V.—THE LAW OF PSYCHOGENESIS.

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Is there a law of psychogenesis? Is there a common principle which sweeps through the whole range of mental evolution, alike in the individual and in the race? A principle sufficiently general to cover the whole field of consciousness, and yet not so vague as to be meaningless? I believe that there is such a principle; one which applies alike to the simpler inferences of perceptual experience, and to the more complex judgments in matters intellectual, æsthetic, moral. I shall here endeavour to indicate its nature. But it will be necessary first to clear the ground at some length.

The Rôle of Consciousness. Without attempting to enter upon such vexed questions as, What is consciousness? and, What is its relation to man as an organism? I think we may say without much fear of contradiction that the business (or, shall we say, part of the business?) of consciousness is the control of action. If it be not so, if consciousness has no such guiding and controlling power (however exercised), then is it but a by-product; very beautiful and precious, no doubt, but none the less a by-product, an epi-phenomenon, a mere incident and not a factor in the development of organic life. Then is all organic response and conduct brought down to the level of reflex-action. Consciousness is like a little child on a great ocean steamer coming into port. He sits in the bows, and whispering his orders to the figurehead, thinks he is controlling the movements of the great vessel, while all the time he is a mere passenger witnessing the handling of the steamer and only fancying he has controlling power. Such a view seems to me false, if not ridiculous. Consciousness is no mere passenger in the organic ship, but holds the helm.

There is a tendency among certain nerve-physiologists to regard all organic response as of the nature of reflex-action, the differences being only differences of complexity. I strongly suspect, however, that this procedure ought to be reversed, and that we ought more clearly to distinguish between the involuntary reflex-act, properly so called, and a response under voluntary and conscious control. I will reduce to its simplest expression, and represent diagrammatically what seems to me the essential difference between the

merely organic reflex and the organic and conscious response. The reflex-act is initiated by a stimulus which passes through one or more nerve-centres *a* and *b*, and gives rise to the appropriate response

FIG. 1

If consciousness there be in this case it may be regarded as a mere by-product, since it does not influence the resulting action. This is the reflex-act. Now let us introduce consciousness as guiding and controlling

FIG. 2

Here consciousness is developed in the loop-line at *c*, and according to the nature of the controlling consciousness the response which flows out from *b* is either reinforced or inhibited through the channel *c b*.¹ As the consciousness in *c* becomes fuller and more complex by the calling into being of an increasing body of representative states of consciousness, it comes to symbolise in mental terms the occurrences both on the side of stimulus and on the side of response. Thus within the organism which responds in voluntary activity to stimuli there develops an organ *c* which is the material expression of that conscious symbolism under which the activities of the organism are controlled.

When I say then that the rôle of consciousness is the control and guidance of action, I do not mean consciousness as dissociated from the living organisation, but consciousness as associated with, and forming the mental aspect of, certain

¹ This is not the place to attempt a justification of this view. It is sufficient to indicate that in man the cerebral hemispheres of the brain seem, in the main at all events, to constitute the organ of control *c*. The connexion *a c* is formed by such tracts as the "optic radiation," from the "pulvinar" to the cerebral cortex. The connexion *c b* is largely represented by the "pyramidal tract". The "motor centres" mapped out with such success of late years are the centres of conscious and voluntary control (or, in short, control-centres) within the brain, or the channels (funnels) through which such control is brought to bear on lower centres *b* through the pyramidal tract.

transformations of energy in the brain or other organ of control.

The Mechanism of Control. Physiologically control is effected by augmentation or inhibition brought to bear through the channel *c b* and resulting from certain molecular transactions in *c*. Psychologically we know these transactions from the aspect of consciousness. From the psychological point of view, therefore, we may say, that the impulse to a given response is checked by the bringing to bear of other and opposing impulses or motives, or is furthered by the co-operation of other and reinforcing impulses or motives. Accompanying the conflict of opposing impulses or motives there is a more or less painful sense of hesitation, dilemma, uncertainty, indecision. And accompanying the ultimate predominance of one impulse or set of impulses there is a sense of relief, of choice, of decision. Often too there is a sense of effort. We say that we broke the spell of indecision by an effort of will.

According to this view of the matter the stronger impulses at length prevail; in other words, the action takes the line of least resistance. But this may seem contrary to experience. As Prof. James has said: "If a brief definition of ideal or moral action were required, none could be given which would better fit the appearances than this: *It is action in the line of greatest resistance*". How comes it to appear to be action in the line of greatest resistance? Because of the sense of effort which is associated with the final decision. Now this sense of effort most markedly accompanies the newest and most difficult activities; it is distinctively associated with the higher control-centres. Whatever be the psychology of effort, its association with the higher control is a fact of common experience. Suppose that we are drawn towards some natural but immoral action by our lower instinctive impulses; but that we resist the action by a resolute act of will, in obedience to the prompting of a moral ideal. It is the latter and not the former, the ideal motive, not the natural propensity, that is a matter of our control centres. *We identify ourselves rather with the action of our control centres than with our lower animal instincts*, and say that we prevail over the instinctive propensity. This association of the idea of self with the higher and most individual control-centres, as compared with the lower instinctive propensities, is the basis of a rational doctrine of free-will. These higher impulses of the individual control-centres we regard as essentially our own, we regard as voluntary; and we associate with them

the motor feelings of effort which accompany the newest, most difficult, most individual activities. A rational doctrine of free-will (which may be held by the most rigid determinist) asserts that the acts we call voluntary are essentially our own, the outcome of the play of our own control-centres; and that, being ours, we are responsible for them.

