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Self-Consciousness, Social Consciousness, and Nature. II

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THE
PHILOSOPHICAL REVIEW.

SELF-CONSCIOUSNESS, SOCIAL CONSCIOUSNESS,
AND NATURE. II.

VI.

SO far, then, a reality, external to my finite Ego, means a world of other experience with which my experience is contrasted. This world is concretely defined, in the first place, as the world of other human experiences than my own. What these experiences actually are, I learn only by myself repeating the expressive deeds of my fellows, and by attributing to these deeds, when performed by my fellows, an inner meaning similar to the one which I more directly observe in the deeds when I myself repeat them under conditions similar to those in which my fellows have already performed them. Of course, no such interpretation of any human meaning is infallible; but I am verifiably right in saying that, at every step, this social process does really bring me into relation with experience which, until I performed the deeds of social imitativeness, *was not* mine. This concrete new experience, which was not mine until I imitated, was then before my imitation, at the very least, a possible experience other than mine. The whole social world is full of suggestions of such actually possible experiences. If every real possibility must, logically speaking, have a basis in actuality, I am philosophically warranted in saying that all these suggestions of other human experience which social imitation interprets, and which common-sense trusts, do as a fact stand not only for a barely possible enlargement of my inner Ego, but for real experience

which, however fallible my private interpretations of it may be, has an actuality contrasted with, and existent apart from, my finite individuality. The world of my fellows' experiences may not be real just as I, in my narrowness, interpret it. But this world is still, from the philosophical as from the common-sense point of view, a real world, a complex of experiences other than mine, and more or less imperfectly communicated to me. And thus it is that one in general defines the metaphysics of the social consciousness. You observe once more the essential relativity of the individual Ego and the social Alter. Neither conception has any clearness apart from the other.

But now, in our human world of experience, there are, yonder, the phenomena of physical nature. Our next question is, in what sense are we to attribute reality to them?

J. S. Mill's answer to this question is well known, and is, in one aspect, closely and instructively similar to Kant's answer, despite all the differences between the two philosophers as to other matters. The phenomena of nature, *e.g.*, the upper Nile valley, the other side of yonder wall, or of the moon, — these one conceives as systems of possible experiences, experiences which, in general, I now have not, but could have under definable conditions. Nature, as such, contains, apart from the bodies of my fellows and of the higher animals, no objects that I conceive as communicating to me any now intelligible inner intents, meanings, plans, or other socially interesting contents. Nature consists of masses of "possibilities of sensation." The problem is, in what sense have these possibilities of experience any inner or self-existent sort of reality? Is nature a *Ding-an-sich*, whose reality is absolutely inscrutable, but self-possessed? The answer to this last and special question is that such a notion is simply meaningless. I can contrast my experience with other experience, and can regard myself as limited by facts of experience not now presented to me. And such a way of regarding myself is, as we have seen, absolutely essential to even my self-consciousness. **But I cannot contrast experience with what is no experience**

at all. Even to say that there now exist certain possibilities of experience which I do not realize, is to raise the issue already several times touched upon in the foregoing. A bare possibility is a mere fiction. It cannot be real. To my true definition of a given experience as merely possible for me, there may correspond an experience which, as it is in itself, is very unlike my private definition of the real possibility. But if I am right in saying, "There is a possibility of experience not now mine," then to such a real possibility some sort of real experience, other than mine, must correspond. The question arises: Is there any such real experience behind those nature-facts which we conceive as our own possible experiences?

But there is another aspect of natural phenomena which perhaps brings us nearer to our goal. The reality of the facts of nature, when we actually confirm their presence, is always viewed as capable of being submitted to social tests. The real nature-phenomenon is not merely conceived as object of my possible experience, but in general as the object of my fellows' actual or possible experience as well. If the star that I see is a real star, then you, if you are a normal observer, can see that star as well as I. This is the common-sense presupposition as to nature. Natural objects are viewed as phenomena that are, in some sense, public property, in so far as many different human observers could make them objects of possible inspection. The presupposition of common-sense is, that many observers could, on occasion, verify the *same* natural fact; so that the physical world will consist, for common-sense, not merely of possibilities of my individual experience, but of possibilities of common experience on the part of many observers.

