outside time. Words, by a marvellous correspondence, by a kind of pre-established association have the power of making them pass into actuality, or of bringing them into the light of consciousness. Thought, then, manifests or reveals itself to man with, or through, the expression of it. As the image presented to me by a mirror is indispensably necessary to me that I may know the colour of my eyes or the features of my face, so also do I require light in order to see my own body" (*Législ. prim.*, Disc. prélim.).

The faculty of thought is inborn in us, says de Bonald, but without the faculty of speech it is nothing. "Every day the intelligence of man is drawn out of non-existence by speech." As it has been justly remarked, words have, in de Bonald's theory, the same property as that which Plato ascribed to sensible phenomena. *They cause us to recollect the idea.* The ideas are there in the mind. "The aim of moral philosophy is not so much to teach men things they do not know, as to make them admit things they do know" (*Législ. prim.*, Disc. prélim.).

Language (by which we are to understand speech) gives us our ideas, since it reveals them to us; but to whom do we owe language? The hypothesis of an arbitrary human institution is absurd in itself, and irreconcilable with the theory of the simultaneity, at least in time and for us, of the word and the idea. Rousseau had rightly said that "speech would be necessary for the establishment of the use of speech." What a genius it would have required to rise to the conception of speech, and of the elements of which it is composed! And if such a genius had ever existed, how could a language have been taught to beings who knew no language, and consequently could not understand the one in which they were addressed? Moreover, how could it be supposed that God created man a sociable being without giving him speech, which is the instrument and condition of every social relation? The impossibility of the invention of language by men would in itself lead us to the conclusion that man was created with speech, as with sight and hearing. In the second place, if, as de Bonald maintains, every idea presupposes language, then the idea of the invention of language presupposes the possession of language. The existence of ideas to be indicated by words might have given rise to the invention of speech, but the idea only appears with the word. Language, therefore, cannot have been invented, and, since it exists, it can only have been given to us by God. To sum up: ideas are revealed to us by language and language is revealed to us by God. On the other hand, thought is logically anterior to words, and innate to the mind; it is not created by experience, but discovered. Therefore thought has, like language, a divine origin. God has given to us both a mind and the instrument for awakening the ideas which slumber in it. De Bonald's theory is thus a kind of Platonism in which words are the principle of reminiscence.

Maine de Biran: Language connected with Voluntary Motion.

De Bonald's theories were accepted by followers of the traditionalist and theological school, such as J. de Maîstre and L'abbé de Lamennais, and rejected by independent philosophers. In his *Examen Critique des Opinions de M. de Bonald* (written in 1818), Maine de Biran refutes the doctrine of the

divine revelation of language. He shows that this theory carries the difficulty a step further back, but does not get rid of it. Signs that were invented by God would be to us not signs, but things which we, in our turn, would have to transform into signs, by attaching a particular meaning to them. "Those who think that man could never have invented language if God Himself had not given or revealed it to them, appear to me not clearly to have understood the question of the institution of language; they perpetually confound the substance with its forms. Suppose God had given to man a ready-made language or a perfect system of articulate or written signs adapted to express all his ideas, man would still have had to attribute to each sign its peculiar value or meaning, in other words, he would have to make it a real sign conveying the intention and aim of an intelligent being, just as a child employs his first signs when he transforms the cries which have been given to him by nature into real signs of distress." Thus, according to Maine de Biran:

"The difficulty of the psychological problem, which consists in determining the faculties which must have co-operated in the institution of the first language, remains the same, whether the signs which are the form, and, as it were, the material of this language, were given or revealed by the Supreme Intelligence, or invented by man, or suggested by the ideas and feelings of which they are the expression."

We see here how, with different philosophers, the problem changes. With de Bonald the question was, how could man have invented language? To Maine de Biran it matters little whether the material of language was revealed by God or invented by man; in either case there remains to be discovered what faculties must have co-operated in the institution of the first language. This would seem to involve a paradox, or even a contradiction; for if language was revealed to man by God, how could faculties be required for its institution? But this apparent paradox is, in fact, Maine de Biran's theory. The word becomes a sign only when it is voluntarily produced. Man appropriates a language only by remaking it himself, and it may literally be said that when he receives it he gives it to himself. Speech is, like effort, the characteristic fact of human life; man speaks because he is not merely passive, because he acts, and in acting is conscious of his will

as of a force which is distinct from the end to which it is applied.

"Why do animals which are formed like us for speech remain always dumb? It is, I think, difficult to answer this question on the hypothesis that derives all the faculties of the human mind from simple sensation. On our theory this question solves itself. Animals do not speak because they do not think, or, in other words, because they are not persons, and because a free activity independent of sensation does not belong to them; and having thus neither the feeling nor the idea of a subject as distinct from its attribute, or of a cause as distinct from its effect, they are incapable of forming the first of all judgments, which is the basis of all the others,—they cannot attach any meaning to the word *I* or to the verb *is*."

What, then, are the successive acts which must be accomplished by man before he can acquire language? The child must, above all, first learn to understand himself—to form the idea of a sign.

"Nature provides the young at birth with instinctive signs adapted to the manifestation of their needs. These signs are nothing to the sensitive being which is ignorant of them, and they are true signs only to the nurse, who hears and interprets them. Before these first signs can have any meaning for the individual who uses them, *he must institute them a second time, by his own activity.* In other words, he must attach a meaning to them. . . . The passage from animal to intellectual or active life manifests itself in the child the moment he transforms his wailing or first cries of pain into signs of calling, which he uses voluntarily in order that his nurse or parent may come to him, change his position, etc. . . . This first transformation is most remarkable. It is the first human act, the first and true foundation of language."

Thus, what are required before all else are the intellect and will, which out of gestures and cries can make signs; there must be a being who is capable of distinguishing between himself and his feelings, and of taking possession of his own activity. Language will then develop through the analogical extension of natural signs and onomatopoeia. Man is, in the second place, adapted for speech by the connection between his acoustic and vocal organs.

"The sounds that reach the organ of hearing, and, through it, the cerebral centre, determine not only the action of the auditory muscles, but also those of the vocal organ which repeats, imitates, and reflects them. The individual himself is his own echo: the ear is struck both by the direct external sound and by the internal reflected sound."

Our vocal organs associate themselves instantly with the impressions received by the ear from the voices of others. There is thus something infectious in language. It is naturally passed on to others and propagated. Lastly, we voluntarily imitate sounds that we recollect having heard. This is *personal* speech. Thus Maine de Biran regards language as a form of activity. It is, according to him, as indispensable to the clearness and distinctness of thought as voluntary effort to the consciousness of personality. "There can be no real ideas where there are no voluntary signs."

It may be granted to de Bonald that all ideas, even that of the ego, not to speak of "*the production of the ego*," presuppose a language of some kind; and a language is not a succession of sounds, but a voluntary muscular movement. Thus Maine de Biran regards language as merely a series of movements, and makes its formation, as well as intelligence itself, depend upon activity and its laws.

Result of Recent Inquiries into the Subject of Language. Comparative Philology. Physiological Theory of Natural Signs.

In our times the problem of language, of its origin, and its relation to thought, has been revived, on the one hand, by the progress of comparative philology, and on the other, by the physiological theory of expression, physiognomy, and gestures, or in short, of natural signs. The result of these discoveries is that the inadequacy of the hypotheses of the 18th century has been shown; for it has been proved that language is not a product of reflection, nor an invention in the usual sense of the word. Furthermore, the two theories of an artificial institution and of a natural origin of language, which had hitherto been continually brought forward as opposed to one another, were now reconciled in one theory, which was both more in accordance with facts and more comprehensive.

The science of language, of which Leibnitz had provided the method, and, so to speak, traced out the plan, made immense progress towards the end of the eighteenth and the beginning of the nineteenth centuries. Already, in 1787, William Jones, the celebrated English orientalist, asserted a relationship between Sanscrit, Greek, and Latin. In 1808 Frederick Schlegel, in his *Essay on the Language and Wisdom of the Hindoos*, by applying the

comparative method, united into a single group the languages of India, Persia, Greece, Italy, and Germany, which he designated by the common name of Indo-Germanic languages. In 1816 Francis Bopp published his treatise on the *System of conjugation of the Sanscrit tongue, compared with that of the Greek, Latin, Persian, and German*—the first truly scientific comparison that was established between the grammars of the Indo-European languages. He completed his work by publishing, between 1833 and 1852, his *Comparative Grammar of Sanscrit, Zend, Greek, Latin, Lithuanian, Slavonic, Gothic, and German.* William Humboldt, Jacob Grimm, Eugène Burnouf (*Studies on the Ancient Language of Persia*) completed the foundation of an experimental science of language. The result of these inquiries was a genealogical classification of languages. It was known that from the Latin had come Italian, Spanish, Portuguese, French, Wallachian, and Roumanian; now it was proved that Latin, Greek, the Celtic, and Teutonic and Slavonic languages, as well as the ancient dialects of India and Persia, had all come of a primitive language, the common mother of the whole Indo-European family. By the same comparative method the Semitic family (Hebrew, Chaldee, Arabic, etc.) was discovered. The existence of a Turanian family (languages of the nomad races of Asia, Thibet, etc.) has been asserted by some philologists and contested by others.

While this affiliation of languages was being proved, the laws of derivation, by which the original idiom is changed, often to the extent of becoming irrecognizable, were also studied. It was shown that this derivation takes place according to fixed laws, of which man is unconscious at the time he applies them, and which the philologists only perceive to-day by dint of analysis and comparison. "What distinguishes phonetic from dialectic changes," says Max Muller, "is that the former can be reduced to very strict rules, while the latter cannot, or at least not with the same unerring certainty. In the growth of the Modern Romance languages out of Latin, we can perceive not only a general tendency to simplification, not only a natural disposition to avoid the exertion which the pronunciation of certain consonants, and still more of groups of consonants, entails on the speaker; but we can discover tendencies peculiar to each of the Romance dialects, and laws so strict as

to enable us to say that in French, and in French only, the Latin *patrem* would of necessity dwindle down to the modern *père*. These changes take place gradually, but irresistibly; and what is most important, they are completely beyond the reach or control of the free will of man." By showing that languages are modified according to inevitable laws of which those who obey them are unconscious, comparative philology has completely overthrown the hypothesis of the 18th century: any notion of convention or contract must now be abandoned. Languages are natural products, living things which obey the laws of life.

"Instead of, like the ancient philologists, proceeding from resemblances that were purely artificial and external, language is now taken as an organic whole, possessing a life of its own: the laws of this life are sought for; and each family of languages is found to have ramifications which obey uniform laws. As long as each language was regarded as an inorganic aggregate over the formation of which no inner reason had presided, only crude material solutions could be found for the problem of the origin of language" (E. Renan, *Origine du Langage*, pp. 86, 87).

Among the philologists who have attempted to make use of the discoveries of linguistic science in the solution of the philosophical problem of language, Max Muller and Renan have most strongly insisted on the fact that it could not possibly have been an arbitrary human institution

Max Muller—The First Elements of Language are Abstract and General Roots.

According to Max Muller comparative philology should be counted among the natural sciences. Language is not an invention in the same sense as painting, architecture, writing, or printing are inventions. Like other natural products, it has had a development rather than a history. ". . . Although there is a continuous change in language, it is not in the power of any man either to produce or to prevent it. We might as well think of changing the laws which control the circulation of our blood, or of adding one cubit to our stature, as of altering the laws of speech, or inventing new words according to our own pleasure" (*Science of Language*, Ch. II).

It is therefore impossible to accept the theory that was current in the 18th century. Philosophers, on the contrary, who "imagine that the first man, though left to himself, would

gradually have emerged from a state of mutism and have invented words for every new conception that arose in his mind, forget that man could not by his own power have acquired the faculty of speech which, so far as our experience goes, is the distinctive character of man, unattainable, or, at all events, unattained by the brute and mute creation" (*Ibid.* Ch. XIV).

Nor does the theory of a divine revelation account better for the facts.

"Theologians who claim for language a divine origin drift into the most dangerous anthropomorphism, when they enter into any details as to the manner in which they suppose the Deity to have compiled a dictionary and grammar in order to teach them to the first man, as a schoolmaster teaches the deaf and dumb. And they do not see that, even if all their premises were granted, they would have explained no more than how the first man might have learnt a language if there was a language ready made for him. How that language was made would remain as great a mystery as ever" (*Ibid.* Lect. IX, p. 331, 1st Series).

Can comparative philology not assist us in solving the problem? Everything which, in a language or family of languages, cannot be reduced to a simpler or more primitive form is called *a root*. The ultimate result of the analysis of the languages of the Aryan and Semitic families has been the discovery of four or five hundred monosyllabic roots, or irreducible and constitutive elements: *Ar*, to plough: *I*, to go: *Ad*, to eat; *Da*, to give: etc., etc.

What are these roots? Two theories have been proposed: that of onomatopoeia or the imitation of natural sounds, and that of the interjection. But neither theory coincides with the results arrived at by comparative philology, for the roots are neither onomatopoeic nor interjectional. Most frequently when we think we have discovered an imitative harmony in a word, we have only to trace the word to its origin to see that it was not created by a direct imitation of a natural sound. It is left to us to look for another solution which, though apparently less simple, is more philosophical, and the only one that appears to be reconcilable with the data of the science of language. Man is differentiated from animals by two faculties: speech and the power of generalization. Now, comparative philology, by tracing language back to roots, each of which expresses a general idea, has proved that to speak and to

generalize are only two aspects of one and the same act. Adam Smith declared that all names were originally individual names. Leibnitz held, on the contrary, that they were all appellative or general. They were both in a sense right. ". . . Adam Smith would be perfectly right in maintaining that this name [*cavea* or *caverna*], when first given, was applied to one particular cave, and was afterwards extended to other caves. But Leibnitz would be equally right in maintaining that in order to call even the first hollow *cavea*, it was necessary that the general idea of hollow should have been formed in the mind, and should have received its vocal expression *cav*. It is the same with all nouns. They all express originally one out of the many attributes of a thing, and that attribute, whether it be an action or a quality, is necessarily a general idea. The word thus formed was in the first instance intended for one object only, though of course it was almost immediately extended to the whole class to which this object seemed to belong" (*Ibid.* Ch. XIV).

The following then are the steps in the formation of language. We begin by knowing general ideas (hollow, *cavea*). In the second place, thanks to general ideas, we are able to know and name particular things (*cav-cavea*). Lastly, the objects thus known and named represent whole classes, and their proper names are changed into appellative names. The difficulty in Max Muller's hypothesis is to understand how the sound is related to the thought. What connection is there between the words and the ideas, between the root *ga*, for instance, and the action of going? We cannot see here, as in the onomatopoeic theory, what can have led man from the thought to the sign that expresses it. Max Muller's reply is merely a re-affirmation of his theory. The general idea calls up and suggests the word. This is an original law of mind.

"The 400 or 500 roots which remain as the constituent elements in different families of language are not interjections, nor are they imitations. They are *phonetic types* produced by a power inherent in human nature. . . . There is a law which runs through nearly the whole of nature, that every thing which is struck, rings. Each substance has its peculiar ring. . . . It was the same with man. . . . Man, in his primitive and perfect state, was endowed not only, like the brute, with the power of expressing his sensations by interjections, and his perceptions by onomatopoeia. He possessed likewise the faculty of giving more articulate expression to the

rational conceptions of his mind. That faculty was not of his own making. It was an instinct, an instinct of the mind, as irresistible as any other instinct. So far as language is the production of that instinct, it belongs to the realm of nature" (Lect. IX, 1st Series).

Max Muller's theory may be summed up in two statements: Firstly, language is a product of nature; Secondly, man speaks by a sort of instinct, which necessarily involves two steps: the formation of general ideas, and the creation of words to express them. This second thesis rests entirely on the fact that philological analysis has reduced all the original material of a language or of a family of languages to four or five hundred abstract and general roots. Now M. Michel Bréal (*Mélanges de Mythologie et de Linguistique*, 1878) has proved that these roots cannot be regarded as constitutive elements of a first language: they are, on the contrary, the remains of former substantives, originally concrete words, which took an abstract meaning, while passing through the form of the verb. The abstract monosyllables obtained by comparative analysis can therefore tell us nothing as to the first language spoken by men.

E. Renan: Language is not the Result of Reflection, but a Spontaneous Product.

M. Renan does not believe that men began by having general ideas, or that the first words were abstract monosyllables. He ascribes the chief rôle in the formation of language to onomatopoeia, to analogical metaphor, maintaining moreover that reason, though as yet unconscious of itself, took an active part in the first creation of language. He is of opinion that synthesis, complexity, exuberance of forms, indefiniteness, extreme variety, and uncontrolled freedom must have been the distinctive features of the first human language. But, like Max Müller, he cannot believe that language was invented in cold blood, with a deliberate intention, as the result of a convention or contract.

"If speech is neither a gift from without nor a slow mechanical invention, there only remains one possible view, namely, that its creation is to be attributed to the spontaneous and combined action of human faculties. The need of giving outward expression to his thoughts and feelings is natural to man; all his thoughts are internally and externally expressed by him, nor is there anything arbitrary in the use of articu-

lation as a sign of ideas. It was neither with a view to suitability or convenience, nor in imitation of animals that man chose speech as a means of formulating and communicating his thoughts, but rather because speech is natural to him, as regards both its organic production and its expressive value. For, if we attribute originality to animals in their cries, why should we deny originality to man in speech?" (*Orig. du Langage*, p. 90).

Man is by nature a speaking being, as he is by nature a thinking being. It is as unphilosophical to assign a deliberate beginning to language as to thought. Languages should be compared to the products of genius, or, better still, to the old popular poems, the great anonymous epics. The action of one family, of one individual may have been decisive in those far-off ages, but that was because there lived in this family or in this individual the spirit of the whole race.

"The true author of the spontaneous acts of consciousness is human nature, or, if you will, a cause which is above nature. When we have reached this point it matters not whether we attribute causality to God or to man. What is spontaneous is at once human and divine, and herein we find a means of reconciling opinions, which are incomplete rather than contradictory" (*Ibid.* p. 94).

Language is a human, but impersonal product. It is the development, the visible expression of thought, "the living product of the whole inner man" (Fr. Schlegel). We must always return to the idea of Life, to understand the birth and progress of languages. A seed is sown which contains potentially all that the living thing will one day be. The germ develops, organs are differentiated, functions distinguished. But in the germ the law was contained, the form and the type of this evolution were implied. Similarly, "it was not by successive juxtapositions that the different systems of languages were formed. Like the living beings in nature, language was, from its first appearance, endowed with all its essential elements. . . . Languages must be compared not to the crystal which is formed by agglomeration around a nucleus, but to a germ which owes its development to its own inner force and to the inward necessity of its elements" (*Ibid.* pp. 100-101).

In this sense it may be said that each family of idioms was created "at one stroke"—that it came out of the genius of each race, without effort and without any preliminary groping [illegible]

words. "An original intuition revealed to each race the general fashion of its speech, and the great act of agreement it was to make once for all with its thought" (*Ibid.* p. 20).

Physiological Theory of Natural Signs: Charles Bell, Darwin.

Physiology, like comparative philology, has provided new data for the solution of the problem of language; for it has explained the production and significance of natural signs. How have gestures and changes in countenance come to express emotions and passions? The parts, says Charles Bell, which are used for expression serve also from the first as functions both of the lower or organic life and of the higher or relational life. Now a gesture which expresses an emotion is the beginning of an action, of one, namely, that would be necessary in order to get rid of the emotion or to prolong it, according as it is pleasant or painful. A sign or expression is thus the beginning of an action. The same applies to facial changes. These are due to the working of certain muscles which do not, like the rest, move under the skin, but are attached to it, and so draw it along with them. If the face by a particular contraction expresses a particular passion or appetite, it is because this contraction is precisely the mechanical condition necessary to the satisfaction of this passion or appetite. If rage is expressed by a rictus which draws back the lips and uncovers the teeth, it is because this is the very movement by which one animal prepares to seize another and to tear it to pieces with his teeth. This theory of Bell's was accepted and expanded by Gratiolet.

In his treatise on the *Expression of the Emotions*, Darwin adopts Charles Bell's ideas, treating them, however, from a new point of view. He, too, starts from the principle that none of our organs were originally intended for expression, and that certain movements of the organism only became the signs of certain internal states in consequence of their habitual co-existence with the latter. He then tries to account for all the phenomena of expression by three general principles: *The principle of serviceable associated Habits; the principle of Antithesis; the principle of actions due to the constitution of the Nervous System, independent from the first of the will, and independent to a certain extent of habit.*

The principle of antithesis is somewhat hypothetical. Darwin

declares that certain expressive movements have no other reason than an original and universal inclination to accompany a feeling with gestures contrary to those which would express the opposite feeling. To show her affection, a cat stiffens herself, draws herself up on her paws, arches her back, cocks up her tail, points her ears, because all these movements are the exact opposite of those she would make when about to make an attack or to defend herself. The principle of the association of useful habits is, in fact, Charles Bell's law traced to its origin. Movements that are useful for the satisfaction of a desire, or for the relief of a painful emotion, become finally, through repetition, so habitual that they recur every time this desire or emotion re-appears, even though it be in a feeble degree, and when their utility no longer exists or is very doubtful. Many natural signs are actions of which, through hereditary habit, we make a beginning when our ancestors would have been prompted by need to carry them out. Dogs have the habit of licking their young in order to clean them: this action was by degrees associated with feelings of affection, and became an expression of tenderness which they extended to their masters, and to all those with whom they wished to make friends. In the same way a man, when insulted, unconsciously puts himself in the attitude which would be proper for attacking his adversary, although he has no intention whatever of doing so.

The third principle, that of the direct action on the organism of the stimulation of the nervous system, is independent of the will, and, to a great extent, of habit. Experience shows that every time the cerebro-spinal system is excited, a certain quantity of nervous force is generated and set free: hence movements, gestures, various cries, laughter, clapping of hands, gambols, which may, by the association of ideas, become indications or signs of the emotions. These two principles of habitual action and of nervous excess may act simultaneously. The gestures of a furious man may be attributed partly to an excess of nervous force, and partly to the effects of habit. These gestures frequently represent, more or less correctly, the action of striking.

Reid, Jouffroy, and Adolphe Garnier had regarded the faculty of expression by, and the comprehension of, signs as one of

our original ultimate faculties. But if expressive signs are merely the movements natural to such and such an action, there is evidently no need of a special faculty for their production, nor would there seem to be any need of a special faculty for understanding them. If this is the case we would seem to have found a key to the much controverted question of the origin of language.

The fact that language may be an organic whole (as in the hypotheses of Max Muller and Renan) does not exclude the possibility that its formation has come about to a certain extent by successive steps, nor prevent its causes from being susceptible of analysis.

"It had already been clearly proved that the more or less artificial and conventional signs out of which language is formed owe their origin to certain natural signs. We now know further, owing to the observations made by Charles Bell, what these signs are, and how they are to be accounted for, at least in certain cases; we are able the more clearly to see how it is possible through our will to extend the use of these signs, to develop, transform them, to derive from them a veritable language. The need of respiration and divers impressions cause the new-born child to utter the cry which will bring him assistance; later he will understand the use he can make of this cry; he will repeat it, thus imitating himself: this is the earliest language. This earliest form of language, modified and extended, will, with the co-operation of nature and volition, give rise to what is called the words of a language. These words, either joined one to the other or modified and inflected in accordance with certain laws which are the laws of thought itself, and which taken collectively are logic, these words, when subjected in this way to rules which go to make up what is called grammar, are a complete language. In this theory we seem to find the rudiments of a truly philosophical explanation of the origin of languages" (F. Ravaisson, *Rapport sur la Philosophie en France au dix-neuvième Siècle*, pp. 217, 218).

Conclusion.

All these apparently contradictory solutions of the problem of language would seem to be gradually converging towards one point, and likely to become reconciled in a theory which will embrace all the different truths to which they correspond.

Among the ancient thinkers we found two great theories: according to one of these, words have a natural origin (φύσει), by which was meant that they imitate the nature of things; according to the other, they were regarded as being arbitrary (θέσει), and hence as having no connection with the nature of the

objects they indicate. There is some truth in both these theories. We no longer believe, like Cratylus, that the science of words is the science of things: so far his opponents were right. But it is true that at the beginning words corresponded to certain qualities in objects, and still more to the impressions they made on the mind of the primitive man: and thus Plato gives evidence of more than a correct intuition in his ingenious derivations in the *Cratylus*. Now we no longer speculate as to whether words imitate the nature of things or not. When inquiring into the origin of language we seek, in the first place, to determine its relation to thought. We no longer ask, like the ancients, Is it possible to know things through the analysis of words? but: Is it possible to think without the help of language? And can language consequently have been created by thought? To this question two answers have been given—the first being, that language is a divine revelation; the second, that it is an arbitrary human institution. The theory resulting from the progress of comparative philology, and of the physiology of natural signs, includes as much as is correct in the modern theories, and admits of a relative reconciliation of those of antiquity. No one now disputes that language is a human product; on the other hand, it is universally allowed not to be the effect of a contract or convention, but a product of nature, the result of human spontaneity, of the spirit and disposition of primitive races.

Thus we have every day more reason to consider language as a living thing, and to seek its explanation in the laws of life. Its first stage is the intentional use of a cry that was originally only a sort of reflex movement. Its first elements are interjections drawn forth by emotions and signifying them, and onomatopœia, which, by imitating external sounds, indicates external objects. The meaning of the words thus formed is extended to other objects by more or less far-fetched analogies, the nature and variety of which it is now sometimes difficult to divine. These elements are co-ordinated by all races in obedience to laws, the logic of which has something that is universal and human, but on which the genius of each race impresses its own character.

CHAPTER VIII.

THE FEELINGS.

Being chiefly concerned with the problems of knowledge and of morality, philosophers have seldom made an independent study of the phenomena of feeling and passion. They have considered them incidentally in connection with ethics, and occasionally even with the theory of knowledge; but they have not gone back to their origin, nor seen the necessity of verifying the somewhat vague analysis of them which is implied in common language. Moreover, each school has directed its attention to such facts concerning this side of our nature as are of special interest to itself, or which serve to corroborate its theories, but has not troubled itself about other elements. Again, whereas the processes of thought are a matter of indifference to the majority of men, there is hardly a person but has had the opportunity of observing more or less correctly in himself, or in others, those phenomena on which human destiny so often depends. The result has been that the vulgar have in a way co-operated in the formation of theories, and that there exist in every language ill-defined words which are nevertheless the expression of emotions frequently subtle though confusedly felt.

Emotions, sentiments, affections, passions, are so many terms whose uncertain meaning varies at the pleasure of philosophers. It is only by a clear comprehension of the different theories, and by referring to the facts they neglect as well as to those they take into account, that it is possible, in spite of the twists and turns of language, to steer one's course in the history of the different theories concerning this subject.

The Earliest Philosophers: the Pythagoreans; Empedocles; Democritus; Socrates.

In this, as in every other respect, the psychology of the predecessors of Socrates was rather weak. The soul was to the Pythagoreans, a number. Number contained a finite element, the principle of unity, of measure, of harmony, and an infinite element, the principle of multiplicity and disorder. It is probable that their principle of unity was Reason, as opposed to the appetites and passions, and all those hidden anarchical powers, by which the soul is troubled, divided, and torn asunder. The Pythagoreans would seem, then, to have been especially impressed by what is dangerous and excessive in the emotions; a one-sided view, which, as we shall see, has been too often adopted by philosophers, as, for instance, by the Stoics.

Heraclitus calls the state of the divided being, "want" (χρησμοσύνη, λιμός), and the unity resulting from the universal fire "plenty" (κόρος); and between these two states, according to him, the life of the universe, and of the individuals of which it is composed, alternates. Here we can discern a foreshadowing of the theory of the inclinations and desires. The theory of Empedocles is more developed and more definite. The living being is a compound of the elements found in all things. All living things, plants, animals, and men, desire that which shall complete and perfect the mixture which constitutes their being. Desire is the tendency to assimilate the elements, by which the normal combination is re-established. All that is not in accordance with the nature of the being, all that differs radically from it, is both an object of aversion and the principle of pain. Pleasure corresponds to satisfied desire, to the restoration of the equilibrium. Thus emotions, as well as the intellect, are explained by the affinities of like for like.

The theories of Democritus concerning pleasure and pain are closely connected with his ethical doctrine. He identifies the pleasant with the useful, and regards happiness as the end of life. But pleasure, he says, is not sensuous enjoyment, for its principle is in the soul.

"Happiness and misery do not depend upon gold or herds of cattle; for it is in the soul that the daemon dwells (ψυχὴ δ' οἰκητήριον δαίμονος), (Frag. I. in the *Fragmenta Philosophorum*, ed. Didot). Bodily

goods are human, but the goods of the soul are divine (Frag. 6). The chief good he asserts to be cheerfulness, by which he means a condition according to which the soul lives calmly and steadily, being disturbed by no fear or superstition or other passion. He calls this state εὐθυμία, and εὐεστώ, and by several other names" (D. L. IX, 45).

Hence the necessity of moderation in our desires and pleasures.

"Our wants increase with our desires; insatiability is worse than extreme poverty. Excess turns pleasure into pain. . . . 'Tis best always to observe the due mean (καλὸν ἐπὶ παντὶ τὸ ἴσον). . . . Too much of anything and too little are both evils."

It is easy to perceive the psychological conceptions implied in these precepts. We shall recognize their influence in Aristotle's theories of the hierarchy of pleasure and of the happy mean.

Socrates, the restorer, or we may even say, the founder of moral philosophy, did little to advance the psychology of the passions. For him it was only a part of ethics. The principle of all human action is the desire for happiness. This desire may take many forms, but ultimately analyzed, it is always found to be the desire for the good. And the good cannot be separated from the useful. Man commits evil only when he mistakes his true interest. Desire does not know the good; it is merely our irresistible inclination to will and to do *what we think is the good.* To enlighten our desires, not to confound happiness with pleasure, or the useful (τὰ ὠφελοῦντα) with the agreeable (τὰ ἡδέα), and in order to accomplish this, to know ourselves, and what we truly want, such is the end of human life. Thus theory and practice are one: Virtue is knowledge.

Aristippus: Pleasure is a gentle, Pain, a violent Movement.

Aristippus was at once a disciple of Socrates and of the Sophists. He despised mere theory, and declared that the soul knows only her own states, and that sensation is altogether subjective. This led him to make pleasure the end, and the entirely relative end, of life. But in his analysis of pleasure he shows much ingenuity. The desire of pleasure lies at the base of human nature, manifests itself from childhood, and is spontaneous (ἀπροαίρετος), or instinctive. In the same way a natural repugnance makes us avoid pain. When we possess

pleasure we wish for nothing more, which proves that it is our end. What then is the nature of pleasure? Our organism is in a state of perpetual movement: when this movement is strong enough to be perceived by consciousness there results an emotion which we call pleasure or pain, according as the movement is gentle (λεία κίνησις) or violent and rough (τραχεία). Thus pleasure and pain are merely organic movements perceptible in consciousness, and both states are positive. It is not true to say, as Epicurus did afterwards, that the absence of pain is pleasure, or conversely; this negative state is a state of immobility, of inertia, resembling that of a man asleep. All pleasures have the same cause, namely, a movement that is gentle and in accordance with nature. All pleasures are therefore equal. There is no need to distinguish between true and false pleasures.

"Pleasure is a good even if it arises from the most unbecoming causes (as Hippobatus tells us in his treatise on sects); for even if an action be ever so absurd, still the pleasure which arises out of it is desirable and good" (D. L. II, 88). . . . "The Cyrenaics deny that pleasure is caused by either the recollection or the anticipation of good fortune—though Epicurus asserted that it was—for the motion of the mind is put an end to by time" (*Ibid.* 89).

Aristippus, however, made a distinction between the pleasures of the body and those of the mind, but without departing from his principle: for he maintained that in general the former are a necessary condition of the latter.

Plato: Theory of Love; Love the Desire for the Good; Ascent of Love towards the Good.

It is not easy to co-ordinate the theories of the passions and emotions, which Plato sets forth in the *Timaeus*, the *Symposium*, the *Philebus*, and the *Republic*. He was chiefly interested in the study of thought and in Ethics. If, however, we compare these different passages we may discover his views on the subject of the feelings. Like Socrates, he says that men love and pursue the good alone (οὐδέν γ' ἄλλο ἐστὶν οὗ ἐρῶσιν ἄνθρωποι ἢ ἀγαθόν, *Symposium*, 206 *a*). "For you may say generally that all desire of good and happiness is only the great and subtle power of love (τὸ μὲν κεφάλαιόν ἐστι πᾶσα ἡ τῶν ἀγαθῶν ἐπιθυμία καὶ τοῦ εὐδαιμονεῖν ὁ μέγιστός τε καὶ δολερὸς

ἔρως παντὶ," *Symp.* 205). Love, being desire, presupposes a want. One does not desire that which one possesses. "Love is the son of *Poros* (Plenty) and *Penia* (Poverty). Like his mother he is poor, but, like his father, he is always plotting against the fair and good . . . keen in the pursuit of wisdom (φρονήσεως ἐπιθυμητής) . . . a philosopher at all times (φιλοσοφῶν διὰ παντὸς τοῦ βιοῦ) . . . he is a mean between wisdom and ignorance (σοφίας τ' αὖ καὶ ἀμαθίας ἐν μέσῳ ἐστίν). . . . For wisdom is a most beautiful thing, and love is of the beautiful, and therefore love is also a philosopher or lover of wisdom. Being a lover of wisdom he is in a mean between the wise and the ignorant" (*Symposium*, 203 *d*, *e*).

We know what the nature of love is and what is its true object. The soul is essentially φιλομαθής, she tends by nature towards an ever higher knowledge because she is at the same time united to and separated from the divine, because she knows enough to desire always to know more. Mortal love, which so violently disturbs the heart, has its principle in this spontaneous aspiration towards that which is highest and most beautiful. Whether she knows it or not, what the soul seeks in the beauty of sensible forms is that supreme, invisible, eternal beauty, of which she has a presentiment and which alone can satisfy her.

"And the true order of being led by another to the things of love, is to use the beauties of earth as steps along which he mounts upwards for the sake of that other beauty, going from one to two and from two to all fair forms, and from fair forms to fair practices, and from fair practices to fair notions, until from fair notions he arrives at the notion of absolute beauty, and at last knows what the essence of beauty is" (*Symposium*, 211 *c*).

If the soul were all intelligence she would possess wisdom, and would consequently not have to desire it. For the same reason that she is drawn to the supreme beauty, the soul also deviates from it, is held by illusions, takes pleasure in the lesser good. The soul tends towards truth only because she occupies a middle place between wisdom and ignorance. In conflict with the νοῦς, the principle of knowledge, there is the ἐπιθυμία, the principle of material desires. The source of the spirited passions is the θυμός, the middle term, which binds the two extreme parts of the soul. To these three

parts of the soul correspond three classes of inclinations, three kinds of desires, *τριταὶ ἐπιθυμίαι* (*Rep.* IX, 580 *d*). That by which we know (*ᾧ γε μανθάνομεν*), the superior and divine part, which in a well ordered soul governs, is wholly directed to the truth. "Lover of wisdom, lover of knowledge (*φιλομαθὴς καὶ φιλόσοφος*) are titles which we may fitly apply to that part of the soul" (*Rep.* IX, 581 *b*). This is the disposition towards the true good, which belongs essentially to the nature of the soul. "The passionate element (*τὸ θυμοειδές*) is wholly set on ruling and conquering and getting famous, is the contentious or ambitious part." "The third, having many forms, has no special name, but is denoted by the general term *appetitive* (*ἐπιθυμητικόν*), from the extraordinary strength of vehemence of the desires of eating and drinking and the other sensual appetites . . . also money-loving (*φιλοχρήματον*), because such desires are generally satisfied by the help of money" (*Rep.* IX, 580 *e*).