Mental Symbolism. I said that within the organism which responds in voluntary activity to the stimuli of the external world there develops an organ, in us the brain, which is the material expression of that conscious symbolism under which the activities of the organism are controlled. What do I mean by this conscious or mental symbolism?

As I write I see before me a table with paper, inkstand, books: through the window I see trees, houses, living beings: further off, a rising down, and beyond, a fine background of English cloud. I feel the pen in my fingers and the table on which my hand rests. The air is scented with tobacco smoke. All this is part of the mental symbolism. The play of impressions on my sensitive organisation evokes in my brain a series of neural tremors which have for their mental aspect all that which I have briefly indicated. Thus in consciousness is symbolically represented that which lies outside consciousness.

Here it may be asked whether the symbolic representation can be said to resemble the outside existences which call it into being. I suggest the question merely to disregard it. For the answer is wholly immaterial to my present purpose. Each individual may answer it for himself in accordance with his philosophy or his common-sense. All that I wish to insist upon is that the external occurrences *must be translated into consciousness* ere they can become part of the symbolic series.

It is through perception that I become acquainted with the table, inkstand, books, and so forth; and the objects as presented to consciousness are percepts. We often hear it said that, in the course of evolution, the percepts of living animals and of men have been moulded to the objects of the world in which we live, and this is sometimes more tersely expressed in the dictum that thoughts have been moulded in accordance with things. But both expressions are apt to be misleading. Percept does not answer to object in the sense that the symbol answers to the thing symbolised. For percept and object are alike parts of the mental symbolism. The percept is one aspect of the several possible aspects which the external occasion of perception presents in mental symbolism; while the term "object" is applied to the sum

of the perceptual aspects. Even when there is tacit reference to the external occasion, when we say, for example, that the same object may give rise to different percepts, or may be perceived in different ways, we use the word "object" in shorthand for the phrase "external occasion symbolised as object". Even if the object, as part of the mental symbolism, resembles point for point the occasion of perception, or what calls forth the mental symbolism (and whether this is so or not, is, as I need not remind those who read this journal, a very old bone of philosophical contention), it matters not. It is with the object as part of the mental symbolism that we are dealing in all cases of human perception and observation.

This point is vital to my argument. Suppose that on the surface of a mirror there is faithfully reflected a landscape. In that reflexion we may trace the relations in which the images stand to one another. We may also compare the images with the things imaged. But the relationship of the images, *inter se*, is one thing. The fact that the images resemble external trees, houses, and so forth is another thing. And he who should confuse the two would be committing a serious blunder. Now the reflexion in the mirror is the mental symbolism. The several images are the objects in consciousness, *for consciousness is the mirror*. All we can do is to compare the images, and trace out their relationships to each other. We can never turn round to see whether the images in the mirror resemble the outside occasion of their existence, for this would be to turn our backs on the mirror, consciousness, in which alone we can see anything. Even if, therefore, we are convinced on other grounds that the images in the mirror answer point for point in closest resemblance to their external occasions, it still remains true that, so far as consciousness is concerned, we are restricted to the mental symbolism.

This mirror-analogy is a rough one, and must not, of course, be taken for more than it is worth. It may serve to illustrate and emphasise the fact that our directest percepts, not less than our most refined and subtlest concepts, form part of the symbolic series. Every visible proof and tangible evidence of the practical reality of the things around us is given in terms of perception, in terms, that is to say, of what I have termed mental symbolism. When we wish to verify the existence of any object or the properties of any object, we do so by submitting it to the touchstone of perception.

I have laid special stress upon the symbolic nature of perceptual experience, because it is sometimes supposed that in

psychogenesis we have to try and explain two things: first, the relations of percepts to each other and to concepts; and, secondly, the relations of percepts to objects perceived or external occasions of perception. If what has been urged above is valid, these two things are so radically distinct and different that we should not comprise them under one head, at least without a very clearly distinguishing adjective. We may call psychogenesis within the sphere of mental symbolism "positive psychogenesis," and reserve the term "metaphysical psychogenesis" for the further and totally distinct question of the relationship between the symbolic series as a whole and its external occasion. It is with positive psychogenesis that I deal.