Here surely is a well-known, but a paradoxical aspect of our nature-experience. I cannot observe your mind, but, as common-sense supposes, I can observe the same external natural fact that you observe. This presupposition is, in effect, a basis in terms of which we often define the facts of nature. What I alone experience, belongs to my inner life.

What you can experience as well as I, is as such a physical fact, and, mind you, this means that, when we deal with nature-phenomena, common-sense supposes us, not merely to have similar inner states, but to refer to actually the *same* fact. If you as finite being count ten, and I as finite being count ten, we perform similar inner acts, but our objects are so far *not* the same ; for the ten that you count is not the ten that I count. We can in this case be referring to the same truth only if there is, as a fact, some sort of extra-human reality possessed by the truths of arithmetic, and actually referred to by both of us. But just such extra-human reality common-sense actually attributes to the facts of nature. If ten stones lie on the highway, and you and I count them, common-sense supposes that though your counting of ten is not my counting of ten, though your perception of the stones is not mine, though your inner life is in no fashion, here noteworthy, identical with mine, still the real stones that I count are identically the same as the real stones that you count. Now any natural fact, as common-sense conceives it, could, without losing its identity, be made the common object of as many observers as could come to get the right hints of its nature through their inner experience. All these possible observers, so common-sense holds, would really refer to the same natural fact.

The nature-things, then, are not merely possible experiences for me ; they pretend to be possible objects of common experience for many observers.

Now when the nature-facts make such puzzling demands upon us as this, there are only two ways of viewing the situation thus created. One way is to say that in truth, all this common-sense notion of nature is illusory. As a fact, one might insist, it is impossible for two finite observers of nature to have the same external fact actually referred to by both of them at once. What one means is, that, as our social consciousness indicates, human beings have many similar experiences, and can socially convey to one another this similarity of their inner lives. When I rejoice, you may

rejoice too ; yet our rejoicings are not the same, but only similar. Just so, one might insist, when I point at my star, you may point at your star also. But what happens is that your experience then resembles mine ; but has not the same outer object at all. Nature is the sum-total of those facts of our various experiences, concerning which our perceptual experience seems most easily to agree. But this agreement means merely a certain socially communicable similarity of our experiences, — not unity or sameness of natural object.

This, I say, is one possible hypothesis as to nature. But observe at once : There is *one* class of nature-objects in case of which just this negative and skeptical hypothesis simply cannot be carried out without destroying the very basis of our social consciousness itself. And this class of seeming outer objects is made up of the very bodies of our human fellows, whom we observe, and with whom we socially communicate. The social consciousness, upon which, as we have seen, our very self-consciousness itself depends for its definition in finite terms, involves, as an integral part of its unity, the observation of certain natural phenomena definable as the expressive movements, the gestures, words, deeds, of our fellows. Now these phenomena are not merely to be viewed as reducible to the possible similar experiences of the various people who may observe their fellows from without. For these phenomena, on the contrary, have, whoever observes them, their identical and inner aspect ; for they indicate the inner life of the social fellow-being who thus expresses himself. Many of you are now observing me. Are all of your various inner experiences of me now actually referring to the *same* fact, external to you but having for me its presented internal aspect, identically the same whoever it is that regards himself as observing my movements ? The answer is here, at once : Yes. If I am I, and am communicating to you through deeds which are represented in you by systems of similar experiences, then, when you experience, in your inner lives, the observable phenomenal aspects of these my deeds, you are all at once meaning, referring to, listening to, the same genuinely real object.

Paradox though it be, the social consciousness insists that the same fellow-man can phenomenally manifest his presence to as many observers as can get some experience of his expressive deeds. All these observers can agree, with due care, as to their accounts of his deeds. These deeds, then, are so far nature-phenomena, like any others. My movements appear to any one of you in space, even as does this desk. So far, one could say, the fact is that the observers have experiences that are similar in one man's case to the experiences of his observing fellow. The observed deeds are merely such similar perceptions in the various observers. The various observers do not see the same real deeds ; but they do possess similar perceptions, which they call perceptions of expressive deeds.

