

senses the infinite divisibility of time and space, which appertains to them truly indeed, but only as objects of imagination and thought.

Z. Ah, I see it now, Philophron; the world of *thought* and *reality* is not a world apart, but is identical with the phenomenal world, only differently treated. Is not that what you would imply?

P. It is, Zeno. And I would add, neither is there any contradiction between them. Phenomenal motion is as infinitely divisible *in thought* as time and space are. Of that infinity it is the phenomenon, and not of *rest*, which is not its reality but its contradiction.

Z. I suspect you are right; and certainly I cannot resist your demonstration. Still I do not quite see *how* it is that you compelled me to assent to the tortoise being overtaken, the contrary to what I conceived myself to have demonstrated. Tell me, if you have no objection, by what means you effected it, where was the leverage of your argument?

P. In re-introducing the standard of measurement, which you had removed by postulating division to infinity. Relative speed can only be measured by taking either an unit of space traversed in different times, or an unit of time in which different spaces are traversed. I chose the latter, as you will remember, in comparing the spaces traversed in the hundredth of a minute. And in doing so, I was only holding you to your own statement of the problem.

Z. True. But how had I removed this standard?

P. By comparing the spaces traversed by Achilles, not with a fixed standard, but with the spaces traversed by the tortoise, which were constantly changing,—a “Lesbian rule”; and though it is true these spaces kept shortening, yet you had, in the infinite divisibility of time, a means of imagining the spaces traversed by Achilles to be shorter still, thus leaving always an infinitesimal space between him and the tortoise.

Z. Philophron, you appal me with the simplicity of the solution.

SHADWORTH H. HODGSON.

FOUR NEW PHILOSOPHICAL TERMS.

An air of pretentiousness is, I fear, not to be escaped in any attempt to justify the putting forward of new terms. Mr. Sully, however, in reviewing, in the April No. of *MIND*, the volume entitled *An Inquiry into the Process of Human Experience*, has made it needful for the writer of it to run the risk, if he is not to seem to admit a very grave fault charged by Mr. Sully against the book. The better plan will be to go at once to the underlying questions:—(1) whether there are or are not specifically-assignable defects in the language before used for psychological inquiry; and (2) whether the words proposed in the volume are real endeavours to remedy the defects, not being wilfully multiplied beyond the proved need, nor being made fantastic for the sake of newness.

Mr. Sully, throughout his notice, does not make the smallest,

faintest admission that there is any deficiency in psychological and philosophical terms. Yet I feel nearly sure that he does not intend to claim adequacy and finality for the phraseology now in use. This, at least, is the first issue between him and myself. I venture to affirm that some further technical words are needed in order to give full articulateness to the later scientific apprehensions of the process of human consciousness. A reader of the critique upon the volume who has not seen the book will possibly not be prepared to learn that the new terms which are put forward are just four in number. They are these :—(1) "The Executive-System" (suggested as a designation of the physical world at the last stage of philosophically considering it); (2) "The Neurotic-Diagram" (used as a name for the sensory-cerebral activity which is now known to happen along with each act of consciousness); (3) "Egoistic-Actualisation" (meant to enable us to speak of the occurring and subsisting of our self-cognition from time to time, that is, whenever we are conscious, in a way which avoids as much as possible language that assumes substantiality for the Ego prior to such a theory being considered and decided upon); (4) "The Law of Effectiveness" (a name for a working-rule seen to demarcate the bounds of human consciousness—that is, standing for the limits where our experience of self and the world is continually beginning, ceasing, and re-beginning).

These terms necessarily occur in derivative forms, as well as in the above primary spelling; but no one who had taken the degree of trouble asked to master the significance of the words as they are first used could fail to understand the derivatives. Are these terms, or some words answering to them, needed in scientific language? Possibly the simplest plan will be to take the phrases one by one, trying to show their applicability.

"*The Executive System.*"—The progress of modern physical science has had for its general effect the establishment of a new kind of philosophical Realism, one greatly differing from the old Realism. Scarcely a thinker of any wide repute could now be found who does not believe that, apart from man's consciousness in respect of it, there exists a world in itself and additional to man. An intellectual inference has established itself of a physical cosmos which is infinite in scale and continuous in duration—subsisting beyond man's range of sensible experience, and also enduring in the lapses of his consciousness owing to sleep, swoon, &c., or when his attention is distracted. Here there is not space to instance the proofs.