It only remains under this head to indicate that, in addition to the percepts and the intelligent inferences on the perceptual plane which characterise the mental symbolism of man *quâ* organism, there are concepts and rational inferences in the conceptual sphere which conspicuously characterise the mental symbolism of man *quâ* social and rational. Man not only perceives and adjusts his actions to surrounding phenomena in common with his four-footed companions, he also analyses these phenomena through the application of his conceptual thought with the aid of language. He frames theories of things and interpretations of nature; he studies the workings of his own mind and endeavours to explain them; he contemplates the beauty and charm of natural objects and of his own artistic productions, and tries to formulate the principles of æsthetics; he ponders over his relations to his fellow-men, and does his best to understand the conditions of his social existence; he forms an ideal of what he himself should be and of what he desires humanity to become, and endeavours to mould his life and the lives of his fellow-men in conformity with these ideals; he feels the ultimate mystery of the world and of his own being, and frames conceptions of the underlying Cause in conformity with his religious tenets. In all this, or at anyrate in most of it, man differs from all other organisms. And all this, or at all events the greater part of it, man possesses in virtue of his social state, a state in which many individuals are animated with a common aim, and in which these individuals are bound together by strands of linguistic intercommunication.

Psychogenesis and Experience. We give in general the name of experience to the process by which the individual powers of the mind are unfolded. To learn by experience is essentially a process of trial and error. The child in response

to certain external stimuli, or perhaps automatically, puts forth its varying activities. Through the guidance of experience some of these actions are enforced, some checked. This, be it noted, is a matter of control. Experience does not originate the activities; it guides them into suitable channels, selecting those which give satisfaction in consciousness and rejecting those which in consciousness are unpleasant and distasteful.

That the burnt child dreads fire is a proverbial example of the teaching of experience. When first the child sees something bright, shining, alluring to the touch (why it should be alluring to the touch does not concern us here) he stretches forth his hand to grasp. The pain he then experiences becomes thereupon associated with the performance of such action under such circumstances. Subsequently he again sees the bright, alluring object; again there is the tendency to stretch forth the hand and touch; but the representation of the associated pain now modifies the former result. If the memory of the pain be vivid the action may be arrested; if weak it will only be partially checked; pain will again be experienced, and will become for the future more firmly associated with the performance of such action under such circumstances.

Such are the rude teachings of experience in the lower planes of mental symbolism. More subtle is the guidance in the higher plane of intellectual, moral and æsthetic control. But it is the same in principle. Conduct in these regions, however, is more idealised; less under the sway of somewhat rough perceptual inferences; more under the control of reason and conceptual thought. The experience is here more distinctly and obviously subjective. The modest woman is not pure in act through bitter experience of the results of an immoral life. She is pure in conformity with an ideal which is part of her moral nature. Just as the child avoids the fire because it hurts, so does the pure woman shrink from the thought of an immoral act because it hurts. Just as it is part of the child's perceptual nature that he should suffer from contact with certain objects, so is it part of such a woman's moral nature that she should be scorched and burnt by impure thoughts. Experience is self-knowledge. Without experience there could be no conscious selection of those activities which give satisfaction in consciousness, no rejection of those which in consciousness are unpleasant and distasteful. And psychogenesis in the individual involves such a selection among the states of consciousness which constitute the mental symbolism.

Innate Tendencies. But though experience is thus a factor in the development of individual conduct; the performance of certain acts giving pleasure while that of others brings pain, the suggestion of immodest thoughts being found in experience to be repugnant to the moral nature, the acquisition of a new truth being found in experience to give a thrill of satisfaction to the intellectual nature—though, I say, experience is thus a factor in, or, if it be preferred, a condition of, the development of individual character and conduct, many of the activities of organisms, and of man among the number, are directed to more or less definite ends in the absence of and previous to individual experience. The typical instances of these are instinctive activities. An instinctive action is one which is performed prior to and independently of experience, though such action may, of course, be subsequently modified through experience and, in so far as thus modified, cease to be instinctive. Instinctive actions, as such, are not subject to control: control, that is to say, renders them, so far, other than instinctive. In the conduct of men the lower impulses are largely of this order. In many cases we are mere spectators, sometimes astonished spectators, of our own actions. Impulse carries us away, and we can only watch and wonder whither we are driven by organic tendencies. The determinate nature of our actions is by no means entirely a matter of individual experience and guidance, but is largely the outcome of innate tendencies. What occurs under experience is a selection from among the existing innate tendencies of special modes of response which are in conformity with the individual nature. These special modes of response, thus selected, then set and become habitual. A habit is a response well-organised through the guidance of individual experience. As the organisation increases the guidance diminishes and the necessity for conscious control ceases. Thus habits ingrained by individual repetition may come to simulate instincts not acquired by the individual but innate.

We next proceed to ask: Whence come the innate tendencies? How comes it that in the individual there already exist a body of determinate or indeterminate impulses from among which, through experience, selection is made?—In doing so we pass from development in the individual to development in the race.

Psychogenesis and Use-inheritance. We have seen that under the selective influence of individual experience certain activities are developed and organised and pass into habits. We inherit the germs, or, one may say, the more or less de-

veloped embryos of faculty, and these may be developed to a greater or less degree through experience. Thus the muscular power of the athlete is increased through training and use; and in the mathematician the faculty of dealing with numerical relations and the symbols by which they are expressed. Take any two individuals with similar musical faculty: the one cultivates the faculty; the other lets it lie dormant. In the one the faculty is perfected within its limits; in the other it remains comparatively undeveloped. These are familiar facts; and we may express their teaching by saying that, in the individual, use develops faculty.