But no, this conclusion the social consciousness declines to accept. All your various but similar individual perceptions of my deeds really refer to the *same* genuine object, precisely in so far as I am I, and in so far as it is my inner experience that is manifested in these deeds. Thus, then, you could say that, if this desk were alone here, you could indeed so far talk skeptically of phenomenal experiences, in various observers, which only seemed to be experiences relating to the same object, but which as a fact do not demand the real sameness of their object. But it is no longer so if, in terms of the social consciousness, you consider not the desk, but me as your nature-object. For I am to you not only nature-phenomenon, represented in you by comparable and merely similar perceptual experiences of your various private worlds ; but I am, as communicating fellow-man, the same outer object for all of you.

Now a similar proposition holds true of any fellow-man. Any man you please has for you his phenomenal aspect. In this aspect he is viewed as object of possible experiences, and the real facts corresponding to this view are, so far, expressible by saying that all of his observant fellows have similar experiences whenever they come into certain definable groups of relations to their own inner worlds. But this man has

another existence than the existence of certain images that his fellows form. All of these images refer to him, to the same man, to his manifested inner experience, and so to one reality. And this is what the social consciousness insists. Give up that insistence, in any general form, and you have no social consciousness, no fellow-men with similar experiences, no definable self-consciousness — yes, nothing but an inexpressible immediacy of inner presentations. But hold by that insistence, and what can you say? I answer: You can and must say that to one portion of phenomenal nature, *viz.*, to the observed bodily movements of your fellows, there corresponds an inner life which is the same in nature, however many may be the phenomenal images that observers form of it when they refer to it as a reality.

The first view of nature, *viz.*, that nature consists of a total of possible experiences, similar in various observers, thus fails as to all those nature-objects that present themselves as our expressively moving fellows. Our fellows are real beings, phenomenally observable from without by as many observers as you please, but self-existent as masses of inner experience, contrasted with one another, and with our own experiences.

But now how can you separate the phenomenal fellow, the originally real finite being, the original of your notion of your non-Ego, from the phenomenal nature of which he appears as a part, and with whose existence he appears to be, in all his life, absolutely continuous? For at this point there returns to help us our whole knowledge of human nature as such. A man's phenomenal expressive movements, objects of possible experience for all observers, stand for, and phenomenally accompany, his inner life. They then are real manifestations of a real interior finite life. But his movements cannot be thus regarded as real unless his limbs, his muscles, his nerves, his brain, his circulatory and nutritive processes, the food that he eats, the desk from which he speaks, the air that he breathes, the room where he speaks, the ancestors from whom he descended, — yes, in the end, the whole phenomenal nature-order with which he is phenomenally continuous, unless all

these things be also regarded as real in the same general sense, *viz.*, as inner finite experience. In short, you cannot separate your phenomenal fellows from the order of phenomenal nature. The continuity between man and nature, known to us first as the absolute inseparability of the expressive movements of our fellows from the nature-processes in which these movements appear to be imbedded, and of which they are phenomenally a part, has now become, in the light of our whole experience of natural phenomena, an all-embracing continuity, extending to cerebral and to general physiological processes, and to the ancestry and evolution of the human race, so that the highest in expressive human nature is now phenomenally linked by the most intimate ties to the simplest of physical processes. If, then, one's fellow is real, the whole of the phenomenal nature from which his phenomenal presence is continuous must be real in the same general fashion.

But observe, *this* deduction of the reality of the natural objects implies *something* very significant as to what nature is. The only possible way to get at the existence of a finite non-Ego is through some form of the social consciousness. What a finite non-Ego is, your fellow teaches you when he communicates to you the fact that he has inner experience, and is the same object, however many observers view him. Now if his continuity with the phenomenal nature of whose processes his observed expressive movements are an inseparable and continuous part, impels you to say that if he is real his whole body, and so, in the end, the whole nature of which that body is an inseparable part and an evolutionary product, is also real, in an inner and finite sense, then the only possible way to interpret this relation is to say: "Nature, by itself, is a system of finite experience which, on occasion, and by means of perfectly continuous evolutionary processes, passes over into, or differentiates from its own organization, the communicative form of socially intelligible experience that you and I call human."

VII.