Furthermore, every desire has its source in the soul. To be thirsty is to be empty; thirst is a desire (*ἐπιθυμία*). "Thus he who is empty desires the contrary of what he feels; being empty he desires to be replenished. . . . This appetite (*ἡ δ' ὁρμή*) which draws him to the contrary of what he feels proves that he has within himself a memory of things opposite to the affections of his body." This reasoning, while it shows that it is memory that draws the animal towards the object of his desire, proves at the same time that every kind of appetite, every desire has its principle in the soul, and that it is the soul that rules in all living beings. "As in the soul one part predominates to the detriment of the others, so there are three classes of men (*τριττὰ γένη, φιλόσοφον, φιλόνεικον, φιλοκερδές*), lovers of wisdom, lovers of honour, lovers of gain, and three kinds of pleasures corresponding respectively to these characteristics" (*Rep.* IX, 581 *c*).

Theory of Pleasure and Pain: Disorder and Re-Establishment of Harmony: Pleasure not the Absence of Pain: True and False Pleasures.

A modern psychologist would have made his theory of pleasure depend upon his theory of desire. The method which Plato follows in the *Philebus* is quite different, and shows how

far the ancients were from the conception of an independent science of mind. To define pleasure Plato starts from the idea of Being (*πάντα τὰ νῦν ὄντα ἐν τῷ παντὶ διαλάβωμεν, Phil.* 23 *a*). There are, according to him, four modes of existence; the infinite or indeterminate (*ἄπειρον*), that which is capable of the more or the less; the finite (*πέρας*), which is characterized by number, measure; the mixture of the finite and the infinite, which embraces all harmony; and finally, the cause of this mixture, which can only be intelligence. Pleasure and pain are placed in the category of the infinite, because they are capable of the more or the less. But the genesis of pleasure or pain belongs to the third class, to the mixture of the finite and the infinite, like harmony and health (*ἐν τῷ κοινῷ μοι γένει ἅμα φαίνεσθοι λύπη τε καὶ ἡδονὴ γίγνεσθαι κατὰ φύσιν, Phil.* 31 *c*).

"When the harmony in animals is dissolved (*ἁρμονίας λυομένης*) there is also a dissolution of nature (*λύσιν τῆς φύσεως*) and a generation of pain . . . And the restoration of harmony and return to nature is the source of pleasure. . . . Hunger is a dissolution and a pain (*λύσις καὶ λύπη*). . . . Whereas eating is a replenishment and a pleasure (*ἐδωδὴ δὲ πλήρωσις γιγνομένη πάλιν ἡδονή*). Thirst again is a destruction and a pain, but the effect of moisture (*ἡ τοῦ ὑγροῦ δὲ δύναμις*) replenishing the dry pla a is a pleasure" (*Philebus* 31 *d*).

In a word, when the living harmony (*ἔμψυχον εἶδος*) composed of the finite and the infinite in accordance with nature, is disturbed, this disturbance is a pain (*φθορὰν λύπην*). The movement towards the natural order, the return of things to their true essence (*τὴν δ' εἰς τὴν αὑτῶν οὐσίαν ὁδόν*) is pleasure.

In this theory pleasure is motion (*κίνησις*), a generation, a becoming (*γένεσις*). One might be inclined to attribute to Plato the theory that pleasure is only the absence of pain, that it always presupposes some antecedent suffering, that it is only the correction of some disorder. To support this opinion we have the words said in the *Phaedo* by Socrates, when freed from his chains:

"How singular is the thing called pleasure and how curiously related to pain, which might be thought to be the opposite of it; for they are never present to a man at the same instant, and yet he who pursues either is generally compelled to take the other; their bodies are two, but they are joined by a single head" (*Phaedo* 60 *b*).

But in the *Philebus*, Plato expressly and repeatedly refutes this theory. He grants that there is between pleasure and

pain a third state (*τρίτη διάθεσις*), a state of indifference. There is, no doubt, always movement in the body, but the animal is not always conscious of all that takes place in its body (as for example, growth): only great changes excite in us pleasure and pain, the smaller ones we do not perceive. There is a life that is exempt from pleasure and pain. Pleasure is therefore not the absence of pain (*οὐκοῦν οὐκ ἄν εἴη τὸ μὴ λυπεῖσθαί ποτε ταὐτὸν τῷ χαίρειν*), and it is a mistake to say that the happiest life is the life that is free from pain, and to believe that one rejoices when he is only free from all suffering (*Phil.* 43 *d*). Pleasure is then the truly positive state, and it accompanies all the progress of a being towards the harmony which is the fulfilment of its nature.

There are physical pleasures and spiritual pleasures. In the *Philebus* and the *Timaeus*, Plato determines the conditions of the emotion which has its source in a corporeal impression. This impression must be strong and sudden, and must be transmitted by the organ even while the latter resists it.

"Let us imagine affections (*παθήματα*) of the body which are extinguished before they reach the soul, and leave her unaffected; and pain, other affections which vibrate through both soul and body, and impart a shock to both and to each of them" (*Phil.* 33 *d*).

There are also pleasures and pains that are purely spiritual.

"In the soul herself there is an antecedent hope of pleasure (*αὐτῆς τῆν ψυχῆς διὰ προσδοκίας*) which is sweet and refreshing, and an expectation of pain, fearful and anxious" (*Phil.* 32 *c*).

Among spiritual pleasures there is the pleasure of the intellect, the highest of all, for it consists in being filled with knowledge, which has more of essence than the objects of sense (*Rep.* IX, 585).

Plato allows that there are true and false pleasures. No doubt it is impossible to be mistaken as to the presence of pleasure: we either feel it or do not feel it; but it is possible to be mistaken as to the pleasure itself. For is there not in the first place a pleasure arising from a correct image and one which is the consequence of error? Is not a man full of chimerical hopes wrong to rejoice, just as, when we look at things from too great or too small a distance our vision is deceptive?

"But now it is the pleasures which are said to be true and false, because they are seen at various distances, and subjected to comparison; the pleasures appear to be greater and more vehement when placed side by side with the pains, and the pains when placed side by side with the pleasures. . . . And suppose you part off from pleasures and pains the element which makes them appear to be greater or less than they really are; you will acknowledge that this element is illusory, and you will never say that the corresponding excess or defect of pleasure or pain is real or true" (*Phil.* 41, 42, *c*).

Again, it is through an illusion that we take the cessation of pain for a pleasure, and the cessation of pleasure for a pain. Frequently, also, we mistake for a pleasure what is in reality a mixture of pleasure and pain. The true pleasures are those that are pure; those that come, for instance, from sounds, colours, perfumes, all those that give an unmixed satisfaction, and, above all others, the joy arising from a knowledge of truth. It is not the force, or the intensity which makes true pleasure, but its purity, or the absence from it of all pain. Excessive pleasures are a mark of corruption either of the soul or of the body.

Finally, Plato considers the cases in which there is a combination of pleasure and pain. Thirst is a pain, to drink is a pleasure; he who is thirsty and drinks has a feeling combined of pleasure and pain. And it is the same with every bodily appetite. Plato discriminates between purely bodily or purely spiritual combinations and those in which are blended pleasures and pains of both kinds. Sometimes the two opposite terms balance each other; sometimes one is the stronger, and accordingly the combination is either pleasant or painful. There are also, as we have said above, *pure* pleasures, that is to say pleasures that are unmixed with pain.

Aristotle: Metaphysical and Psychological Theory of the Feelings.

In his theory of the feelings Aristotle as usual joins speculation to observation. He collects the truths which had been in part recognized by Plato, completing them, and more precisely determining their connection with one another. The conception of a first immovable mover, of a God towards Whom the whole universe is tending, serves to make us understand the impulses of the human soul.

"All living things," says M. Ravaisson, "all substances have a fundamental and habitual manner of being, a form which is their essence and to which they of themselves tend as towards their end and their good. This essential, substantial form is what is called their nature. The definition of natural beings as distinguished from aggregates formed by art, or force, or chance, is that the former contain in themselves the principle of their own motion, a motion whose final end is their nature and their essence. But this is not all. This end of the natural movement is at the same time its principle, its efficient cause. It is through the actuality towards which it tends that the being is moved. It is this actuality which, being its end and its good, excites in it the desires from which is born the motion, and which, being immediately present in the potentialities of matter, draws the latter on and realizes them more and more" (*Ess. sur la mét. d'Arist.* Vol. II, p. 11).

The following is the psychological theory contained in this metaphysical conception. With the sensitive soul (τὸ αἰσθητικόν) appears desire, properly so called (ὄρεξις). The αἰσθητικόν and the ὀρεκτικόν are one and the same part of the soul considered from two different points of view. Animals have therefore impulses which are, however, confused like their sensations. Every animal has at least one sense, namely, touch, and where there is sensation there is pleasure and pain, and where there is pleasure and pain there is desire. Aristotle compares the two-fold movement by which we make for pleasure and turn from pain, to the acts of affirmation and negation.

In the sensitive life, desire (ὄρεξις) has two forms (ἐπιθυμία and θυμός). The ἐπιθυμία is desire, the seeking after what is agreeable, the natural spontaneous movement towards pleasure. The θυμός with Aristotle has almost the same meaning as with Plato; that is to say, it is desire rising above blind instinct, approaching intelligence; the inclination, which is still an animal one, to do good to our friends and evil to our enemies (φιλητικόν-μισητικόν). There are irrational natural desires (ἄλογον) which are common to all men, and there are besides individual ideas (ἴδιοι καὶ ἐπίθετοι), such as the desire for honours, which imply a certain intervention on the part of the intellect and are the result of habit, of certain organic tendencies; in these the ἐπιθυμία and the θυμός are most frequently combined and blended.

The ὄρεξις is not confined to sensitive life; it is modified through the intervention of thought and becomes will

(*βούλησις*.) Aristotle uses this word in the same sense as Malebranche the word "will." It is the general tendency towards the good, appetite regulated by reason. Volition is not liberty. One may will (*βούλεσθαι*) that an athlete may win, but one cannot bring it about (*προαιρεῖσθαι*, free choice). The *βούλησις* belongs only to rational beings, for it implies the *φαντασία βουλευτική*, the discursive power which out of sensible images forms materials for thought. The chief distinction between will and desire is that desire cannot see beyond the present moment, whereas will, enlightened by intelligence, compares images with one another, takes the future into account, calculates and foresees future pleasures and pain. It is owing to the *ὄρεξις* that the desire when conceived becomes movement, real action. The *κινητικόν* (faculty of motion) is connected with the *ὀρεκτικόν*. It is the same as with the universe: the immovable mover is the good to be obtained (*πρακτὸν ἀγαθόν*). Desire is at once moved as regards the good towards which it tends, and mover as regards the organism which it moves. The organism can only be moved. So also, in the universal system, God is the immovable mover, the firmament is the movable mover, and the sublunary world is that which is moved but is not a mover (*De Anima*, III, 10).

Theory of Pleasure as the Complement or Perfection of Normal Activity.

Aristotle's theory of pleasure depends on his theory of desire. A being has tendencies because its potentialities have not reached complete actuality. Pleasure (*ἡδονή*) corresponds to actuality. It cannot be separated from the action which it completes and perfects. Pleasure is not, as Plato has said, a *becoming*, it does not increase with duration; it is a positive state, a whole, not a movement the successive stages of which can be followed. Pleasure is a complete reality, an end in itself (*ἐνέργεια καὶ τέλος*).

"Now, the pleasure makes the exercise complete (*τελειοῖ δὲ τὴν ἐνέργειαν ἡ ἡδονή*), not as the habit or trained faculty does, being already present in the subject, but as a sort of superadded completeness (*τέλος ἐπιγιγνόμενον*) like the grace of youth (*οἷον τοῖς ἀκμαίοις ἡ ὥρα*). So long, then, as both the object of thought or of sense, and the perceptive or contemplative subject are as they ought to be, so long will there be pleasure in the exercise" (*Nic. Ethics*, X, 4).

Thus pleasure arises from the free and unimpeded exercise of a faculty of the soul (ἐνέργεια τῆς κατὰ φύσιν ἕξεως ἀνεμπόδιστος); pain (λύπη) is the consciousness of an obstacle to this perfect activity. If every sensation is either agreeable or painful, it is because every sensation is either favourable or in conflict with a present state which is in accordance with nature.

From this definition of pleasure several consequences follow which are confirmed by psychological observation. Pleasure being the complement of activity cannot be set aside any more than the activity itself.

"The desire for pleasure we should expect to be shared by all men, seeing that all desire to live. For life is an exercise of faculties (ἡ δὲ ζωὴ ἐνέργειά τις ἐστί). . . . But pleasure completes the exercise of faculties, and therefore life, which men desire. Naturally, therefore, men desire pleasure too, for each man finds in it the completion of his life, which is desirable. . . . How is it, then, that we are incapable of continuous pleasure? Perhaps the reason is that we become exhausted; for no human faculty is capable of continuous exercise. Pleasure, then, also cannot be continuous, for it is an accompaniment of the exercise of a faculty. And for the same reason some things please us when new, but afterwards please us less" (*Nic. Ethics*, X, 4).

"The exercise of a faculty is increased by its proper pleasure, *e.g.* people are more likely to understand any matter, and to go to the bottom of it, if the exercise of it is pleasant to them. Thus, "those who delight in geometry become geometricians and understand all the propositions better than others; and similarly those who are fond of music, or of architecture, or of anything else, make progress in that kind of work, because they delight in it." But "the exercise of a faculty is spoilt by pain arising from it; as happens, for instance, when a man finds it disagreeable and painful to write or to calculate, for he stops writing in the one case, and calculating in the other, since the exercise is painful" (*Nic. Ethics*, X, 5).

From the nature of pleasure it is easy to see that there must be several kinds of pleasure.

"Pleasures differ in kind, since specifically different things we believe to be completed by specifically different things. . . . The exercises of the intellectual faculties are specifically different from the exercises of the senses, and the several kinds of each from one another; and therefore the pleasures which complete them are also different" (*Nic. Ethics* X, 5).

The divers living species have respectively their characteristic actuality which corresponds to their essence and completes their nature. For each species there is therefore a particular pleasure suitable to it. The special function of man, the one which above all others is proper to him, is thought. The human pleasure *par excellence* is the pleasure of thought, the most free from all admixture of pain, the one also that most approaches permanence. It can, therefore, only be owing to a corruption for which man is responsible, if pleasure is opposed to virtue. Pleasure corresponds to perfect activity. Virtue is the highest perfection of our natural activity; the two terms are identical.

Analysis of the Passions.

Aristotle distinguishes the passions from the primitive impulses, and from pleasure and pain; but he does not treat the passions in detail, except incidentally, and in connection with rhetoric. He gives a subtle analysis rather than an exact theory of them. Passion is a movement of the soul (κίνησις ψυχῆς), that is to say, since the soul is the form of the body, it is a movement of the body which reaches the consciousness of the soul. Passion arises without reflection, spontaneously; it is at once a lasting tendency towards certain types of action (ἕξις) and a passive state (πάθος). That it is a modification of the body as well as of the soul, is sufficiently proved by the blushing and pallor, the heat and the coldness, and all the organic disturbances which accompany it.

Aristotle places the passions under two categories, in one of which pleasure predominates (love, φιλία,—courage, θάρσος,—benevolence, χάρις); in the other pain, and these are by far the most numerous (rage, ὀργή,—hatred, μῖσος,—fear, φόβος,—pity, ἔλεος,—just indignation, νέμεσις,—envy, φθόνος,—shame, αἰσχύνη,—jealousy, ζῆλος).

Each passion is both a state of the soul and a principle of action; it is an element of the character. It should be studied, in the first place, in him who feels it; secondly, in its object: and, lastly, in its motives. νέμεσις, for instance, is a painful feeling aroused by the sight of the prosperity of those who do not deserve it, especially when this prosperity is not inherited, but has been acquired by a stroke of luck. In this case the senti-

ment experienced is indignation, its object is ill-acquired prosperity, its cause the unworthiness of the prosperous. Aristotle points out the influence of age on the passions.

"The young are ardent but inconstant, their insults are mischievous, not malicious. All their errors are on the side of excess; they are not desirous of wealth, because they have never yet experienced want; they are sanguine in their expectations, because they have never yet met with many repulses. And they are high spirited, for they have not as yet been humbled by the course of life. They are likewise prone to pity, from their conceiving everyone to be good and more worthy than in fact he is. The passions of the old are different, or at least arise from different causes; they too, for example, are prone to pity, but their pity proceeds from fear, from the feeling that every calamity is at hand to every man" (*Rhet.* Bk. 11, 15).

Aristotle does not regard the suppression of the passions as possible or desirable. Well employed they may be the weapons of virtue. The sage does not avoid the passions, for they are, as it were, the raw material of virtue; he moderates them, philosophizes with them (*συμφιλοσοφεῖ τοῖς πάθεσι*).

Importance given to the Psychology of the Passions after Aristotle: Theory of Theophrastus: Opposite Views of the Peripatetics and the Stoics.

After Aristotle, the theory of the passions occupies an important place in Greek philosophy. Great speculative constructions were abandoned, the main object henceforth was to insure to man an impregnable refuge within himself. It was desired above all that in those troubled times, whatever might happen, man should preserve inward peace. Sceptics, Stoics, Epicureans, all on different grounds teach *ἀπάθεια*, and refuse to regard passion otherwise than as the effect of a disordered reason. The Peripatetics alone upheld the traditions of Aristotle: the passions, they said, are in conformity with nature, they are the matter of virtue, which consists in organizing them and in bringing them into harmony. In all the schools this question is discussed: Are passions in conformity with, or contrary to nature? A question which belongs more especially to ethics, but could only be solved through a psychology of the passions.

Even Theophrastus (B.C. 372-288), the successor of Aristotle, appears to have had occasion to oppose the Peripatetic to the

Stoic theory. Thought is altogether within the soul, the active intellect is beyond and above the soul, while desires and passions have their origin in corporeal movements. These movements are, however, only their occasional cause; the real principle of passion is in the soul. Passion in its turn re-acts on the body, modifies the elements of the latter, and the relations between them: pleasure increases the powers of the body, pain contracts them; both may go so far as to destroy consciousness by acting on the respiratory organs. Pain, pleasure, and enthusiasm, by acting on the vocal organs, predispose a man to song and music. The Peripatetics deny the identity of passions, which was held by the Stoics. If all passions were identical, that is to say were only the one and the same passion, how is it that, in the first place, pleasures vary like the activity to which they correspond; and, secondly, that simultaneous sensations of pleasure, instead of being accumulated, obstruct one another in consciousness? Cicero expounds the theory of Zeno (*Acad.* 1, 10) as against that of the Peripatetics, and, in so doing, he merely conforms to the traditions of the schools which discussed these questions.

"The old school (*i.e.* the Peripatetic) did not eradicate emotion from the heart of a man, declaring it natural to feel pain and desire and fear, and to be excited by pleasure, but merely restricted these feelings and brought them within narrow bounds (*sed eam contraherent in angustumque deducerent*). The Ancients maintained these emotions to be due to nature (*naturales*), reason having no share in them (*et rationis expertes*), and placed feeling in one portion of the mind, reason in another" (Cicero, *Academics*, I, 10).

Stoicism. Distinction between the Impulses and the Passions; Passion is a Corruption of Reason; Classification of the Passions.

One may say of the Stoic theory that it is the exact reverse of the Peripatetic. According to Zeno all passions are voluntary. *Perturbationes voluntarias esse putabat.* They arise in consequence of a judgment, of an opinion (*opinionesque judicio suscepto*). Far from being natural, they are diseases of the soul (*morbi*) (Cic. *Acad.* 1, 10). To understand them aright we must distinguish them from natural impulses (ὁρμαί, *appetitus*).

"The first impulse which an animal has is to protect itself. . . . Nature has bound the animal to itself by the greatest unanimity and affection, for

by that means it repels all that is injurious, and attracts all that is akin to it and desirable" (D. L. VII).

Even a plant has a tendency within it in virtue of which it seeks its end; but it has no consciousness of its own nature. In animals nature varies her methods. She employs impulse (ὁρμή) and sensation (αἴσθησις), but as a sort of luxury; for the impulse involved in the tendency to motion only serves to direct the animal towards the same ends as those at which nature aims. It is a mistake to think, like the Epicureans, that the first impulse is an impulse to pleasure. Pleasure is not primitive, but a supplement, an accident. Pleasure arises when nature, by its spontaneous movement, has found what is suitable to the constitution of the being (D. L. VII, 86).

In man nature chooses another way, namely, that of reason. Reason is the most perfect way that nature could take to reach her highest goal. For man, to live according to nature is to live according to reason. Reason is, as it were, the artist, whose function is to form the impulses into a harmonious whole (τεχνίτης γὰρ οὗτος ἐπιγίνεται τῆς ὁρμῆς, D. L. VII, 86).

Up to this point there is nothing contrary to nature in the desires. But when the ὁρμή or the impulses throw off the yoke of reason, passion is born. Passion is an excessive and irrational desire; ὁρμὴ πλεονάζουσα, ἄλογος, ἀπειθὴς λόγῳ. The Stoics simplified Plato's and Aristotle's psychology, for they did not accept the theory that there is, in the soul, one part passion, and the other pure reason. There is, they said, only one will, which is rational by nature, but subject to weaknesses. It is reason herself (λόγος) which becomes irrational (ἄλογος) when she yields and allows herself to be carried away by the excess of the ὁρμή. Passion is a vicious and disordered reason (λόγος πονηρὸς καὶ ἀκόλαστος.) It derives its strength from an erroneous judgment. If the judgment were correct there would be no passion. (*Omnes perturbationes judicio censent fieri et opinione*, Cic. *Tusc.* IV, 7.) But opinion is itself the consequence of a weakness, of a consent forced from the fainting soul (ἀσθενὴς συγκατάθεσις). As virtuous constancy comes from the tension, the energy of the soul, so passion comes from

a relaxation of it (*ἀτονία*, *ἀσθένεια*). *Omnium perturbationum esse matrem immoderatam quandam intemperantiam* (Cic. *Acad.* 1, 10). It follows from this that all passions are bad; pleasure is not a good, pain is not an evil.

All the Stoics agree in regarding a false judgment as the principle of passion, but, as to the interpretation of this formula they are divided. According to Chrysippus it is the false judgment itself (*κρίσεις*, *δόγματα*) that is passion, and gives rise to the violent movements which follow passion. The opinion of Zeno, which was more generally accepted in the school, was that passion was not the judgment itself, but the disturbance in the soul, the state of depression, of inflation or exaltation (*ἐπάρσεις*, *οἴξεις*, *συστολαί*), which follows in its train (Cic. *Tusc.* IV, 7; *Tusc.* III, 11). One of the curious results of this Stoic definition is that passion, since it presupposes reason and will, is peculiar to man. But in order to be in harmony with fact they admitted the existence in animals of something resembling passion (*simile quiddam*). Animals, says Seneca, have images from which arise impetuous movements (*impetus*): but these outbursts are violent, obscure, and fleeting. What is anger in man is ferocity in the brute.

The Stoic school does not appear to have considered the relations between soul and body in regard to passion till a late period of its existence. Seneca perceived that passion is preceded and accompanied by certain organic movements which are independent of the will (heat, coldness, blushing, paleness, tears, etc.). This physical disturbance is succeeded by a corresponding judgment, such as the following: an injury calls for vengeance. But this judgment owes its effective force only to a voluntary act, to the consent of reason (Seneca, *De Ira*, II, 14). A natural movement becomes a passion when exaggerated by opinion and carried beyond its proper limits. Is it not a fact that grief is assuaged much more quickly when we do not excite and entertain it by endless meditation on the greatness of the loss sustained? In order to know whether passion exists or not, we must not look to external signs, to tears, or trembling; but ask whether reason has any control or not, for that is the whole question (Seneca, *De Ira*, II, 2). Thus one may find in the sage a shadow, an image of passion, but never passion itself. The Peripatetics were wrong in maintaining that

moderate passions were good; one can never know how far a passion may go when once it is let loose.

The Stoics made a systematic classification of the passions. Passions are excited, either by what appears to be good, or by what appears to be bad. But what appears to be good or bad may belong either to the present or to the future. Hence, there are four ruling passions: pain, *aegritudo*, λύπη, corresponding to a present evil; fear, *metus*, φόβος, to a future evil: pleasure, *voluptas* or *laetitia*, ἡδονή, corresponding to a present good; desire, ἐπιθυμία, *libido*, to a future good. In Cicero, Diogenes Laertius, and Stobaeus we find numerous subdivisions of these primitive passions.

Wisdom is opposed to passion, as health to disease. The Stoics, in spite of their systematic consistency, could not exclude all sensibility from the soul of the sage. They had to admit the existence of legitimate affections, of calm sentiments, of wise impulses, which, far from disturbing the soul, are the outcome of strength and health. As the wise man is in no way affected by the present evil (*praesentis mali sapienti affectio nulla est*, Cic. *Tusc.* IV, 6), there is in him nothing corresponding to *aegritudo*. He possesses the true good. In order that we may not be disturbed, it is enough if our reason refuses to regard as evil either physical pain or the accidents of life. But to our blind, passionate impulse towards what appears to us good, there corresponds in the wise man a prudent and constant search for the good. This is the will βούλησις, *voluntas* (*Id quod constanter prudenterque fit, ejusmodi appetitionem Stoici*, βούλησιν, *appellant, nos appellamus voluntatem*, *Tusc.* IV, 6). As we pursue the good, so also we avoid evil by a natural instinct. This instinct, when regulated by reason, becomes caution (εὐλάβεια), which is quite different from fear. Lastly, in place of lawless pleasure there is a continuous calm and intelligent joy (χαρά, *gaudium*). *Nam quum ratione animus movetur placide atque constanter, tum illud gaudium dicitur*, *Tusc.* IV, 6).

These three great classes of normal affections are subdivided into species, in the definition of which Diogenes Laertius employs the same expressions as in the case of the passions, only adding the epithet, rational, εὔλογος (χαρὰ ἔπαρσις εὔλογος).

Disagreement between the Disciples of Chrysippus and Zeno in their Definition of the Passions. Posidonius returns to Plato's Theory. Seneca and Galen.

In their definitions, as in their conceptions of passion, the Stoics were divided. For Zeno and his disciples, passion was a disturbance, a movement of the soul (ὄρεξις, ἔκκλισις, ἔπαρσις, συστολή), judgment being only an occasional cause. Chrysippus, on the other hand, taught that the principal fact was the mental illusion; passion is defined as a false judgment; its violence and suddenness is explained by the novelty (πρόσφατος) of the judgment. Sometimes Cicero gives Zeno's account, as, for instance, when defining fear, he says: *declinatio a malis sine ratione et cum exanimatione humili et fracta* (Tusc. IV, 7, 15). More frequently, however, he quotes Chrysippus or his disciples: *aegritudo opinio recens* (πρόσφατος) *mali praesentis in quo demitti contrahique animo rectum esse videatur.* Diogenes Laertius, on the contrary, defines the passions after the manner of Zeno: φόβος ἄλογος ἔκκλισις. The school would seem later to have tried to reconcile these two contradictory theories. This is how the Eclectics define fear: "Fear is an impulse which is opposed to reason, and caused by the opinion that an evil is imminent" (ἔκκλισις ἀπειθὴς λόγῳ, αἴτιον δ' αὐτοῦ τὸ δοξάζειν κακὸν ἐπιφέρεσθαι). In their description of particular passions the Stoics were too often content to add to the name of the typical passion some characteristic which belongs either to the object of the passion or to the nature of the judgment implied in it, or even to the circumstances accompanying it, or its physical effects. Terror is a fear accompanied by an extinction of voice: enjoyment is a pleasure which charms the mind through the ears, etc. (D. L. VII, 112-114).

The psychology of the Stoic school was modified by an independent member of it, called Posidonius, who taught at Rhodes, where Cicero became his disciple and Pompey went to hear him. According to Posidonius it is not possible to accept the absolute unity of the human mind, or to explain everything by reason. How is it that the wise man, who also deems some things desirable, is not subject to passion? Is passion, then, distinct from judgment? Why do men who resemble each other in their way of thinking sometimes differ

so profoundly as regards the influence of passion upon them? Posidonius returned to the Platonic division of the soul and sought the principle of the passions in the two inferior parts of the soul (*θυμός*, *ἐπιθυμία*). This explains the fact that certain animals have passions, that the violence of a passion depends on the state of the body, and that time may by itself calm and weaken passion. The lower parts of the soul being intimately united to the body, and worn out and exhausted by their own agitation, allow themselves to be more and more guided by reason, just as a horse, tired out by his own struggles, allows himself to be guided by his rider (Galen, *de Hipp. et Plat.* IV, 5–V, 1).

According to this theory, between which and that of the Stoics the minds of men were divided in ancient times, passion does not spring up in the mind to descend into the body, but, on the contrary, begins in the body and in the lower parts of the soul, which are closely united to the body. Even Seneca, in the *De Ira*, recognizes the influence of temperament on the passions. It is the amount of warmth in the organism that is the cause of anger, which arises out of the heating of the blood in the region of the heart. Women and children, having humid constitutions, are less violent in their anger. In middle age, when the dry element predominates, anger rises quickly but does not last, because there is a rapid transition from the hot to the cool stages. In old age heat decreases, and anger gives place to persistent ill-temper. The great physician, Galen (about 150 A.D.) agrees with Plato and Posidonius as to the three parts in the soul, and attributes passion to the irrational soul. As regards the question whether passion is passive or active (*ἐνέργειαι* or *πάθη*) Galen observes that the two terms are not mutually exclusive: action in one part of the soul may produce a passive state in another, and even in the active part, if the action is excessive. If the beating of the heart is exaggerated to the point of becoming palpitation, the heart suffers. As actions of the two lower parts of the soul, the passions are, then, in a sense, conformable to nature. But if they go beyond this limit they may disturb, not only the whole body, but reason itself. In no case is it, as the Stoics declared, reason departing from its own nature and becoming its own contrary, *i.e.* irrational.

Epicurus: Pleasure the Absence of Pain: Pleasures of the Mind and Pleasures of the Body: Theory of Desire.

The Stoic theory of pleasure remained somewhat vague. The animal tends to self-preservation and desires what is proper to its constitution, and by obeying this earliest natural instinct it discovers pleasure. Pleasure is therefore not a primitive fact, but an accessory, or result. It would seem that even on this hypothesis pleasure must still be desirable, if not in itself, at least as corresponding to the perfection of a natural activity. Nevertheless, Cleanthes would not grant that pleasure was conformable with nature, and all the Stoics maintained that pain was not an evil, and could not disturb the happiness of the wise man. According to Epicurus, on the contrary, the love of pleasure is a primitive instinct which gives the impulse to activity and determines its end.

"Every animal the moment that it is born seeks for pleasure, and rejoices in it as the chief good; and rejects pain as the chief evil, and wards it off from itself as far as it can; and it acts in this manner without having been corrupted by anything, under the prompting of nature herself, who forms this incorrupt and upright judgment" (Cic. *de Fin.* I, 9).

What then is pleasure? Aristippus and Plato had taught that pleasure was a movement, a becoming. Aristotle had said, on the contrary, *οὐκ ἔστιν οὐδεμία ἡδονὴ γένεσις*, pleasure might, no doubt, be preceded by a movement, but in itself it corresponds to the act which it completes, and consists less in movement than in repose (*ἡδονὴ μᾶλλον ἐν ἠρεμίᾳ ἢ ἐν κινήσει*, *Nic. Eth.*). Epicurus was mindful of Aristotle's doctrine. He distinguishes two kinds of pleasure: one, calm, persistent, lasting, that is, pleasure in repose, which is freedom from all physical pain and from all mental unrest: the other, lively and fleeting, pleasure in movement, which is excited in us by the titillation of the flesh (*ἡδονὴ ἐν στάσει, ἡδονὴ ἐν κινήσει*). The true pleasure is pleasure in repose, *constitutive* pleasure (*καταστηματική*). Pleasure in movement is only a means employed by nature to reach her end, which is the absence of pain. The limit of the greatness of pleasures is the removal of everything that can give pain. "*Ὅρος τοῦ μεγέθους τῶν ἡδονῶν ἡ παντὸς τοῦ ἀλγοῦντος ὑπεξαίρεσις*" (D. L. X, 139).

The consequence of this psychological theory is that there is no intermediate state between pleasure and pain.

"Epicurus would not admit that there was any intermediate state between pleasure and pain; for he insisted that the very state which seems to some people the intermediate one, when a man is free from every sort of pain, is not only pleasure, but the highest sort of pleasure . . . He thinks that the highest pleasure consists in an absence of all pains; so that pleasure may afterwards be varied, and may be of different kinds, but cannot be increased or multiplied" (Cicero, *de Finibus*, I, 11). *οὐκ ἐπαύξεται . . . αλλά μόνον ποικίλλεται* (Ep. *ap.* D. L. x. 144).

Such was the novel idea of Epicurus. If only pain be absent we enjoy all the pleasure that is possible. The *ἡδονὴ ἐν κινήσει* can only vary, pass into the *ἡδονὴ καταστηματική*, and is a useless luxury.

As ideas are formed by the recollection of past sensations, so the pleasures of the mind are the remembrance of pleasures of the body, accompanied by the hope that they will recur.

"For I do not know what I can consider good if I put out of sight the pleasures of eating and drinking, and of love, and those which arise from music, and from the contemplation of beauty" (D. L. Ch. X. 5). The origin and root of all good is the pleasure of the stomach (Athenaeus, XII, 6, 7).

But the originality of Epicurus lies in his having first reduced the pleasures of the mind to the remembrance or anticipation of pleasures of the body, and then declared that the former are greater than the latter.

"For with the body we are unable to feel anything which is not actually existent and present, but with our mind we feel things past and present" (Cic. *de Fin.* I, 17).

Thus the soul may rise above the present pain: it may enjoy life as a whole, and also pleasures that are past but capable of being recalled. Epicurus complained that men were ungrateful to life. He desired them to drive away the momentary suffering by all the pleasant memories they have stored up, and to free the mind from actual pain by occupying it with former joys and future hopes. This teaching is confirmed by the psychology of pain. The only primitive pains are bodily ones. Pleasure being the sovereign good and reducible to the absence of pain, it necessarily follows that pain is the greatest of evils. Fortunately, by a kind of favour of nature:

"If the pain is excessive it must needs be short. . . . Suffering of long continuance has more pleasure in it than uneasiness" (Cic. *Tusc.* II 19).

"Pain does not abide continuously in the flesh. . . . Long diseases have in them more that is pleasant than painful to the flesh" (Ep. *apud* D. L. x. 140).

It is therefore always open to man to be happy and free. "If a wise man," says Epicurus, "were to be burned or put to torture, or even if he were in Phalaris's bull, he could say: How sweet it is! How little do I regard it!" (Cic. *Tusc.* II, 7). The Epicurean theory of passion is connected with this theory of pleasure. Pleasure is the absence of pain. This stable pleasure may be varied but cannot be increased by active pleasure. We have therefore attained the end of nature when we are free from all pain. Nature is not exacting, she does not plunge men into the trouble of passion. Epicurus distinguishes three sorts of desires. The first are natural and necessary (hunger and thirst, etc.). The second natural but not necessary (love, family). The third are neither natural nor necessary (wealth, honour): they arise out of false opinion. To be happy it is enough to be able to satisfy the desires that are natural and necessary.

"Nature demands only things easy to find; things rare and exceptional are useless, except for excess and vanity. Bread and water are an admirable dish to a hungry and thirsty man" (D. L. x).

The wise man may marry under certain circumstances, but he will never be the dupe of the illusions of love. As for superfluous desires, they will vanish with the false opinions on which they rest. Thus, for quite other reasons and in quite different ways, through timidity and weakness rather than by strength of mind, the Epicurean, like the Stoic, practises ἀπάθεια (impassiveness).

Neo-Platonism: The Soul only participates indirectly in Pleasure and Passion.