When therefore we come to ask how innate faculties and determinate tendencies to activity have been developed in the race the simplest and most tempting answer is: By inherited experience. An instinct is thus an inherited habit. According to this view the increased muscular power of the athlete, the enhanced mathematical faculty of the man of science, the developed musical ability of the pianist, are to some extent handed on as a legacy to their children. Modified and perhaps enriched by the individual experience of the legatees, the legacy is again handed on to succeeding generations; and thus, through the steady addition of increments individually acquired and transmitted to offspring, there is a progressive development of faculty in the race, and each individual comes into the world with a greater potentiality for individual development.

This is undoubtedly a very pretty and pleasing scheme. But of late the actual occurrence, and even the possibility of any such inheritance of acquired increment of faculty, has been seriously questioned, and by many able biologists stoutly denied. No matter by how much the athlete increases his biceps, no matter how fully the mathematician develops his splendid faculty, the children subsequently born to them are, it is maintained, none the better for their pains. Faculty in general is in the same position as particular applications of it: the boy does not know his fifth proposition of Euclid because his father knew it before him; nor does he learn it any the easier for his father's long devotion to mathematics. Had his father devoted his life to billiards instead, his son would have learnt that proposition none the less easily.

Which of these strongly opposed views is correct; whether "use-inheritance," as it has been conveniently termed, is fact or fancy, I will not here attempt to decide. It is a matter that is still *sub judice*; one that is very hard to settle by experimental evidence or direct observation, and one on

which we must not dogmatise one way or the other. It will have to be decided mainly on biological grounds, and we must be content to await conclusive biological evidence for or against it.

In any case so far as organic evolution is concerned, and psychogenesis is from our point of view closely associated with organic evolution, this use-inheritance is, if established, admittedly only one factor. Another factor, regarded as dominant by most biologists, is natural selection.

Psychogenesis and Natural Selection. I need not describe the mode of action of natural selection. It is based upon the law of increase, the law of variation, and the struggle for existence: the law of increase, that many more individuals are born than survive to procreate their kind; the law of variation, that these individuals are not all alike; and the struggle for existence, by which those who fall below mediocrity are eliminated, while those who excel, interbreeding with average individuals, tend to raise the standard of mediocrity in the succeeding generation. A wolf-spider and his wife are cunning in their artful stalking of unwary flies. They have a numerous family. Some are inferior in cunning to their parents, some equal them, a few excel them. But flies are scarce, and there is not enough food for all. Only two can get a living, but these two are just the most cunning of the whole brood. Of the numerous family produced by these selected individuals, only two again survive to continue the race, and they the very cleverest of the lot. They have not inherited any cunning *individually acquired* by their parents, but they are the terminal products of a series of fortunate variations in the direction of cleverness.

It is clear that there is no inherited experience here. The relation of this process of natural selection to experience seems indeed to be this. Learning by experience in the individual is a process of trial and error, erroneous response being checked. Learning by experience in the race is also a process of trial and error, individuals who failed to accommodate themselves to their surroundings, as the result of their individual experience, being eliminated. In the one case erroneous responses, in the other erroneous respondents, are eliminated. There is no inheritance of experience, on the view above indicated, but those individuals who best profit by experience are selected and transmit their ability so to do.

Now what is the relation of natural selection to psychogenesis or the development of mental symbolism? If we say that it has been a factor and a most important factor in

its development, we must be clearly understood to mean by development, guidance along certain lines, not origin or initiation. Though the struggle for existence may have caused the elimination of those individuals in which the mental symbolism was relatively imperfect or deficient, natural selection does not give us the law of its internal development.

What is the function, if one may so say, of the mental symbolism in the animal world? To enable the organism so to guide its actions as to resist elimination, to live out its full span of life, and to procreate its kind. Those organisms in which this function is performed in the most efficient manner have survived through the operation of natural selection. Be it so. But the power of efficient control must have been *there*, given in the organism, ere it could be selected. Every advancing step in the development of mental symbolism and of the control it rendered possible must have been *presented* to natural selection, was not in any sense *evoked* by natural selection.

This, it may however be said, is nothing special and peculiar to the mental symbolism : it is true of every organ and of every function which has reached excellence or relative excellence through survival. The fittest survive through natural selection : but what is the mode of origin of the fit? Favourable variations are selected : but how about the origin of the variations? These are questions which are daily asked and can hardly be said to have received satisfactory answers.

All this I grant, nay more than grant, I am prepared to urge. But that is perhaps all the greater reason why we should endeavour to find the law of psychogenesis—the principle which guides and has guided the development of mental symbolism apart from the physical elimination of natural selection.

Natural Selection and Social Evolution. Granting that natural selection is a dominant factor in organic evolution, is it also the dominant factor in social evolution? I believe that in modern phases of social evolution natural selection holds a quite subordinate place.

So much is said and written about the social struggle for existence; so largely does competition enter into all phases of social procedure; so conspicuously does the principle of selection, and election, meet us at every turn; that it may seem somewhat absurd to contend that natural selection holds quite a subordinate place in social evolution. If not natural selection, it may be said, at anyrate a strictly analogous process is not subordinate but dominant.