The force of this proof is limited, of course, by the fact that it is precisely an argument from continuity. It is capable of endless development and illustration ; and I take it to be the only possible proof that nature exists in any way beyond the actual range of our more or less similar human experiences of nature's observable facts. Yet no argument from any continuity of apparent processes has absolute force. It does not follow that every hypothetical conception which you and I now form of this or that natural process, *e.g.*, of the atoms, or of gravitation, corresponds to any distinct form of the inner nature-experience. As a fact, I take it that our scientifically conceived laws of nature are largely phenomenal generalizations from very superficial aspects of the inner life of nature, and that very much indeed of what we now call nature has existence only for human perception and thought, as a matter of the similarities of the experiences of various human observers. But my point is here not a detailed theory, but a general conception of nature. And my general conception is this :— There is a vast system of finite experience, real as our socially communicative fellows are real, and manifesting its existence to us just as they do, *viz.*, through the phenomena which appear to our senses as material movements in space and time. What this inner experience is we know, in case of our human fellows, by social communication. What the rest of the nature-experience is, we can only make out very indirectly. But the continuity proves that the nature-experience passes over, on occasion, by unbroken although vastly complex processes, into the form of human experience. All the facts grouped together as the doctrine of Evolution, make this continuity seem the more elaborate, minute, and significant, the better we know it. In consequence we have no sort of right to speak in any way as if the inner experience behind any fact of nature were of a grade lower than ours, or less conscious, or less rational, or more atomic. Least of all have we a right, as the Mind Stuff theories do, to accept our

hypothetical atoms as corresponding to real nature-entities, and then to say that inorganic nature consists of a mass of scattered sensations. Of the reality of organized experience we all know ; but scattered sensory states are mere abstractions, just as the atoms of physics are. There is no evidence for the reality of nature-facts which is not defined for us by the very categories of the social consciousness. No evidence, then, can indicate nature's inner reality without also indicating that this reality is, like that of our own experience, conscious, organic, full of clear contrasts, rational, definite. We ought not to speak of dead nature. We have only a right to speak of uncommunicative nature. Natural objects, if they are real at all, are *prima facie* simply other finite beings, who are, so to speak, not in our own social set, and who communicate to us, not their minds, but their presence. For, I repeat, a real being can only mean to me other experience than mine ; and other experience does not mean deadness, unconsciousness, disorganization, but presence, life, inner light.

But it is customary to say, by way of getting rid of any sort of animism, that we have no right to reason by mere analogy from our inner experience to anything resembling life in inorganic nature. To this I answer that, were the foregoing argument one from analogy, it would be open to the same objections as could be urged against any form of animism. But the whole point of the foregoing analysis has been that you do not first find nature as something real, and occult, and *then* proceed to argue from analogy that this occult reality is alive. On the contrary, I have first insisted that occult realities, things in themselves, in the abstract sense, are absurd ; that the social consciousness gives us the only notion of finite reality that we can have ; and that the social consciousness recognizes, as real, beings having conscious experience. After this point was reached, and only then, could we turn, in our argument, to the phenomena of nature to ask if they must be regarded as conforming to just such a concept of finite reality, since, as a fact, this is our only possible concept of what a real being is. Now a phenomenon

of nature, on the face of it, is solely something suggested to us by the agreement between the series of experiences present in various men. And no purely physical experience can possibly prove that nature has other reality than this, *viz.*, reality as a series of parallel trains of experience in various people. So far we had not to interpret nature, but only to wonder why nature gets taken to be real at all, apart from these parallel series of experiences. Then it was that there came to our aid the argument from continuity. Certain of the phenomena of nature do stand for real inner experience, *viz.*, the expressive movements of men. It is impossible to separate these latter phenomena, however, from the rest of the natural world, whose phenomenal unity the doctrine of Evolution is now daily making more manifest. Hence — so we reasoned — the rest of phenomenal nature must be regarded as standing for systems of finite experience, whose inner unity has to be defined in the way that human experience illustrates. And it is thus, not by analogy, but by the very process whereby nature comes to be defined as real at all, that natural facts get conceived as like other finite experience. Of the relation of this “other experience than ours” in the cosmos, to our human type of experience, we can then at once say, that, in the process of evolution, our human experience has become differentiated, by long and continuous processes, from the whole, so that relatively continuous intermediate stages now probably link us to the rest of the cosmical inner life. Of ‘unconscious’ experience in nature we have no right to speak, precisely because consciousness means the very form and fashion of the being of experience itself, as we know it. Of transformations of conscious experience, with a preservation of continuity through the whole process, our own inner life gives us numerous examples.