But, advancing a further and equally important step, let us add that this world so independent and real, the inference of which is made by modern science so indubitable, nearly all psychologists now agree, is not itself cognisable by us in its process, man's sensations existing only as facts of his own consciousness. The taste of sweetness, the feeling of heat, the phenomena of sound, light, &c., are held to have no subsistence without a sensorially-endowed being in the act of experiencing them. But it results from this view, strictly followed out, that the physical world, in our ultimate philosophical reference to

it, ought not to be spoken of in sensory terms without its being recognised that they do not finally apply. That is to say, a phrase is wanted, which, by the very attempt it shows to leave out all sensory description, will give habitual intellectual awareness of the fact that ultimately the physical world is not sensibly apprehended, but is only inferred.

Let us now try to ascertain what this mental inference of the not-sensibly apprehended world, for which a name is wanted, amounts to.

For this, a further fact needs bringing out clearly—namely, that although sensations, &c., only occur as events of consciousness, and are in themselves mental happenings, they can only arise or exist in a certain order of grouping or sequence—not a simple unalterable order, for its groupings and sequences are proved to be potentially transposable, but the transpositions disclose laws limiting and settling the variety of their occurring. This transposability of the order of our sensations is clearly something additional to the sensations themselves; and the apprehending of this is indeed one and the same with the inference that sensations—no matter how or whence they are actually caused—are only possible when there arrive specific occasions of them, which occasions are practically determined by an operative-process independent of the sensations. Clearly, this is virtually saying that a sensation can only happen along with the occurring of a certain event in a scheme of existence which is additional to our sensory consciousness. What that event is in itself we do not know; we have not any faculty for knowing it. The sensation, or rather grouping of sensations, which arises represents it, so to speak, and in common thinking stands for it. But modern psychology assures us that the sensation is not the cosmical event.

Owing to a specific experience connecting with our own muscular activity (which experience is named Motion), having the closest practical relation with the operative vicissitude of the cosmos—our muscular activity being in fact the ordinary means for transposing the order of the other sensations—this term Motion naturally came to be employed to designate the vicissitude itself, just as if it described the mode of it. But without going into any subtle details, it will be enough to say that it is now agreed by thinkers that the conception of Motion applied to the causative-process of the physical world is finally stultificatory. Whatever the mode of the cosmical vicissitude, it is not Motion. We have, of necessity, to make our calculations of the physical process in terms of Motion, but at the ultimate philosophical stage we have to repudiate that word as not being a real description of the mode.

How the two sets of occurrences, physical and mental, come to exhibit this practical relation, so that a sensation can only happen when the specific cosmical event is occurring, and is sure then to happen if there be right juxtaposition and activity of a human organism, is the final problem of philosophy. With that question we are not concerned here. All that it is needful to establish for the purpose in hand is, that the cosmos has events of its own, which

practically determine those of our consciousness, and that the incognisable cosmical events occur in an order that implies vicissitude, which may be called qualitative if the word quantitative does not appear rightly applicable.

The case is now fully stated. The cosmos is only intellectually inferred by us, but there is in that way disclosed an operative-process going forward, which executively determines our sensations by furnishing the possibilities or occasions of them. This is the ultimate apprehension we get of the world in philosophically considering it; and for the apprehension I ventured to think a name was asked which put off as much as possible complex sensory-associations. The term which persistently occurred to me as best serving the end was "Executive System".

It may, however, properly be asked:—Was there no language already in use which could be availed of? I think that an instinctive effort to supply the want can be traced. Let us run through the list of other terms which has accumulated. The word 'Nature' has been very commonly employed to stand for the cosmical operation; but the word Nature is pictorial—poetry claims it as well as science. It is, in fact, one of the loosest terms we have. 'Matter,' again, though it may be construed so as to be largely abstract, may mean statics, without including dynamics. 'Force' tries to obviate that difficulty, but this word is often used in respect of portions of the scheme of the world, not totalising it. The word 'Energy' is needed for a special significance of its own. By giving to the world as it is philosophically apprehended at its last, most abstract stage, the name of "Executive-System," it was sought to bring out the operative-relation which the cosmos holds to our consciousness, and to commit us to no other affirmation respecting it than this fundamental one of modern scientific Realism. Surely the bringing together of the two words "executive" and "system" does not make a very outlandish phrase?