Is the process strictly analogous? I think not. What is the method by which progress is secured by natural selection? The elimination of failures, that is to say of all those individuals who fall below mediocrity, or their exclusion from all participation in the continuance of the race. Is this true of social evolution regarded as a whole? Are the failures eliminated? Are they excluded from all participation in the continuance of the race? Do not the social problems of the day largely arise out of the fact that the social failures are *not* eliminated but are here in our midst, and that they multiply exceedingly? Are not the checks to increase of population mainly prudential? And are not the prudent—those who look before they leap into marriage—for the most part those who are *not* social failures? It is just because natural selection, or the elimination of the unfit, is not and cannot be the law of development in a civilised social community, that we are surrounded on all sides with the most difficult social problems.

Or look at the matter from a slightly different standpoint. No account of social evolution would be complete which did not comprise a consideration of progress in Art, Science, Literature, Morality. Now I do not believe that anything analogous to natural selection, any process of eliminating the unfit, has been the dominant factor in the evolution of any of these higher phases of social endeavour. An important factor it has certainly been in preserving some of the *products* of these higher phases of human thought. The works of Shakespeare and Milton, of Hooker and Bacon, of Newton and Darwin, of Locke, Hume and Berkeley remain, while a host of inferior writings have been eliminated. But I question whether the genius of Shakespeare or Milton, the scientific insight of Newton or Darwin, or the philosophic penetration of Hume or Berkeley were the outcome of any process which can with any approach to accuracy be regarded as analogous to the elimination of the unfit by natural selection. I fail to see how the *Elijah* of Mendelssohn or the *Assumption* of Titian could be the result of any process of physical elimination.

This word "physical" perhaps best touches the quick of this question. Natural selection through elimination is essentially a physical or organic process; and my contention is that in social evolution we are mainly concerned with a psychical or mental process. Not the law of organic development but the law of mental development, of psychogenesis, is dominant here.

Psychogenesis and Sexual Selection. Natural selection

proceeds on the supposition that those who escape elimination in the struggle for existence mate together indiscriminately. This is not the case in human civilised society. Whatever may be true of the lower animals, among mankind selective mating is a fact of the very utmost importance. And its special importance, in regard to our present theme, lies in this: that, at its best and highest, it is essentially a psychical and not merely an organic process. It is a process by which man is consciously or unconsciously giving physical or organic expression through heredity to his highest ideals. For in marriage at its best and highest the man selects his ideal woman, her in whom beauty and grace, physical, moral and intellectual, are embodied; and the woman selects her ideal man, conspicuous among men for beauty and strength of mind and body. Herein lies the value, from the evolution point of view, of our marriage system. The more enduring the marriage bond the more careful will the contracting parties be to select wisely and well, looking not merely to immediate gratification but to life-long association. And if there be any truth in heredity this must have an important effect on the race; not indeed on the community as a whole, except in so far as there is elimination, but on its highest representatives physically, morally and intellectually.

Sexual selection then differs from natural selection in this: that whereas natural selection is a process by which is effected the physical elimination, by death or failure to procreate their kind, of those who fall below mediocrity; selective mating is the giving expression to certain preferences or ideals. By natural selection all are plucked in life's examination who do not reach a certain standard of excellence: by selective mating particular individuals are picked out by an act of selective choice. Natural selection has guided the mental symbolism to certain developments by eliminating those in whom these developments were absent: selective mating is a product of the mental symbolism so developed. It is itself the outcome of psychogenesis. And however important it may be as a factor in social development it is rather the result of than the cause of the higher phases of mental evolution.

The Law of Truth. In seeking an answer to the question: What is the law of psychogenesis? it will be well to start from the higher and more abstract region of concepts and work our way downwards to the more practical level of percepts; and then, having found certain subsidiary laws or principles, to see if there does not run through these a single basal law or principle.

What is the guiding principle of development in intellectual matters? I would call it the *law of truth*. In the course of my reading and of my converse with my fellow-men I find the facts of nature and of human conduct and experience interpreted in a number of different ways. Some of these interpretations I unhesitatingly accept as true; others with as little hesitation I reject as false; many I ignore or relegate to a suspense account. On what grounds do I at once accept certain interpretations and reject certain others? It is often difficult to give, off-hand, the specific grounds of acceptance or rejection. But it practically comes to this. I accept what is in accordance with my own views and theories: I reject what is contrary to my own scheme. I relegate to a suspense account, or ignore, what neither accords fully with my system of interpretation of nature, of life and of man, nor actually conflicts with that interpretation. I neither accept nor reject what seems to be irrelevant.

A bare-faced confession of prejudice! But observe that I am for simplicity's sake supposing that my interpretation is constant. I most sincerely hope, however, that it is capable of development, and that such prejudice as there is is the healthy prejudice that comes of long and honest study. Suppose then that I am led to accept a view which is not in strict accordance with the views I held yesterday. Does not this imply that my opinions have altered so as to embrace the new view? And is it not still true that I accept what is in accordance with my own theory—not my theory of yesterday, but my modified theory of to-day? The very fact that the new view could not be accepted without modification of my theory of things, emphasises the point which I desire to bring out, that what is accepted must be in accord with the system into which it is incorporated. In every mind, as intellectual, this process is going on. The true is accepted, the false rejected; the rest more or less ignored. No man consciously accepts the false, or rejects the true.