In the Neo-Platonic school, the theories concerning the emotions were dominated by metaphysical considerations. Plotinus was anxious to reconcile pleasure, pain, and the passions, with the impassiveness of spiritual substances (ἀπάθεια τῶν ἀσωμάτων). The soul, even when acting on the body, has its

own independent life, remains altogether within itself. What is incorporeal is subject to no passivity; those who speak of a passive part of the soul, forget that the soul is a formal cause (εἶδος), and consequently inaccessible to disturbance or passion.

What then is the explanation of pleasure, pain, and all the emotions? According to Plotinus the body alone is affected; the soul merely perceives what takes place in the body. When we experience a bodily pain or pleasure, these states are in the body and in the φύσις, the principle of animal life; but the soul has a passionless perception of them. When we perceive that our body is becoming separated from our soul, pain arises. When we perceive, on the other hand, that our body is more closely united to our soul we feel pleasure. The soul is in the body like fire in the heated and illumined air. Pleasure and pain are those conditions of the body in which it is filled with the rays of the soul. It is the same with sensuous desire. The body alone would be inert, the soul by itself has no sensuous desires. A movement arises in the body, in consequence of which a desire springs up in the lower part of the soul (φύσις) which is connected with the body, and this desire awakens in the superior, the real soul, images by which it is either satisfied or repressed. Passion has sometimes also its starting point in the soul. Anger always implies a disturbance of the blood and of the bile, but this organic disturbance is sometimes a starting point and sometimes a consequence, and is caused in the soul by the idea of injustice. Thus feelings and desires that are purely spiritual may be awakened in the soul, such as joy, the desire for knowledge, and the love of beauty, which prepare us for the pure contemplation of the true.

St. Augustine: Pleasure and Pain. Thomas Aquinas: The Irascible and Concupiscent Impulses; Love the Principle of all the Passions.

The Christian philosophers, one of whose characteristic doctrines was contempt of our sensible nature and the mortification of the flesh, were more inclined to condemn the emotions than to study them. St. Augustine accepts the Neo-Platonic view. The soul is independent of the body, which cannot act upon it. It is the soul which in the body acts on itself. When there is a change in the relations between the corporeal

elements, the soul perceives it and reacts upon it in order to bring the impression into harmony with its own regulative activity. If to accomplish this, only a feeble effort is required, the soul experiences pleasure. If, on the contrary, the resistance is too great and the effort too violent, pain arises. Pain is therefore not a proof of the passivity of the soul, for it arises from excessive activity. If the soul is frequently conquered by passion, it is because it has lost its true nature through the corruption of sin.

The most important and most scientific theory of the emotions, belonging to the middle ages, was that of Aquinas. Here as elsewhere he owes much to Aristotle, but he also contributed observations entirely his own. Like the Cartesians later, he referred the passions to the body, at least so far as the *depressing* passions are concerned.

Passio cum objectione non est nisi secundum transmutationem corporalem; unde passio proprie dicta non potest competere animae, nisi per accidens (*Summa theol.* 1ª, 2ª Quest. XXII, Art I).

These depressing passions are more deserving of the name of "passion" than those which are elevating:

Quando hujusmodi transmutatio fit in deterius, magis propric habet rationem passionis quam quando fit in melius: unde tristitia magis propric est passio quam laetitia.

In his classification of the passions Aquinas divides them, in the first place, into two great types: the *concupiscent* and the *irascible*. The *concupiscent* appetite arises when an object presents itself simply *sub ratione boni*, as a cause of pleasure or pain. It has reference solely to the good, or what we regard as such. The *irascible* appetite arises when the object presents itself *sub ratione ardui*, and refers to obstacles which hinder us from the attainment of good or the avoidance of evil. The particular passions are classified as follows:

(1) The Concupiscent Appetites.	(2) The Irascible Appetites.
Love—Hatred.	Hope Despair.
Desire—Aversion.	Courage—Fear.
Joy—Sadness.	Anger.

In the first place, an object excites in us either love or hatred, according as it is suitable or repugnant to our nature. Love gives birth to desire, hatred to aversion; and we feel joy or sad-

ness according to the success of our efforts. So much for the *concupiscent* appetite. As for the *irascible* appetite, if the obstacles which separate us from a good can be surmounted, we experience hope; in the contrary case, despair. When threatened by an evil which we are able to avert, we feel courage. In face of an inevitable evil we feel fear. An evil which has befallen us may excite anger, if vengeance or resistance are still possible, but when the desired good is attained we feel no passion corresponding to this anger.

Aquinas next considers the different forms and degrees of these master passions. We find in his works many scholastic divisions and definitions; but there are also many truths which succeeding philosophers remembered. He makes a distinction between *amor*, which is love based on sensuous desire; *dilectio*, in which reason and will have a part: and finally, *caritas*, which is love in the highest or Christian sense of the word. In connection with hatred, he remarks, like Aristotle, that it owes its existence entirely to love, and if it seems to be more violent it is only by a pure illusion. Again, like his master, he regards activity as the chief source of joy. He distinguishes two kinds of fear: one which arises from a feeling of personal weakness, the other from the idea of an invincible power in the object. To the first class belong *segnities*, the fear of work; *erubescentia*, the fear of failure; *verecundia*, the fear of deserved blame. The second class includes admiration (*admiratio*), amazement (*stupor*), and terror (*agonia*).

To these divisions and sub-divisions he occasionally adds profound remarks. Love is at the root of all the passions. It underlies every form of the concupiscent appetite, and without love, without this natural impulse towards the good, there would be no effort required to turn away from evil, there would be no irascible impulse. The irascible passions may be mixed with the concupiscent, and may supplement them. It is thus hope that causes effort to arise out of desire and brings about the satisfaction of the soul. Fear adds to aversion a feeling of depression. We fear sadness much more than we desire joy. We feel much more acutely the deprivation of a good than the pleasure of the desired possession. The emotions that imply a positive desire do not disturb the vital motion (*vitalis motio*), unless they are

carried to excess; but, on the other hand, those by which we are turned away from an evil that we fear tend to weaken the vital flow. For this reason all kinds of sadness are injurious to the body.

Renaissance: Revival of the Epicurean Doctrine. Cardan and Montaigne.

The Epicurean theory, which had been forgotten in the middle ages, reappeared at the Renaissance. "According to Cardan, good things please us the more when they come after the less good; and, conversely; thus, light after darkness, the sweet after the bitter, harmony after discord. For every joy and every pleasure must necessarily lie in a sensation. Now, every sensation implies a change, and every change is from one opposite to another. If it is from good to evil the result is sadness, if it is from evil to good the result is pleasure. Evil must therefore have preceded. Who takes pleasure in eating unless he is hungry, in drinking without being thirsty? It is a curious thing to note that Cardan's inference from this theory is directly opposed to that of Epicurus. He declared that we must seek as much as possible the causes of suffering, so as to experience in their cessation the largest sum of pleasure. If we are to believe his biography, Cardan seems to have made his life conformable to this singular precept, which would lead to asceticism by way of a refinement of voluptuousness" (Léon Dumont, *Théorie Scientifique de la Sensibilité*).

It is not easy to discover in Montaigne's writings any precise doctrine concerning the emotions. He would seem, however, to have shared the views of Epicurus.

"Our well-being is but the privation of ill-being. That is why the sect of philosophy which has set most value on pleasure also placed it in indolence. To endure no ill is the highest well-being that man can hope for. Now, this same tickling and pricking which a man feels in certain pleasures and which seems to some far beyond mere health and indolence—this active and moving pleasure and as I may term it itching and tickling pleasure, aims but at indolence" (*Essais*, II, XII).

Many other passages might be cited in which the spirit, if not the doctrine, of Epicureanism re-appears.

"I am seized by the worst of maladies, the most sudden, the most painful, the most deadly, the most incurable. Of these attacks I have already endured five or six, and they were long and painful. Yet, either I am mistaken, or there is in such a state that which will give support to one whose soul is free from the fear of death, free, too, from the threats, conclusions, and consequences with which medicine doth disturb our minds."

Montaigne does not, however, seem to rely much on the recollection of past pleasures as a means of mitigating the present pain.

"For not only to a strict philosopher, but simply to any settled man when he by experience feeleth the burning alteration of a hot fever, what current payment is it to pay him with the remembrance of the sweetness of Greek wine"?

And as for trying to forget past evils, "Nay," says Montaigne, "there is nothing so deeply imprinteth anything in our remembrance as the desire to forget the same."

Summary: Contradictions and Relative Agreement of the Doctrines set forth.

It must be admitted that, so far, we have not found much harmony between the psychological theories of the emotions held by different philosophers. For Aristippus pleasure was merely a bodily movement. For Epicurus this titillation of the flesh was only a means or antecedent of true pleasure which consists in the absence of pain. For Plato, Aristotle, and even the Stoics pleasure implies desires and an ideal, and accompanies normal activity. The Pyrrhonists and Epicureans would do away with the passions, which they regard as only false opinions. Plato, Posidonius, and Galen taught that passion arises out of the irrational element in the soul, whereas the Stoics held that passion was reason degenerated into unreason. Christian philosophers taught that the principle of passion was in the body, in the flesh, of which the soul through sin has became the slave. But the majority of philosophers, having first inveighed against the disturbance and disorder of a soul that is no longer mistress of herself, do at least some justice to the emotions. Plato only demands that the ἐπιθυμία be subject to the θυμός, and the θυμός to the νοῦς; Aristotle opposes the ἦθος to the πάθος; the Stoics the *constantiae*, εὐπαθείαι, the happy and constant dispositions of a

soul regulated by reason, to the passions properly so called. Even Christians regard the love of God and charity as legitimate emotions. These points of agreement as well as these divergencies of opinion are instructive. Each theory is supported by facts, that are sometimes exaggerated and insisted on to the exclusion of all others, but which would not be neglected in any complete theory. We shall now examine the doctrines of the great Cartesian school.

Descartes' Physiological Theory of the Passions: Classification of the Passions: Theory of Pleasure.

Descartes defines the body as extension, the soul as thought. Extension and thought have nothing in common. I can conceive one without the other; therefore the things of which they are the essential attribute are absolutely distinct. If to the body a soul is joined, what will happen? The soul is united to the whole of the body, but it has its principal seat and exercises its functions in the small *pineal gland*. The result of this union is that the soul receives within itself as many different impressions, that is to say, it has as many different perceptions as there are different movements in this gland. Everything that arises in the soul on occasion of the movements in the body might be called passion. But, in order that the meaning of this word may be precise, it is better to restrict it to those "perceptions, sentiments, or emotions of the soul which are particularly referred to it, and are caused, sustained, and strengthened by some motion on the part of the spirits" (*Pass. a* 7), such as joy, sadness, and anger.

Passion in the soul corresponds to purely mechanical action in the body. The sheep that flees from the wolf is not afraid, animals being automata, yet everything takes place as if it were a prey to the most lively terror. Man is afraid when his body is in the same condition as the body of the sheep before the wolf: the man and the sheep are both automata, but the man has a soul, into which is translated under the form of a passion certain movements of the machine.

"The ultimate, immediate cause of the passions is merely the disturbance by which the animal spirits set the small gland, which is in the middle of the brain, in motion. It is therefore an error to place the seat of the passions in the heart. No doubt the passions cause some disturbance to be felt in the heart, but this is through the medium of a

small nerve which descends from the brain to the heart, just as stars are perceived in the sky through the medium of their light and our optic nerves; so that it is no more necessary that our soul should exercise immediately its functions in the heart in order to feel passions, than it is necessary for it to be in the sky in order to see the stars" (*Passions*, I, 31, 33).

Passion depends so much on the machinery of the organism, that a slight modification in the construction of the machine is enough to transform a passion. "The same impression made on the gland by a terrifying object may arouse fear in some men, and excite courage and boldness in others; the reason of which is that all brains are not made alike, and that a movement of the gland which excites fear in some, will in others cause the spirits to penetrate into the pores of the brain, whence they descend, some into the nerves through which we move our hands in defence, and some into those which stir the blood and drive it to the heart in the way required for the production of the spirits necessary to the continuance of this defence, and for the sustenance of the will" (*Ibid.* I, 39). Thus Descartes does not hold with the Stoics that passion is reason perverted into unreason, nor, with Plato, that it is a revolt of the irrational part of the soul.

"We have in us only one soul, and there is in this soul no diversity of parts. The sensitive and the rational soul are one and the same, and all its appetites are volitions. The mistake of making it play divers parts, which are usually conflicting, arises from the fact that its functions have not been clearly distinguished from those of the body, *to which alone must be attributed all that is noticeable in us as repugnant to our reason*" (*Ibid.* I, 47).

Having explained how the passions arise, Descartes attempts to classify and enumerate them. His principle of division is founded on two observations.

The first is that "All our passions may be excited by objects that move the senses, and that these objects are the most usual and chief causes of passion." The second is that "Objects that move our senses, excite different passions, not by reason of the diversity in them, but solely by reason of the divers ways in which they may injure or profit us, or are in general of importance to us" (*Ibid.* II, 51, 52).

These objects are innumerable, *but they only effect us in a certain number of ways, which depend, so to speak, on what they can do for us.* It is these different ways in which objects affect

us that we have to determine. Descartes distinguishes six simple and primitive passions—admiration, love, hatred, desire, joy and sadness. In this classification the novel idea of placing admiration at the head of the passions is noticeable. With admiration are connected esteem and contempt, generosity or pride, humility or meanness, veneration or disdain. "When a thing appears to us as good for us, that is to say as being suitable to our nature, this makes us feel love for it, and when it appears to us as bad or injurious, our hatred is excited" (*Ibid.* II, 56). From the same consideration of good or evil, arise all the other passions, and, before all else, desire, which refers to the future. Out of desire spring the secondary passions—hope, fear, jealousy, confidence, despair, irresolution, courage, boldness, emulation, cowardice, terror, and remorse. The two last primitive passions are joy and sadness, with which are connected derision, envy, compassion, self-satisfaction and repentance, favour and gratitude, indignation and anger, shame and glory, disgust, regret, and joyfulness. Having enumerated the passions, Descartes studies them in detail, analyzes them one after the other, explains their causes, and describes their characteristics and their effects as regards the soul and the body. In his remarks we find a curious medley of psychological observations, which are sometimes very ingenious, and physiological fictions which provide a solution for every difficulty.

In his definition of joy and sadness are to be found Descartes' theory of pleasure and pain. "*Tota nostra voluptas posita est tantum in perfectionis alicujus nostrae conscientia,*" he writes to the Princess Elizabeth. "All our pleasure lies in our consciousness of some perfection in ourselves."

"Joy is an agreeable emotion of the soul which consists in its enjoyment of a good which the impressions of the brain represent to it as being its own" (*Ibid.* II, 91).

"Sadness is an unpleasant state of languor caused by the discomfort which the soul experiences from an evil or a defect which the impressions of the brain represent as belonging to it" (*Ibid.*).

Thus through their different movements the animal spirits are the occasional causes of the passions of joy and sadness; but joy and sadness themselves consist in the consciousness of some perfection or imperfection.

"The reason why pain usually produces sadness is that the feeling we call pain always comes from some action which is so violent that it shocks the nerves; so that pain being instituted by nature for the purpose of informing the soul of the injury received by the body through this action, and of the weakness of the body in that it was unable to resist the injury, the body conveys to the soul that both this weakness and the injury received are evils, and always disagreeable to it" (II. 94).

This theory of pleasure and pain is what might be expected of a philosopher who defined soul as thought.

The Use and Dangers of the Passions.

Descartes does not condemn the passions, on the contrary he declares that they are intrinsically good.

"The use of all the passions lies solely in that they incline the soul to will the things that nature tells us are useful, and to persist in this will; just as the same agitation of the spirits which habitually causes them, disposes the body for movements which serve to the execution of these things" (*Pass.* II, 52). "The utility of all the passions lies solely in that they strengthen, and cause to last in the mind, thoughts which it is good for it to preserve, and which might otherwise easily be effaced from it" (II, 74). "We must observe that according to the institution of nature the passions are all connected with the body, and are found in the soul only inasmuch as it is joined to the body; so that their natural use is to induce the soul to consent to and contribute actions which may serve to preserve the body, or make it in some way more perfect" (II, 77).

But if the passions are naturally good they also have their dangers. In the first place, there are many things which cause no sadness at the beginning, and even give us joy, and which yet are injurious to the body; and there are others which are useful to the body, although at first disagreeable. Secondly, the passions almost always exaggerate goods or evils, in such a way as to incite us to seek the one and fly the other with much more eagerness than is proper; just as we see animals frequently deceived by snares, and in avoiding small evils fall into greater ones (*Ibid.* II, 138). Descartes shows how the soul can struggle against the excess of passions. They cannot be suppressed all at once; for, by acting on the heart they disturb all the blood and the animal spirits, so that until this emotion has ceased they remain present to our thought, in the same way as sensible objects are present to it while they act on our organs of sense. But the soul may at least always arrest the effects of passion, suspend the actions to which it is prompted; and it may find distraction

in other thoughts, until time and calm have entirely exhausted the disturbance of the blood (III, 211). The soul can do more, it can excite or suppress the passions, if not by a direct act of volition, at least by dwelling on ideas calculated to awaken or destroy them.

"Our passions cannot be directly excited or removed by the action of our will, but indirectly they can—through the representation in the mind of things which are usually connected with the passions which we desire to have, and which are contrary to those we would reject. Thus, if we wish to excite courage in ourselves and to get rid of fear, it is not enough to have the will; we must set ourselves to consider the reasons, objects, or examples which would persuade us that the danger is not great; that there is more safety in defence than in flight, etc." (*Art.* 45).

Finally, we can even go further. Between the movements of the body and the thoughts of the soul there is a natural correspondence, and it is this correspondence which threatens man with the slavery of passion. But man has the power of altering this correspondence; he can, through habit, affect the relations of soul to body, and join any thought he wishes to any movement of the pineal gland. Owing to this power, man may become once more master of himself, since, instead of obeying nature, he creates within himself a second nature. "Although each movement of the gland appears to have been joined by nature to each of our thoughts from the beginning of our life, it is possible, nevertheless, through habit to join them to other thoughts" (*Ibid.* I, 50), "and such is the connection between the soul and the body that when we have once joined a certain bodily act to a certain thought, the one will, in the future, never occur without the other" (*Ibid.* II, 136).

To sum up: before there can be passion the body must intervene, there must be motion of the animal spirits; but regarded from the point of view of the soul, passions are thoughts, judgments. To understand Descartes's theory of the emotions rightly we have to distinguish in them three degrees. In the lowest degree passion arises in the soul from a disturbance in the blood and in the animal spirits; the thoughts are immediately imposed upon the soul by the body, the states of which they express. In the second degree passion commences with judgment, and is caused by the action of the soul, which sets itself to conceive certain objects. The soul is now no

longer obliged to express the body; the terms may even be reversed, and the body may be said to express the soul by its movements. Thus there is a passion that corresponds to virtue; generosity, for example, is virtue manifesting itself in the body: it is right notions, or the moral principles strengthened by the movement of the animal spirits. It is virtue becoming a passion, which is excited by a movement made up of admiration, joy, and love (*Ibid.* II, 153-160.) Lastly, there are emotions which are purely spiritual.

"I say that these emotions (*love and hatred*) are caused by the spirits, in order to distinguish love and hatred,—which are passions and depend on the body,—both from those judgments which incline the soul to unite herself voluntarily to the things she deems good, and from the emotions *which these judgments by themselves excite in the soul.*"

Purely intellectual joy comes to the soul through its own action alone. It is its enjoyment of the good which appears to the understanding as its own. "Now good and evil depend principally on the inward emotions which are excited in the soul by the soul; and therein they differ from those passions which depend always on some movements of the spirits. And although these emotions of the soul are often joined to passions which resemble them, they may also exist with others and even arise from their contraries" (II, 147). These purely spiritual passions correspond to the εὐπαθείαι of the Stoics, and may serve to make the latter theory comprehensible.

Spinoza applies the Mathematical Method to the Study of the Passions. The Three Primitive Passions and their Composites: Intellectual Love.

Spinoza was not satisfied with Descartes' theory of the passions. In his opinion, Descartes accomplishes nothing beyond displaying the acuteness of his own great intellect (*Eth.* Part III, Pref.).

"I shall therefore treat of the nature and strength of the emotions according to the same method as I employed heretofore in my investigations concerning God and the mind. I shall consider human actions and desires in exactly the same manner as though I were concerned with lines, planes, and solids" (*Ibid.*).

It would be interesting to follow Spinoza's deduction step by step, to analyze his demonstrations, to see whether no new

idea is introduced into them, whether he really does always proceed *a priori*, whether he always accurately analyzes the facts which he observes with so much perspicacity, whether he does not sometimes trace to some complicated process passions that arise spontaneously in the soul. Here, however, we can do no more than give the principal features of his doctrine.

Spinoza commences with a definition of what he understands by passivity and activity.

"I say that we *act* when anything takes place, either within us or externally to us, whereof we are the adequate cause; that is, when through our nature something takes place within us or externally to us, which can through our nature alone be clearly and distinctly understood. On the other hand, I say that we are *passive* as regards something when that something takes place within us, or follows from our nature externally, we being only the partial cause" (*Eth.* Part III, Def. II).

Spinoza, like Descartes, defines the soul as thought, as a succession of ideas. The soul acts, therefore, in so far as it has adequate, that is, clear and complete ideas: and in so far as it has inadequate ideas it suffers certain passions (*Ibid.* Part III, Prop. I). Nevertheless, like Descartes, he connects passion with bodily movement.

"Emotion, which is called passivity of the soul, is a *confused idea*, whereby the mind affirms concerning its body, or any part thereof, a force for existence (*existendi vis*), greater or less than before, and by the presence of which the mind is determined to think of one thing rather than another" (*Ibid.* Part III).

Like Descartes, too, he makes passion a pure mode of thought, but he adds something to his master's theory. As indicated in the second part of the definition, passion is accompanied by a movement of thought, a tendency:—Leibnitz's *appetitio*, the *transitio ad novas perceptiones*. For Spinoza derives all the passions from desire. What, then, is desire? Every particular being is a mode of the absolute substance, that is, of the infinite power by which God is and acts. Infinite activity being the *reality* of all particular beings, they contain within themselves nothing which could destroy them. "Nothing can be destroyed except by a cause external to itself. This proposition is self-evident, for the definition of anything affirms the essence of that thing, but does not negative it" (*Ibid.* Part III, Prop. IV).

If every being participates in the divine power, and is active in the same measure as it is real, and if it contains nothing within itself to destroy its existence, it follows that everything strives, as far as it lies within its power, to persevere in its own being, and that this effort is the actual essence of the thing itself, and does not involve limited, but indefinite time (Book III, Props. VI, VII, VIII). This is Spinoza's main principle; let us now consider its consequences.

"The mind, both in so far as it has clear and distinct ideas, and also in so far as it has confused ideas, endeavours to persist in its being for an indefinite period, and of this endeavour it is conscious" (*Prop.* IX). "This endeavour, when referred solely to the mind, is called *will*, when referred to the mind and body in conjunction, it is called *appetite*. It is, in fact, nothing else than man's essence, from the nature of which necessarily follow all these results which tend to its preservation, and which man has thus been determined to perform. . . . *Desire is appetite with consciousness thereof.* It is thus plain from what has been said that in no case do we strive for, wish for, long for, or desire anything because we deem it to be good, but, on the other hand, we deem a thing to be good because we strive for it, long for it, or desire it" (*Prop.* IX, note).

The soul is the idea of the human body. Between these two terms there is an exact parallelism, a real, pre-established harmony.

"Since the first element that constitutes the essence of the mind is the idea of the human body as actually existing, it follows that the first and chief endeavour of our mind is the endeavour to affirm the existence of our body (*Prop.* X).

The effort of the mind to persevere in its being thus necessarily involves an effort to maintain and strengthen the body which is its object, without which it would not be. "Whatsoever increases or diminishes, helps or hinders the power of activity in our body, the idea thereof increases or diminishes, helps or hinders the power of thought in our mind" (*Prop.* XI). Hence arises the effort of the mind to imagine the things which increase the body's power of action and to repel thoughts that will prevent or diminish it. The tendency to persevere in being does not seem to imply an effort needed to escape from an evil state and seek a better one. Spinoza arbitrarily introduces into his theory of desire the idea of design. There is a striving after the most perfect existence,

the highest reality: an effort not only to repel all that diminishes life, but to attain all that increases and enriches it.

When the soul reaches a greater perfection it feels *joy*, when it reaches a lesser perfection, *sadness*. Perfection and reality are the same thing. Spinoza proves that from these three passions, joy, sadness, and desire, all the others can be derived.

"*Love* is nothing else but *pleasure accompanied by the idea of an external cause: Hate* is nothing else but *pain accompanied by the idea of an external cause*. He who loves necessarily endeavours to have, and to keep present to him, the object of his love; while he who hates endeavours to remove and destroy the object of his hatred" (*Prop.* XIII, note).

We cannot here follow the details of this deduction. We may, however, remark that the principal springs of this mechanical process are the association of ideas, imagination, and sympathy.

1. Effects of the association of ideas.

"If we conceive that a thing, which is wont to affect us painfully, has any point of resemblance with another thing which is wont to affect us with an equally strong emotion of pleasure, we shall hate the first named thing and at the same time we shall love it" (*Prop.* XVII).

2. Effects of imagination.

"A man is as much affected pleasurably or painfully by the image of a thing past or future as by the image of a thing present" (*Prop.* XVIII).

3. Effects of sympathy.

"By the very fact that we conceive a thing, which is like ourselves and which we have not regarded with any emotion, to be affected with any emotion, we are ourselves affected with a like emotion" (*Prop.* XXVII).

In this way Spinoza accounts for *commiseration, emulation, benevolence*, and also, by means of an ingenious demonstration, *envy*. "If we conceive that anyone takes delight in something which only one person can possess, we shall endeavour to bring it about that the man in question shall not gain possession thereof" (*Prop.* XXXII). *Proof*: "From the mere fact of our conceiving that another person takes delight in a thing we shall ourselves love that thing and desire to take delight therein (*Prop.* XXVII). But we assumed that the pleasure in question would be prevented by another's delight in its object: we shall therefore endeavour to prevent his possession thereof" (*Prop.* XXVIII). "We thus see that from the same property of human nature whence it follows that

men are merciful it follows also that they are envious and ambitious" (*Prop.* XXXIII, note). Spinoza also explains by sympathy the secret bitterness mixed with the false pleasures of hatred and vengeance. "Joy arising from the fact that anything we hate is destroyed, or suffers other injury, is never unaccompanied by a certain pain in us" (*Prop.* XLVII). Proof: "This is evident from *Prop.* XXVII. For, in so far as we conceive a thing similar to ourselves to be affected with pain, we ourselves feel pain."

The same mechanical process explains how it is that passions conflict and interfere with, or combine and are added to one another.

"I think I have thus explained, and displayed through their primary causes, the principal emotions and vacillations of spirit which arise from the combination of the three primary emotions, to wit, desire, pleasure, and pain. It is evident, from what I have said, that we are in many ways driven about by external causes, and that like waves of the sea driven by contrary winds, we toss to and fro unwitting of the issue and of our fate" (*Prop.* LIX, note).

Although Spinoza holds in general with Descartes that every passion corresponds to a state of the body, yet, like Descartes also, he recognizes the existence of a higher emotion, which corresponds to the mind's own special activity. "Besides pleasure and desire, which are passivities or passions, there are other emotions derived from pleasure and desire which are attributable to us in so far as we are active" (*Prop.* LVIII). The soul, inasmuch as it possesses adequate ideas, tends to persevere in its own being. In this case, desire is pure action, in which sadness has no place. The adequate idea is the highest degree of our active power, and sadness being that which diminishes or hinders the mind's power of thought, no affection of sadness can reach the mind, in so far as it is active.

There remain now only two primitive emotions: *cupiditas* and *lactitia*, desire and joy, and of these there are two forms, *strength of mind* and *generosity*. *Strength of mind* is the desire by which each person endeavours, from the dictates of reason alone, to preserve his own being. *Generosity* is a reasoned, virtuous sympathy, which induces us by means of the dictates of reason alone, to endeavour to assist other men, and

bind them to ourselves in friendship To change inadequate and confused ideas into adequate ideas, and thus to make the desire and joy that spring from the activity of the soul alone take the place of passion properly so called, thereby eliminating all sadness, is, through the vision of things under the form of eternity, to emancipate oneself from the bondage of passion, to live in God, and to find in the intellectual love of Him happiness and virtue, which are identical.

Malebranche: Development of the Preceding Ideas; Passions and Impulses; Classification of Desires.

Malebranche's theory of the passions bears a great resemblance to that of Spinoza. Like Spinoza, he applies the rational method, and reduces the passions to three primitive forms. And he follows both Descartes and Spinoza in making the passions depend on the body, while holding, on the other hand, the existence of a pure emotion higher than those bodily passions, an intellectual love, the love of God. But Malebranche went more deeply into these theories and developed them further.

For Descartes the soul was one, and all that was irrational in us was explained by the action of the body alone. The passions, properly so called, arise out of a disturbance in the animal spirits. The soul escapes slavery only because it is able, in the first place, to modify through its judgments the movements of the pineal gland, and consequently the passions: and secondly, to lead an entirely spiritual life. This theory was developed by Spinoza. The soul is passive because it is limited in its being, because everything that is in it is not explained by its own nature, because it is the *idea* of a body which is affected by all other bodies. The cause of passion is also in another sense external to the soul: it is metaphysical. But for that very reason passion depends on the nature of the soul, on the limitations of its essence.

With Descartes feeling has not, so to speak, any special principle; it is a pure mode of thought: in Spinoza the tendency to persevere in being ultimately appears as a general law, in virtue of which every idea involves affirmation. Malebranche seeks in the soul itself a principle which may account for its movements. He believes in an original

tendency and derived impulses. With his master, he explains the passions by a physiological cause, but he makes them depend on these impulses, and hence on the normal activity of the soul and hence on the action of God. Finally, he finds the reason of their excess and danger in a corruption of our original nature.

His method is the same as that of Spinoza. He admits that introspection has a certain value, but declares that it cannot be an adequate or scientific method.

"If our nature were not corrupt, it would not be necessary to seek to discover by means of reason, as we are about to do, what must be the natural inclinations of created minds; we would only have to look into ourselves, and we should discover by our inner sense of what takes place within us, all the inclinations that must be natural to us. But because we know by faith that sin has reversed the natural order, and because our reason itself tells us that our inclinations are disordered, we are obliged to find some other means" (*Rech. de la Vér.* I, IV, Ch. I, § 1).

We must through reason discover what our true nature is. This nature we shall find in the action of God in us. God can only have Himself for his principal end, but, as a secondary end, He may have the preservation of created beings, because they all, in different degrees, participate in his perfection.

"Since the natural inclinations of minds are certainly continuous impressions from Him Who created and preserves them, these inclinations must, as I think, be in every way similar to those of their Creator and Preserver. They can, therefore, naturally have no other principal end than His glory, and no other secondary end but their own preservation, and the preservation of others, but this always with a regard to Him who gave them being" (*Ibid.* I, IV, Ch. I, § 2).

This being the case, the principle of all particular inclinations must be the love of God for Himself, for again it is His own perfection that He loves in His creatures. "As there is properly speaking only one love in God, and as it is through this love—since God can only love things as in relation to Himself—that God can love things, so God only impresses on our souls one love, which is the love of the good in general, and we can love nothing unless it be through this love, since we can love nothing that is not, or appears not to be good. The principle of all our love for particular things is the love of the good in general, because this is our will; for will is nothing else than the continual impress of the Author of nature, which inclines

the mind of man towards the good in general" (*Ibid.* IV, Ch. I, § 3). Thus, whatever our inclinations may be, their true principle and object is God.

Malebranche classifies our particular inclinations under three principal ones. The first is *curiosity*, that is, that uneasiness of the will which makes us seek all that is new in the hope of finding the desired satisfaction. This uneasy curiosity has its dangers, but

"It is most suitable to our condition; for it is infinitely better to seek anxiously truth and happiness which we do not possess, than to remain in a state of false repose, content with the lies and false goods with which most men are satisfied."

The second inclination which the Author of our nature impresses unceasingly on our will is the love of ourselves and of our own preservation.

"We have already said that God loves all His works, that it is by this love alone that they are preserved, and that He wishes all created spirits to have the same desires as Himself. He wishes them therefore all to have a natural desire for their own preservation and happiness, and to love themselves" (*Ibid.* Ch. V, § 1).

Self-love includes the love of greatness and of pleasure, the love of being and of well-being. Through the love of greatness, we seek power and independence. "We desire in a manner to have necessary being, we wish in a sense to be like gods." In the love of pleasure we desire not only being but well-being, "since pleasure is the thing that is best and most agreeable to the soul: I say expressly, pleasure as pleasure." Greatness and independence consist usually in our relation to the things around us, but "pleasures are in the soul itself. They are real modes of it, and by their own nature are capable of satisfying it."

Malebranche rejects the paradoxes of the Stoics. "We must state things as they are; *pleasure is always a good, pain is always an evil*; but it is not always to our advantage to enjoy pleasure, and it is sometimes to our advantage to suffer pain" (Bk. IV, Ch. X, § 1). For what is pleasure? "*It is the sign of the good.* Whatever causes pleasure is certainly much to be loved and very good" (*Ibid.* § 2).

It is not the objects we feel that really act on us, since bodies cannot act on minds; nor is the soul itself the cause of

the pleasure or pain it feels on the occasion of these objects; for if the feeling of pain depended upon the soul, it would never feel any pain: "God alone has the power to act on us and to make us feel pleasure and pain." But, "usually we should only do good to anyone in order that he may do a good action or as a reward for such an action; and we should usually cause anyone to suffer an evil only in order to prevent him from doing wrong, or to punish him for having done so. Thus since God always acts in accordance with order and with the rules of justice, every pleasure as instituted by Him either impels us to, or rewards us for, some good action, and every pain either deters us from, or punishes us for, some bad action."

Whether it be antecedent pleasure exciting us to action, or pleasure which results from action, pleasure is always a mark of the good, the sign of a perfection. How, then, is it that there are pernicious pleasures? In the first place, it is because there are actions which are good in one sense and bad in another. In the second place, as we say that a thing is a cause of an effect when the one is always accompanied by the other, so we imagine that it is sensible objects that are acting on us, and we separate ourselves from God, Who alone is capable of causing pleasure, in order to unite ourselves to some vile creature.

"Since every pleasure is a reward, it is an injustice on our part to produce in our bodies movements which oblige God, in consequence of His first will or of the universal laws of nature, to make us feel pleasure when we do not deserve it. God being just, it cannot but happen that He will punish us some day for having forced His will by obliging Him to reward by pleasure crimes committed against Him."

Our third natural affection is that which we feel for those with whom we live, and for all the objects surrounding us. "In order to understand the causes and effects of these natural affections, you must know that God loves all His works and unites them closely one with another for their mutual preservation."

"Lest this affection should be stifled by self-love, He has caused us to be so bound up with all that surround us, and principally with beings of the same species as ourselves, that their misfortunes naturally afflict us, and their joys give us joy, and their greatness, or humiliation, or abasement seems to increase or diminish our own being."

Such, then, is Malebranche's theory of the affections. His view of the passions closely resembles that of Descartes. The occasional cause of passion is always a movement of the animal spirits. The mind of man has two essentially different relations. As pure spirit it is essentially united to the Word of God, to Sovereign Reason; as a human spirit it has an essential relation to the body. Our natural affections are all those movements of the soul which are common to us and to pure intelligences. Passions are all the emotions which the soul feels naturally, on occasion of abnormal movements of the spirits and the blood. These passions are inseparable from the affections. Man is capable of a sensible love or hatred, only because he is capable of a spiritual love or hatred. God, the principle of all movement, is the principle of the movement of the passions. It is impossible to conceive any direct or reciprocal action between thought and extension, between spirit and body.