"*The Neurotic-Diagram.*"—Physiological-psychology may claim as the most fundamental of the principles it has established, that a sensory-cerebral activity is indispensable for the occurring of consciousness as we know it. Even thinkers who hold that the Ego, while we are conscious, adds phenomena which are not assignable in any way of direct relation to the physical process, allow that the neurotic-activity must be happening in the fundamental mode which conditions the self-feeling before any such addition is practicable. But as might be looked for, none of the old phraseology—that is, none of the terms afforded by such words as ideas, notions, feelings, &c.—necessarily indicates this conditioning-operation. I have not space for particulars, but efforts have been made to get a name for the physiological activity. The term cerebration has struggled into use; and some of the more recent inquirers have sought to get a power of further specialising the process by speaking of neural tremors, grouping of nerve-units, and so on. All this has, I believe, helped. But I ventured to think that a further term was needed—one which, while

being a direct reminder of the nervous-apparatus, should distinctly allude to the fact of a specific modification of its operation being needed in and for each distinct experience. For nervous anatomy has not only made out that during consciousness there must be some cerebral activity, but has shown that answering to each act of consciousness there is a precise allotment of the neurotic-operation.

The premature classifications of phrenology have fallen into discredit; if, however, they had fully maintained themselves, the names of the "bumps" would still have needed supplementing by a word capable of naming their grouping in associated activity. At this moment, despite the striking experiments of Dr. Ferrier, scarcely any one pretends that, excepting as to the sense-organs, and a few general functions of the cerebellum and some other parts of the brain, it is possible strictly to localise the activity. But everybody agrees in an inferential conclusion to the effect that, for each individual act of consciousness there is a specific interplay of parts of the cerebral system, and that there must be habituated local allotment of the neurotic machinery in this way. Is not this the same thing as saying that in and for every individual act of experience there is *demarcation* and *configuration* of the neurotic activity? If the brain were open to observation, and we could sensibly trace its operations in all their minutiae, we are forced to believe that we should witness an associated, related activity which would be diagrammatically reproducible.

It was for the purpose of serving as a name for this physiological aspect of the process of our consciousness that I suggested the phrase "Neurotic-Diagram". It seemed to me that it recognised the fact of neural-activity being indispensable for consciousness, and at the same time kept in view that in each case there is specific configuration or demarcation of the sensory-cerebral movements. Supposing that experimental knowledge ever enabled inquirers to strictly localise functions in the nervous system, then the specific neurotic-diagrams might be designated classificatorily. That, of course, is the unhopd-for ultimate ideal limit of progress in this matter; but how could any step towards it be practicable without some such generic name as the volume proposes?

I have not space to urge in any detail the convenience of the phrase in describing the phenomena of aphasia, epilepsy, &c.; nor how it throws light upon the use of hypothesis in reasoning, and on the distinction between Memory and Imagination, on the shortening of chains of ideas, &c. My own experience forces me to believe that the use of the term would brush away much mistiness from the prevailing psychology, which is continually forgetting its physiology. Is the phrase a very hard one? Do "neurotic" and "diagram," both plainly understood words when they stand apart, suddenly grow unintelligible on being brought near?

"*Egoistic-Actualisation*" and "*The Law of Effectiveness*."—I couple the third and fourth of the terms, for the explanation of the one runs into the other. In the brief construing, earlier given, of the phrase "*Egoistic-Actualisation*," it was claimed for it that it enabled

us to speak of our self-awareness phenomenally, without assuming in the very words we start with substantiality of the Ego. If a thinker refuses to grant entity to the Ego, he still has to allow that something which practically amounts to egoistic-actualisation happens whenever consciousness begins or resumes. Well, is there or is there not an advantage in a term which strictly defines what must be conceded by everybody in this first stage of describing what happens mentally?