What, it will be said, no one reject the true, no one accept the false! This, at anyrate, is an interpretation of the facts which we may unhesitatingly reject as false. But before you reject, my friend, be sure that you understand. I do not say that no one rejects what *you* regard as true, or accepts what *you* regard as false. That would, indeed, be absurd. I say that no one accepts what *he* regards as false, or rejects what *he* regards as true—a very different matter. To say that any one believes what *he* deems untrue is a contradiction in terms. What, then, in the individual mind, is the criterion

of truth and falsity? I reply, congruity or incongruity to the existing intellectual system as developed in that mind. An explanation of a given occurrence which is in congruity to my system of interpretation of nature I accept. If the explanation is incongruous, I reject it. If a lady pricks her finger with a darning needle, and attributes it to having spilled salt at luncheon and omitted to throw some over her left shoulder, this explanation is for her, no doubt, the true one. For me it is false, because it is not in congruity to my mode of interpreting such occurrences. In different minds widely different systems of interpretation grow up. The man of science, as such, the poet, as such, the mystic, as such, view the world with different eyes. Each has his special theory of things. But each, as an intellectual system, is self-congruous. Each has developed by the selection of the congruous and the rejection of the incongruous.

The Law of Beauty. In æsthetic matters, what may be termed the *law of beauty* is the guiding principle. That only can be accepted as beautiful which is in congruity to the æsthetic nature. The æsthetic nature may change; what was once regarded as beautiful may in after years make one shudder; in what was once regarded as indifferent we may learn to see a gem of art; but at any moment in the process of development, only that could be accepted as beautiful which was in harmony with the individual taste at the time. It is generally admitted that there is no arguing about matters of taste. Things are for me beautiful or ugly, pleasing or displeasing, tasteful or the reverse, according as they are congruous or incongruous to my nature as æsthetic. You cannot make a thing beautiful to me as it is beautiful to you without altering my whole æsthetic nature. You cannot persuade a man to prefer the third *Léonora* overture to *The Bogie Man*. We agree that there is no arguing about taste. Why? Because you are not likely by argument to modify the æsthetic nature. It is nearly, but not quite, as true that there is no arguing about intellectual matters—as between, for example, a positivist and a Hegelian. You cannot persuade a poet on the one hand, or a metaphysician on the other, to accept a scientific interpretation of nature, because he cannot do so without changing his whole intellectual nature. Both the true and the beautiful are questions of congruity to the mental nature.

The Law of Right. In matters of ethics the *law of right* is the guiding principle. This is accepted as right, that is rejected as wrong, according as each is congruous or incon-

gruous to our moral nature. The sense of congruity or incongruity is what we term the voice of conscience.

As in intellectual matters, and as in questions of æsthetic taste, so too in ethical problems it is often exceedingly difficult to give a specific answer to the question: Why is this or that right or wrong? The woman's answer, Because it is, and there's an end on't, is really not far astray. A thing is right for me because it is in accordance with my moral nature, because it is what it is, and I am what I am, and it and I vibrate in unison. The thought pulsates true with my thought. The act is in harmony with my ideals.

It is untrue to fact to say that there is only one possible self-congruous ethical system. As there are different interpretations of nature, as there are different standards of taste, so there are different ethical ideas. We cannot frame a universal scale of right and wrong. Dr. Martineau gives a hierarchy or ascending scale of passions, appetites, affections, and sentiments, and says: "Every action is *right* which, in presence of a lower principle, follows a higher; every action is *wrong* which, in presence of a higher principle, follows a lower". The hierarchy expresses his own ideal scale, but, as a matter of fact, it is individual and not universal. We cannot frame a universal scale. If we say that our own scale ought to be universal, we are only expressing our own ideal. I am not, of course, saying that there is not an interpretation of nature truer than all others, an ethical system nearer than all others to the perfect right. I only say that we know not at present which interpretation of nature, which ethical system is the truest and most right; and that there are in existence several rival interpretations of nature and many rival ethical systems, which are perfectly self-congruous in the eyes of those who hold them.

In opposition to the principle of congruity some one may lay stress on the constant discrepancy between theory and practice in matters of right and wrong. "The pity of it is," he may say, "that incongruous as it may be to his moral nature man is constantly doing that which he knows to be wrong. It may be true that no one can believe what is, from his point of view, untrue, or admire what is, in his eyes, ugly; but he constantly does what he feels to be wrong." This is perfectly true. And it is due to the fact that moral considerations are not, as man is at present constituted, the only, nor always, by any means, the more powerful, incentives to action. The brute performs a number of actions which are conformable to his nature as sensual; and man is still largely a brute. If a man is sensual rather than

moral his actions will be in conformity with his sensuality rather than his morality. And this is in complete accord with the principle I am advocating, that what is congruous to the mental nature of the individual is selected, and what is incongruous thereto is rejected.