Meanwhile let us lay aside, once for all, the petty human Philistinism that talks of the evolution of humanity out of so-called ‘dead nature,’ as if it were necessarily a vast progress from ‘lower’ to ‘higher,’ or from the meaningless to the world full of meaning. What value human life may get

we in a measure know. But we certainly do not know that the nature-experience whose inner sense is not now communicated to us is in the least lower or less full of meaning. Our human evolution is, as it were, simply the differentiation of one nature-dialect, whereby a group of finite beings now communicate together. We have no right to call the other tongues with which nature speaks, barbarous, because, in our evolutionary isolation from the rest of nature, we have forgotten what they mean.

VIII.

A few concluding considerations seem to be still in place in view of the most cogent positive objection that is likely to be urged against the foregoing interpretation of nature. The hypothesis advanced in the foregoing transcends our direct as well as our scientifically mediated experience of nature, just in so far as our view supposes that the nature-phenomena are hints of the existence of a finite experience continuous with ours, but such that its extra-human contents are not communicated to us. And this transcendence of our human experience is indeed a perfectly obvious objection to my notion. Yet the objection is so far only negative. In admitting, as I do, all that such an objection can urge so far as regards the fact that our hypothesis transcends the limits of present human verification, I still answer that this objection is precisely as cogent against every theory which attributes any sort of genuine inner reality to nature, as it is against our own theory. The objection, in fact, contends only against the attribution of relatively independent reality to nature, just as such attribution, and not against our special view as such. No human verification, made as it is under social conditions, can of itself do more than prove (in the social sense of the word 'proof') that various human experiences, existent in different men, have certain actual agreements. To believe that nature has any reality apart from these, our intercommunicable parallel series of human experiences of what we call the nature-phenomena, is, therefore, to transcend the actual data of the

social consciousness, so far as they are presented to us mortals. The present objection, then, is equally valid against all cosmological doctrines. The only question really at issue, however, is : What reason forces us to transcend the data of our literal social consciousness at all? Why are we led to assume a nature outside of the various reports that men give of their parallel trains of describable physical experience? To this question, as I conceive, the only fair answer is the argument from continuity, as it has now been stated. But the argument from continuity is an argument for the existence of finite realities whose ultimate type the social consciousness in general predetermines for our conception, while the nature of their specific relations to our experience is such as to preclude our filling out this general conception of "other experience than ours" with any particular contents such as we attribute to the communicative minds of our fellows. My argument, then, is not for one concept of the reality of the facts of nature as against contrasting, and equally possible, concepts of the reality of beings other than ourselves. My argument is, that, from the nature of our human consciousness, with its primal contrast of inner Ego and social non-Ego, we can have just one general concept of a finite non-Ego, *viz.*, the concept of "other experience than our own." The only real question, then, is : Shall we attribute this concept, in its most generalized form, to nature, or shall we not? There is no answer to this question except the one derived from our foregoing argument from continuity. That to attribute any reality whatever to nature is to "transcend our own experience," in the human and socially concrete sense of the word 'experience,' ought to be especially remembered by those who, while glibly attributing to nature a reality which they profess to regard as utterly inscrutable, are still accustomed to insist that one must never venture to transcend human experience in any fashion.

But it is not this negative argument that I myself regard as the most cogent. I am, as I have just said, more interested in a positive objection which will occur to many of you.

The nature-experience, so our hypothesis supposes, is, in at least a considerable degree, relatively continuous with ours. That is, there is experience in Nature which closely resembles human experience ; there is other experience which less resembles ours, but which need not be lower ; there is conscious experience still more remote from ours ; and so on. All this experience hints to us its presence, but only in case of our human fellows communicates its inner meaning to us. But one may now answer : " It is true that the phenomena of our bodies are, physically speaking, continuous with the phenomena of physical nature in general. It is not true, so soon as we leave man, that we get any direct signs of the existence of an inner life, or nature-experience, at all corresponding, in its inner resemblance, to our own, to the physical continuity of its phenomenal processes with our own expressive physical life. The higher animals manifest their inner experience, apparently similar to ours, by expressive activities which resemble ours, but which certainly do not stand in any close physical continuity with ours. Our own organic processes, on the other hand, stand in very close relations of physical continuity with our most intelligent conscious and voluntary deeds. Yet if there is any inner experience connected with those of our organic activities which have no conscious equivalents in our own inner life, it is hard to show any sufficient body of evidence to bring this 'subliminal' experience into any relatively continuous *inner* relations with our own, despite the numerous, and decidedly interesting, recent efforts which have been made to connect our individual consciousness, by empirical links, with some such 'subliminal' processes." What my theory seems to lack, then, is a definition of any way in which our human consciousness *can* be in relations of inner continuity with a world of experience which, although thus actually in close continuity with ours, gives signs of its presence only through physical phenomena whose inner meaning, even in case of our own organic processes, quickly escapes any interpretation in terms now intelligible to our socially limited minds. An objector may well urge that this is a positive fault of the theory. Our