Without a disturbance of the animal spirits and of the blood there is no passion. But Malebranche does not, any more than Descartes, pretend that every passion begins necessarily with a movement in the body; this only happens in cases when the passion is excited by confused feelings, and when the mind does not perceive the good or the evil which is the cause of the passion.

In all other cases the following seven elements can be discerned in every one of our passions:

"1°. The act of judgment made by the mind with regard to the object, or rather the confused or distinct perception of the relation of the object to ourselves; 2°. An actual determination of the movement of the will towards this object, assuming the latter to be or to appear a good; 3°. A feeling of love, or aversion, of desire and joy or of sadness; 4°. A further determination of the course of the spirits and of the blood in the direction of the external and internal parts of the body; 5°. The sensible emotion of the soul, which feels itself disturbed by this sudden overflow of spirits; 6°. The different sentiments of love or aversion, joy, desire, or sadness caused, not by an intellectual perception of the good or the evil as in the case of those of which we have just spoken, but by the divers disturbances which the animal spirits cause in the brain; 7°. A certain feeling of joy, or rather of an inward sweetness which holds the soul in her passion."

Passion may thus begin with a movement of the animal

spirits, but more often this movement is preceded, and the way prepared for it, by purely spiritual phenomena.

We may even have purely spiritual affections that are by accident accompanied by physical phenomena.

"It is one of the laws of the union of body and mind that all affections of the soul, even those it has for goods which have no connection with the body, are accompanied by disturbances of the animal spirits, owing to which these inclinations become sensuous. . . . Thus our love of truth, of justice, of virtue, even of God, is always accompanied by some movement of the spirits, which makes this love a sensuous love We are therefore united in a sensuous manner, not only with all those things which relate to the preservation of life, but also with the spiritual things to which the mind is immediately united by its own nature"

Not that the intellectual joy, which accompanies the clear knowledge of the good estate of the soul, is to be confounded with the sensible pleasure, which accompanies the confused consciousness of the good condition of the body. Intellectual pleasure is stable, free from remorse, as immutable as the truth which causes it: whereas, "sensuous pleasure is nearly always accompanied by sadness of mind, or remorse of conscience, and is as uneasy and as inconstant as the disturbance of the blood which produces it" (Bk. V, Ch. III).

What are the effects of the passions, and why are they capable of excess? All the passions have two very remarkable effects: they cause us to apply our mind and they engage our hearts. In so far as they cause us to apply the mind the passions may be very useful in the acquirement of knowledge, but in so far as they engage our hearts they have always a bad effect, because they only possess the heart by corrupting our reason, by making things appear to it, not as they are in themselves or according to the truth, but according to their relation to us (Bk. V, Ch. VIII).

The danger of passion is a consequence of original sin.

"Before the existence of sin the soul was able to efface the too lively image of a bodily good, and to cause the sensible pleasure which accompanied this image to disappear. The body being subject to the mind, the soul was able in one instant to cause the disturbance of the fibres of the brain and the emotion of the spirits to cease through the sole consideration of her duty, but since sin began to exist this has no longer been in her power (Bk. V, Ch. IV). Our nature is now corrupt. The body acts with too great force on the mind . . . the

mind became as it were material and earthy after sin. Its close relation and union with God was lost. I mean that God withdrew from it as much as He could without losing or destroying it. A thousand disorders followed from the absence or withdrawal of Him Who preserved the mind in its due place" (Bk. V, Ch. I).

In his classification of the passions Malebranche adopts the same principle as Descartes. "The number of the passions is not to be multiplied according to the number of objects, which are innumerable, but according to the principal relations that can exist between them and us." The first of these passions is *admiration*, but it is an imperfect passion, because it is not excited by the conception or sense of the good. Love and aversion are the mother passions (*passions mères*); they generate no other general passions except desire joy, and sadness, which are the three primitive passions: "the particular passions are composed of these three primitive passions alone, and they are the more complex according as the principal idea of good or evil which excites them is accompanied by a larger number of accessory ideas" (V, Ch. VII).

The particular passions are thus distinguished, not only by the fact that the three primitive passions may be diversely combined in them, but also by the judgments and perceptions which cause or accompany them. "The chief difference between passions of the same kind (gaiety, exultation, benevolence, gratitude, laughter, or amusement, are all different kinds of joy; disgust, grief, regret, compassion, indignation are different kinds of sadness) can be traced to the different perceptions or different judgments that accompany them."

Bossuet: The Psychology of Thomas Aquinas and the Cartesian Physiology.

Bossuet's philosophy is a combination of scholastic and Cartesian doctrines, of the psychology of Aquinas and the physiology of Descartes. The operations of the senses are accompanied by pleasure and pain. Both of these are sensations, "since they are both a sudden and lively perception which we experience in the first instance in the presence of objects that are pleasant or painful. . . . Pleasure is a feeling that is agreeable and in harmony with our nature: pain is a feeling that is unpleasant and contrary to our

nature" (*Connaissance de Dieu et de soi-même*, Ch. I, § 2). This is not very instructive, at least if taken literally. Bossuet's definition of the passions is more satisfactory.

"Whenever we feel or imagine pleasure or pain we are attracted or repelled. . . . Passion is a movement of the soul which, being affected by the pleasure or pain which it either experiences or imagines in an object, pursues or avoids that object" (*Ibid.* § 6).

He places the principal passions under two categories: those whose object is regarded simply as being present or absent and which taken together constitute the concupiscent appetite; and those whose object is considered *sub ratione ardui*, according to the expression used by Aquinas, as being hard to attain or to avoid, and which constitute the irascible appetite. To the first category belong love, hate, desire, aversion, joy, sadness: to the second, courage, fear, hope, despair, anger. There are a great many secondary passions: shame, envy, emulation, admiration, etc., but these are all connected with one or more of the principal passions. One may even say that all the passions depend on love alone, that all are comprised in or excited by love.

"The hatred we feel for one object comes only from our love for another. Desire is nothing else than love extending to an object not possessed, as joy is love of the object possessed. . . . Courage is a kind of love that undertakes the most difficult things in order to possess the loved object, and fear is a kind of love that, in finding itself threatened with the loss of that which it seeks, is disturbed by the danger. . . . Take away love and there will be no passions, and, on the other hand, where love is there all the passions are found" (*Ibid.* § 6).

So far Bossuet follows Aquinas; let us now see in what sense he is a Cartesian. "If," he says, "we consider the passions as being merely in the body, they would seem to be nothing else than an unusual disturbance of the animal spirits on the occasion of certain objects, which are to be pursued or avoided. Thus it must be that the passions are caused by the impression made and the motion excited in the brain by an object possessing great force" (Chap. II, § 12). The passions are, therefore, entirely involuntary movements of the soul, co-ordinate with bodily movements that are themselves determined by those of the object. "The co-operation of the soul and body in the passions is evident, but it is clear that the good or bad

inclination must have its commencement in the body. . . . In the passions the soul is passive, it does not rule over the dispositions of the body, but subserves them" (Ch. III, § 2). Bossuet's remedies for the passions are the same as Descartes' and, like his, derived from that correspondence owing to which all the thoughts of the soul are followed by some modification of the body.

La Rochefoucauld: Self-Love the Principle of all Human Affections.

La Rochefoucauld was not a philosopher, but a man of the world, who, without seeking to connect his theories on human nature with any general system, merely sets forth the results of his observations of himself and of others. He traces all human emotions and passions to self-love, and, in the various metamorphoses of this single impulse, he finds an explanation of all our desires.

"Self-love (*amour propre*) is the love of self and of all things for the sake of self. . . . It takes every contradictory form: it is imperious and obedient, sincere and deceitful, merciful and cruel, timid and courageous. Its tendencies vary according to the diversity of temperament by which it is directed and devoted, now to fame, now to riches, and now to pleasure. They change with age, fortune, and experience. But it matters not whether self-love takes several directions or only one, because it is broken into many or concentrated in one, at its pleasure, and according as is needful. It adjusts itself to things and to the want of them. Self-love will even take the part of those that are against it, will forward their purposes, and, what is even more wonderful, will hate itself with them, will conspire for its own destruction, work towards its own ruin. In short, the only desire of self-love is to be, and so long as it can exist it is ready to be its own enemy."

Thus self-love is the principle of even those affections which, deceived by our pride, we regard as disinterested. "Self-interest speaks to us every kind of language and plays all kinds of parts, including that of disinterestedness. . . . Generosity is the skilful use we make of disinterestedness in order to attain the sooner a larger interest. . . . Compassion is often a feeling for our own misfortunes in the misfortunes of others, a prudent foresight of evils into which we might fall. We assist others in order to oblige them to assist us on similar occasions, and the services we render them are, in fact, benefits which we render to ourselves in advance."

Hobbes deduces his Theory of Egoism from a Materialistic Psychology.

Hobbes shares La Rochefoucauld's theories, but, with a more merciless logic, he deduces them from an entirely materialistic psychology. All that is real is corporeal, every phenomenon can be reduced to motion.

"Conceptions and apparitions are nothing really but motion in some internal substance of the head, which motion, not stopping there but proceeding to the heart, must there either help or hinder the motion which is called vital; when it helpeth it is called *delight*, *contentment*, *or pleasure*, which is nothing really but motion about the heart, as conception is nothing but motion in the head; and the objects that cause it are called pleasant or delightful, or by some name equivalent; the Latins have *jucundum*, *a juvando*, from helping; and the same delight with reference to the object is called love. But when such motion weakeneth or hindereth the vital motion, then it is called *pain*; and in relation to that which causeth it, *hatred*, which the Latins express sometimes by *odium* and sometimes by *taedium*. This motion, in which consisteth pleasure or pain, is also a solicitation or provocation either to draw near to the thing that pleaseth, or to retire from the thing that displeaseth; and this solicitation is the endeavour or internal beginning of animal motion, which, when the object delighteth, is called *appetite*; when it displeaseth it is called *aversion*, in respect of the displeasure present; but in respect of the displeasure expected, *fear*" (*Human Nature*, Ch. VII, §§ 1, 2).

From Cartesianism Hobbes borrowed its mechanism only. There are some points of resemblance between his doctrines and those of Spinoza, but thought was for Hobbes only a mode of extension. Such a theory naturally leaves no place for any disinterested passions.

"*Repentance* is the passion which proceedeth from opinion or knowledge that the action they have done is out of the way to the end they would attain: the effect whereof is to pursue that way no longer, but, by consideration of the end, to direct themselves unto a better. . . . *Pity* is imagination or fiction of future calamity to ourselves, proceeding from the sense of another's calamity.' . . . There is yet another passion, sometimes called love, but, more properly, *good will* or *charity*. There can be no greater argument to a man of his own power than to find himself able not only to accomplish his own desires, but also to assist others in theirs, and this is that conception wherein consisteth charity" (*Human Nature*, Ch. IX, §§ 7, 10, 17).

According to Locke, Passions are Modes of Pleasure and Pain.

Locke did not construct any theory of the passions, but

only considered them in connection with the ideas which correspond to them in us. "Pleasure and pain, and that which causes them, good and evil, are the hinges on which our passions turn" (Bk. II, Ch. 20). "The passions are modes of pleasure and pain, resulting in our minds from various considerations of good and evil" (*Ibid.*). While reflecting on the pleasure which a thing that is present or absent may give us, we have the idea of what we call love. On the other hand, reflection on the pain which a thing present or absent may cause in us produces the idea of what is called hatred. "The uneasiness a man finds in himself upon the absence of anything whose present enjoyment carries the idea of delight with it, is what we call desire . . . the chief, if not only, spur to human industry and action is uneasiness" (*Ibid.*).

Joy, sadness, hope, fear, despair, anger, envy are all, in like manner, modes of pleasure and pain and different forms of the uneasiness which is caused by the absence of a good or the presence of an evil. These diverse passions are often mixed in life. "There is, I think, scarce any of the passions to be found without desire joined to it" (*Ibid.* Ch. XXI).

Locke defines pleasure and pain by ideas: the passions, being modes of pleasure and pain, are therefore modes of thought, and in this view we recognize the Cartesian influence. But by introducing a state of uneasiness, and by assigning to this uneasiness the most important part in the determination of human actions, Locke would appear to hold the existence of a principle distinct from thought, a collection of tendencies of which the definite desires are only manifestations.

Leibnitz: Metaphysical Theory of the Passions; Activity and Passivity. Psychological Theory: the Three Degrees of Appetition; Theory of Pleasure.

In Leibnitz we find once more the great Cartesian tradition, the union of metaphysics with psychology. The monad, a spiritual atom, the only true reality, possesses, besides perception, *appetition*, or the tendency to pass to new perceptions. "The activity of the internal principle which produces change or passage from one perception to another, may be called *appetition*. It is true that desire (*l'appétit*) cannot always fully attain to the whole perception at which it

aims, but it always obtains some of it and attains to new perceptions" (*Monad.* § 15). This tendency of every monad to advance in being is, in the human soul, the principle of the passions and emotions. But this tendency towards a higher perfection would not in itself suffice to explain the emotional life of mankind, the mysteries and errors of passion. The monad is not an isolated thing, for, owing to the pre-established harmony, it is in agreement with all the other monads: and it is in this metaphysical law, in this inter-dependence of creatures, that the principle of passion is to be found.

"A created thing is said to *act* outwardly in so far as it has perfection, and to *suffer* (or be *passive*, *pâtir*) in relation to another, in so far as it is imperfect. Thus *activity* (*action*) is attributed to a Monad in so far as it has distinct perceptions, and *passivity* (*passion*) in so far as its preceptions are confused. And one created thing is more perfect than another, in this, that there is found in the more perfect that which serves to explain *a priori* what takes place in the less perfect, and it is on this account that the former is said to act upon the latter (*Ibid.* §§ 49, 50).

Thus, for the very reason that they are in harmony with one another, the monads also limit one another. Not one of them is purely active; for that would mean that all things were made for this monad, that it was the universal end, God Himself. "The soul would be a divinity, if it had no other than distinct perceptions" (*Théod.* § 62). It must be remembered that, according to Leibnitz, "a created monad can have no inward physical influence on another monad. The influence of one monad upon another, is only ideal, and it can have its effect only through the mediation of God, in so far as in the ideas of God, any monad rightly claims that God, in regulating the others from the beginning of things, should have regard to it" (*Monad.* § 51). For Leibnitz as for Spinoza, passion is a limitation of action, an imperfection of our essence. It does indeed attach us to ourselves, but only in so far as we express other beings by confused ideas. "Thus although each created monad represents the whole universe, it represents more distinctly the body which specially pertains to it, and of which it is the entelechy; and as this body expresses the whole universe through the connection of all matter in the *plenum*, the soul also represents the whole universe in representing this body which belongs to it in a special way" (*Monad.* § 62).

Passion therefore does not, as Descartes seemed to think, merely correspond to an action of the body to which we are joined, but, as in Spinoza's theory, to a metaphysical law, the mutual limitation of beings which according to Leibnitz expresses the universal order, the harmony preestablished by God. Far from the body being the cause of passion, it is passion that is the cause of the body. It must be said that, strictly speaking, the soul has within itself the principle of all its actions and even of all its passions (*Théod.* 65). But, the soul in so far as it is active derives everything from itself, has no use for a body; the latter only expresses its law of limitation and its relation of dependence on and harmony with the other monads.

Let us now see how these metaphysical views are confirmed by psychology. The first form of appetition in us is an *inquiétude* (the *uneasiness* of Locke), a confused desire.

"For I should prefer to say that in the desire in itself there is rather a disposition and preparation for pain than pain itself. . . . Hence the infinitely wise Author of our being arranged it for our good, when he so arranged it that we should often be in ignorance and among confused perceptions, in order to act more promptly by instinct, and in order not to be disturbed by too distinct sensations of a multitude of objects, which we cannot altogether grasp, and which nature, for her ends, has not been able to do without" (*New Essays*, Bk. II, Ch. XX, § 6).

"These impulses are like so many little springs which try to release themselves, and which make our machine go" (*Ibid.*). "These little impulses consist in delivering ourselves continually from little obstacles at which our nature works without our thinking about it" (*Ibid.* Ch. XXI, § 36). Thus in the lowest stage we find that uneasiness, those insensible inclinations of which we are unconscious (*Ibid.* § 42). And above these there are "sensible ones whose existence and object we know, but whose formation we do not feel, and there are confused inclinations which we attribute to the body, although there is always something corresponding in the mind" (*Ibid.* § 42), and these latter are the passions properly so called.

"The Stoics regarded the passions as thoughts; thus hope was to them the thought of a future good, and fear the thought of a future evil. But I prefer to say that the passions are neither satisfactions nor displeasures,

nor thoughts, *but tendencies, or rather modifications of the tendency which come from thought or feeling, and which are accompanied by pleasure or displeasure*" (Ch. XX, § 10).

Lastly, above the passions proper "there are distinct inclinations which reason gives to us, whose force and formation we feel." These inclinations do not depend on the body, but express the very nature of the soul; they correspond to distinct ideas, and are veritable activities.

Under all these different forms appetition is always equivalent to the pursuit of pleasure and the avoidance of pain. The good is that which tends to produce or increase pleasure, or to diminish or lessen the duration of pain. Leibnitz has been reproached with having held contradictory opinions concerning pleasure, with having spoken at one time like Aristotle at another like Epicurus (L. Dumont, *Théorie Scientifique de la Sensibilité*) but this is because it was not understood that his conception of human nature admitted of the reconciliation of these two opposite theories.

"It is also for the sake of this skill that nature has given us the stimuli of desire, like the rudiments or elements of pain, or, so to speak, of semi-pain, or (if you wish to speak extravagantly in order to express yourself more forcibly) the little imperceptible pains, in order that we might enjoy the advantage of suffering without its inconvenience; for otherwise, if this perception were too distinct, we should always be miserable while awaiting the good, while this continuous victory over these semi-pains which are felt in pursuing our desire and satisfying in some way this appetite or this longing, gives us a quantity of semi-pleasures whose continuity and mass (as in the continuity of the impulse of a heavy body which falls and acquires momentum) becomes at last a complete and genuine pleasure; and finally, without these semi-pains there would be no pleasure at all, nor any means of perceiving that something aids and relieves us by removing some obstacles which prevent us from putting ourselves at ease. It is furthermore in this that we recognise the affinity of pleasure and pain, which Socrates in Plato's *Phaedo* noticed when his feet itched" (*New Essays* II, Ch. XX, § 6).

Might we not infer from this that pleasure is the absence of pain? And yet Leibnitz says a little further on (Ch. XX, § 41):

"And I believe that, at bottom, pleasure is a feeling of perfection and pain a feeling of imperfection, provided it be marked enough to make us capable of perceiving it." Again elsewhere he returns to the formula: *Voluptas seu delectatio est sensus perfectionis, id est, sensus cujusdam rei quæ juvat aut quæ potentiam aliquam adjuvat.*"

These two views are not contradictory. We tend towards the infinite, but there always remains in us some passivity, hence some imperfection, hence some uneasiness, which, even in the midst of joy, urges us on towards a higher state. It is because our nature is great that no pleasure here below can fully satisfy us, that every pleasure is preceded by an uneasiness which it causes to cease, and followed by an uneasiness which calls for another state of perfection.

"And very far from being obliged to regard this uneasiness as incompatible with happiness, I find that uneasiness is essential to the happiness of created beings which never consists in complete possession—this makes them insensible and as it were stupid—but in a progress continuous and uninterrupted towards the greatest good, which cannot fail to be accompanied by a desire, or at least a continual uneasiness, but which, as I have just explained, does not go so far as to inconvenience, but limits itself to those elements or rudiments of pain, partly unconscious, which are nevertheless sufficient to serve as an incentive and to arouse the will (*New Essays* II, Ch. XI, § 36).

Thus, the reason why some uneasiness precedes every pleasure and ceases with it is that this uneasiness belongs to the very essence of man, whose limited nature tends to the infinite, but it is none the less true that each pleasure by appeasing this ever-recurring uneasiness—"for we are never without some activity and motion" (*New Essays*, II, Ch. XXI, § 36)—is the feeling of a higher perfection. "All action is a step towards pleasure, and all passion a step towards pain" (*Ibid.* § 72). Every time that we experience a pleasure it is because, in different degrees, we set ourselves free from the bonds of passivity.

As there are three kinds of inclinations, so there are also three kinds of pleasures. There are some pleasures which correspond to our unconscious inclinations, others which correspond to the passions, and others, lastly—and these are the purest, the most valuable—which correspond to the activity of the mind. We have, therefore, rational, enlightened (*luminous*) pleasures "which are found in knowledge and in the production of harmony," and which should be set against the pleasures of sense, which are confused, though lively. The conflict between the spirit and the flesh "is nothing but the opposition of the different tendencies arising from the thoughts that are confused and those that are distinct." As the feeling of our own

perfection, pleasure in itself is good. But our tendency towards pleasure is like the tendency of the stone which goes by the shortest way towards the centre of the earth, and is incapable of foreseeing the rocks on which it will be shattered. Thus it comes that, while making straight for the present pleasure, we sometimes fall into the abyss of misfortune.

Happiness, on the contrary, is a lasting pleasure, which implies a continuous progress towards new pleasures. This progress is only possible through the intervention of reason, which is the principle of order and foresight, which looks to the future, and, proceeding by a road which it knows, meets no unexpected obstacles. Happiness, therefore, can be reduced to the cultivation of reason, to a constant movement towards more distinct perceptions. "Virtue itself consists in a pleasure of mind" (*Ibid*, II, Ch. XX, § 2)

Jean Jacques Rousseau: Superiority of Nature, and consequently, of Emotion, to Reason.

We can only just indicate the main outlines of the more recent theories concerning the feelings. In France, in the 18th century, by a recoil from the analytic spirit which had been cultivated to excess, J. J. Rousseau proclaimed the excellence of nature. "Do away with our pernicious progress, our errors and our vices, do away with the work of man, and all will go well" (*Émile*, IV). In the intuitions of feeling we have a primitive light, more brilliant and more pure than the light of reason. We must, therefore, always listen to "the holy voice of nature." All our first inclinations are legitimate. "Whatever the cause of our existence may be, it has provided for our preservation by giving us feelings suitable to our nature, and it cannot be denied that these at least are innate." "The first of all these is the love of self; but we also desire the happiness of others, and when it costs nothing to our own, the latter is increased by it." With these benevolent affections our moral sense is closely connected. "Love of good and hatred of evil are as natural to us as the love of ourselves. The behests of conscience are not judgments but feelings." In Germany Jacobi attacked the ethics of Kant as being too abstract, and supported theories similar to those of J. J. Rousseau. He declares that there is a light of the heart which cannot

penetrate into the understanding without being extinguished. He professes to be a pagan in understanding, a Christian in feeling.

English and Scottish Moralists—Shaftesbury: Classification of the Affections according to their Objects. Hutcheson; Hume; Thomas Reid: Appetites, Desires, and Affections.

After Locke, several subtle minds in England and Scotland devoted their attention to moral philosophy. These philosophers adopted the psychological method, that is to say, they made the study of the impulses and the feelings of the human mind their starting point. While endeavouring to discover what man ought to do, what objects he should choose as the end of his activity, they modified the Cartesian principle of classification, and arranged the affections, not according to their different modes, but according to the objects towards which they are directed. Shaftesbury discovered in man self-regarding impulses and benevolent or social impulses, which cause us to love the happiness of others for its own sake, and without any regard to our own. To these two classes of impulses he adds rational or reflective tendencies, which imply reason: these consist in the sense of esteem or contempt which we feel in the presence of moral beauty or ugliness, and have for their object human actions, or rather, the thoughts and affections which are their source. When we imagine an action we experience a feeling which is either painful or agreeable, as when we hear a harmony or a discord. We distinguish good from evil by a kind of delicate sense, an innate moral sense, whose existence manifests itself in our rational impulses. These impulses not only give rise to judgments, but also intervene as determining forces, as springs of action. Virtue consists in the harmony between our personal and benevolent impulses, induced by our rational impulses. Virtue and happiness are identical. "The summit of wisdom is rational self-love."

Hutcheson draws a sharp distinction between egoism and benevolence. We desire the happiness of others as directly as our own. Benevolence is an ultimate feeling. Besides these two affections, we find within us the primary idea of the moral good. And this simple quality of moral goodness can

only be perceived by a special sense. This is the moral sense, whose perceptions, like all sensible perception, are accompanied by pleasure and pain. Adapted to the perception of a quality which is to be found in our intentions and acts only, our moral sense is not an external but an internal sense. Moreover, Hutcheson sees goodness in those actions only which tend to the happiness of others: universal benevolence constitutes moral excellence.

In Hume's theory of the emotions, as in his theory of mind, the principle of association plays an important part. He draws a distinction between *simple* and *complex* passions. Joy, sadness, desire, aversion, hope, fear, are *simple* passions arising from the simple consideration of good and evil. The *complex* passions are explained by the laws of association (association of ideas according to the relations of resemblance, contiguity, and cause—association of similar emotions—co-operation of these two kinds of association). Hume proves his theory by an analysis of pride, humility, and the benevolent affections. All advantages, such as wit, beauty, wealth, rank, which, when associated with the idea of ourselves cause pleasure, may produce pride. In our benevolent and malevolent passions also Hume discerns the operation of the laws of association.

"The virtues, talents, accomplishments and possessions of others make us love and esteem them; because these objects excite a pleasing sensation which is related to love (association of similar emotions), and as they have also a relation or connection with the person, this union of ideas forwards the union of sentiments according to the foregoing reasoning" (*On the Passions*, Bk. IV).

Our reason forms judgments on the true and the false, but is never in itself a motive to the will. Therefore we act only through passion; and what we call reason in human conduct "is a calm passion which causes no disorder in the soul," and does not interfere with foresight. Hume assigns a most important part to disinterested benevolence, and, like J. J. Rousseau, he finds in feeling and sympathy the foundation of morality. To this theory a systematic form was given by the great political economist, Adam Smith, in his "*Theory of Moral Sentiments*" (See below "*The Ethical Problem*").

Thomas Reid made use of the previous work of the Scottish School in his description of the "Animal principles of action."

These principles are "such as operate upon the will and intention, but do not suppose any exercise of judgment or reason, and are most of them to be found in some brute animals, as well as in man."

Reid, in the first place, points out the *appetites* (hunger, thirst, lust, need of action and rest), which are preceded by disagreeable sensations and periodic. *Desires* differ from appetites, firstly, in that they are not accompanied by a disagreeable sensation; secondly, in that they are not periodic. The chief among them are the desire of power, the desire of honour, and the desire of knowledge. The principle of the desires is not, any more than that of the appetites, the pursuit of pleasure: the appetites tend to the preservation of the body, desires have been given to us for the furtherance of social life.

Those principles of action which have persons for their immediate object, and which imply that one is either ill or well disposed towards a man, or at least towards a living being, are the *affections*. The benevolent affections cannot be reduced to egoism. Naturally pleasant, they are directed towards the happiness of their object (gratitude, compassion, esteem, friendship, love, patriotism). Even the malevolent affections, the chief among which are emulation, anger and resentment, serve a purpose in the plans of Providence.

The meaning of the word *passion* is so uncertain as to have given rise to endless discussions, which would have been avoided by a good definition.

"I shall," says Reid, "by the word '*passion*' mean not any principle of action distinct from those desires and affections before explained, but *such a degree of vehemence in them*, or in any of them, as is apt to produce those effects upon the body or upon the mind which have been above described."

The passions differ therefore not in nature but in degree from the principles which we have described. Thus passion tends to good, and it is only by accident that it leads us into evil.

Kant: Distinction and Connection between Desire and Pleasure; Different forms of Desire.

"All the faculties or capabilities of the soul," says Kant, "can be reduced to three, which cannot be any further derived

from one common ground: the faculty of knowledge, the feeling of pleasure and pain, and the faculty of desire" (*Critique of Judgment*, Introd.). Thus Kant draws a distinction between the feeling of pleasure and pain and the faculty of desire. At the same time he recognizes the relation between them. "Pleasure or pain is necessarily combined with the faculty of desire, either preceding this principle as in the lower desires, or following it as in the higher, when the desire is determined by the moral law" (*Ibid.*).

As regards pleasure and pain, Kant adopts the view of the Italian philosopher Verri (18th century), and repeats the Epicurean arguments.

> Pleasure, Verri had said, is not a positive state, but merely the cessation of pain. Man's sole motive principle is pain. Pain precedes every pleasure. Every pleasure, says Kant, must be preceded by pain, pleasure cannot follow another pleasure. Pains that pass slowly are not followed by a lively pleasure, because we are not conscious of the transition. . . . To feel that one lives, and that one is in enjoyment, is nothing else than to feel that one is being forced continually to pass from the present state (*Anthro.* II, §§ 59, 60).

This theory of pleasure was to be used later by Schopenhauer as a foundation for his pessimism. "*Alles Leben ist Leiden.*" To live is to suffer, because to live is to strive, and striving implies pain. Hartmann admits that there are positive pleasures, such as those of Science and Art, which do not presuppose any antecedent pain; but, on the other hand, his theory of consciousness as arising out of opposition, out of contradiction, leads him to the conclusion that "numerous difficulties lie in the way of the theory that consciousness perceives the satisfaction of will, while pain brings consciousness with itself."

Kant in his theory of desire points out the distinction between emotion (*Affect*) and passion (*Leidenschaft*). Desire (*Begierde, Appetitio*) is the spontaneous direction of the force of a subject by the representation of something that is to follow as the possible effect of this force. A sensible, habitual desire is called an inclination (*Neigung*). An inclination which is little or not at all under the control of reason is passion (*Leidenschaft*). On the other hand, the vivid consciousness of an actual pleasure or pain, which allows of no reflection

in the subject, is emotion (*Affect*). Emotion is a seizure of the soul, is violent, fleeting, and may be compared to intoxication (*Rausch*). Passion moves slowly, reflects, is like a disease resulting from the absorption of a poison, or from a vitiated constitution. Where there is much emotion, as with the French, there is usually little passion. Emotion is like water bursting its dykes, passion like a torrent, which cuts an ever deeper bed. As examples of emotion, Kant cites excessive joy, hopeless melancholy, fright, anger, anxiety. Among the passions he makes a distinction between those that are natural, innate, ardent (*Passiones ardentes*), such as love of liberty, sexual love; and the acquired passions which are calmer (*frigidae*), such as ambition, desire of ruling, and avarice.

Herbart: Emotions traced to the Reciprocal Action of Representations.

Herbart and his disciples sought to explain the whole life of mind, and hence of feeling, by the reciprocal action of *representations* or *perceptions* (*aus dem gegenseitigen Verhaltniss der Vorstellungen*): and thus they are inclined, like Descartes, to reduce feeling to intelligence. Herbart distinguishes two classes of feelings: those which depend on the quality of the object felt, and those which depend on the condition of the feeling subject. The former have their principle in the manner of combination of the partial representations of which they are composed; when apperceived these are aesthetic feelings. when not apperceived they are sensations. The latter, which he calls emotions (*Affect*), depend solely on the co-operation or reciprocal opposition of the representations, and not on the content of these representations (joy, sadness, hope, fear). For Herbart, it is from the movement of the representations alone that emotion arises. Desire (*Begehren*) is the presence of a representation struggling against obstacles and thus becoming the principle which determines the other representations. While thus returning to the theory of feeling as a mode of intelligence, Herbart at the same time gives a new form to this theory: by making feeling depend on the composition and movement of the representations, he draws attention to the conditions of complex sensations and feelings, which are too often overlooked.

Hamilton returns to the Aristotelian Theory of Pleasure.

Hamilton, like Kant, defines emotion proper as the capacity of feeling pleasure and pain; in his theory of pleasure, however, he returns to the theory of Aristotle, and affirms that pleasure is the result of activity.

"A feeling of pleasure is experienced," he says, "when any power is consciously exercised in a suitable manner; that is, when we are neither, on the one hand, conscious of any restraint upon the energy which it is disposed spontaneously to put forth, nor, on the other, conscious of any effort in it to put forth an amount of energy greater either in degree or in continuance than what it is disposed fully to exert. In other words, we feel positive pleasure in proportion as our powers are exercised but not over-exercised; we feel positive pain in proportion as they are compelled, either not to operate, or to operate too much. All pleasure thus arises from the free play of our faculties and capacities; all pain from their compulsory repression or compulsory activity" (*Lectures* II, p. 477).

Th. Jouffroy: Distinction between the Impulses and Feeling Proper. Adolphe Garnier.

Th. Jouffroy, the translator of the works of Reid, distinguishes as ultimate, "firstly, our natural primary impulses or that collection of tendencies or instincts which impel us towards certain ends and in certain directions prior to all experience, and which at the same time indicate to our reason the destiny of our being and incite our activity to pursue it; secondly, feeling, or that susceptibility of being affected painfully or pleasurably by any internal or external cause, and of reacting against such causes by movements of love or hate, desire or repugnance, which are the principle of all passion" (*Mélanges Philos.*, p. 272). While distinguishing, like Kant, the appetitive faculty from feeling (pleasure and pain) Jouffroy, at the same time, regards feeling itself as belonging to appetite, calling it love, hatred, and desire. The sequence of the phenomena according to him is as follows: primary impulses or passions, namely, pleasure or pain, which are results of the impulses satisfied or thwarted—secondary affections, namely, love and hatred. "These only arise in us on the occasion of external objects, which, by favouring or interfering with the development of our primitive passions, excite them in us" (*Droit. Nat.*, I, p. 32).

The theory expounded by Garnier in his *Traité des facultés de l'âme humaine* differs from that of Jouffroy rather in language than in substance. With Jouffroy he holds, in the first place, that we have primary tendencies: "an instinctive impulse is a disposition to feel pleasure in the presence of an object or pain in its absence, or to feel pleasure in the absence of the object and pain in its presence." We feel pleasure or pain according as our impulse is satisfied or thwarted. "The impulse towards pleasure or pain precedes the pleasure or pain." Pleasure and pain are followed by love and hatred. "When the pleasure or pain have been experienced, the affection becomes love or hatred." Pleasure and pain are the only simple primary passions, "all the others are mixed with intellectual elements"—such as love, hatred, desire, aversion. The same impulse may run through all the passions. We have here an obscurity of language which arises out of the complexity of the phenomena themselves. Pleasure and pain are states; and as applied to them the word "passion" appears to be taken in its etymological sense, and to signify something that suffers, or is passive; but love, hatred, desire, etc., imply activity, motion, and as applied to these impulses the word "passion" appears to have a different meaning. Garnier distinguishes the impulses as they are directed, firstly to personal objects, secondly to impersonal objects (the true, the beautiful, the good); thirdly, to living beings (sociability, family love). To these primary impulses he adds certain complex passions, such as friendship, patriotism, and the love of God.

Herbert Spencer: Evolutionist Theory; Principle of Heredity.

To the Scottish and French psychological school belongs the credit of having described and classified mental phenomena. Herbert Spencer, on the other hand, seeks in the theory of evolution, the principles of an explanation in agreement with the general laws which, according to him, are operative in all phenomena. While seeking to define pleasure and pain, Herbert Spencer observes that there is a pain, or rather an uneasiness, which comes from a state of inaction, and that, on the other hand, there are pains of an opposite kind which accompany excessive action.

"Thus recognizing, at the one extreme, the negative pains of inaction, called cravings, and, at the other extreme, the positive pains of excessive action, the implication is that pleasures accompany actions lying between these extremes" (*Princip. of Psychology*, Vol. I, p. 276, 2nd Edn.).

In a general way, therefore, pleasure corresponds to an activity which is neither too small nor too great. But here we are confronted by the objections brought by Stuart Mill against Hamilton's doctrines. For, as Mill says: What constitutes a moderate activity? What is the lowest degree of pleasurable activity above which there is pleasure, and the higher degree above which there is pain? How is it that in certain states of consciousness, as for example in tasting and smelling, some tastes and some smells are always disagreeable no matter what their intensity may be? (Mill's *Exam. of Hamilton*).

The only reply to these questions is to be found, according to Herbert Spencer, in the theory of evolution.