Moreover, under different external circumstances and different internal states of the bodily organisation, our natures fluctuate to and fro within limits which vary in different individuals. In moments of excitement we are different beings from ourselves in moments of calm contemplation. And we therefore react differently. There are periods when the organisation of the drunkard or the sensualist cries aloud for the satisfaction of the craving by the performance of acts in conformity with the state of heightened sensuality. If the sensual desires be satisfied this element of the nature retires into the background, and moral considerations gaining predominance, the individual, reviewing his conduct, is covered with shame and remorse. The acts in congruity with the heightened sensual state excite loathing and disgust in the succeeding state of increased moral sensibility.

Conduct and Verification. Apart from such cases as those just alluded to, in which there is conflict between moral ideals and the lower impulses of our nature, there are many cases in the practical conduct of life when consistently to act out our highest moral ideal is impracticable. We may feel that war is repugnant to our moral nature, but at the same time urge the efficient maintenance of our army and navy and their vigorous employment in cases of national necessity. The guiding principle in these cases is practical expediency, or the congruity of actual conduct to the existing social or other conditions. The practical reformer is he whose social ideals are not merely utopian and subversive of the existing order of things, but exhibit a graduated series of practically possible steps from the existing system to an order of things ideally better. The ideal system¹ must not only be congruous within itself, but must be in touch with the actualities of life and conduct.

Similarly of intellectual systems or interpretations of nature. Not only must they be congruous in themselves and on the conceptual plane of intellectual ideas, they must

¹ I am here speaking of the practical carrying into effect of social reform. There is a great difference between the ultimate ideal which we only hope may some day be reached, and the practical ideal which we may see realised to-morrow.

be, and are in all cases held to be, congruous to perceptual experience. The ultimate appeal in all cases is to perceptual experience. To this plane must conceptual conclusions be brought down that they may undergo the test of verification. Not only must ideas and theories be congruous to other ideas and theories, but they must be in congruity to percepts. From percepts have concepts arisen by analysis and abstract thought and reason; to percepts must the results of analysis and abstract thought conform to satisfy the final test of congruity.

Here again the principle I am advancing may seem to be incongruous to actual facts. The concepts of primitive folk, of savages, of the uneducated, of faddists, have certain practical perceptual implications which *we* see clearly enough, and which when submitted to the perceptual touchstone, are shown to be false or incongruous. But in these cases the individual concerned either fails to apply his concepts to the perceptual touchstone, or fails to see the conflict between theory and practical experience which is to us so obvious, or introduces new concepts which make the test for him of none effect.

The last is a very common case, which I may roughly illustrate. The individual concerned is, we will suppose, a spiritualist. At a dark séance, while the medium lies entranced, tambourines are heard, played, it is said, by spirit agency. It so happens that a scientific wag has blackened the tambourines. And when the séance is over and the lights turned up, it is found that the medium is all besmudged with lamp-black. The scientific wag regards this as proof presumptive that the medium played the tambourines. Does this perceptual evidence convince the spiritualist? Not so. A spiritualistic concept is introduced and the whole affair made congruous to spiritualistic views. For is it not a well-known law, that anything which happens to the spirits during a séance is transferred to the medium through whose agency they were manifested? By the introduction of new assumptions it is very easy to make perceptual experience fit in with any theory which an individual may chance to hold.

There are, moreover, certain highly abstract concepts and theories which are very hard to bring down to the touchstone of perceptual experience. Such are the concepts of metaphysics. And there are certain minds which normally live and move in an atmosphere of conceptual thought. They are often impatient of verification, and have little faculty of testing the congruity of concepts to percepts. I met a

man of ability some time ago, who had been lecturing to working-men on physiology. He had scarcely ever seen a dissection, made an experiment, or examined a microscopic preparation. He found that doing so only confused his ideas! His mind was speculative and metaphysical; and he was troubled with utopian schemes of social reform. Very different is the scientific mind which is restless in its endeavour to apply the criterion of perceptual verification.

This constant demand on the part of science for practical perceptual verification is justified by the essential unity of consciousness, the solidarity of the mental symbolism, and the continuity of its development. According to the scientific interpretation of life and mind (which we must remember is only one out of several congruous systems) not only must the conceptual inferences be conformable to each other but they must stand the test of verification in the perceptual plane. The congruity must sweep through the whole range of mental symbolism from the lowest percept to the highest concept. Any incongruity between concept and percept is in the eye of the scientific mind fatal to the former; in the eye of the metaphysical mind not infrequently fatal to the latter.

Thus we come down to the practical perceptual plane. What is the guiding principle of development here? Many will answer the congruity between percept and object, using the word object for the external occasion of perception as it exists independently of the percipient. If so, we are here going outside the mental symbolism. But I have endeavoured to show that this way of putting the matter is unsatisfactory and misleading. Not the congruity between percept and object (so-called) but the congruity between percept and percept is the law of the mental symbolism in this plane. The percept evoked by the sight of my favourite pipe suggests certain perceptual inferences which I intend ere long to submit to practical perceptual verification.