But, as I previously said, this term practically connects itself with the use of the fourth and last of the names proposed, *viz.*, "The Law of Effectiveness". In reference to it, I beg leave to posit two facts:—First, that our self-consciousness intermits from time to time, *viz.*, in sleep, during miscarriages of attention, &c. Secondly, that all the sensations, one or more of which must be in the act of going forward whenever we are aware of ourself and the world, only arise and only last while the conditioning-operation of the world (*i.e.*, the Executive-System) observes a specific range of what we call rate, volume, direction, &c. I suppose that both these statements will be admitted by everybody. Now, the practical observance in our experience of these limitations is probably describable as the working of a Law; that is, the executive-operation for the conditioning of human consciousness is found to be effective only within such-and-such a range of its vicissitude. But is there at present any distinct and compendious recognition of that fact in a verbal expression, which will keep prominent in our thinking this practical limitation of our consciousness by the term recurring continually in the expository phraseology? I did not know of any.

In the absence of a periodical use of some such qualifying term, not a little language to be met with in the works of eminent psychologists confuses the true state of the case. We hear of the mental and physical sides of a fact, as if consciousness and the universe were, so to put it, conterminous. In truth, only a few of the cosmical events can rightly be spoken of in that way. We hear, in a general unrestrictive way, of consciousness being a function of the organism, as if all the activities of the organism rendered phenomena of sentience in our experience. On the contrary, nothing has been more decisively proved by modern science than the fact that it is perfectly easy by either heightening or lowering, widening or narrowing, the physical operations—named "impressions" in the old terminology—to nullify their power of challenging the Ego and of furnishing sensations. Only a limited range out of the total possibilities of intra-bodily executive-operation has the power of conditioning human experience. By the use of the term "Law of Effectiveness" in connexion with the other related phrase "Egoistic-Actualisation," the true state of the case is recognised. If the phraseology starts a further inquiry, namely, as to the sanction enforcing these limitations, that problem has to be accepted like any other. It is advisable that we should know exactly where we stand, and if a problem is naturally suggested which has finally to be pronounced

insoluble, still the fact of the suggestion of the problem is valid in itself and is part of the situation in which we find ourselves.

I have reached the end of the proposed innovations in phraseology, and in doing so have fully exhausted the space I can expect from the Editor. I will only ask—Were these four terms needed? Are they very formidable? Do they bear marks of any wish to coin new verbiage for novelty's sake? I must leave the answers to the reader. I am not complaining that the terms must of necessity fight their own way. It is on the whole well that some penalty should attach to any meddling with language; and I foresaw that I was incurring the disadvantage, but felt compelled, for what seemed to me good reasons, to submit to it. The future will show what degree of versatility in this respect there is among the class of readers to which the volume addresses itself.

I should not like to conclude without mentioning that I have in another way thanked Mr. Sully for the generous appreciation of his review in respect of the points which he found himself able to approve.

WILLIAM CYPLES.

THE ETHICAL METHOD OF EVOLUTION.

It may be of some service to students of Ethics to have stated in a concise way the principal questions discussed in the *Data of Ethics*, so far as there seems to be originality in the discussion, and further, in the same connexion, to have presented the assumptions that evolutionists must make before they can establish a new method of Ethics. We propose here to review briefly Mr. Spencer's criticism of other views, with the object of arriving at an estimate of the value of his proposed alterations.

I. (1) Mr. Spencer asserts—"There continues to be entire satisfaction with that form of utilitarianism in which the causal relations between acts and their results are practically ignored" (p. 58); and he goes on to say that utilitarians make no use of deduction in their method. With this position it is only necessary to compare the sixth book of Mill's *Logic*, *passim*. We select one or two sentences out of a hundred that would answer the purpose. As to the formation of character, 'The empirical law derives whatever truth it has from the causal laws of which it is the consequence'. 'Now to such cases we have seen that the Deductive Method, setting out from general laws, and verifying their consequences by specific experience, is alone applicable.' The very illustration used by Mr. Spencer in regard to "the course of one who studies pathology without previous study of physiology" as resembling the usual course of moralists, is one used by Mill for precisely the same purpose:—"Students in politics thus attempted to study the pathology and therapeutics of the social body, before they had laid the necessary foundation in its physiology" (*Logic*, B. VI., c. vi., § 1). In fact Mr. Spencer's volume is very curious reading, taken in connexion with the sixth book of the *Logic*.