"Those races of beings only can have survived in which, on the average, agreeable or desired feelings went along with activities conducive to the maintenance of life, while disagreeable and habitually-avoided feelings went along with activities directly or indirectly destructive of life" (*Princip. of Psychology*, Vol. I, p. 280, 2nd Edn.).

It follows that there may be actions that are agreeable or disagreeable in every degree: and secondly, that as the moderate activities are the only ones in harmony with that normal equilibrium which constitutes health, these must produce pleasure. If pleasure is not an infallible guide, it is because the environment of the animal changes, and it is sometimes placed in new conditions to which it is not yet adapted.

How then are we to explain the higher forms of feeling, or our disinterested affections? On this point, as in the theory of knowledge, we find two great hypotheses. According to the empiricists, our impulses are merely habits fixed in us by the experience of pleasure and pain, and consequently they vary with the temperament and education of individuals. But, for those who maintain the theory of *innate ideas* the principles of pleasure and pain, otherwise inexplicable, are to be found in inborn tendencies. Herbert Spencer professes to explain the forms of feeling as well as the forms of intelligence,

by a theory in which these opposite views are reconciled. "Those psychical states which we class as feelings, are involved with, and inseparable from those which we class as purely intellectual processes" (*Ibid.* p. 584, 1st Edn.). It is, therefore, by the same kind of progress that man rises to a higher knowledge and to higher emotions. The most lofty knowledge we possess is made up of very simple perceptions, our most elevated feelings are the result of the composition of sensations. In what then does knowledge differ from feeling? We can see the distinction clearly by the difference between sensation and perception. In sensation, we are conscious of certain affections of the organism. In perception we are conscious of relations between these affections. In perception the changes of state take place very rapidly, and the sensations are only present just long enough for the establishment of relations between them, and consciousness is almost entirely occupied with these relations. In sensation, on the other hand, the changes take place with comparative slowness—"Or more probably when like affections of consciousness are not permanently destroyed by the changes, but continually return, and are thus only broken by the changes so far as is needful to maintain consciousness" (*Ibid.* p. 587).

In the same way, feeling, which is merely a more or less complex compound of sensations and representations, implies a certain duration of the psychical state. When a series of psychical changes take place within an instant, there can be no emotion. It is for this reason that when psychical acts are perfectly automatic, feeling does not arise. This also is the reason why it is blunted by habit. Feeling being a compound, the more numerous are the groups of secondary feelings of which it is composed, the more powerful it is. The higher the evolution, the stronger the emotions. The passion by which the sexes are united, which is spoken of as a simple feeling, love, is in fact the most complex of all the passions, and hence the most powerful. "This passion fuses into one immense aggregation nearly all the elementary excitations of which we are capable, and from this results its irresistible power" (*Ibid.* p. 602).

The active and impulsive element in our feelings is sufficiently explained by the close relation between stimulation and

reaction, which has been proved both by the examination of the nervous system and by the fact of reflex motion.

"And to have in a slight degree those psychical states involved in the processes of catching, killing, and eating, is to have the desires to catch, kill, and eat. That the propensities to the acts are nothing else than nascent excitations of the psychical states involved in the acts is clearly proved by the natural language of the propensities" (*Ibid.* p. 596).

So far, Herbert Spencer only gives a more precise form to the empirical theory and analytic method. But, according to him, the existence of primary and distinct impulses is a necessary result of evolution and heredity.

"As the forms of thought, or the accumulated and transmitted modification of structure produced by experience lie latent in each newly-born individual, are vaguely disclosed along with the first individual experience, and are gradually made definite by multiplication of such individual experiences, so the forms of feeling likewise lying latent are feebly awakened by the first presentation of the external circumstances to which they refer, and gradually gain that degree of distinction which they are capable of through often-repeated presentations of these circumstances" (*Ibid.* Vol. I, p. 493, 2nd Edn.).

Conclusion.

The history of the different theories which have been held concerning the passions and the emotions is instructive in many ways. It shows, in the first place, how difficult it is to separate psychology from systematic philosophy. The views of philosophers regarding the emotional side of human nature vary according to their speculative ideas and their conceptions of human destiny. The Rationalists hold the existence of *a priori* elements in feeling as well as in intelligence; of primitive affections and inclinations, which, as they exist prior to experience, mark out broadly in advance the line it is to take. The Empiricists start from a fact, namely, pleasure, and will see in the affections nothing more than habits derived from experience, varying with individuals, and without any other fixity than that which results from similarity of circumstances. But here the most recent form of empiricism, by the substitution of heredity for habit, seems to admit of the possibility of reconciliation with the opposite theory—at least in the domain of pure psychology. For the theory of heredity implies innate elements, at least in the actual

individual, who is the true object of psychology properly so called. The doctrine of origins would belong then to what might be called *psychological embryology*. Moreover, this theory admits, in any case, of the existence of an innate, primary appetite which is the *primum movens* of the whole sensitive and emotional development of man.

It is also impossible not to perceive how theories concerning pleasure and the passions have been influenced by the different conceptions of human destiny. The psychology of Aristippus and Aristotle, of Epicurus and of the Stoics, of the Christian philosophers and the modern pessimists, can only be interpreted through their views on the moral end of mankind. According as a philosopher is weary and despondent, or courageously accepts our present life, or even sacrifices it to a future and higher life, he will advance different theories concerning the nature of pleasure and the passions. The indefiniteness of words has done much to prolong discussion. Nevertheless, even the divergencies of philosophers, their foregone conclusions, and their prejudices have not been unfruitful. Each one sees what he does see all the better because it is exaggerated in his eyes by the attention he devotes to it. Thus in these exclusive theories many subtle analyses are found, by means of which, one by one, the divers elements of human feelings are distinguished.

A complete doctrine would be one that had profited by all the efforts we have reviewed: by the theory of Aristotle as well as by that of Epicurus; by the physiology of Descartes and the psychology of the Scottish philosophers; by the metaphysics of Spinoza and of Leibnitz. The theories of the empirical school would also be given a place, and would be found to have their true root and their true reason in the speculations of the metaphysicians.

CHAPTER IX

PROBLEM OF FREEDOM

Is Man free? Can he perform of two possible actions either the one or the other, of his own choice, without being forced thereto by any internal or external necessity? Is what we call "deliberation" the act of an independent being, of one who is his own master, who controls his actions and is their true cause? Or does this term merely express the equilibrium or oscillation of the forces which constitute such a being, and which determine his action by inflexible mechanical laws? Such is the problem of Freedom, a problem formidable both on account of the antinomies it suggests and of its logical relations to our conceptions of the universe.

The idea of Freedom seems to contradict the laws of science, which are the laws of Nature herself. It breaks the continuity of phenomena, and is opposed to the hypothesis of the unity of force in nature. Freedom seems also to contradict the laws of thought, which has unity only in virtue of the principles of causality and sufficient reason. Lastly, Freedom seems to be a contradiction of the attributes of God, whose foreknowledge embraces all time, whose providence allows nothing to remain outside His omnipotent action. And yet man feels that he is free; the notion of liberty seems to be inherent in the notions of justice, of responsibility, of merit and demerit, reward and punishment; it is on this notion that the whole practical life of mankind rests. On this ground battle has been waged since the beginning of philosophy. And the history of this contest is a curious and dramatic one. It shows on the one hand the

natural tendency of the human mind towards unity, and on the other our irresistible consciousness of individuality, of multiplicity, which distinguishes itself from unity while it gives it variety and wealth of content.

Notion of Responsibility with the Pythagoreans. Eleatic Pantheism and Atomism exclude Freedom.

The first Greek philosophers did not attempt the problem of Free Will, for the excellent reason that it did not present itself to them. They were occupied mainly with physical questions, they had not yet clearly distinguished matter from life and mind. Their way of thinking was at once synthetic, concrete and confused. The Ionic philosophers derived the world and all its particular forms from a living substance—water, air or fire, to which they sometimes, a in the case of Heraclitus and Diogenes Apollonius, attribute intelligence. As this principle of the world is at once physical and spiritual it becomes the human soul by a natural evolution. The Pythagoreans however appear to have had some dim perception of the problem of freedom. It was as a punishment for sin and as a kind of expiation that the soul was thrown into the body. After death it went to Kronos or Tartarus according to its merit, or was condemned to make new peregrinations through the bodies of men or animals. This theory seems to imply a notion of freedom, but, "we do not know whether the Pythagoreans regarded the union of the soul with the body as being founded on choice or on a natural affinity, or on the arbitrary will of the gods" (Zeller). It is most probable that the question never arose with them and that they included the transmigration of souls among the harmonious movements of the revolving universe.

The Eleatics professed a kind of pantheism in which, in the supreme, eternal, immutable principle, both the corporeal and the incorporeal are merged. "Parmenides and Democritus say that everything happens by necessity. According to them the same principle is at once destiny, justice, providence and cause of the universe." *Παρμενίδης καὶ Δημόκριτος πάντα κατ' ἀνάγκην τὴν αὐτὴν δ' εἶναι καὶ εἱμαρμένην καὶ δίκην καὶ πρόνοιαν καὶ κοσμόποιον.* As regards Democritus this is only partly accurate. Democritus places the essence of the *ἀνάγκη* in the

ἀντιτυπία καὶ φορὰ καὶ πληγὴ τῆς ὕλης, that is, in the resistance, the displacement, the impact of matter (Plut. *de Plac.* I, 25, 26).

The Atomists find the ultimate explanation of everything in changes of situation in space, and of these changes themselves in the impact, (*πληγή*) *rebound*, *παλμός*, *ἀποπαλμός* of the atoms which are determined one by the other *ad infinitum*. The consequence of this is universal necessity. *οὐδὲν χρῆμα μάτην γίγνεται, ἀλλα πάντα ἐκ λόγου τε καὶ ὑπ' ἀνάγκης.* Nothing happens by chance, everything is born of reason and necessity (Stob. *Ecl.*, I, 160). *Democritus accipere maluit necessitate omnia fieri, quam a corporibus individuis naturales motus avellere* (Cic., *de Fat.* 10, 23).

Socrates: No One is Voluntarily Wicked.

The speculative scepticism of the Sophists resulted, in practice, in the absence of any moral principle, in the insolence of a Callicles who accepted no rule of conduct except the art of satisfying all his own desires, while trading on popular credulity. Individual fancy was not freedom, but the capricious tyranny of desire and passion. Socrates, in his violent reaction against Sophistry, indentified morality with knowledge, maintaining that the good, being the same as the true, imposes itself, as soon as it is known, irresistibly on the will, as on the intelligence. Every man necessarily wills his greatest good or his true happiness, and his particular acts are only the means to this universal end. Now, the greatest good of an individual is the good itself. It is therefore enough to know the good in order to practice it. All virtue is knowledge. *λόγους τὰς ἀρετὰς ᾤετο εἶναι* (*Nic. Eth.* VI, 13, 1114, b-29).

He who commits evil does so out of ignorance and because he is mistaken as to the means to the end he is pursuing. The wicked man does not really do what he wills, although he does what seems to him to be the good. *Οὐδεὶς κακὸς ἑκών· ἐπὶ τὰ κακὰ οὐδεὶς ἑκὼν ἔρχεται* (Protagoras, 358 c). "Right judgment, self-control, prudence and temperance he did not distinguish (*σοφίαν καὶ σωφροσύνην οὐ διώριζεν*); for he deemed that he who knew what was honourable and good and how to practise it, and who knew what was dishonourable and how to avoid it, was both prudent and temperate" (Xen. *Mem.*

III, 9). They asked him whether he considered those men to be wise and temperate (σοφούς καὶ ἐγκρατεῖς) who know what they ought to do, and do the contrary. He answered:

"No more than I think the openly imprudent and intemperate to be so; for I consider that all persons choose from what is possible what they judge for their interests, and do it, and I therefore deem those who do not act thus judiciously to be neither prudent nor temperate. He said, too, that justice and every other virtue was (a part of) prudence for that everything just and everything done agreeably to virtue, was honourable and good (καλά τε καὶ ἀγαθά) that those who could discern these things would never prefer anything else to them" (Xen. *Ibid.*).

M. Fouillée considers that in order to establish his doctrine of determinism, Socrates gives here a *reductio ad absurdum* of the common opinion, according to which, it is possible for any one to do evil voluntarily even when he knows the good. The same argument is reproduced by Xenophon and developed by Plato in the *Hippias Minor*. A man who runs badly voluntarily, would be better than one who runs badly unwillingly, through a natural incapacity. In the same way it would be better to limp, to sing badly, to be beaten in the wrestling match voluntarily than involuntarily. For he who in all these cases voluntarily does things badly has the knowledge of good and the power to do it. So also in the moral life, the voluntarily unjust man is better than he who is unjust involuntarily, for he knows justice and is capable of practising it. "There I cannot agree with you," says Hippias—"Nor can I agree with myself," Socrates replies, 'and yet that seems to be the conclusion which, as far as we can see at present, must follow from our argument.'" This paradox is an argument against free will. A good runner might run badly because he has some higher end in view; but a man who knows the good cannot be determined to evil by an idea of a good that is higher than the true good. The hypothesis of free will is refuted by the absurd consequences it involves; the knowledge of the good is irresistible.

Plato Modifies the Doctrine of Socrates: Opinion and Science.

Plato, while holding with Socrates that our will tends necessarily to the good, at the same time modifies his master's doctrine. According to him there is in the soul an irrational part always ready to revolt. Opinion, (δόξα), having no firm

basis and being easily shaken, is not strong enough to struggle against this irrational element. Man may therefore do the contrary of *that which appears to him* to be the good. True science alone is invincible. But opinion is a kind of ignorance, it only comes upon the truth by chance. For Plato, as for Socrates, virtue is therefore the determination of the will by the knowledge of the good: it is true freedom, true happiness; the wicked man is ignorant, unhappy, and a slave.

Plato sometimes appears to transfer the freedom of our present life into a prior existence. Although in the *Phædrus* (248 c) he shows us the souls falling by a kind of chance (συντυχίᾳ τινι), yet in the tenth book of the *Republic* (618 c-619 b) he represents them as choosing their future state: "the responsibility is with the chooser, God is justified." Is then the whole future life of a man decided by his own free choice? Has the determination of our present particular acts its principle in an absolutely free act done in a former state of existence? Did Plato in a manner divine Kant's noumenal freedom? No! The choice is determined by the state of the soul which chooses, and depends upon its relative knowledge of the good. "Let each one of us leave every other kind of knowledge and seek and follow one thing only, if peradventure he may be able to learn, and may find some one who will make him able to learn and to discern between good and evil, so as to choose always and everywhere the better life as he has opportunity" (*Rep.* 618).

Aristotle refutes Socrates and Plato; Proof of Freedom from Responsibility and by Psychological Analysis; Consequences of Freedom.

Aristotle refutes the arguments of Socrates and Plato.

"Socrates, indeed, contested the whole position, maintaining that there is no such thing as incontinence: when a man acts contrary to what is best, he never, according to Socrates, has a right judgment of the case, but acts so by reason of ignorance. Now this theory evidently conflicts with experience . . . There are other people (τινές, Plato) who in part agree and in part disagree with Socrates. They allow that nothing is able to prevail against knowledge, but do not allow that men never act contrary to what *seems* best; and so they say that the incontinent man, when he yields to pleasure, has not knowledge, but only opinion. . . . But if, in truth, it be only opinion and not knowledge,

and if it be not a strong but a weak belief or judgment that opposes the desires (as is the case when a man is in doubt), we pardon a man for not abiding in it in the face of strong desires, but, in fact, we do not pardon vice or anything else that we call blameable" (*Nicom. Ethics*, VII, 2).

Responsibility implies freedom. If we adopt the view held by Plato and Socrates there is no merit in virtue any more than there is demerit in vice.

"And so the saying, 'none would be wicked, none would be blessed,' seems partly false and partly true; no one indeed is blessed against his will, but vice is voluntary. If we deny this we must dispute the statements made just now, and must contend that man is not the originator and the parent of his actions, as of his children" (*Ibid.* III, 5).

This indirect proof of freedom is confirmed by psychological analysis. The will (*βούλησις*) is a rational and painless inclination, the object of which is the real or apparent good. It is a form of that desire (*ὄρεξις*), by which the whole of nature is carried on towards perfection. The end of the will must be the good; but this universal end does not determine the means. Our particular acts are contingent and depend on our choice. Choice (*προαίρεσις*) is distinct from desire and passion, since it is often in conflict with them; it is also distinct from opinion and knowledge, since it is not always he who has the most correct knowledge that acts the best. We deliberate on future things, which it depends on us to do or not to do, and about which a choice is possible. Our determination is not the result of inclination alone, nor of reflection alone, but implies both inclination, since it tends towards good, and reasoning, since it is the result of deliberation. A free act is one which is deliberate (*τὸ ἑκούσιον προβεβουλευμένον*). Freedom belongs to a being who is at once intelligent and sensitive, whose actions are not necessarily determined either by his ideas or his desires, but who pursues happiness by directly intervening in his own actions.

If our freedom is a reality and not an illusion, it follows that we cannot foresee everything in the sequence of phenomena; that it is possible for man to introduce into the world unexpected acts, and that of two contradictory propositions bearing on the future, one is not necessarily true and the other false at the moment they are uttered. The existence

of free will alters the theory of contradictory propositions. The psychological problem becomes now a metaphysical and logical problem, and the solution of the former involves that of the latter. Aristotle sees these consequences and unhesitatingly accepts them.

"If every affirmation or negation is either true or false, it is also necessary that everything must either be or not be ; for, if one man says that a thing will be and another denies the same, one of them must evidently speak the truth, if every affirmation or negation be either true or false. Indeed there is nothing which either is, or is generated fortuitously, nor casually, nor is there anything that has the power either to be or not to be, but all things are from necessity, and not due to chance. . . . [Otherwise] it would not be necessary to deliberate nor to reflect before we act. . . . But that is impossible ; for we see that there is a beginning of future things both from our deliberation and from our practice, and among those things which have not always an actual existence there are some which may either be or not be, in the case of which it is possible either that they may be or not be, or that they may be either generated or not generated. It is therefore evident that all things neither are, nor are generated by necessity, but that some things subsist casually, and that their affirmation is not more true than their negation" (*Organon*, Ch. IX).

The Stoics: Physical, Logical, and Ethical Proofs of Determinism.

After Plato and Aristotle, rival schools, each of which claimed to have found the secret of happiness, were further divided on the subject of freedom. We can here only give a summary of a dispute which lasted through many centuries. The subtleties of a logic that was sometimes sophistical, the arguments of common sense, psychological analysis, physical and metaphysical hypotheses, all of which have since been resumed, developed, and completed, had their beginning in the schools of Greece. For the Stoics, the world was a whole sympathetic to itself (πᾶν σύμπαθες ἑαυτῷ), a kind of immense animal, filled in all its parts by the one soul, and vibrating all over at the slightest movement. The negation of freedom was a necessary consequence of this pantheism.

The Stoics multiplied arguments in favour of determinism. Everything, they said, goes to prove it. In the first place, it is proved by logic. Of two contradictory propositions one is necessarily true; therefore of these two propositions, '*A* will be,

'*A* will not be,' the necessity of one at the moment I speak excludes the possibility of the other: *Ex omne aeternitate fluens veritas sempiterna* (Cic. *De Divin*, I, 55). In the second place, determinism is proved by the laws of nature. These are the principle of causality—the principle that nothing happens without anterior cause (for, to say that something exists without a cause is to say that something comes from nothing); and the principle of design. The world is not an ill-constructed poem made up of scraps and pieces. All things in it work together. It expresses the unity of a providential design, in which the capricious interference of a chance power, like free will, is not tolerated. Thirdly, determinism is proved by common sense and the beliefs that are most dear to mankind. Prophecy implies foreknowledge and foreknowledge determinism. It is because nothing is left to chance, because all things hang together and work together that an inspired mind can see the future in the present, discern in the flight of birds or the entrails of victims signs of future things. To accept free will is to break the bond by which man is united to the gods, and to deprive him of the precious help of the divine counsels. Finally, determinism is proved even by morality. The serenity (εὐαρέστησις) of the sage is only possible through the providential necessity which leaves no room for regrets.

Pressed by their opponents, the Stoics sought to disguise the repulsive consequences of their doctrine. Chrysippus, the great doctor of the school, attempted to bring about a kind of reconciliation between determinism and freedom. It is not correct to say that everything is necessary, for the contrary of what happens is, in itself, logically possible. To us who do not know what it is that makes the fact inevitable, it is as if it were not determined, and we should act as if we were free. The consequence of determinism is not inertia; facts are only necessities in relation to other facts, *tam necesse est medicum appellare quam convalescere* (Cic. *De Fato*, 12).

There remains the question of moral responsibility. It is falsely said that circumstances fashion men's conduct, for men of different characters do not behave in the same way under the same circumstances. We are determined by facts, *ut mentis proprietas et qualitas est* (Aulus Gellius, *Noctes Att.* VII, 2). We must distinguish the *causae principales* and the *causae adju-*

vantes (*De Fato*, 18). Chrysippus illustrated this by a cylinder on an inclined plane. It requires an impetus to set the cylinder in motion (*causae adjuvantes*), but it is on account of its form that it rolls down (*causae principales*). In the same way events are an impetus to man, but it is his character that determines the way he will move (*Ibid.*, 18). However, all these subtleties do not prove the freedom of our will, but only a sort of spontaneity, a determinism by character, as opposed to determinism by things.

Epicurus: the Clinamen or Swerving of the Atoms, and Freedom in Man.

In connection with the subject of free will Epicurus appears, curiously enough, as the disciple of Aristotle (Guyau, *Revue philos.* July, 1877).

"It would be better to follow the fables about the gods than to be a slave to the fate of the natural philosopher; for the fables which are told give us a hope of being able to move the gods by honouring them, but one cannot turn aside necessity, ἀπαραίτητον τὴν ἀνάγκην" (Epicurus *apud* D. L. x, 134).

Where shall we find a principle by which the links of fate may be broken, and cause prevented from following cause *ad infinitum?*

Principium quoddam, quod fati fadera rumpat,
Ex infinito ne causam causa sequatur (Lucr. II, 255).

As a way of escape from determinism (ὅπως τὰ ἐφ' ἡμῖν μὴ ἀπόληται, Plut. *de Solert. Anim.* 7), Epicurus endows the atoms with a spontaneous power of moving themselves, analogous to that of which experience makes us feel the reality in ourselves.

"The action first commences in the will of the mind, and next is transmitted through the whole body and frame (Lucr., II, 269). As nothing comes from nothing, the power which is in us must have its cause in the germs of things, in the atoms."

Quare in seminibus quoque idem fateare necesse est,
Esse aliam, praeter plagas et pondera, causam
Motibus unde haec est nobis innata potestas:
De nihilo quoniam fieri nil posse videmur (II, 284).

This cause is the *clinamen*, the power of the atoms to swerve from the straight line into which they are impelled by necessity; in a word, the power of creating a new movement by an arbitrary change of direction.

"That the mind itself does not feel an internal necessity in all its actions, and is not as it were overmastered and compelled to bear and put up with this, is caused by a minute swerving of first beginnings, at no fixed part of space and no fixed time" (*Ibid.* 290 *sq.*).

Id facit exiguum clinamen principiorum
Nec ratione loci certa, nec tempore certo (*Ibid.* 292-3).

Thus our freedom does not place us outside the laws of nature. it is only a form of the universal contingency of things. If everything is determined,

Libera per terras unde haec animantibus extat,
Unde est haec, inquam, fatis avolsa potestas,
Per quam progredimur quo ducit quemque voluntas?
Declinamus item motus, nec tempore certo,
Nec regione loci certa, sed ut ipsa tulit mens.

"We change the direction of our motions neither at a fixed time nor fixed place, but when and where the mind itself has prompted" (*Ibid.* 256).

Epicurus attacks the doctrine of logical determinism as well as that of physical determinism. He declares with Aristotle that of two contrary propositions concerning a future event, neither the one nor the other taken individually is necessarily true. He also attacks the doctrine of moral determinism, and restores to the notion of responsibility its former value, "Necessity is an irresponsible power, and fortune is unstable, while our will is free: and this freedom constitutes, in our case, a responsibility which makes us encounter blame and praise" (D. L. X, 133).

Opposition of the New Academy to the Stoic Dogmatism. Carneades: Freedom a Cause.

Carneades accepted neither the Stoic nor the Epicurean doctrines. There was at that time a keen and continuous struggle between the three great schools which were disputing the possession of men's minds. The probabilists of the Middle and New Academy endeavoured to overthrow the Stoic dogmatism; Carneades, parodying a celebrated line used to say εἰ μὴ γὰρ ἦν Χρύσιππος, οὐκ ἂν ἦν ἐγώ (instead of στοά).

The Epicureans, according to him, might have proved their thesis of freedom without encumbering themselves with the *clinamen*. His argument is remarkable in that it is purely psychological: it is, in fact, the argument of Reid, Victor Cousin, and Jouffroy.

"For in saying 'without cause,' we mean without antecedent external cause, not without any cause whatever. As when we say that a vessel is empty, we do not mean empty in the sense of the natural philosopher, who denies the existence of absolute emptiness, but we merely mean that the vessel contains no water, wine, oil, or other liquor. So when we say that our soul is moved without cause, we mean without antecedent extrinsic cause, not independently of all cause whatever. As of an atom, when it moves through void space by its specific gravity, we may say that its motion has no cause, meaning no cause extrinsic to itself. Therefore, not to expose ourselves to the ridicule of the natural philosophers by asserting that anything happens without a cause, we must distinctly propound that the nature of an atom is such that it may be moved by its own specific gravity, and that its intrinsic nature is the very cause of its motion. And in the same manner we need not seek for an external cause for the voluntary motions of the mind. For such is the nature of voluntary motion, that it must needs be in our own power, and depend on ourselves, otherwise it is not voluntary. And yet we cannot say that the motion of our free-will is an effect without a cause, for its proper nature is the cause of this effect" (Cic. *De Fato*).

This is the argument of the modern upholders of free will; the principle of causality is not violated by the freedom of our will, because freedom is itself a cause, the nature of which is to be free.

Neo-Platonism: Metaphysical and Theological Difficulties.

The Neo-Platonists accepted and defended the freedom of man, but they did not succeed in reconciling it with their metaphysical and religious doctrines, nor even with their theory of the soul. Plotinus says more than once that our will is free, that virtue has no master, ἀρετὴ ἀδέσποτος, that each man bears the punishment of his misdeeds. Without free will we should be, not men, not independent subjects, but particles carried along by the universal movement. If all things be subject to necessity, ἓν ἔσται τὰ πάντα. Ὥστε οὔτε ἡμεῖς ἡμεῖς, οὔτε τι ἡμέτερον ἔργον· οὐδὲ λογιζόμεθα αὐτοί, ἀλλ' ἑτέρου λογισμὸς τὰ ἡμετέρα βουλεύματα οὐδὲ πράττομεν ἡμεῖς (*Enneades* III, I, Ch. IV). "In that case we shall not be ourselves. No action would be our own. It would no longer be we ourselves, but another principle that was reasoning, willing, and acting in us." The fatalism of astrology deprives us of our will, our passions, our vices, and makes of us stones carried along down an inclined plane (λίθοι φερόμενοι), not

men possessing activity of themselves and by nature (III, 1, 5). But, having accepted free will, how are we to reconcile it with Providence, with the organic harmony of the world? Plotinus replies that virtue is free, but that each of its acts is included in the whole of things, that each one plays his own part, but is given by the author of the universal drama the *rôle* that suits him best (*Ibid.* IV, 4, 39).

But there is another difficulty. Plotinus says that virtue has no master, that the wicked man condemns himself: but on the other hand he affirms, like Plato, that all evil-doing is involuntary, that the good alone are free, and that there is true freedom only in pure contemplative activity. Plotinus replies, as the Stoics had already done, that he who follows his nature is free because he depends on no one but himself, and again, that though involuntary, the action is still attributed to him who accomplishes it, because it is he who does the evil (*Ibid.* III, 2, 10). Iamblichus was anxious to reconcile freedom with divination, for it was in this form that the antinomy between freedom and foreknowledge, the solution of which was sought later by theologians, presented itself to philosophers at that time. The Stoics, in order to preserve divination, sacrificed free will; Iamblichus, like the Christian doctors, desired to reconcile the two terms, but he did no more than assert that even what is undetermined and uncertain is known with certainty by the gods. They know the present, the past, and the future, *μιᾷ καὶ ὡρισμένῃ καὶ ἀμεταβάτῳ γνώσει*. They know the indeterminate as determinate, *ἀόριστον ὡρισμένως*, as well as the successive in the eternal. This is the solution afterwards given by the theologians. But is an antinomy solved by simply accepting its two terms without discussion? The precise problem to be solved is how it is possible for a thing that is uncertain and undetermined to be foreseen with certainty?

St. Augustine: The Will is Free; Foreknowledge and Providence; Freedom and Grace. Thomas Aquinas and Duns Scotus.

With the Christian theologians the problem of free will takes the following form: admitting the existence of free will as necessary for the justification of God and for the moral life of man, how is it to be reconciled with divine foreknowledge

and with grace? According to St. Augustine, the very notion of will implies freedom. It is a sophism to oppose the concatenation of causes to the freedom of our volition. Volition is not an effect, it is the cause of all human actions. The will is the foundation and, as it were, the substance of all the actions of a spiritual life: *Voluntas est quippe in omnibus: imo omnes nihil aliud quam voluntates sunt* (Aug. *De Civ. Dei*, XIV, 6). The will, far from being determined by intelligence, precedes it: to know and to possess the good we must love and will it. But, as theologian, he takes away from us all that was conceded by the psychologist: St. Augustine is indignant with those who would deprive providence of the determination of human actions.

"Now the expression, 'Once hath He spoken,' is to be understood as meaning 'immovably,' that is, 'unchangeably,' hath he spoken. But it does not follow that though there is for God a certain order of all causes, there must, therefore, be nothing depending on the free exercise of our own wills. Our wills themselves are included in that order of causes which is certain to God, and embraced by His foreknowledge, for human wills are also causes of human actions . . . and, therefore whatever power they have, they have it within most certain limits; and whatever they are to do they are most assuredly to do" (*De Civ. Dei*, III, 9). "How can God foreknow the possible, what may or may not be? In the Eternal nothing passeth away, but the whole is present" (Conf. XI, 11). "The words 'never,' 'before,' 'at that time,' have no signification in the divine life" (Conf. XI, 13, 14, 30).

God both sees together and is the author of all the phenomena which unfold themselves in time. Contingent things do not take place because God foresees them, but God foresees them because they will take place.

There remains the question of grace. The freedom of Adam was *posse non peccare*, the being able not to sin. The freedom of the blessed is the *non posse peccare*, the impossibility of sinning. In consequence of original sin, the present state of man is the *non posse non peccare* (not to be able not to sin). Human will is therefore powerless without grace. Anything good that man does is done by God in him: *potestas nostra ipse est*, He Himself is our power.

"'Therefore,' says Pelagius, 'God foresaw who would be holy and immaculate by the choice of their free-will, and on that account elected them before the foundation of the world in that same foreknow-

ledge of His in which He foreknew that they would be such. Therefore He elected them,' says he, 'before they existed, predestinating them to be children whom he foreknew to be such as would be holy and immaculate'" (Aug. *De Praedest. Sanct.* X).

St. Augustine rejects this doctrine. He even attacks the semi-Pelagians, who allowed to the freedom of the will the initiative of good, a kind of spontaneous solicitation of grace, maintaining that efficacious grace determines and precedes this desire of the good or this appeal to God. Hence his conclusion is absolute predestination. Freedom, which seemed to be man's all, was only used once by Adam for his damnation: *hinc est universa generis humani massa damnata, quoniam qui hoc primitus admisit, cum ea quae in illo fuerat radicata sua stirpe punitus est, ut nullus ab hoc justo debitoque supplicio nisi misericordia et indebita gratia liberetur.* Such was St. Augustine's hard doctrine. Even Bossuet admits that it has "*des inconvénients fâcheux.*"

Aquinas, the angelic doctor, amends St. Augustine's doctrine. He gives a clear statement of the objection that springs from foreknowledge.

"All that is known by God must necessarily be; for even that which we know necessarily is; and God's knowledge is more certain than ours. But of no future contingent thing can it be said that it necessarily must be. Therefore no future contingent thing is known by God." The answer runs thus: "*Omnia quae sunt in tempore, sunt Deo ab aeterno praesentia.* God knows all things, not only those which actually exist, but also those which either He Himself or any creature can bring forth. Thus all future contingent things as they are in themselves and according to their actual condition are known to Him all at once and infallibly. . . . Eternity exists as a whole, and embraces all time; whence it is clear that contingent things are infallibly known to God in so far as they are present before the divine vision, and that at the same time contingent things are future when compared with their immediate causes" (*Summa Theol.* I, Qu. 14 *a*, 13).

Imagine a man standing on the top of a tower who sees at one view travellers passing in the road, whom, if he were lower down, he would only perceive one after the other. It is thus with God. From the heights of immovable eternity He sees at once all the successive acts of His creatures, and while He sees them by His prescience, He at the same time determines them by His providence. Thus, according to

Aquinas, our free acts are not only foreseen but predetermined. This is called the theory of physical premotion. God wills and foresees all our actions. He wills that they should be such and such, but at the same time He wills them to be free. I am moved beforehand naturally (*physical premotion*). I am predetermined by God, but predetermined to act freely in a certain way. In short, my actions are at once free and necessary—a bizarre solution which seems to identify contradictions.

Mediaevalism had its philosopher of freedom, namely, Duns Scotus, the Franciscan doctor, and the great antagonist of Aquinas. Duns Scotus asserts the contingency of the world, and maintains that there are causes that are free to act or not to act, facts that may or may not take place. *Voluntas est superior intellectu*: the will is above the intellect. It is by a free assent that we accept the truths of faith which elude any demonstrative certainty. Freedom in man can only be understood through freedom in God. God does not find in His mind ready-made ideas or truths that impose themselves on His actions like a kind of fate: it is by a free act that God creates the true and the good.

If the first cause acted by necessity, it would impose on the secondary cause necessary action, and thus the necessity of the first principle would extend to the last consequences. If the whole world is not the result of a free act, there can be no freedom in the world.

The Problem of Freedom from Descartes to Kant. The Mechanical Materialism of Hobbes.

The problem of freedom had to be faced by modern philosophers, as well as by those of the middle ages and antiquity. The empiricists, the sensationalists, the materialists, Hobbes, and Locke—all those who sought in external phenomena and their relations the reason of the laws of spiritual life—deprive man of all initiative in his actions. Among the metaphysicians, some, like Descartes, refuse to sacrifice free will; others, like Spinoza and Leibnitz, despair of being able to reconcile it with the determinism forced upon them by the laws of thought, or by the principles of their systems, and they substitute for it some intellectual equivalent. At last, Kant thought he had

found the long sought reconciliation, but his theory only gave rise to further endeavours to find one more satisfactory still.

Hobbes' mechanical materialism logically excludes all freedom from the human mind, and he boldly accepts the consequences of his doctrine. Our conceptions and imaginations are in reality nothing more than a movement excited in the brain. As this movement does not stop there, but communicates itself to the heart, it must necessarily either assist or hinder the motion that is called vital. In the former case there is pleasure, and in relation to the object there is what we call 'love.' In the latter case there is pain, and relatively to the object, hatred. "This motion, in which consisteth pleasure or pain, is also a solicitation or provocation either to draw near to the thing that pleaseth or to retire from the thing that displeaseth; and this solicitation is the endeavour or internal beginning of animal motion, which, when the object delighteth, is called appetite, when it displeaseth, it is called aversion, in respect of the displeasure present, but in respect of the displeasure expected, fear" (*On Human Nature*, Ch. VII).

Desire, fear, and aversion are the primary, though hidden, motives of all our actions. These passions are the will itself. A man can no more say that he wills to will than he can go on saying that he wills to will to will, repeating the word 'will' *ad infinitum*. As to what is called deliberation, it is merely a succession of appetites or fears.