In this perceptual sphere, as indeed throughout the whole range of mental development, the guidance of pleasure and pain is of great importance—so great that some are found to argue that in moral matters we are influenced solely by considerations of happiness. Our nature is not only intellectual, æsthetic, moral; it is also sensitive. And as the false is rejected as incongruous to our nature as intellectual; as the ugly is avoided as incongruous to our nature as æsthetic; as the wrong is shunned as incongruous to our nature as moral; so is the painful, so far as possible, avoided as incongruous to our nature as sensitive. Only by

extending the meaning of the words pleasure and pain so as to be coextensive with what I have here termed congruous and incongruous can it be said that all our actions and our thoughts are determined by pleasure and pain.

The Law of Psychogenesis. Enough has now been said to indicate what I regard as the law of psychogenesis. As in the case of natural selection, properly understood, it is a law of elimination—the elimination of the incongruous. It applies not only to the relations of concepts *inter se*, but to the relations of concepts to percepts, and of percepts to other percepts. It sweeps through the whole gamut of mental development. It is a law of the assimilation or incorporation of like with like. Progress is effected by the elimination of the incongruous.

Assimilation presupposes an environment of that which is capable of assimilation. And the environment in which mind develops is a mental environment. That is a fact too often lost sight of. Consciousness never comes in contact with aught but other facts of consciousness. The mental symbolism is one and continuous and self-contained. There is no getting outside it. If mind does grow up in correspondence with something that is not mind this is a matter of metaphysical psychogenesis, not of positive psychogenesis with which alone I am now concerned. From the positive point of view mind develops in conformity with a mental environment and with that alone—an environment of percepts directly suggested from without and of concepts growing out of perceptual experience or suggested through inter-communication with our fellow-men. And the environment is not unchanging, but is itself subject to development. Each thinker not only has his thoughts moulded by the intellectual environment but reacts upon it, making it for the future something different from what it was. The thinker in any department of knowledge brings his mind into contact with all that is best in human thought and endeavour in that department. He thus finds his true environment and endeavours to make it more congruous by further elimination of incongruities. That I feel sure is how science has advanced. First the congruous system is allowed to take form in the individual thinker's mind by the assimilation of all that is best in the work of his precursors; by the rigorous application of scientific method and verification some of the remaining incongruities are eliminated; and then through the thinker's influence the amended and extended system is impressed on the science and philosophy of his time and of all after time. The environment is henceforward no longer

the same. This I could amply illustrate ; but not here and now.

The environment is henceforward no longer the same. This constant change—for the better as we hope—of the environment of the developing mind makes it exceedingly difficult, if not impossible, to test the truth of the theory of use-inheritance, already adverted to, in the matter of the mental faculties of man. Take the case of two men with equal mathematical faculty, of whom the one develops the faculty while the other devotes his life to billiards. Putting aside the fact that this development of the faculty in the one case and not in the other is very probably itself the outcome of an innate tendency—putting aside this I say, the son of the former grows up under the influence of a mathematical atmosphere, the son of the latter amid the clatter of billiard balls. If then the son of the former develop into a better mathematician than the son of the latter, who shall say that it is the inherited increment of faculty and not the influence of a mathematical environment that has produced this effect ? And, in general, if the mean level of intellectual and moral attainment to-day is higher than it was a generation or two ago, how can we tell that this is not the result of development in harmony with a higher intellectual and moral atmosphere rather than the effect of the inherited increments of faculty ? Who shall say that this is not how the acquired increment tells on the race, and not through direct heredity ? I am not saying that it is so. But I say that all the facts must be taken into consideration.

It will of course be observed that in contending that the law of psychogenesis is a law of development by the elimination of the incongruous, I am not pretending to account for the origin of the congruous. Just as natural selection accounts for organic development by the elimination of the unfit, but makes no pretence, or should make none, to account for the origin of the fit (which is a distinct problem), so do I suggest that mental development results from the constant elimination of the incongruous ; but I make no pretence that it accounts for the origin of the congruous. It is a theory of survival, not of origin.

I had intended here to say somewhat further concerning the relation of physical elimination under natural selection to the psychical elimination of the incongruous. During the early phases of organic evolution the two went hand in hand. In the evolution of man they widely diverge. Physical elimination, as I have contended, becomes a less important factor : the elimination of the incongruous (espe-

cially that which is incongruous to the social ideal) becomes more and more the law of progress. I have not space to trace the matter further ; but I have elsewhere¹ said somewhat on this head.

Lastly, I must say a word, but not all that I had intended, on the relation of the law of psychogenesis to the Freedom of the Will. The process, as I conceive it, is one of the elimination of the incongruous, a process analogous, though in a wholly different plane, to that of natural selection. Mental development is the result of a continuous process of selection by the control centres. But I have contended that we constantly identify ourselves with the special action of these control centres. We claim such action as especially and distinctively our own, as the product of our own volition, of our free-will. Hence we may say that psychogenesis through selection is the outcome of free-will, *as thus regarded* ; a conclusion which ought to, but is not the least likely to, satisfy both determinists and indeterminists.

Be this as it may, we can perhaps all agree that it should be our practical endeavour to raise the intellectual and moral tone of the community by effecting the elimination of such incongruities to the social nature as falsity, misery, squalor, destitution, vice and immorality ; and the assimilation into the social conscience of ideals of truth, justice, happiness, beauty and purity.

¹ *Animal Life and Intelligence*, pp. 483, 484.