"*Either* the actions immediately follow the first appetite . . . *or else* to our first appetite there succeedeth some conception of evil to happen to us by such actions, which is fear, and which holdeth us from proceeding. And to that fear may succeed a new appetite, and to that appetite another fear alternately, till the action be either done or some accident come between, to make it impossible. This *alternate succession of appetite and fear* . . . is what we call *deliberation*. . . . In deliberation the last appetite, as also the last fear, is called *will*. Forasmuch as *will to do* is *appetite*, and *will to omit*, fear; the *cause* of *appetite* and *fear* is the *cause* also of our *will*" (*Ibid.* Ch. XII).

According to Hobbes, everything is ultimately reducible to a movement of material particles, which are necessarily determined. The will of man is no more free than the will of brute beasts. Will and desire are one and the same thing considered from different points of view.

Locke: Psychological Method; Freedom is the Power of Doing what one Wills; But does not apply to Volition; Distinction between Desire and Will.

Locke rejects the doctrine of free will, not for *a priori* reasons, as irreconcilable with the consequences of a materialistic metaphysics, but on the ground of psychical experience. We have a clear and distinct idea of active power, only through reflection on the operations of our mind.

"We find in ourselves a power to begin or forbear, continue or end several actions of our minds and motions of our bodies, barely by a thought or preference of the mind ordering, or, as it were, commanding the doing or not doing such or such a particular action. This power is what we call will" (*On the Human Understanding*, Bk. II, Ch. 21, § 5).

Before entering into the question whether man is free, let us determine the meaning of the word freedom. All the actions of which we have any idea are reducible to these two, *moving* and *thinking*. "So far as a man has power to think or not to think, to move or not to move, according to the preference or direction of his own mind, so far is a man free" (§ 8). A paralysed man who wishes to walk but whose limbs refuse their office is not free. We do not say of a ball that it is free, because the ball does not think, and freedom implies understanding and will. Freedom does not, however, belong to volition. "Suppose a man be carried while fast asleep into a room where is a person he longs to see and speak with, and be there locked fast in, beyond his power to get out: he awakes and is glad to find himself in so desirable company, which he stays willingly in, *i.e.* prefers his stay to going out. I ask, is not his stay voluntary? I think nobody will doubt it, and yet, being locked fast in, it is evident he is not at liberty to stay, he has not freedom to be gone" (*Ibid.* § 10). Will and freedom are therefore entirely distinct things. The volition must precede freedom and the latter is merely the power a man has of doing what he wills to do.

"It is as insignificant to ask whether a man's will be free as to ask whether his sleep be swift or his virtue square, liberty being as little applicable to the will as swiftness of motion to sleep or squareness to virtue" (§ 14).

So far Locke wins his case easily, for he has defined freedom in such a way that it could not possibly belong to the

will, but he has not yet attacked the real difficulty. Leibnitz (*New Essays*) points out that we must distinguish between freedom to do and freedom to will. Why should it be assumed that the upholders of free will do not know what they mean?

"This is what is called *free will*, and it consists in this, that one supposes that the strongest reasons or impressions which the understanding presents to the will do not prevent the act of the will from being contingent, and do not give it an absolute and, so to speak, metaphysical necessity" (*New Essays* II, Ch. XXI, § 8).

Locke, however, comes finally to the real question, which he states thus: "*Is man free to will?*"

"This then is evident, that in all proposals of present action a man is not at liberty to will or not to will, because he cannot forbear willing, liberty consisting in a power to act or forbear acting and in that only" (*On the Human Understanding*, Bk. II, Ch. 21, § 24).

For example: a man who in walking, proposes to stop walking, is no longer free to will that he will, for he must either stop or go on, and, by hypothesis, he wills to stop; the act is voluntary, but the volition itself is not free. But if we insist, and ask further "*Whether a man be at liberty to will which of the two he pleases, motion or rest?*" This question is absurd, for it is the same as to ask "whether a man can will what he wills or be pleased with what he is pleased with? . . . they who make a question of it must suppose one will to determine the acts of another, and another to determine that, and so on *ad infinitum*" (§ 25).

If our will is not free, by what then is it determined?

"The motive for continuing in the same state or action is only the present satisfaction in it; the motive to change is always some *uneasiness*" (§ 29).

The will, then, according to Locke, is determined by the uneasiness of desire, by the most pressing uneasiness we feel at the moment.

". . . A constant succession of uneasinesses out of that stock which natural wants or acquired habits have heaped up, take the will in their turns; and no sooner is one action dispatched, which by such a determination of the will we are set upon, but another uneasiness is ready to set us on to work" (§ 45).

It is a mistake to say that the will is determined by the greatest good. A good that is absent does not give rise to a pain equal to the degree of excellence that it has, or even that we recognize it to have: every pain, on the other hand, causes a desire equal to itself. The drunkard knows the harm he is doing himself: he makes excellent resolutions, but when the time comes he cannot resist the uneasiness which results from his bad habits. The greatest good, even when recognized as such, only determines the will in cases where it excites a desire in proportion to its excellence, and thus our desire arouses in us a corresponding uneasiness.

Thus, according to Locke's profound remark, our will is in the first place determined by the desire to avoid pain. In order to explain this determination of the will by our uneasiness, it need only be said that all our actions are directed to our happiness, the first condition of which is the absence of pain; secondly, our mind is often too much occupied with present uneasiness to consider other goods. How little weight in the conduct of men has their belief in eternal pains and punishments. On the other hand, "any vehement pain of the body, the ungovernable passion of a man violently in love, or the impatient desire of revenge, keeps the will steady and intent" (§ 38).

Locke, though apparently so little in favour of the doctrine of free will, nevertheless pointed out an important distinction which throws a great deal of light on the question and which philosophy has retained—the distinction, namely, between will and desire. He does not wish these two terms to be confounded. A man *desires* to be rid of his gout, yet, "whilst he apprehends that the removal of the pain may translate the noxious humour to a more vital part, his *will* is never determined to any one action that may serve to remove this pain" (§ 30). It must be admitted, therefore, that there are exceptions to the law that the greatest and most pressing uneasiness determines the will to the next action (§ 47). "We are endowed with a power to suspend any particular desire, and keep it from determining the will and engaging us in action" (§ 50). We are at liberty to compare our desires, to consider their objects and calculate their consequences. "In this lies the liberty man has" (§ 47). What in this case deter-

mines the will is the "last judgment of good or evil" (§ 48). To will and to act in accordance with the final result of a strict self-examination is a perfection rather than a defect of our nature. Our choice is regulated by our knowledge. The more we are determined by our reason to what is best, the freer we are. Man's freedom consists then in opposing reflection to the impulse of immediate desires, in giving an effectual force to the notion of true happiness. ". . . So the care of ourselves that we mistake not imaginary for real happiness is the necessary foundation of our liberty" (§ 51).

Descartes firmly asserts the Freedom of our Will; Proof by Consciousness; Infinity of the Will; Solution of Apparent Contradiction; Omnis peccans est ignorans.

The firmest defender of freedom in modern philosophy is Descartes. If, on the one hand, his doctrine appears as an entirely mathematical one, it may, on the other hand, be considered as a philosophy of freedom. The soul, to Descartes, was not only intelligence, it was also freedom. "By the understanding alone I neither assert nor deny anything, but merely apprehend the ideas regarding which I may form a judgment" (*4th Méditation*). It is our will that gives its assent to what we have perceived by our understanding. The intellect itself is in a sense subordinate to the will (*Principles of Philosophy*, I, 34).

To judge is to will. The distinctive characteristic of the will is that it is free. By this we are to understand that we have "a positive power of determining ourselves to one or other of two contraries, that is to say, to pursue or to avoid, to affirm or negate the same thing" (*Letter to Père Mers.* ed. V. Cousin, Vol. VI, 134). This power is known to us through our consciousness of it while exercising it. Whilst all in me is limited, "my will alone, that is to say, the freedom of my will, I find by experience to be so great that I cannot conceive the idea of any other freedom more ample and extended. So that it is principally by this freedom that I know myself to bear the image and likeness of God" (*3rd Méditation*).

Having said that freedom consists in choosing between two opposites, Descartes elsewhere seems to contradict himself and to profess determinism.

"Indifference, he says, is the lowest degree of freedom; if I always knew clearly what was good and what was true I should never have to deliberate as to what judgment and what choice I should make, and therefore I should be entirely free without ever being indifferent. I do not think that in order to do evil it is necessary to see clearly that what we are doing is bad; it is enough if we see it confusedly, or remember to have judged formerly that it was so; for, if we saw it clearly, it would be impossible for us to sin at a time when we saw it in this way. For this reason it has been said '*omnis peccans est ignorans*'" (*Letter to a Jesuit Father*, ed. V. Cousin, Vol. IX, p. 168).

Does this not almost appear to be a return to Plato's theory? But this apparent contradiction is solved in the following way: with the evidence before us we cannot refuse our assent, but it is our freedom which, through examination, gives the evidence and thereby determines itself. The evidence is therefore, so to speak, a reward of our endeavours to see rightly.

"As man may not always give his whole attention to the things he ought to do, it is a good action to give such attention; and, by this means, our will so follows the light of our understanding as not to be at all indifferent" (*Ibid.*).

Thus, assent to the truth, however evident it may be, is always meritorious. "It is the nature of the mind that it attends for scarcely more than one moment to the same thing. As soon as our attention is turned away from the reasons by which we know that this thing is right, and we retain in our memories only that it was desirable, we may imagine in our mind some other reason which makes us doubt of it, and perhaps suspend our judgment, or even form a contrary one" (*Ibid.*). We may even openly resist the evidence.

"Even when we are compelled to a thing by a very evident reason, although morally speaking it is difficult for us to do the contrary, nevertheless, speaking absolutely, we can do it; for we are always free to prevent ourselves from pursuing a good that is clearly known or from accepting a truth that is evident, provided only that we think it is well thus to prove the truth of the freedom of our will" (*Letter to the Père Mers.*, ed. Cousin, VI, p. 134).

To sum up: we are determined by evidence, but we remain nevertheless free; because, in the first place, assent to the truth is always meritorious; secondly, we can always disregard the evidence through inattention, and give force to the reasons for doing ill; thirdly, nothing can prevail over the desire of proving to ourselves the freedom of our will.

Spinoza: Refutation of the Doctrine of Freedom by Metaphysics and Psychology.

The great reform brought about by Cartesianism was the application of the mathematical method to philosophy. The resolution of all things into clear ideas and the co-ordination of these ideas under one supreme idea, the idea of God, which should be the guarantee of their deductive concatenation,—such appears to have been Descartes' conception. But, at the same time, we must remember that, according to Descartes, everything, even mathematics, depends upon the will of God, which is free. Thus his mechanism presupposes freedom. Spinoza, seeing in Descartes' work its mathematical side only, was not unjustly accused by Leibnitz of an *immoderate Cartesianism*. Suppressing Descartes radical and substantial distinction between thought and extension, he makes them both the attribute of one substance, from which all the modes of being can be mathematically deduced. *Deus mundus implicitus, mundus deus explicitus.* Spinoza refutes the doctrine of free will, *a priori* and *a posteriori*.

"Nothing in the universe is contingent, but all things are conditioned to exist and operate in a particular manner by the necessity of the divine nature (*Ethics*, Part I, Prop. XXIX). In the mind there is no absolute or free will; but the mind is determined to will this or that by a cause which has also been determined by another cause, and this last by another cause, and so on to infinity" (Part II, Prop XLVIII).

This *a priori* argument recurs throughout Spinoza's works. It constitutes, in fact, his system, and he confirms it by an *a posteriori* argument borrowed from psychological observation. "There is in the mind no volition or affirmation or negation, save that which an idea, inasmuch as it is an idea, involves" (*Ibid.* Prop. XLIX). Will and Understanding are one and the same thing. "When we say that anyone suspends his judgment, we merely mean that he does not perceive the matter in question adequately. Suspension of judgment is therefore, strictly speaking, perception and not free will" (*Ibid.* note). Whence, then, comes our consciousness of freedom? It is a subjective illusion, arising from the fact that men are "conscious of their own actions and ignorant of the causes by which they are conditioned" (Prop. XXXV, note).

"Thus an infant believes that of its own free will it desires milk, an angry child believes that it freely desires vengeance, a timid child believes that it freely desires to run away; further, a drunken man believes that he utters from the free decision of his mind words, which when he is sober, he would willingly have withheld; thus too, a delirious man, a garrulous woman, a child, and others of like complexion believe that they speak from the free decision of their mind, when they are in reality unable to restrain their impulse to talk. . . . All these considerations clearly show that a mental decision and a bodily appetite or determined state are simultaneous, or rather, are one and the same thing, which we call decision when it is regarded under or explained through the attribute of thought, and a conditioned state when it is regarded under the attribute of extension and deduced from the laws of motion and rest" (Part III, Prop. II, note).

Malebranche: God the Principle of Human Activity.

Malebranche sacrifices the creature to the Creator, but at the same time he tries to avoid the extremes of Spinozism. In his theory of *Occasional Causes*, while allowing real action to God alone, he affirms the distinct existence of beings, to whom he denies any initiative. His theory of freedom is only a corollary of his more general one of *occasional causes*. "Whatever effort of the mind I may make, I can find no strength, or efficiency, or power outside the will of the infinitely perfect Being" (*Rech. de la Vérité*, XVth *éd.*). God must then be the principle of human activity, as He is the cause of all the movements of nature. Volition is merely our natural impulse towards the good in general, which is indeterminate." It is God "who impels us irresistibly towards the good in general." It is He "who gives us the idea of a particular good and the affection for it." It is He who directs us towards this particular good. "Thus God is the author of all that is real in the movements of the mind, and in the determination of these movements. Nevertheless He is not the author of sin" (*Rech. de la Vérité*, 1st Book). "The sinner does nothing, for sin is nothing, but he ceases to act, he stands still, he does not follow God." Malebranche does not see that in order to arrest the impulse given by God, an efficient force would still be needed, and that this theory compromises both the freedom of man and the universal action of God.

Bossuet: Proofs of Free Will, firstly, by Consciousness;

secondly, by Reasoning; thirdly, by Revelation. Freedom as Conflicting with the Foreknowledge and Providence of God.

In his *Treatise on Free Will*, Bossuet seeks at once to establish free will, and to reconcile it with Providence and the Divine foreknowledge. This treatise also gives an excellent summary of all the principal solutions that have been offered by theologians. "The question is whether there are things that are in our power, and at the disposal of our choice, to such an extent that we are able to choose or not to choose them." Bossuet sums up with his usual clearness the classical arguments in favour of freedom.

"I say that freedom or free will, in this sense, is certainly possessed by us, and that this freedom is made evident to us, first of all, by the testimony of feeling and experience; secondly, by the evidence of reason; and thirdly, by the evidence of Revelation, that is to say because God has clearly revealed it to us in the Scriptures" (Ch. II).

As regards the evidence of consciousness, let each one consult his own mind; he will feel that he is free, just as he feels that he is rational. This is the direct proof, the proof by the *lively inward feeling*, as Leibnitz called it. To the objection that in important deliberations there is always some motive which determines us, Bossuet, like Reid later, replies by citing cases of indifference, where on examining ourselves we can find no motive of action. The will is, therefore, capable of self-determination without motives. "When I have no other intention than that of moving my hand in a certain direction, I find that it is my will alone that impels me to this movement rather than to another" (*Ibid.*). The testimony of consciousness is ratified by reasoning. All languages contain words and modes of speech which imply belief in freedom. Responsibility, repentance, praise, blame, punishment, deliberation have no meaning apart from liberty. "Hence we have clear ideas of many things which can pertain only to a free being" (Ch. II). This is what is now called an indirect proof, for it is based on the absurd consequences of the negation of freedom. Thirdly, as regards the proofs derived from Scripture, Bossuet merely remarks that "in the Bible we find all the expressions employed by which men are in the habit of expressing their freedom and its consequences" (*Ibid.*). Having in this way established freedom, Bossuet then states the endless problem of its reconciliation with the divine

providence and foreknowledge. "God directs the will of men to any end He pleases." Moreover, "God knows only what he Himself does"; He cannot borrow His knowledge from without, and since He sees everything there can be no action of which He is not the author. "If He has nothing in Himself whereby He can cause in us free actions, far from foreseeing them before they take place, He will not see these actions when they do take place" (Ch. III).

Bossuet acknowledges that the difficulty is great, but, he says, before we attack it we must be firmly resolved to sacrifice neither freedom nor the divine attributes.

"The first rule of our Logic is that we must never abandon truths we have once known, whatever difficulties may arise when we attempt to reconcile these truths; but that we must, on the contrary, always, so to speak, keep a firm hold of the two ends of the chain, though we may not always be able to see the connecting links between them."

This suggestion, strictly construed, would involve nothing less than the negation of the principle of contradiction; unless, indeed, some rule were laid down by which one could distinguish the cases where the contradiction is evident from those in which it is not, though the means of reconciling it are not known to us.

Having made these introductory remarks, Bossuet proceeds to examine the problem itself. Four solutions have been proposed. The first, which is the one adopted by the Protestants and the Jansenists, and "which is attributed to St. Augustine," consists in placing the essence of freedom in what is voluntary. 'Voluntary' in the 17th century meant, that which we do willingly, *libenter*. What are we to understand by this formula? Before the first sin, we were, in the proper sense of the word, free, and while we were in that state "God left the will entirely to itself." There was therefore no need to reconcile man's freedom with the divine decrees. Subsequent to the original sin, God "regulates in an absolute decree the things that depend on our wills, and in that omnipotent manner makes us will that which pleases Himself." Hence, there is no difficulty in understanding that He foresees our acts and their consequences. But this solution merely does away with the problem altogether: before original sin there was freedom, but not foreknowledge; since original sin there is foreknowledge, but no freedom.

The second theory examined by Bossuet is that of *scientia media*. The modern Franciscans and Jesuits, says Leibnitz,

are rather in favour of the doctrine of *scientia media* (Théod. I, 39). In the 16th century the Jesuit Molina, in a treatise *de Concordia liberi arbitrii cum gratiae donis*, had upheld this doctrine. The objects of the divine knowledge are three: possible things (knowledge by simple intelligence); actual events (knowlege by vision); conditional events which have an intermediate place between the actual and the possible (*scientia media*). (*Ibid.*) God knows from all eternity what His creatures will do *freely*, at whatever time He may take them or in whatever circumstances He may place them. This divine knowledge does not affect man's freedom, for to know a thing is not to change its nature. Now God regulates His decrees in accordance with what His creature, who is free, will *freely* do on such and such an occasion. He waits to see the direction of our wills and then forms with certainty of success (*à jeu sûr*) His decrees on our resolutions (Bossuet, ch. IX).

Thus God, while distributing His graces, takes into account the freedom of man and his decisions, which He knows by a *scientia media* that is neither knowledge by simple intelligence nor knowledge by vision. Bossuet objects that the decrees of God would on this theory no longer be the first causes of things (Ch. VI). We ourselves would add, How could a free act, that is, an act that is contingent, be known from all eternity?

The third doctrine of the theologians is that of *contemperatio*. God draws us on towards certain actions—(1) through the disposition of objects and through the circumstances in which He places us; (2) through the thoughts He puts in our minds; (3) through the emotions He is able to excite in our hearts. "There is nothing which the Almighty cannot cause to co-operate in the accomplishment of His designs. If, therefore, He chooses to *win over my will and*, at the same time, *to leave it free*, He is able to accomplish both (Ch. VII). According to this manner of reasoning no contradiction is impossible to God, and consequently there is no contradiction which may not be found in things. If man at first resists God's influence, God returns to the charge, and that so often and with such force, that man, who through weakness and being much importuned does things disagreeable to himself, will not resist doing those

which God has undertaken to make pleasing to him." This theory makes God into a kind of seducer or suborner of man. Moreover, it is impossible to reconcile the freedom of our will with this *suavité prévenante*, this *délectation victorieuse*.

Bossuet adopts the fourth solution, which is that of the Thomists, and is called the *doctrine of premonition* or *physical predetermination*. "God acts immediately upon our minds, in such a way that we determine ourselves to act in a certain manner; but our determination is nevertheless free, because He wills it to be so. We harass ourselves vainly when we try to discover the means by which God does what He wills to do: since by the fact that He wills, that which He wills exists. . . . God is the cause not only of our choice, but of the freedom of our choice" (Ch. IX). God is the cause of our freedom, because He makes our action such as it would be if it depended on us alone.

"For we may say that God makes us such as we would ourselves be if we could exist of ourselves, since He makes us with all the principles and with the whole condition of our being. For the condition of our being is to be all that God wishes us to be. Thus He causes that which is man to be man, that which is passion to be passion, and that which is action to be action, and that which is necessary to be necessary, and that which is free in its activity and exercise to be free in its activity and exercise."

But does not this ingenious solution involve a confusion between freedom and spontaneity? All these attempts show that while it is necessary from the point of view of morality and of conscience to accept our freedom as a fact, the difficulty is extreme when we try to explain this fact or to find the theory of it.

Leibnitz: Liberty of Indifference and Moral Necessity; Psychological Determinism; Influence of Motives; Characteristics of Freedom, Intelligence, Spontaneity and Contingency.

Leibnitz is opposed both to the doctrine of Descartes and to that of Spinoza. Descartes, like Duns Scotus, had held that there is in God absolute indifference, and in man free will. Spinoza had identified the possible, the real and the necessary, and subjected the universe to a logical deduction of consequences of which God Himself was the principle. Between this fatalism and the doctrine of indifference, Leibnitz

discovers an intermediate theory—that of moral necessity, which inclines without compelling: *inclinat non necessitat.* The doctrine of liberty of indifference is irreconcilable with divine foreknowledge. "No knowledge however infinite can make God's knowledge and providence consistent with the action of an indeterminate cause, in other words, with something chimerical and impossible." This doctrine is also irreconcilable with the laws of nature and of reason; for, according to it, the soul at the moment of deliberation is in a state in which everything is perfectly balanced, either because the will has no motive for action, or because it is solicited by equally strong motives. But the principle of indiscernibles is inconsistent with any such pure equality in the sphere of nature. For the action to take place, the principle of sufficient reason requires, besides the force, an end towards which it tends, a good by which it is determined.

Spinoza's mistake was to have confounded the real and the necessary. Anything which, taken absolutely, does not imply contradiction is possible. In this sense one may say that the contrary of all that happens in the world is possible, and that consequently all phenomena are contingent. It is necessary for a triangle to have three angles because it is contradictory to say that a triangle could have more or less than three angles. But we cannot deduce the universe logically from the nature of God. Out of an infinite number of worlds God chose the best. The true, the only necessity, is the necessity of the good.

Although the best of all possible worlds was chosen and all its phenomena predetermined, foreseen, co-ordinated by God, necessity reigns nevertheless. "All things are certain and predetermined in man as in everything else, and the human soul is a kind of spiritual automaton" (Théod. 52). The mind is a balance; the motives are the weights; and again, "the mind is a force which endeavours to act in many directions, but does so only where it finds most facility and least resistance. For instance, when air is too closely compressed in a glass receptacle it will break the latter in order to escape from it. It will press on every side of the receptacle, but it will finally rush through on the weakest side. Thus it is that the inclinations of the mind move towards all the goods that present themselves; these are the antecedent volitions: but

the consequent volition, which is the result of them, is determined towards that by which it is most strongly affected" (Théod. 324-325).

In what sense, then, can we attribute freedom to man? Freedom implies three things—*Intelligence*, or the faculty of choosing, *spontaneity* and *contingency*. Intelligence is a distinct knowledge of the object of deliberation, the exact and perfect perception of the differences between the divers possible courses, and of the relation of those differences to the principle of the best. The perfect use of reason, which would consist in having only distinct thoughts, is denied to us; but for this very cause we possess the intelligence characterised by hesitation, and the faculty of choosing, which is required for freedom. *Spontaneity* is the power of acting and of being at the same time oneself the principle of one's own action.

Now all beings have this spontaneity, since the world is made up of monads, or spiritual atoms. Between these there is no direct or reciprocal action, and the agreement between their independent acts is due solely to the harmony pre-established by God. There remains the characteristic of *contingency*. As we have seen, all that is not absolutely impossible, that is to say, contradictory, is contingent. In this sense, not only human actions, but all the phenomena of the real universe are contingent. It is easy to see that all Leibnitz preserves of freedom is the word. What use is it that the contrary of my action is logically possible, if it is really, and in our actual world impossible? Still we must not confound the moral determinism of Leibnitz with Spinoza's logical fatalism. The psychological consequences of the two doctrines may be the same, but the spirit by which they are inspired is quite different.

Hume: Men hold at the same time the Doctrine of Free Will and that of Necessity; Indirect Proofs of the Necessity of our Acts.

David Hume applies in an ingenious manner his doctrine of causality to the problem of freedom. In his opinion there is in the world, properly speaking, neither necessity nor freedom, but only a constant succession of phenomena. His was not a rationalistic method like that of Leibnitz, nor yet an em-

pirical one like Locke's; it was critical, and consisted in forcing the mind by analysis to give a clear account of its own thought. All disputes arise out of the ambiguity of words. Let us agree once for all as to the ideas which really correspond in the mind to the words necessity and liberty, and the discussion will be closed. "I hope," says Hume, "to make it appear that all men have ever agreed in the doctrine both of necessity and of liberty, according to any reasonable sense which can be put on these terms, and that the whole controversy has hitherto turned merely upon words" (*Enq. Conc. Human Understanding*, Sect. VIII, Part I).

Let us, in the first place, see in what sense men may be said to be partisans of the doctrine of necessity; but before we do this we must decide what is the origin of our idea of necessity.

"Our idea therefore, of necessity and causation arises entirely from the uniformity observable in the operations of nature, where similar objects are constantly conjoined together, and the mind is determined by custom to infer the one from the appearance of the other" (*Ibid.*).

A constant conjunction of similar phenomena, a consequent habit of inferring one from the other—this is the only notion we have of necessary connection. If we can show that all men without hesitation or doubt agree that our voluntary actions are subject to the law of regular connection, and that, consequently, they constantly give rise to inferences, we shall thereby prove that all men agree in accepting the doctrine of necessity. The same actions spring from the same motives. The same causes are always followed by the same events; ambition, avarice, self-love, generosity, public spirit, etc., have been at all times the great motives of action. "Would you know the sentiments, inclinations, and course of life of the Greeks and Romans? Study well the temper and actions of the French and English."

If the experience of life is useful, it is precisely because such experience enables us to determine the connection between men's actions and their constant antecedents, and thus to foresee, prevent, or be prepared for them. No doubt human actions differ according to age, sex, country; hence age, sex, education, prejudices, must all be taken into account. Even the peculiar character of each individual will have a certain uniformity in its influence, otherwise we should not be able to

regulate our behaviour to other men on a knowledge of their character. No doubt it is possible to find actions which seem not to have any regular connection with known motives, but it is the same with certain natural phenomena, for instance winds, rain, clouds, under the apparent irregularity of which are concealed laws that remain hidden from us merely on account of their complexity.

"The most irregular and unexpected resolutions of men may frequently be accounted for by those who know every particular circumstance of their character and situation. A person of an obliging disposition gives a peevish answer; but he has the toothache, or has not dined" (*Ibid.*).

One may say of the inferences which we make concerning the actions of our fellow-creatures, that it is upon them that the whole of human life rests. Almost all human actions imply inference from the foreseen actions of others. The labourer who brings his goods to market and offers them at a reasonable price, counts on finding a buyer, and on being able to obtain from other men what he requires for his subsistence by means of the money he will get from this buyer. History, politics, ethics, literary criticism, all imply that we have a right to infer the actions of other men from their motives, and to reason about these actions in the same way as we reason about natural phenomena.

Now, if all men in their practice thus profess the doctrine of necessity, how is it that they have such difficulty in admitting it in words? It is because they have formed a false conception of necessity. Invariable connection between natural phenomena, habitual transition in the mind from the appearance of one thing to the expectation of another, this is all that is involved in our notion of causality.

But, in spite of everything, men have a tendency to believe that they can penetrate more deeply into the powers of nature, and perceive a necessary connection between the cause and the effect. When they subsequently reflect on the operations of their minds, not feeling such a connection between the motives and the act, they assume that there is a difference between the effects of a material force and those of thought and intelligence.[1] But, as we have seen, the notion of necessity,

[1] Hume explains this in the *Enquiry concerning the Human Understanding*, Sect. VIII, part I (note). "The prevalence of the doctrine of liberty may be accounted for from another cause, viz., a false sensation or seeming experience

once it has been traced to its true origin, applies to voluntary acts as well as to natural phenomena. There is one sense, however, in which men rightly accept the doctrine of freedom, this is in the sense given to the word by Locke, that of the power of doing what we will when we are not prevented.

If all human actions may be foreseen when the motives are known, it follows that the consciousness we think we have of freedom is an illusion. Nor have the indirect arguments usually given in favour of free will any more validity. It is a deplorable habit, says Hume, that of refuting doctrines by their dangerous consequences. Such arguments do not assist in the discovery of truth, they only serve to make an adversary odious.

The upholders of necessity, however, may turn against their opponents the arguments used by the latter. Hume does this with great skill, declaring that his doctrine is absolutely essential to morality. "All laws being grounded on rewards and punishments, it is taken as a fundamental principle that these motives have a regular and uniform influence on the mind, and both produce the good and prevent the evil actions."

In the second place, actions are momentary, fleeting, if their source does not lie in the character and disposition of the person who does them. But if they are thus, as it

which we have or may have, of liberty or indifference in many of our actions. The necessity of any action, whether of matter or of mind, is not, properly speaking, a quality in the agent, but in any thinking or intelligent being, who may consider the action; and it consists chiefly in the *determination of his thoughts* to infer the existence of that action from some preceding objects; as liberty when opposed to necessity is nothing but the want of that determination, and a certain looseness or indifference, which we feel, in passing, or not passing, from the idea of one object to that of any succeeding one. Now we may observe, that, though in *reflecting* on human actions we seldom feel such a looseness or indifference, but are commonly able to infer them with considerable certainty from their motives and from the dispositions of the agent, yet it frequently happens that, in performing the actions themselves, we are sensible of something like it: And as all resembling objects are readily taken for each other, this has been employed as a demonstrative and even intuitive proof of human liberty. We feel that our actions are subject to our will, on most occasions; and imagine we feel that the will itself is subject to nothing, because, when by a denial of it we are provoked to try, we feel that it moves easily every way and produces an image (or a *Vellcity*, as it is called in the schools) even on that side on which it did not settle. This image, or faint notion, we persuade ourselves, could at that time have been compleated into the thing itself; because, should that be denied, we find, upon a second trial, that at present it can. We consider not that the fantastical desire of showing liberty is here the motive of our actions, and it seems certain that however we may imagine we feel a liberty within ourselves, a spectator can commonly infer our actions from our motives and character." The consciousness of freedom is, therefore, only a subjective illusion. This is, in substance, the same explanation as that given by Spinoza.

were, detached from the person, they do not make him worthy of praise or blame. "The person is not answerable for them, and as they proceeded from nothing in him that is durable and constant, and leave nothing of that nature behind them, it is impossible he can upon their account become the object of punishment or vengeance."

According to the principle of indifference, Hume says, "a man who has committed an abominable crime is as innocent as on the day of his birth." As against the doctrine of the partisans of freedom, one may say that all the moral notions of mankind imply a relation between the actions of a man and his nature. Why is it that an action is more blameable the more it is premeditated, if it is not "because the criminal action in this case is a proof of bad principles in the mind?"

Kant: Phenomena and Noumena, the Empirical and the Intelligible; Noumenal Freedom.

The solution proposed by Hume was only an apparent one. The meaning he attaches to the word freedom was only a means of insuring the triumph of determinism. After so many fruitless attempts, so many antithetical systems, history seemed to have proved the impossibility of reconciling natural necessity with human freedom.

It is one of Kant's merits that he offered a new hypothesis which, like any other undemonstrated hypothesis, one may refuse to accept, but which, at any rate, includes both determinism and freedom without requiring the human mind to affirm at the same moment two contradictory propositions. According to Kant, we can only represent phenomena to ourselves under the form of space and time, and phenomena represented in space and time cannot be brought into harmony with the unity and identity of consciousness unless, in their reciprocal action, they are linked together by an inflexible determinism. "But since all the concepts and principles of our understanding are altogether void if applied outside the limits of our understanding, it is an illusion on the part of reason when it attributes objective validity to entirely subjective maxims which, in reality, it only accepts for its own satisfaction."

In this way we get rid of fatalism. The world as it appears to us is subject to determinism. But it is only an

apparent world. The world of the thing-in-itself, the world of realities, of noumena, is independent of laws which have meaning only through and for the subjective forms of sense. In a word, we have not the right to infer from what appears to what is. The *Critique of Pure Reason* proves that freedom is possible, the *Critique of Practical Reason*, that it is necessary. Duty, the categorical imperative, has no meaning unless there is freedom; it demands freedom and communicates its own certainty to freedom.

No doubt in our present life our actions, taken collectively, are only phenomena and form a system the parts of which are linked together according to the laws of determinism; but this series, which is manifold, successive and divisible, because unfolded in time, is the expression of an act that is simple, single, free, accomplished outside time, in the eternal. Necessity is the appearance, freedom the reality; and Kant "abolishes knowledge to make room for belief" (Pref. 2nd ed. of the *Critique of Pure Reason*).

Thus, for Kant, there are two worlds, the world as it appears to us, *the world of phenomena* which, being subject to the form of time, can only be thought as determined; and *the world of noumena* which exists outside of time, which alone has real being and to which we have not the right to apply the categories, since these have no meaning except in connection with the entirely subjective forms of sense. The world of phenomena is ruled by *empirical causality*, that is to say, by the continuous concatenation of the same antecedents with the same consequents; in the noumenal world there is no time, no before nor after, hence no antecedents, no consequents. Here we have the reign of *intelligible causality*, that is to say, of freedom.

Let us apply these principles to man. There is a phenomenal and a noumenal man. Man, as he appears to others and to himself, is only the phenomenon of himself. All the actions of that phenomenal man, occurring in time, are connected according to the laws of a necessary succession. If we could take into account all the principles by which he is determined "we should be able to calculate the future conduct of a man with as much certainty as we calculate an eclipse of the sun or moon." When from the

actions of a man we have inferred his habitual springs of conduct, what Kant calls his *empirical character*, can we not with relative certainty determine what he will do under given circumstances? This is the case for determinism.

But where does this empirical character come from, this law, this general rule, from which it is possible to infer the manifold actions of an individual? The empirical character, like everything else that manifests itself in time, merely expresses the thing-in-itself, the absolute, eternal reality. Its principle is therefore not to be found in phenomena. The reason of our empirical character is to be found in the intelligible character which, in its unity, implicitly contains all that our entire life unfolds in its successive variety. We will all our actions, in principle, freely and outside of time. It is this noumenal free choice that, in spite of determinism, justifies remorse in the guilty, indignation in the spectator of evil doing, and that explains the fact that precocity in evil, a kind of fatal tendency found in certain children, appears to us not as an excuse but as an aggravation of the evil. Such, at least, is the conception of Kant, who, filled like St. Augustine with the idea of the wickedness of man, substitutes the idea of the radical sinfulness of man for the theological doctrine of *original sin*.

Conclusion.

The problem of freedom continued to exist after Kant, as it did before him. It has been questioned whether all the elements of his doctrine were in harmony, and whether the doctrine itself was as favourable to morality as he thought it was. Does not the determinism of phenomena extend, by a kind of logical necessity, to the world of noumena? And does not absolute predestination deprive our present life of all meaning, of all moral value? Philosophers tried to restore to freedom its right of interfering in the course of phenomena, and the dispute between the libertarians and determinists was reopened. Determinists, without being able to add anything very new to the psychological arguments of the ancients, but finding constant support in the progress of science, have, by the mechanical theory of the universe, by the relations between mental and physiological life, which are being defined every

day with increasing clearness, and by the inferences to be drawn from statistics (*e.g.* of murders, suicides, and marriages), made the most of the authority of science.

The upholders of free will have, for this very reason, thought themselves obliged to seek an explanation of facts in a region behind human freedom, and would place it at the very origin of things.

The author of a philosophy of freedom, M. Secrétan of Lausanne, has with greater boldness resumed the arguments of Duns Scotus and Descartes, and, after Kant's example, making metaphysics subordinate to morality, he has sacrificed divine foreknowledge to freedom, and co-ordinated all his ideas, all his theories, all his hypotheses concerning the origin and nature of things, with the reality of free will. M. Em. Boutroux asserts the "contingency of natural laws." He reduces laws to the habits of causes that are creative and spontaneous. These causes are called into being and maintained by the infinite freedom which divine perfection, as Descartes said, has given to itself. Others (M. Renouvier and his disciples), making use of the category of number, ask us to reject substance, the infinite, the necessary, all of which, according to them, are unintelligible things; and, in order to satisfy reason, while preserving free will, they propose absolute beginnings, phenomena arising out of nothing, phenomena in themselves and by themselves, and make the relative absolute. Some (MM. Delbœuf, Boussinesq) find in the mechanical laws themselves, or rather in certain cases of indetermination which are reconcilable with these laws, reasons for accepting the doctrine of free will.

M. Alfred Fouillée, on the other hand, finds in determinism itself a "kind of practical equivalent of and indefinite approximation" to free will, by inserting a succession of intermediate terms between the extremes: the idea of freedom, the desire of freedom, and the love of freedom. "We no longer regard freedom as a magical power nor as a completed thing, but as an end, an idea which can only be realised progressively and methodically by means of a regular determinism."

Notwithstanding all these attempts the problem of free will has not been solved. But can it ever be solved after the manner of a mathematical problem? We may doubt it. The

very nature of the problem precludes such a solution; but what one may assert is that it is now stated more precisely than heretofore. The progress of determinism has itself led the partisans of freedom to strengthen their arguments and to extend their application of them. They grant that freedom cannot be a miracle, nor can man, as Spinoza said, be an empire within an empire. If man is free it is because freedom is the principle of things, because it exists everywhere, because determinism itself is only a product of freedom. And it is towards this final solution that the followers of Maine de Biran, as well as those of Kant and Schelling, seem to be advancing.

CHAPTER X

HABIT

HABIT is a disposition acquired or contracted through the repetition or continuation of impressions or actions.

There is an obvious analogy between habit and memory, and we must expect to find that the theories of habit correspond to those we have set forth in connection with memory. The history of this problem has, however, a peculiar interest, because habit, which was first studied by moralists in its relation to the will, has in our days come to be regarded as one of the great principles of speculative philosophy. Here again we have an example of the law of philosophic progress. Truths are added to one another, not by constant accumulation as in the positive sciences, but points of view are changed, and all possible principles of explanation are tried and followed up to their ultimate consequences; and from these attempts at system, from these syntheses, which although only partial are often too ambitious, some permanent truths are attained.

Plato: Antithesis between Habit and Knowledge.

Plato inquires into the nature of habit, and in the main condemns it. Man's task is to set himself free from opinion, which is always relative and changing, and to rise to absolute knowledge, the object of which is the eternal and the immutable. True virtue is knowledge. To know is to do, and to do well is to know; therefore one cannot but despise a virtue that rests on mere habit. It is a thing of routine, without principle, and just as uncertain as the opinion on

which it is founded; and those who possess it are incapable of communicating it to others. The great Athenian politicians had no disciples. Themistocles, Aristides, Pericles, were not able to leave to their children the inheritance of their political knowledge (*Meno*, 99). Consisting as it does in practices that are frequently contradictory, and not derived from any single principle, the virtue that rests upon habit is incapable of making of life a harmonious whole. Habit applies to evil as readily as to good; and if it alights upon the good, it is only by a happy chance. It is not led by the feeling of beauty to recognize that nothing is desirable except the good. Moreover, habitual conduct is generally determined by lower motives, virtue is not loved or desired for its own sake, but for the sake of pleasure or some other advantage. This is the virtue of a slave; this is being "brave through cowardice, temperate through intemperance" (*Phaedo*, 82 *a*).

Plato makes those men live again in the form of bees, wasps, and ants, "who have practised the civil and social virtues, which are called temperance and justice, and which are acquired by habit and attention without philosophy and mind" (*Phaedo*, 82 *a*). (*οἱ τὴν δημοτικὴν τε καὶ πολιτικὴν ἀρετὴν ἐπιτετηδευκότες . . . ἐξ ἔθους τε καὶ μελέτης γεγονυῖαν ἄνευ φιλοσοφίας τε καὶ νοῦ.*)

In the tenth book of the *Republic* (519), when the souls are choosing their future destiny, one unhappy man chooses the condition of tyrant, and thus condemns himself. "He . . . had dwelt in a former life in a well-ordered state, but his virtue was a matter of habit only, and he had no philosophy" (*ἔθει ἄνευ φιλοσοφίας ἀρετῆς μετειληφότα*, *Ibid.* 619).

Aristotle: The Origin, Nature, and Effects of Habit: The part played by Habit in Knowledge and Virtue.

To Aristotle belongs the credit of having been the first to propound a psychological theory of habit. Further truths have, no doubt, been added to those which he discovered, and a more scientific classification of facts has been made; but his theory remains none the less admirable for its depth and precision. Habit, he says, is formed gradually, and is the result of a movement which is not natural or innate, but which is fre-

quently repeated. Thus the origin of habit is the repetition of an act: it has for its principle the acts which are similar to those which it itself engenders. "It is our actions that determine our habits or character" (*Nic. Eth.* II, 2). "It is absurd to say that he who acts unjustly does not wish to become unjust" (*Nic. Eth.* III, 5).

The origin of habit being thus determined, let us now see what habit itself is. Habit is like nature. Just as in nature things follow one another, so is it also with acts of the mind, and what is frequently repeated creates a second nature (*Ὥσπερ γὰρ φύσις ἤδη τὸ ἔθος . . . ὥσπερ γὰρ φύσει τὸ μετὰ τόδε ἐστὶν, οὕτω καὶ ἐνεργείᾳ, τὸ δὲ πολλάκις φύσιν ποιεῖ*" (*De Memoria et Reminiscentia*, 2, 452 *a*, 27). Habit and nature are not, however, identical.

"That which is habitual becomes (by that time) natural (as it were); for in a certain way custom is like nature, because the idea of *frequency* is proximate to that of *always*; and now nature belongs to the idea of always, custom to that of *often*" (*Rhet.* I, 11,370 *a*, 7).

Another proof of the analogy between habit and nature is found in the effects of habit. In the first place an act becomes less difficult through habit.

"By doing just acts we become just, and by doing acts of temperance and courage we become temperate and courageous . . . in a word, acts of any kind produce habits or characters of the same kind, *ἐξ ὁμοίων ἐνεργείων αἱ ἕξεις γίγνονται*" (*Nic. Ethics*, II, 1).

Pleasure is attached to habitual as to natural acts. Perfect virtue is the virtue that takes pleasure in itself and in its own actions. He is not truly virtuous who does not delight in being so, and whose virtue is not the source of all his pleasures and all his joys.

Thus virtue should come to be our nature, and the normal act should be the virtuous act. Every being applies its activity to that which it loves best. Not only does habit make an act less difficult, not only does it get rid of the necessity of effort, but it also produces a tendency to repeat the act; for the soul begins to take pleasure in it, and the more often it acts in a certain way the more it desires to act again in the same way. The soul delights in doing what it has already done. The repetition of an act gives to the activity a form which is as inseparable from it as a second nature. Thus custom (the

repetition of an act) produces habit, habit produces desire, and desire produces action.

Inanimate things are incapable of contracting habits: the repetition of an act will not change their nature.

"For instance, a stone naturally tends to fall downwards, and you could not train it to rise upwards though you tried to do so by throwing it up ten thousand times, nor could you train fire to move downwards" (*Nic. Ethics*, II, 1).

Habit makes its appearance with life, but the human soul alone is capable of adding to nature, and of giving herself the higher forms of knowledge, art, and virtue. Science is not merely the faculty of attaining truth: it is an acquired facility, a tendency to act, to think; it is a knowledge that is ready to pass into action. In the same way, virtue does not consist in an indefinite capacity for acting, nor even in a natural inclination to the good. Virtue is a ἕξις, an active habit, a thing we possess and are prepared to make use of.

It is not enough to will once what reason commands. Human life is not a thing of one day, one swallow does not make a spring. Virtue is the mean between two opposite extremes, and an invariable habit of moderation with regard to the passions. And since, in order to make our definition complete, we must include reason, which alone can determine the due mean, and our freedom which is the principle of habit itself, let us say that virtue is a fixed habit of moderation with regard to the passions, which is voluntary, and determined by right reason (*Nic. Eth.* II, 6).

The repetition of an act engenders a habit, but the original cause of the act itself was our own free will. "He who knowingly commits such actions as will make him unjust is voluntarily unjust" (*Nic. Eth.* III, 5). It is true that when injustice has become habitual, the individual no longer has it in his power to become just, but the habit itself depended on him. Just as he who throws a stone is unable to call it back once it has gone, although, in the first instance, he was free either to pick it up and throw it or not: so, in the first instance, it was in the power of the licentious and unjust man not to be licentious and unjust, ἡ γὰρ ἀρχὴ ἐπ' αὐτῷ (*Ibid.* 1114 *a*, 19). Thus man is responsible for his habits, because he is their true author.

Aristotle may be regarded as the inventor of the great theory which represents habit as the development of a spontaneity through which an act becomes a permanent activity. The nature of a living thing is not fixed or imprisoned once for all in an immutable form. A living being can gain new aptitudes through training and action: he can add mobile forms to those that are fixed; and in this way he may endow himself with a new nature which depends on himself and on that which he does.

Stoicism: Definition of the ἕξις; Knowledge is a ἕξις; Virtue is not Habit; Correction of this Paradox; Theory of the προκοπή; Summary.

The Stoics borrowed the word ἕξις from Aristotle, but they extended and modified its meaning. In Aristotle the word ἕξις corresponds exactly to our 'habit.' Whereas the ἕξις of the Stoics represents a much larger genus, of which habit, properly so-called, is only a species. The ἕξις is the quality (*ποιότης, τὸ ποιόν*) which comprises the essential characteristics of a thing, in contrast to its manner of being (*σχέσις, τὸ πῶς ἔχον*). The ἕξις has its origin in the very nature of the object: it presupposes an internal and innate principle of self-conservation. The *σχέσις*, on the other hand, is acquired (*τὰς μὲν γὰρ σχέσεις ταῖς ἐπικτήτοις καταστάσεσι χαρακτηρίζεσθαι, τὰς δὲ ἕξεις ταῖς ἐξ ἑαυτῶν ἐνεργείας*: *Simpl.* 61 *β*). When the ἕξεις admit neither of the more nor of the less, and are susceptible neither of tension (*ἐπίτασις*) nor of relaxation (*ἄνεσις*), they become what are called the *διαθέσεις*. The distinctive characteristic of the ἕξις, strictly so-called, is that it is capable of degrees, of less and more. The ἕξις always implies some spontaneity: it can also diminish or increase, and by these two characteristics we can see how it is that habit may be considered as one of its species.

The quality which imposes a form on indeterminate matter is a reality, and for the Stoics every reality was corporeal. Quality is therefore a body penetrating another body, a force extending throughout all the parts which it binds together (*τὰς δὲ ποιότητας πνεύματα καὶ τόνους, οὐσίας καὶ σώματα*: Plut. *de Stoic repugn.* XLIII, XLV, XLIX). The ἕξις is an aerial tension, an ether, a breath in circular motion (*ἡ δὲ ἕξις ἐστὶ πνεῦμα*

ἀντιστρέφον ἐφ' ἑαυτό), which goes from the centre to the periphery, returns from the periphery to the centre, and thus holds together the whole body, whose form and unity it is. It had already been said by Aristotle that even a stone, in order to keep its different parts together, required something analogous to a soul. The Stoics place in the stone, in every organised being, a quality, a force, which, by binding its elements together, contains them, and is thus their constant habit (ἕξις). Ἀνάγκη δὲ τὸ ἓν σῶμα ὑπὸ μιᾶς, ὥς φασιν, ἕξεως συνέχεσθαι (Alex. Aphr. *de Mixtis*, 143 *a*).

As in nature the ἕξις is a force which contains and binds together the elements of the stone and of the wood, the bones, and the sinews of the animal, so science is a force which unites representations once they are understood, and makes them into a system (σύστημα). Science is therefore a *habit*, a ἕξις, which consists in an energy and in a voluntary tension of the soul.

"Science is a possession, or *habit* of the representations, which is firm and incapable of being affected by reasoning, and which consists entirely in tension and energy. ἕξιν φαντασιῶν δεκτικην ἀμετάπτωτον ὑπο λόγου ἥντινά φασιν ἐν τόνῳ καὶ δυνάμει κεῖσθαι" (Stob. *Ecl.* II, 130).

Such is the nature of *knowledge*. As regards *virtue*, the Stoics abandon the theory of Aristotle, and return to that of Socrates and Plato. Virtue is knowledge and can be taught: Vice is ignorance: εἶναι δ' ἀγνοίας τὰς κακίας, ὧν αἱ ἀρεταὶ ἐπιστῆμαι (Diog. L. VII, 93). Thus practice with them was identical with theory. Goodness that is natural, or a mere habit, they despised.

"*Cumque superiores* (Aristotle) *non omnem virtutem in ratione esse dicerent, sed quasdam virtutes natura aut more perfectas, hic* (Zeno) *omnes in ratione ponebat*" (Cic. *Acad.* I, 10, 38).

The divers virtues are inseparable from one another; we either have all the virtues, or none of them, for the different virtues cannot exist apart from one another. Virtue is the expression of right will, it is a force that affects all the actions of our life. There are no degrees in virtue: it either is or is not, just as a line must either be straight, or not straight, and there is no other alternative (Diog. L. VII, 127). Between vice and virtue there is no middle stage: he who is not wise is mad.

The obvious conclusion is, that Aristotle was wrong in defining virtue by the ἕξις, for the ἕξις is susceptible of degrees, of more and less. Virtue is a διάθεσις, and is subject neither to tension nor relaxation. Virtue is not acquired gradually, by a series of acts that are in conformity with reason: it appears all at once, and is the soul herself in a state of strength and perfection from which she cannot fall. *Decrescere summum bonum non potest, nec virtuti ire retro licet. . . . Incrementum maximo non est; nihil invenies rectius recto* (Seneca, *Epist.* LXVI, 5).

The Stoics might, in theory, deny any connection between habit and virtue, but, in so doing they seem to have placed virtue on an inaccessible height, to which there was no road. In order to find a wise man, they had to go back to Ulysses, or even as far back as Hercules. But the very necessity of distinguishing themselves from the common herd compelled the Stoics to correct and soften their own paradoxes, to re-establish the existence of certain intermediate states between virtue and vice, and consequently, to allow once more that habit has its place and function in human life. Passion, they said, is a disturbance of the soul, a momentary weakness, (*Motus animi improbabiles subiti et concitati*, Seneca): but if passion is not controlled, or if it arises frequently, it becomes a disease of the soul.

The Stoics divided the diseases of the soul into diseases proper (νοσήματα, *morbi*) and into weaknesses (ἀῤῥωστήματα). The disease of the soul is opinion, which is the cause of desire, and has degenerated into a rooted habit (δόξα ἐπιθυμίας ἐῤῥιζωμένη εἰς ἕξιν), opinion which makes us consider some things as most worthy of pursuit which are not so (μὴ αἱρετά). And there is a false fear, which corresponds to this false desire: *opinio vehemens, inhaerens atque insita de re non fugienda tanquam fugienda* (Sen.).

It is somewhat difficult to see the distinction between the ἀῤῥωστήμα and the νόσημα. The former is a weakness of the soul, a relaxation, which accompanies disease, and is at once the source and the consequence of it. As some bodies are predisposed to physical diseases (εὐεμπτωσίαι) so there is also in certain souls a predisposition to spiritual diseases, they

are *εὐκαταφορίαι εἰς πάθος*. The *νόσοι*, the *ἀῤῥωστήματα*, and the *εὐκαταφορίαι* are *ἕξεις*, habits.

Thus the Stoics acknowledged the part played by habit in vice: they also found themselves obliged to recognize its importance in the attainment of virtue. Just as the soul may degenerate, so also it is possible for it to make progress towards the good. In the first place, every man has a primitive inclination to virtue; *omnibus natura fundamenta dedit semenque virtutum* (Sen. *Epist.* CVIII, 8). In the second place, a man may, without attaining perfect wisdom, gradually come to resemble the sage by imitating his behaviour, by performing the same actions, namely those medium duties, *officia media* which the Stoics call *καθήκοντα* in contrast to the perfect duty (*κατόρθωμα*) which is accomplished by the sage alone. Thus man is capable of a continuous progress towards virtue. Such is the theory of the *προκοπή*.

"Socrates, Diogenes, and Antisthenes made great progress in virtue" (D. L. VII, 91). "When the two Decii, or the two Scipios are commemorated as brave men, or, when Fabricius and Aristides are called just, is either an example of fortitude looked for from the former, or of justice from the latter, as from wise men? For neither of these was wise, in such a sense as we wish the term wise man to be understood. Nor were those who were esteemed and named wise, Marcus Cato and Caius Laelius, wise men. But, from the frequent performance of mean duties, they bore the similitude and appearance of wise men" (Cicero, *de Off.* III, IV, 14).

In this progress towards wisdom, there are three stages. In the lowest, a man is free from most vices, but not from all, *extra multa et magna vitia sed non ultra omnia*. Then follow those who are free from the passions, but are still exposed to the danger of a relapse into them. Lastly, he who has reached the highest term of this progress, is no longer subject to a relapse, and for perfect wisdom, only lacks the consciousness of his own wisdom (*Sed hoc illi: de se nondum liquet. . . . Et scire se nesciunt;* Seneca, *Epist.* LXXV, 8).

This theory of progress would seem to imply a return to the Peripatetic view: for does not the constant practise of all the *καθήκοντα* constitute a progress towards wisdom? But the Stoics adhered nevertheless to their original paradox; between true virtue and the virtue of the vulgar, there is always a chasm. What matters it whether one is drowned near to the shore or

far from it? True virtue is a διάθεσις; it appears entire, all at once, at the extreme end of the progress. It is an indivisible thing which must be possessed in its entirety or not at all.

Let us now see whether it is possible to abstract some common conception from the diverse meanings attached to the word ἕξις. The ἕξις is always a quality, a force capable of degrees of less or more: a cause that is at once formal and corporeal, and imposes a certain unity upon the elements which it pervades and binds together.

By their indifferent use of the word ἕξις to indicate either the force which in nature is the cause of the cohesion of inorganic things, or the force which in knowledge connects our representations into a system; from their use of the same word to express also, both natural dispositions (such as the εὐκαταφορίαι εἰς πάθος) and those which are acquired through the repetition of the same acts (such as the diseases of the soul or progress in virtue), it is clear that the Stoics recognized the connection between the force that is operative in nature, and that development of our spontaneous activity which we call habit. Thus a wider meaning was given to Aristotle's maxim, now a commonplace, that habit is a second nature.

Epicurus: Mechanical Theory of Habit.

Epicurus taught that virtue consists both in knowledge and in habit, but he did not advance any special theory of the latter. Habit would seem to have been to him merely a means, a provisional instrument; for he holds with the Stoics that wisdom, when once it is acquired, can neither increase, nor diminish, nor be lost.

But although Epicurus offers no general theory of habit, he explains the association of ideas by means of a mechanical doctrine which reminds one of the Cartesian view. The soul is corporeal, and is composed of very fine atoms which pervade the whole body. When an impression causes a movement in the soul, this movement produces, in its turn, movements similar to those by which it has on a former occasion been followed. In this way are connected with a present sensation the recollection of past perceptions, or the movements of the body that stand in some relation to that sensation. On hearing the word snow, we think of coldness and whiteness;

when we see acid fruit, the taste of which we know, there is an abundant secretion in our salivary glands. *Atomi casu quodam et sine ratione concurrentes in unum et animam creantes, ut Epicuro placet, quarum una commota, omnem spiritum, id est animam, moveri simul. Unde plerumque audita nive candorem simul et frigus homines recordari, vel quum quis edit acerba quaedam, qui hoc vident, assidue exspuere incremento salivae* (Chalcid. *in Tim.* 213).

In the mystic philosophy of the Neo-Platonists, the part assigned to habit was naturally of minor importance. Practical virtue belongs to the soul, in as much as the latter is joined to the body: it moderates our desires, calms our passions, frees us from false opinions, and presents in the sensible world an image of the true harmony. But virtue has another function besides that of regulating our sensible nature; it separates the body from the soul and prepares man for ecstasy, which is the immediate possession of the Good.

Descartes: Physiological Theory of Habit. Bodily and Mental Habits.

The mechanical theory of habit, of which we found the original conception in Epicurus, was developed by the Cartesian school. Descartes regards the soul and the body as distinct substances. Body is extended, and, like the material universe, subject to mechanical laws only. The soul is pure thought, and has its own law, and its own life. From the union of soul and body there results a third life, which has something from each. The body is an automatic machine; and animals, being only bodies, are mere machines, all of whose movements can be explained by the arrangement of the works and the action of the springs in the machine. Our bodies, like those of animals, are marvellous automata, and are set in motion by the warmest and most subtle elements of the blood, that is, by the animal spirits, which ascend to the brain, and, according to the different movements of the pineal gland (the principal seat of the soul in Descartes' theory), flow rapidly into the muscles, and by distending and contracting the latter produce the movement of our bodies.

"All our limbs can then be set in motion by the objects of sense, and by the spirits, without the aid of the soul. . . . All the movements we make without any intervention of the will (as it often happens that we breathe, or walk, or eat, in fact that we perform all such actions as are common to us and animals), depend solely on the structure of our members and the course which the spirits, excited by the heat of the heart, naturally take in our brains and nerves and muscles, just as the movement of a watch is produced by the force of its spring and the construction of its wheels" (*On the Passions*, *a* 16).

Given this bodily mechanism, it is easy to deduce from it the origin of habit. When the spirits have once passed through certain pores of the brain, these pores are more easily re-opened than others by the return of the spirits into them (*Ibid.* *a* 42).

Habits are formed in us just as rivers hollow out and alter their beds by flowing through them. Thus there are purely corporeal habits, which are due to the sole fact that a movement when repeated traces out an easy road for the spirits to travel in; and, as everything that takes place in the body is re-echoed in the soul, we have in this the source of a real dependence and slavery.

But we must remember that soul and body act and re-act upon one another. Having examined habit from the point of view of the body, let us now consider it from the point of view of the soul. "Our will has by nature such freedom that it can never be forced" (*a* 41). Even after the emergence of a particular thought the soul may come to any one of a number of resolutions. "We do not always connect the same action with the same thought" (*Ibid.* *a* 136). When we want to speak we do not think of the movements of our tongue and lips, but only of the meaning we wish to convey. This is because, through habit,

"We connect the action of our soul, which, through the medium of the gland, is able to move our tongue and lips, with the meaning of the words which follow these movements rather than with the movements themselves" (*Ibid.* *a* 44).

Habit is therefore not forced upon the soul by the mechanism of the body. The soul makes use of the laws of its union with the body in order to realize in this mechanism the mode of action it has chosen. We can

imagine what takes place. "What constitutes the whole activity of the soul is that, merely by willing a thing, it causes the small gland, with which it is closely connected, to move in the way required in order to produce the effect referred to by this act of will" (*Ibid. a* 41).

According to this law, the volitions of the soul, which are free, are followed by such movements of the gland and of the spirits as are necessary to the execution of these volitions. Now, we have seen that, in virtue of purely mechanical laws, the spirits enter more easily into those pores of the brain which have been frequently opened by them, and fall naturally into the paths they have already cut out for themselves. The soul can therefore, through its own volition, make the spirits form throughout its body paths, which answer to the intentions it has formed and to their execution.

There would seem to be greater difficulty in explaining mechanically how it is that the soul is able to join to any movement of the gland whatever thought it chooses to have; Descartes nevertheless grants it this privilege.

"Although each movement of the gland appears to have been joined by nature to each one of our thoughts since the beginning of our life, it is possible nevertheless, through habit, to join them to other thoughts" (*a* 50). "And such is the connection between the soul and the body, that when we have once joined a certain bodily act to a certain thought, the one will in future never occur without the other" (*a* 136).

In virtue of this law man is able, on the occurrence of bodily movements that would naturally occasion fear, to excite within himself the passion of courage; and it is the same with all the other passions. In such cases the bodily mechanism is not affected, the habit no longer has a physical origin, and would seem to consist altogether in the development of a spiritual spontaneity.

Descartes affirms indeed the existence of habits in the purely spiritual life. He writes to the Princess Elizabeth (15th of June, 1645):

"Besides our knowledge of truth, habit also is necessary if we are to be always disposed to judge aright. For inasmuch as we cannot always be attentive to one thing, however clear and evident the reasons may have been which at one time persuaded us of a truth, we may later be induced

to disbelieve the same truth, unless by long and frequent meditation we have so impressed it upon our mind that it has become a habit; and in this sense the schools were right when they said that virtues were habits."

Malebranche: Physiological Theory; Mechanism of Habit; Habits of the Soul; Innate and Instantaneous Habits.

Malebranche develops and expounds with great clearness the mechanical theory of habit, and of its relation to memory. "There are always in some parts of the brain, wherever they may be situated, a somewhat large number of animal spirits, which are in a state of commotion caused by the warmth of the heart whence they come, and quite ready to flow into any place where they can find an open passage. All our nerves meet in the repository of these spirits, and the soul has the power of determining the movement of the spirits, and of conducting them through the nerves into any of the muscles of the body. The spirits, when once they have entered these muscles, cause the latter to swell, and consequently to become shorter, and in this way they set in motion the parts to which the muscles are attached.

But we must observe that the spirits do not always find the paths by which they are to pass sufficiently open and free, and it is for this reason that we have, for example, difficulty in moving our fingers with the rapidity required in order to play musical instruments, or in moving the muscles used in speaking for pronouncing the words of a foreign language: but, by their continual course through them, the animal spirits gradually open and smooth out these paths, so that with time they no longer find any resistance. Now it is in this facility which the animal spirits have of passing into the limbs of our body that habits consist" (*Rech. de la Vérité*, Bk. II, 1st Part, Ch. V).

Malebranche at the same time points out the relation between memory and habit.

"It is evident from what we have just said that memory and habit are in many ways connected, and that, in a sense, memory may pass for a kind of habit. For just as bodily habits consist in the facility the spirits have acquired of passing into certain parts of our body, so memory consists in the traces which these same spirits have impressed on the brain, and which enable us to remember things with ease. So that, if there were no perceptions attached to the course of the animal spirits which is connected with these traces, there would be no difference between memory and the other habits" (*Ibid.*).

But to consider habit merely from the point of view of the connection between soul and body would be an arbitrary limitation of Malebranche's psychology. There are spiritual habits, modifications of our own being, inner tendencies which are stable and permanent. Here Malebranche gives a wider, more general meaning to the word habit. His habit is the Greek ἕξις. Habit, he says, may be innate. "For instance, a child coming into the world is a sinner, and deserving of God's anger, because God loves order, and the heart of this child is not well ordered, and it turns to bodily things from the habitual inclination of an inevitable, natural, or purely involuntary love, which it has derived from his parents without consent on his part" (*Morale*, 1st Part, Ch. III). Man's task is to give himself a second nature in place of this first nature, to substitute the acts of a love that is free, for the acts of a love that is natural. "Natural love leaves in the soul a tendency to natural love, and the love that is the result of choice leaves the habit of that kind of love. When a man has often consented to entertain the love of a good, he acquires a tendency or a facility of consenting to it again" (*Ibid.*).

We should never weary of doing again that which ought to be done. As Malebranche forcibly puts it in a formula which sums up the origin and effects of habit:

"Acts produce habits, and habits acts" (*Ibid.* Ch. IV). "It scarcely ever happens that the stronger habits are formed by a single act, or that the inveterate disposition to obey the movements of self-love is destroyed by an actual movement of the mind. On the contrary, habits are stable" (*Ibid.* Ch. III). "Virtues are usually acquired and strengthened by acts" (*Ibid.* Ch. II).

We must notice here the expressions *hardly ever*, *usually*. For Malebranche, the spiritual habit is so far from being a mechanical or inevitable thing, that it can be acquired or lost at a stroke. Human life is not, like a natural whole, subject even in its progress, to the law of continuity. In considering it we must take into account a supernatural element, namely, divine grace, which will sometimes cause a sudden change of direction. *Naturally* we are only able to contract habits through acts, and to strengthen them by practice (*Ibid.* 1st Part, Ch. VIII, § 1), but "through the sacraments of the new law

we receive justifying grace, or habitual charity" (Ch. VIII, § 2). For instance the priest, in giving absolution, transforms our present good intention into a constant disposition, into a ἕξις, as the Stoics called it. In the same way a good habit may be lost in a single instant.

"The habit of charity is much more frail, much more difficult to acquire and to preserve, than the habit of crime, because a single deliberate act, a single mortal sin will always destroy it. The principal reason of which is that we cannot love God without the assistance of grace, and it is just that we should lose our right to this assistance by one voluntary act of infidelity" (*Morale*, 1st Part, Ch. III, § 17).

To sum up: Malebranche propounds a theory of habit which only refers to the habits that result from the union of the soul and the body, and this theory is a purely mechanical one. As for the habits of the soul, he certainly recognizes their existence; but though he gives a theological explanation of the natural tendencies which depend on original sin, and of those which are due to the action of efficacious grace, he makes no attempt to account for habits properly so called, which arise from the repetition of acts.

Leibnitz: Metaphysical Theory; The Principle of Habit is found in the Laws and the Nature of Spiritual Spontaneity.

Leibnitz deduces habit from the principles of his metaphysical system, and in particular, from the law of continuity: *Non datur saltus in natura.* In the Monad everything comes from the Monad itself; but as each Monad is in harmony with all other Monads, so also are its own acts in harmony with one another: they form a continuous series and depend upon and explain one another. Therefore, a thing that has once been never absolutely ceases to be; something of it always survives in the actual phenomena. "The present is big with the future, and laden with the past" (*New Essays*, Pref.). Habit, in this sense, is a universal metaphysical law, a necessary consequence of determinism, of the law of continuity, and of the pre-established harmony. The soul is not indifferent to its own acts; they express its nature, determine what it will be, and thus become for ever part of itself.

"An immaterial being or a spirit cannot be stripped of all perception of its past existence. There remain to it impressions of all that has formerly happened to it, and it even has presentiments of all that will

happen to it ; but these feelings are most often too feeble to be capable of being distinguished and perceived, although they may perhaps at some time be developed into clearness" (*New Essays*, II, Ch. XXVII, § 14).

Thus habit consists of our past actions, which persist in activity in a latent state, survive in the spontaneity of the Monad, and intervene, whether we are aware of it or not, as determining causes in our present behaviour. What has been cannot altogether pass away, because all things are linked together, and depend upon one another.

"Now, if this transmigration of souls were true, if it were true that souls retaining subtle bodies, passed on a sudden into other coarser bodies, then the same individual might continue to exist in Nestor or Socrates and in some modern person, and could even make his identity known to any one who could penetrate sufficiently into his nature, by the impressions or marks which remained of all that Nestor or Socrates did, and which any mind sufficiently penetrating might there read" (*Ibid.*)

As against the mechanical view of habit, Leibnitz brings forward a theory, according to which, the principle of habit is found in the laws and development of our spiritual spontaneity. We have within us many things whose existence we do not suspect. Those small perceptions which we do not perceive "have more effect than we think."

"These unconscious (unfelt) perceptions also indicate and constitute the identity of the individual, who is characterized by the traces or expressions of his previous states, which these unconscious perceptions preserve, as they connect his previous states with his present state ; and these unconscious perceptions may be known by a higher mind although the individual himself may not be conscious of them, that is to say, though he may no longer have a definite recollection of them. But they (these perceptions) furnish also the means of recovering this recollection when it is needed, through periodic developments which may some day occur" (*New Essays*, Preface).

In the Modern Empirical School Habit becomes a Universal Principle of Explanation. Malebranche, the Precursor of the Associationists.

So far, habit has only been considered by philosophers as a mode of activity, and chiefly in its relation to the moral life. We shall now see how the importance attached to it has grown in modern times. Habit has come to be regarded as the universal law of speculative, as well as of practical life, as

the central fact of the whole of nature, as the explanation of the apparently innate elements of mind. Through habit the *a priori* has been reduced to the *a posteriori*, rational to empirical elements. It is not sufficiently well known that it is to Malebranche that the origin of this explanation of things by habit is to be traced. Not only did he recognize the importance of the association of ideas, and find in it the explanation of apparently primary intuitions (see *External Perception*); he even maintained that man's conception of the universe is merely an illusion caused by habit and the association of ideas.

According to Malebranche, God alone acts in the universe; no movement is ever caused except by Him and on the occasion of some other movement. Now, we attribute causality to material things; we imagine that a ball really pushes the ball that moves after contact with it, whereas, in fact, there is only a succession. "We think that a thing is a cause of some effect when the one is always accompanied by the other." This view, which reduces causality to invariable succession, and the principle of causality (as applied to phenomena) to a subjective illusion strengthened by repetition, recurs in all the following theories.

Locke: Habit Explains the Apparent Innateness of our Practical Principles.

It was natural that empiricism, as it came into fuller consciousness of itself, should ascribe a larger part to habit. For, does not the negation of all *a priori* elements, the derivation of all things from experience, amount to making of nature itself, to use Pascal's expression, "a primary custom"? Locke, however, recognizing, as he did, the existence of an activity peculiar to the mind, does not go so far as this. Still—not to speak of some of his particular theories, such as that of substance, for instance (see *Assoc. of Ideas*)—it is by habit that he explains the apparent innateness of the principles of practical life.

"It may come to pass that doctrines that had been derived from no better an original than the superstition of a nurse or the authority of an old woman may, by length of time and consent of neighbours, grow up to the dignity of principles in religion or morality" (*On Human Understanding* Bk. 1, Ch. II, § 22). Here education plays the principal part.

"When men so instructed are grown up, and reflect on their own minds, they cannot find anything more ancient there than those opinions which men taught them before their memory began to keep a register of their actions, or date the time when any new thing appeared to them; and, therefore, make no scruple to conclude that those propositions, of whose knowledge they can find in themselves no original, were certainly the impress of God and nature on their minds, and not taught them by anyone else" (*Ibid.* § 23).

Thus our respect for moral and religious principles seems to us natural and innate, only because we cannot remember the time when we began to form ideas of them. Everything is explained, in the first place, by habit; secondly, by the fact that we cannot remember when we formed this habit:

"And custom, a greater power than nature, seldom failing to make them worship for divine what she had inured them to bow their minds and submit their understanding to" (*Ibid.* § 25).

Berkeley: All the Principles of Connection between our Ideas are Habits; Idealistic Empiricism.

If we abolish the real existence of extended matter, and substitute for Malebranche's *Vision in God* an immediate action of the divine mind upon the human mind, we have Berkeley's idealism. In his system everything is reduced to ideas and relations between ideas: but these relations are not necessary relations, they do not flow from the nature of things or from their mutual interaction. If there is causality there must be reality, and nothing is truly real except spirits. Berkeley's philosophy eliminates all causality from the external world, and only admits relations of co-existence or of constant succession between phenomena, that is to say, between ideas. The laws of nature are merely rules in accordance with which God excites ideas in us; and yet it is our very observation of those laws that has led us to deny this fact.

"For, when we perceive certain ideas of sense constantly followed by other ideas, and we know this is not of our own doing, we forthwith attribute power and agency to the ideas themselves, and make one the cause of another, than which nothing can be more absurd and unintelligible" (*Principles of Human Knowledge*, § 32).

The constant relations between ideas are not deducible from the ideas themselves, but merely express the divine wisdom and will. The changes in the material world form a kind of

language which expresses the volitions of the supreme mind. Therefore, it is only by experience that we can learn the constant relation between ideas. "Now the set rules or established methods wherein the mind we depend on excites in us the ideas of sense, are called the laws of nature" (*Ibid.* § 30).

"And these we learn by experience, which teaches us that such and such ideas are attended with such and such other ideas in the ordinary course of things. This gives us a sort of foresight which enables us to regulate our actions for the benefit of life. And without this we should be eternally at a loss; we could not know how to act anything that might procure us the least pleasure, or remove the least pain of sense. That food nourishes, sleep refreshes, and fire warms us; that to sow in the seed time is the way to reap in the harvest; and in general that to obtain such or such ends, such or such means are conducive—all this we know, not by discovering any necessary connection between our ideas, but only by the observation of the settled laws of nature, without which we should be all in uncertainty and confusion, and a grown man no more know how to manage himself in the affairs of life than an infant just born" (*Ibid.* § 31).

Habit is the source of foresight. "We may, from the experience we have had of the train and succession of ideas in our minds, often make, I will not say uncertain conjectures, but sure and well-grounded predictions concerning the ideas we shall be affected with pursuant to a great train of actions, and be enabled to pass a right judgment of what would have appeared to us, in case we were placed in circumstances very different from those we are in at present" (*Ibid.* § 59). Thus, according to Berkeley, there are no other relations between our ideas than those of co-existence and constant succession which we discover by experience, and which, being fixed into habits, become the regulative principles of human life.

David Hume: Habit the Principle of all the Laws of Mind; Exception in the Case of Mathematics.

Hume's system is a generalization of the foregoing principle of explanation. Habit with him becomes the universal law of mind. Not only external perception, but all our experiences, all our inferences are explained by habit. Empiricism becomes Associationism. We find once more in connection with the

question of habit, all those arguments which we stated in giving an account of Hume's theories of reason and perception. Whenever we find two objects or two events constantly joined together, we immediately infer one from the other. And yet we have not by all our experience acquired any idea or knowledge of "the secret power by which the one object produces the other"; nor is it by any process of reasoning we are engaged to draw this inference. How is it then that we inevitably arrive at such a conclusion? There is some other principle which determines us to form such a conclusion—"this principle is custom or habit."

"Whenever the repetition of any particular act or operation produces a propensity to renew the same act or operation, without being compelled by any reasoning or process of the understanding, we always say, that this propensity is the effect of *custom*. By employing that word, we pretend not to have given the ultimate reason of such a propensity. We only point out a principle of human nature, which is universally acknowledged, and which is well known by its effects. Perhaps we can push our inquiries no farther, or pretend to give the cause of this cause, but must rest contented with it as the ultimate principle, which we can assign, of all our conclusions from experience" (*Enq. conc. the Human Understanding*, Sect. V, Pt. 1).

Hume cannot see any other way of explaining the fact that several experiences are required to establish a general law, and that a single one is not sufficient.

"Custom, then, is the real guide of human life. It is that principle alone which renders our experience useful to us, and makes us expect for the future a similar train of events with those which have appeared in the past. Without the influence of custom, we should be entirely ignorant of every matter of fact beyond what is immediately present to the memory and senses. We should never know how to adjust means to ends, or to employ our natural powers in the production of any effect" (*Ibid.*).

To the objection that there is a distinction between experience and reason, Hume replies: "If we examine those arguments, which in any of the sciences above mentioned, are supposed to be the mere effects of reasoning and reflection, these will be found to terminate, at last, in some general principle or conclusion, for which we can assign no reason but observation and experience" (*Ibid.* note). In short, habit is the principle of our belief in matters of fact.

"Having found . . . that any two kinds of objects—flame and heat, snow and cold—have always been conjoined together: if flame or snow be presented anew to the senses, the mind is carried by custom to expect heat or cold, and to *believe* that such a quality does exist, and will discover itself upon a nearer approach. . . . It is an operation of the soul, when we are so situated, as unavoidable as to feel the passion of love, when we receive benefits, or hatred, when we meet with injuries. All these operations are a species of natural instincts, which no reasoning or process of the thought and understanding is able either to produce or to prevent" (*Ibid.*).

Thus, according to Hume, it is not by intuition or by reasoning that we are able to know the future in the past, to infer what will be from what has been; such inference is merely the effect of habit. As for the fact that an irresistible belief springs from habit, this is a kind of natural instinct the explanation of which it is useless to seek.

Hume allowed, however, that there is a certainty of a peculiar character in Mathematics. "The conclusions which it [Reason] draws from considering one circle are the same which it would form upon surveying all the circles in the universe." This exception was to be abolished later by a more logical empiricism which includes mathematics among the inductive sciences, and admits of only one single principle of belief, namely habit.

Condillac: Habit, Instinct, and Reason.

Condillac's ingenious psychology added some new elements to the empirical theory. His views on the relations between habit and reason resemble those of Herbert Spencer, but he omitted the element of heredity, and claims to explain by the experience of the individual, what the evolutionists of to-day explain by the experience of successive generations. Still Condillac deserves the credit of having traced the path which was to be followed by the philosophers of his school. The latter have gone further than he did, but in the same direction. Actions are conditioned by our needs. The same acts are conditioned by the same needs, and thus habits are formed. There is no radical difference between human and animal activity. Animals begin by acting with reflection, but,

"As they have few needs, the time soon comes when they have done all that reflection can teach them. There only remains for them to repeat every day the same things; they must therefore finally have nothing but habits, they must be limited to instinct . . . instinct is nothing but a habit out of which the element of reflection has been eliminated" (*Traité des Animaux*, Ch. V).

By this we see how it is that instinct is the same for all individuals belonging to the same species.

"Since all individuals of the same species are moved by the same principle, which acts toward the same ends and employ the same means, they must necessarily contract the same habits, do the same things and do them in the same way" (*Ibid.* III).

Habit in animals is instinct. What is it then that characterizes habit in man? In the first place, we have many needs, in consequence of which we have many habits; and since these habits can only be fostered at the expense of one another, they are more subject to change, and are less narrow. In the second place, as Condillac ingeniously remarks, men imitate one another, so that individual traits, instead of disappearing, tend to spread: hence the multiplication of needs and ideas, of means and ends. "Men end by being so different only because they begin by imitating one another and continue to do so" (*Ibid.*). Finally, as our habits are few in proportion to the variety of our circumstances, reason must come to our aid. This is also Herbert Spencer's theory. There is no absolute difference between instinct and intelligence; reason appears when acts are no longer performed with automatic certainty, and when circumstances are too complex and occur too seldom to give rise to an instinctive habit. As Condillac very clearly puts it: "The amount of reflection which we possess over and above our habits, is what constitutes our reason." We have therefore an *ego of habit* which regulates all our animal faculties, and an *ego of reflection* which is characterized by invention and skill.

As regards the connection between habit and the regulative principles of knowledge, Condillac is not as clear or as complete in his analysis as Hume. "We have instinct since we have habits; our instinct extends even further than that of animals, for it is not only practical but theoretical. Theoretical

instinct is the effect of a method that has become familiar." Every man who speaks a language, for instance, has a more or less perfect method.

"By dint of repeating the judgments of those who superintend our education, and of reflecting ourselves on the knowledge we have acquired, we contract such a strong habit of apprehending relations between things, that we sometimes divine the truth before we have grasped the demonstration . we discern it by instinct."

Here Condillac refers to an acquired aptitude; he does not trace the principles of knowledge to habit. On the subject of our judgments of taste he is more explicit.

"The instinct by which we judge of the beautiful is the result of certain judgments which have become familiar to us, and which, for this reason, have been transformed into what we call feeling, taste; so that feeling or tasting the beauty of an object was originally merely judging it in comparison with other things (*Ibid.* Ch. V). The tastes of men differ according to the different habits which circumstances have made them contract. The sense of beauty or taste originates in a very slow process of judgment" (*Ibid.*).

Thomas Reid: Reaction against the Doctrine of Hume; Habit the Mechanical Principle of Action.

On this, as on all other subjects, Reid sought to bring about a reaction against the scepticism of Hume. He returns to the common-sense view, considers habit in relation to our active faculties, and, far from finding in it the principle of belief and the source of certitude, asserts that it is merely a mechanical principle of action.

"Habit differs from instinct not in its nature, but in its origin; the latter being natural, the former acquired. Both operate without will or intention, without thought, and therefore may be called *mechanical principles*" (*On the Active Powers*, III, Part I, Ch. III).

We recognize here the descriptive method which dwells on distinctive characteristics rather than on analogies. It did not occur to Reid to reduce instinct and habit to a more general fact, which would include and explain the apparent antithesis between them. He criticises the definition usually given of habit as "a facility of doing a thing, acquired by having done it frequently." This definition, he says, is only sufficient as regards habits in matters of art.

"But the habits that may with propriety be called principles of action must give more than a facility, they must give an inclination or impulse to do the action. . . . I conceive it to be part of our constitution that what we have been accustomed to do, we acquire not only a facility but a proneness to do in like occasions, so that it requires a particular will and effort to forebear it, but to do it requires very often no will at all. We are carried by habit as by a stream in swimming if we make no resistance (*Ibid.*).

Reid repeats Aristotle's observation that habit is not found in the inorganic world or in human works of art. "A clock or a watch, a waggon or a plough, by the custom of going does not learn to go better, or require less moving force, the earth does not increase in fertility by the custom of bearing crops." Here Reid means by habit the mere repetition of an action. Nevertheless, the phenomenon of the acclimatization of plants shows that habit appears with vegetable life: it is much more complex in the animal: and in human life it plays a very considerable part. Besides habits properly so called, man has acquired appetites.

"Some habits produce only a facility of doing a thing without any inclination to do it. All arts are habits of this kind; but they cannot be called principles of action. Other habits produce a proneness to do an action without thought or intention These we considered before as mechanical principles of action. There are other habits which produce a desire of a certain object and an uneasy sensation till it is obtained. It is this last kind only that I call acquired appetites" (*On the Active Powers*, III, Part II, Ch. I).

These ingenious observations were to be further explained and reduced to simple laws by a French psychologist, Maine de Biran. Reid points out with much ingenuity the uses of habit. As without instinct a child would not reach manhood, so without habit a man would remain in childhood all his life. He dwells on the example afforded by language: "This art, if it were not more common, would appear more wonderful than that a man should dance blindfold amidst a thousand burning ploughshares without being burnt." But having arrived at the question of the origin of habit, Reid as usual refuses to face it.

"We can assign no cause of this instinct and habit other than the will of Him who made us. . . . No man can show a reason why our doing a thing frequently should produce either a facility or inclination to do it."

Dugald Stewart: Habit traced to the Association of Ideas and Volitions. Hamilton returns to Leibnitz's Theory.

On the question of habit Dugald Stewart parts from his master. Reid regards habit as a mechanical principle of action, independent of will and of intelligence, and of the same nature as instinct. According to Dugald Stewart, habit does not differ from conscious and voluntary action. He explains it by the rapidity with which ideas and volitions follow each other when they have been frequently joined together and repeated. Thus he traces habit to the association of ideas and volitions. When we are learning to play the piano, each movement of our fingers is preceded by a conscious act of volition; but by degrees, after sufficient repetition, we execute the movements without being able to say afterwards whether we were conscious or not of the volitions which preceded them. Not that, according to Dugald Stewart, habit differs in its nature from will; but, with the practised performer, the volitions follow each other with such rapidity through his consciousness, that they leave no trace there, and consequently cannot be recalled by memory.

Hamilton differs from both Reid and Dugald Stewart. When we read aloud, he says, if the subject does not interest us we can pursue a serious meditation on a totally different subject, which would be impossible if we had a distinct perception of each of the smaller changes which go to make up these two operations, or if we gave to each a special attention. Hamilton asserts that habit can only be explained by the Leibnitzian theory of unconscious mental modifications.

Maine de Biran: Laws of Habit; its Effect on Feeling.

Maine de Biran determined the laws of habit with much penetration. When he wrote his *Mémoire sur l'habitude*, he had not yet separated himself from the sensationalist school. He speaks like Stuart Mill. "What we find in our consciousness at the first glance are masses of phenomena" (p. 10). Habit at once complicates mental facts by combining them, and effaces the traces of this combination, so that we take what is complex to be simple. The psychologist's task is to reconstruct all these habits which constitute our

understanding, to discover the simple phenomena and the laws of their combination.

Still, throughout the *Mémoire*, he distinguishes the passive from the active elements in the life of mind, a process which is equivalent to abandoning mere sensationalism. This distinction is confirmed by the difference of the effects which habit has on feeling and on our active powers. As regards the effects of habit on our emotions, "all our impressions," he says, "of whatever nature they may be, become gradually feebler when they have continued for a certain time, or been frequently repeated. The only exception is in the case when the cause of the impression goes so far as to injure or destroy the organ" (p. 73). "Our sensations alter or disappear more rapidly and more completely in proportion to the passivity of their special organs" (p. 84). Maine de Biran tries to explain this effect of habit on sensation by the hypothesis of a sensible principle, which acts unconsciously, a kind of vital principle which is "distinct from our motor activity, or from our voluntary determinations." The weakening of continued or repeated sensations does not depend on mechanical causes, but is a result of the activity of the principle which produces these sensations (p. 80). If a sensation grows feebler, it is because the reaction which is its condition becomes less. "When the cause of a sensation has acted long enough and with enough force on an organ, it modifies the latter, and raises its relative tone: but, on the other hand, the sensible principle also raises the forces of our system, in order to place them, as it were, on a level with this stimulation, and to preserve the former relations. The organ persists for a certain time in this condition, and if, while it lasts, the same cause acts again, it is evident that this cause will produce less change than the first time; because it will find the organ and the whole system already partly tuned up to the pitch to which it tends to bring them, and consequently it changes the relations between the forces much less than before, and consequently the sensation will be less lively. The more frequent the repetitions are, and the shorter the intervals, the nearer will the effects approach continuity. If the intervals are long enough for the system and the organs to return to their original state, it is

evident that the sensation, when repeated, will be like a new one (p. 82). And what is true of our physical sensibility is equally true of our moral sensibility. "Every continuous or repeated excitation of our sensibility, whatever may be its moving cause or inner centre, must have parallel and corresponding results in our sensations and in the sentiments of our soul, in the physical and moral part of our being."

Maine de Biran makes the profound remark that if sensation is blunted by habit, habit, on the other hand, often develops passion and desire. This fact, according to him, cannot be made to agree with the mechanical hypotheses of an increase of mobility or of an artificial callousness of the parts, hypotheses which are often employed to explain the weakening of repeated impressions (p. 84).

On the other hand, the hypothesis of a sensible principle enables us to understand "the increase of needs and the violence of desires on the one side, corresponding to indifference on the other." Considered as the causes of stimulation, the impressions become necessary as they grow feebler. "According as the sensation grows feebler and has less effect on the organ, the system or the centre that is most directly concerned remains none the less fixed at the same pitch; and the sensitive principle always preserves a more or less persistent quality (or determination) of the sensation. It will therefore still act even when the stimulating cause fails. According as the pitch of the organ becomes lower, a kind of effort is required to raise it again, and to restore it to its former activity. The failure of this effort will produce disturbance, uneasiness, anxiety, and desire. It is for this reason that a being accustomed to factitious stimulants feels no enjoyment in their use, yet suffers real torment when deprived of them" (p. 90).

Maine de Biran's general principle is, that while habit weakens in us all that is passive, it at the same time renders every kind of activity more perfect.

"Every voluntary movement when frequently repeated becomes gradually easier, more rapid, and more precise, whilst the effect or impression that results from the movement becomes less in the same ratio as that of the increase in the rapidity, precision, and facility; and in the final stage of this increase the movement becomes entirely insensible, and affects consciousness only through the results in which it co-operates or

the impressions with which it is associated" (p. 96). This effect of habit on the phenomena of action explains the fact that perception becomes more distinct according as sensation is less acute; that through education the senses work together in harmony, that one may take the place of another, and that finally perceptions become associated by simultaneity and succession. "If all our faculties, however we may distinguish them in name," Maine de Biran concludes (p. 296), "are nothing but modifications of the faculties of feeling and of motion, they must all share in the one or the other of these two effects of habit; that is to say, they will, as sensations or feelings, all degenerate, become weaker (in certain cases stronger), whilst as movements they will become developed, acquire greater perfection, more precision, rapidity, and facility."

M. Ravaisson: the Two Laws of Habit reduced to One; Metaphysical Consequence.

M. Ravaisson returned to the problem of habit and its laws and simplified the above solution. Maine de Biran had explained the different effects of habit by the difference in the activities which are modified, and pointed out the opposition between the law of life and the will. M. Ravaisson sought and discovered a universal law in harmony with all observed phenomena. He begins by laying down the two antithetical laws which Maine de Biran had already formulated:

"The general effect of any continuity or of any change caused in a living being by any thing other than itself, is that if this change does not go so far as to destroy the being, the latter is always less and less affected by it; on the other hand, the more the living being repeats or prolongs a change originating in itself, the more often he will go on repeating it and the stronger becomes the tendency to do so. The change that comes to it from outside becomes more and more foreign to it, the change which comes to it through itself becomes more and more its own. *Receptivity diminishes, spontaneity increases*, this is the general law of habit" (*De l'Habitude*, p. 9).

But are not these two laws the corollary of a more universal law which includes and explains them both?

"Continuity and repetition weaken passivity and heighten activity. But in the opposite histories of these two opposite powers we find a common feature. Whenever the sensation is not painful, according as it is prolonged and repeated, according as it consequently grows fainter, it becomes more and more a need. On the other hand, according as in the movement effort disappears and action becomes more free and more rapid, it also grows more and more into a tendency, an inclination which no longer awaits the command of will, but forestalls it and even often escapes will and

consciousness altogether. Thus, in sensation and in activity a kind of *obscure activity*, which anticipates more and more, in the one case, the will, in the other the impression of external objects, is equally developed whether by continuation or by repetition. . . . Thus sensation is lowered and mobility heightened by repetition, but *for one and the same cause*, namely, the development of an unconscious spontaneity, which penetrates and becomes more firmly established in the passivity of the organism, outside and below the region of will, of personality, and of consciousness. . . . The law of habit can only be explained by the development of a spontaneous activity, which is at once and equally different from both mechanical necessity and conscious freedom" (pp. 25-28).

A sensation when repeated grows feebler, because it no longer causes an abrupt change, because it is a permanent state of the mind, something belonging to ourselves, an element of our inner life; for the same reason it becomes an ever more imperious want, which calls for satisfaction. In the same way, an action when repeated is performed with increasing facility, because this action becomes a special faculty, a new power, which acts of itself and realizes its own object.

From this theory of habit M. Ravaisson thinks that important metaphysical consequences may be deduced. Habit is a force which springs from that force which we ourselves are, and in no way differs from it. But if habit begins in consciousness and will, does it not tend to end in an unconscious spontaneity? If it sets out from the mind, does it not do so only to get ever further away from the mind and nearer to nature's mode of action? And does not this seem to invite us to carry the light of consciousness into the lowest depths of the life of instinct?

In that continuity, which by insensible degrees leads from spirit to nature, M. Ravaisson thinks he has found a clear proof of the unity of Being. The upholders of the mechanical theory professed to derive the spiritual from the physical, to reduce to a material necessity all order, all harmony which would seem to imply direction, and hence design. M. Ravaisson boldly adopts the opposite standpoint. In the gradual degradation of our own activity, which, having begun with a conscious effort, seems through habit to return to the sureness of instinct, he finds the middle term which unites the two apparently opposite extremes: nature and spirit. But, on this view, that which is mechanical is not the first but the

derived: it is a symbolic expression of spiritual activity, arrested and crystallized into a form in which it imprisons itself. Mechanism does not exclude design, but is the first, the simplest application of it. Mechanism can no more be separated from design than language from the thought which it expresses; the word is necessary to the idea, but it only exists through and for the idea; in the same way the end can only be attained through movement, but movement exists only through and for the end to be attained. To do away with direction is to do away with the movement, therefore to suppress design is to suppress mechanism.

James Mill and John Stuart Mill follow Hume: Inseparable Associations, Unconscious Syntheses.

In England the tradition of Hume's teaching, carried on by Hartley, was never broken. James Mill, the father and master of John Stuart Mill, regards habit, through which the association of ideas gradually becomes inseparable, as the great principle of human thought.

"Where two or more ideas have been often repeated together, and the association has become very strong, they sometimes spring up in such close combination as not to be distinguishable. Ideas, also, which have been so often conjoined that whenever one exists in the mind the others immediately exist along with it, seem to run into one another, to coalesce as it were, and out of many to form one idea; which idea, however in reality complex, appears to be no less simple than any one of those of which it is composed. Some ideas are, by frequency and strength of association, so closely combined that they cannot be separated. If one exists, the other exists along with it, in spite of whatever effort we make to disjoin them" (*Analysis of Human Mind*, I, 68).

Hence the illusions of intuitional psychology: complex collections of ideas are taken for simple ideas, and truths which have been gradually cemented by experience, for immediate data of consciousness. This law of association, according to James Mill, plays the chief part in some of the most important phenomena of the human mind; it explains the formation of our ideas of external objects, our faculty of classification, all the advantages of language, the relation of cause and effect, and even the primary laws of logic. Stuart Mill gives precision to James Mill's system by adding to it his theory of *inseparable association* (see *Ass. of Ideas*, p. 193).

In this theory Stuart Mill breaks up all these apparently simple intuitions, and traces them to syntheses, the complexity of which we are, owing to habit, no longer able to perceive. External objects, the mathematical axioms, the principles of the positive sciences (*e.g.* the law of causality) are so many products of habit and results of inseparable association.

Hamilton had attacked the doctrine which professes to explain the *a priori* principles of thought by habit. Stuart Mill endeavours to refute his arguments.

"Hamilton says: 'We can think away each and every part of the knowledge we have derived from experience.' 'Yes,' says Mill, 'associations derived from experience are doubtless separable by a sufficient amount of contrary experience'" (Mill's *Examination of Hamilton*, p. 264).

Again Sir W. Hamilton says:

"When association is recent the causal judgment should be weak, and rise only gradually to full force, as custom becomes inveterate." And how do we know that it does not? answers J. S. Mill. The whole process by which we acquire our belief in causality takes place at an age of which we have no recollection, so that the verification of the fact by experience is impossible. But Hamilton's great argument is the feeling of necessity which accompanies these *a priori* truths.

"The *necessity* of so thinking cannot be derived from the *custom* of so thinking; and the customary never reaches, never even approaches to the necessary. Association may explain a strong and special, but it can never explain a universal and absolutely irresistible, belief. What I cannot but think must be *a priori* or original to thought; it cannot be engendered by experience upon custom."

Mill is amazed at this argument.

"For if there be any one feeling in our nature which the laws of association are obviously equal to producing, it is that [of necessity.] The necessary, according to Kant's definition, and there is none better, is that of which the negation is impossible. If we find it impossible by any trial to separate two ideas, we have all the feeling of necessity which the mind is capable of. Those therefore who say that association cannot generate a necessity of thought must be willing to affirm that two ideas are never so knit together by association as to be practically inseparable. But to affirm this is to contradict the most familiar experience of life" (p. 264).

If we believe these principles to be *a priori*, it is because of the associations we formed at the very beginning of our life,

at a time of which we have no recollection. If these principles are universal, it is because these associations are common to all men, or to the majority of mankind. Thus Stuart Mill reduces certainty to the impossibility of conceiving the contrary. And this impossibility is itself merely the result of a habit created by the regular succession of phenomena.

Herbert Spencer adds Heredity to Habit; Nature is a Primary Custom; The Transition from Instinct to Reason and from Reason to Instinct.

We have already seen that Herbert Spencer adds to Stuart Mill's doctrine the element of heredity. It is he especially who has made habit the sovereign law, the principle of all explanation. But habit is no longer regarded as merely individual. By modification of the organism, it is transmitted from generation to generation: it becomes an inheritance, which ensures that evolution is a continuous progress. Thought is a consequence of life, and like life itself it is a perpetual adaptation of the being to its environment.

"All intelligent action whatever is the establishment of a correspondence between internal changes and external coexistences and sequences . . . through insensible gradations" (*Princ. of Psychology*, § 194, 1st ed.).

Thus it is external phenomena that gradually create the organism and constitute thought. There is no break, no sudden advance, a slow evolution leads, through the progress of habit, from the simplest of organic forms to the most complex, from reflex action to instinct which is only a compound reflex action, from instinct to memory, reason, and will.

It is a mistake to make any radical distinction between the innate and the acquired, between nature and habit. Nature is merely a primary custom, a habit which has been made definite by constant repetition. It can be proved that the parallel evolution of life and of thought must necessarily, at a given moment, cause the infallibility of instinct to be replaced by the uncertainties of rational activity, and automatic action by action that is habitual in different degrees. We can also say directly that an act that was once conscious may gradually become purely automatic, and thus insensibly we return to the instinct from which we set out. "Instinct may be regarded as a kind of organized memory; on the other

hand, memory may be regarded as a kind of incipient instinct" (*Ibid.* § 190).

In the first place, let us see how it is that memory and reason take the place of instinct. "The cohesion between psychical states is proportionate to the frequency with which the relation between the answering external phenomena has been presented in experience" (*Ibid.* § 195). There must be indissoluble psychical relations corresponding to the simple, universal, and constant relations that exist in the environment. "Yet it is manifest that with relations increasingly complex and decreasingly frequent, there must come a point at which the answering physical relations will no longer be absolutely coherent" (*Ibid.* § 189). It must be that while, in instinct, the correspondence is between inner and outer relations that are simple or general, in reason, on the contrary, the correspondence is between inner and outer relations that are complex, or special, or abstract, or infrequent. "But the complexity, speciality, abstractness, and infrequence of relations are entirely a matter of degree: of each there are countless gradations by which its extremes are united" (*Ibid* § 194). Thus it inevitably happens that a great number and variety of psychical relations are finally established in the organism: and that these relations possess divers degrees of coherence, beginning with instinct, and going through all the stages of habit, finally reaching conscious action, which implies a new adaptation of already existing relations.

From this, according to Herbert Spencer, it is easy to see that in virtue of the laws of evolution, the cause of thought is found in life and that of reason in instinct. It is still easier to see how instinct is formed. There is no commoner experience than the passage in us from the voluntary and rational to the automatic stage. "The rational actions pass, by constant repetition, into the automatic or instinctive" (*Ibid.* § 195). Thus the mind passes from reflection to habit, and from habit to instinct ,just as from instinct it proceeded to habit, and from habit to reflection.

"Take as one example the actions gone through in such a process as that of shaving, or that of tying a neck-kerchief. Every man will remember that when, as a youth, he first attempted to guide his fingers in the proper

direction by watching the reflections of them in the looking-glass, he was greatly perplexed to move them rightly. The ordinary relations between the visual impressions received from his moving fingers and the muscular feelings arising from their motions no longer holding good when he had to deal with the images of his fingers as seen in the glass, he was led to make movements quite different from those he intended; and it was only after setting himself deliberately to watch how the motions and the reflected appearances were related, and then consciously making a certain motion in expectation of a certain appearance that he slowly mastered the difficulty. By daily practice, however, the impressions and motions have become so well co-ordinated that he now goes through them while busily thinking of something else, they have more or less completely lapsed from the rational into the automatic. . . . In fact it will be found on considering them that the greater part of our common daily actions—actions, every step of which was originally preceded by a consciousness of consequences, and was therefore rational—have, by habit, merged more or less completely into automatic actions. The requisite impression being made on us, the appropriate movements follow, without memory, reason, or volition coming into play."

"Perhaps the most marked instance of the gradual lapse of memory into automatic coherence is that seen in the musician. . . . The visual impression produced by the crotchet or quaver, the consciousness of its position on the lines of the stave and of its relation to the beginning of the bar, the consciousness of the place of the answering key on the piano, the consciousness of the muscular adjustments required to bring the arm, hand, and finger into the attitude requisite for touching that key, the consciousness of the muscular impulse required to give a blow of the due strength, and of the time during which the muscles must be kept contracted to produce the right length of note—all these states of consciousness, which at first arose in a distinct succession and thus formed so many recollections, ultimately constitute a succession so rapid that the whole of them pass through consciousness in an inappreciable time" (*Ibid.* Ch. VI).

Here Herbert Spencer seems to agree with Dugald Stewart: but, for the former, absence of memory depends on absence of consciousness. Habit cannot be reduced to a series of ideas and volitions too rapid for distinct recollection. It is a series of acts which have become gradually automatic.

"As fast as they cease to be distinct states of consciousness—as fast as they, by consequence, cease to be represented in memory, so fast do they

become automatic; the two things are two sides of the same thing. And thus it happens that the practised musician can continue to play while conversing with those around, while his memory is occupied with quite other ideas than the meanings of the signs before him."

Physiological Explanation of Habit; Habit transmitted by Heredity; Habit the Law of Every Form of Existence.

Habit is the most general law of psychical phenomena. But intelligence cannot be separated from life, nor life from the organism which is its condition. The last question concerning habit is: "By what physical process does an external relation that habitually affects an organism, produce in that organism a corresponding internal relation?" Herbert Spencer considers that the following principle can be deduced from the universal mechanical laws:

"When a wave of molecular transformation passes through a nervous structure, there is wrought in the structure a modification such that, other things being equal, a subsequent like wave passes through this structure with greater facility than its predecessor . . ." And he regards nervous evolution as "an accumulated result of such changes" (*Ibid.* § 249, 2nd ed.).

We see from this that, in a general way, the connections between the nervous elements correspond to the relations between the external phenomena. The internal is formed by the external. We are also by this enabled to understand certain laws of habit which are proved by experience. The more intense two simultaneous or successive sensations are, the more their relation tends to become fixed in the organism. The repetition of the relation between two states of consciousness strengthens their connection. An action which was at first repugnant, usually becomes with time less disagreeable, and ends by being altogether indifferent or even pleasant.

The principle of these three laws is the same. A very intense current may produce all at once the same effect as a very feeble current would produce only after frequent repetition. The painful feeling that accompanies some kinds of action arises from the resistance offered to them on the part of the organism; but when this action is repeated it establishes nervous connections, creates an apparatus corresponding to itself, and may thus become one of the necessary forms of the flow of nervous force.

"It will be obvious that these and other traits of progressing intelligence harmonize with the principle that lines of nervous communication are formed by the passage of waves of molecular motion, and become the more permeable the more frequently such waves are repeated" (*Ibid.* § 252).

It is only through this physiological explanation of habit that we are able to understand fully the evolution of thought and of life. The organism is transmitted in the state into which it has been modified by habit. What was habit in the father becomes nature in the child. There is no break in the life of successive generations. Individual experience cannot account for all internal facts. The human race is, in truth, like one vast individual; in fact, it is not enough to say the human race; man owes something to the humblest of his ancestors. He is the result of an immense experience: that of all the species which, by their metamorphoses, have prepared the way for his advent. ". . . The simple universal law that the cohesion of psychical states is proportionate to the frequency with which they have followed one another in experience requires but to be supplemented by the law that habitual psychical successions entail some hereditary tendency to such successions, which, under persistent conditions, will become cumulative in generation after generation, to supply an explanation of all psychological phenomena, and, among others, of the so-called laws of thought" (*Ibid.* 1st ed. § 197).

In this way, according to Herbert Spencer, we are able to reconcile the hypothesis of the empiricists with that of the transcendentalists. The former are right in affirming that everything comes from experience, and the latter in maintaining that there are innate elements in the mind. The solution of this difficulty is found in the principles of heredity.

"To rest with the unqualified assertion that, antecedent to experience, the mind is a blank, is to ignore the all-essential questions -whence comes the power of organizing experiences? whence arise the different degrees of that power possessed by different races of organisms, and different individuals of the same race? If, at birth, there exists nothing but a passive receptivity of impressions, why should not a horse be as educable as a man?"

Therefore, we must have recourse to the hypothesis of innateness, and we must interpret it "in the sense that

there exist in the nervous system certain pre-established relations answering to relations in the environment. There is truth in the doctrine of 'forms of thought'—not the truth for which its advocates contend, but a parallel truth. Corresponding to absolute external relations there are developed in the nervous system absolute internal relations—relations that are developed before birth, that are antecedent to, and independent of, individual experiences, and that are automatically established along with the very first cognitions" (*Ibid.*).

"The corollary from the general argument that has been elaborated is, that the brain represents an infinitude of experiences received during the evolution of life in general, the most uniform and frequent of which have been successively bequeathed, principal and interest, and have thus slowly amounted to that high intelligence which lies latent in the brain of the infant—which the infant in the course of its after life exercises and usually strengthens or further complicates—and which, with minute additions, it again bequeaths to future generations" (*Ibid.*).

Thus habit perfected by heredity, which is only a consequence or result of habit, becomes the most general principle not only of mind but of life. All in us that we were inclined to regard as being really primary and innate and essential, is in fact only the result of a slow process of evolution, of a successive acquisition. We must return to the maxim of Heraclitus: nothing is, all things are becoming. When we remember that habit itself is only an application of the universal law of mechanical action, a corollary of the law of the persistence of force, we may assume that the whole of nature, that every constant form is a product of analogous laws. Thus the philosophy of evolution is the triumph of the doctrine of habit, as the law not only of the living and spiritual world, but of every form of existence.

Conclusion.

The result of this review is that we find, in the first place, two great opposite theories concerning the question of habit. The first, foreshadowed by Epicurus, upheld, at least as regards the union of soul and body, by the Cartesian school, and developed by contemporary physiology (see *Théories de la Mémoire*, Th. Ribot), represents habit as a physical and mechanical phenomenon and reduces it to a mere automatism. The second theory, from which M. Ravaisson has sought to

draw all its metaphysical consequences, is that of Aristotle, of the Stoics, of Leibnitz, of all those who believe that life has in it something which is higher than mechanism. This theory considers habit to be the modification of a spiritual activity.

The history of this problem shows, in the second place, that philosophical progress consists not so much in the addition of particular truths, as in the discovery of new points of view for the explanation of things as a whole. And is not this a real progress, is it not to the advantage of the mind to be able to take into account the many different possible conceptions of the universe? By its logical development, empiricism was led to make habit the great principle of spiritual life, and to associate itself with the mechanical theory of habit in which the spontaneity of living things is resolved into inertia. But can we be satisfied with the empirical solutions? In the first place, granting that it reduces a great number of phenomena to unity, habit cannot explain itself: it carries the problem a step further back, but does not solve it. Can we say that the mechanical theory offers any real solution? Mechanism implies elementary ideas, such as those of space and time, of motion itself, and of the communication of motion, concerning which it would be well first to be agreed. In his *Mémoire sur l'habitude* Maine de Biran, who was then still a sensationalist, admits that the hypotheses concerning the cerebral mechanism are symbols by which thoughts become as it were visible, rather than real explanations. Again, the reduction of all things to habit is a contradiction. Habit is an acquired thing. The term habit presupposes something elemental, something absolute, or at least a distinction between a being and its modes. To reduce everything to habit would, if taken literally, mean to reduce everything to nothing.

And this particular conclusion applies to all psychological problems. We have seen empiricism offer in every case an explanation which is useful and sufficient as regards the concatenation of phenomena and the conditions under which they are produced, but in every case we have also seen the failure of empiricism to render a final explanation. For passivity always implies activity, the external implies the internal, mechanism implies spontaneity, the acquired implies the innate.

If everything could be explained by the external, this external would again imply something external to itself, that is to say something else beside itself: and if we must always go in this way from one thing to something else, we shall never reach true being. We may therefore say of the whole of psychology what we have just said of the theory of habit: to explain the internal by the external, activity by passivity, spontaneity by mechanical laws, the primitive by the acquired, is to explain everything by nothing.

END OF VOLUME I.

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