theory, he may say, need not undertake to tell precisely what the supposed nature-experience contains. But it ought to show how physical processes continuous with those of whose inner meaning we are conscious, may involve, as their own inner aspect, types of experience more or less continuously related to our own, and yet now quite inaccessible to us.

As a fact, there is a very obvious way of hypothetically accounting for this presence and inaccessibility of types of experience closely related to ours, whose presence is hinted to us by physical processes such that we now wholly fail to interpret their inner meaning. This supplementary hypothesis is suggested by one of the most interesting and best known principles governing the correlation of mental processes and their phenomenal accompaniments.

Mental processes, in human beings, are correlated to physical processes whose phenomenal or externally observable basis is known to be the functions of nervous systems. Now the best known principle governing the physical fortunes of any nervous system is the principle of Habit. This is the rule that a nervous system tends to repeat its former functions, when once these have become set through series of repeated stimulations. Whatever function has frequently been accomplished under the direction of nervous centers, tends to be the more readily accomplished again. This principle tends, of course, to the production of stability and uniformity of conduct in us all. And the analogy between the results of this special tendency to the formation of nervous Habits, on the one hand, and the existence of the observable processes of Natural Law in general, on the other hand, has often been noted. The phenomenally observable conduct of a being with a nervous system is always, as a fact, and in proportion to the elevation of this being in the scale of life, a very irregular sort of conduct. Yet it tends towards regularity, because of the principle of Habit. Now, however, the regularity of outwardly observable conduct towards which, as towards an asymptote, the conduct of a being with a nervous system tends, is a sort of regularity which physical nature, especially in the inorganic

world, continually shows us, only in a highly perfected form, in those extremely regular processes which we define, not, to be sure, as the ideally ultimate laws of the universe, but as the observable routine of phenomenal nature (such routine as is exemplified by the tides, the seasons, etc.). That nature's observable Laws might even be interpreted, from an evolutionary point of view, as nature's gradually acquired Habits, originating in a primal condition of a relatively capricious irregularity, is a conception to which several recent writers, notably Mr. Cope, and, with great philosophical ingenuity, Mr. Charles Peirce, have given considerable elaboration. I do not myself accept this notion that the laws of phenomenal nature, where they are genuinely objective laws, and not relatively superficial human generalizations, are the evolutionary product of any such cosmical process of acquiring habits, as Mr. Peirce has so ingeniously supposed in his hypothesis of "Tychism." But I mention the analogy between these regularities of physical phenomena which are called the observable laws of nature, and the gradually acquired regularities of conduct which slowly appear in the lives of beings with nervous systems, in order to introduce another consideration, of equal importance for the definition of the place of conscious experience in the cosmical order.

If it is the rule that our nervous systems tend to form habits, and that habits mean uniformities of phenomenal behavior, it is equally true that our human consciousness tends to grow faint just in proportion as our habits become relatively invariable. Our human and conscious experience is the inner accompaniment of what appears, when viewed from without, as an irregularity of phenomenally observable conduct. Or, in other words, our conscious life is the inner aspect of a physical process of what is called our adjustment to our environment. This adjustment tends to become, in proportion to the perfection of our habits, a matter of predictable routine. But whenever this routine becomes relatively perfect, our consciousness grows fainter, and in the extreme case of an almost entirely invariable physical routine, our consciousness

ceases, while the perfected nervous habit remains, for human experience, only as an externally observable phenomenal process of a physical nature. A young man consciously and proudly twirls his moustache. The acquisition of this new mode of conduct constitutes a novel adjustment, and so involves change of routine behavior. This change is accompanied, at first, by a decided sense of personal importance. In time the habit may become set, so that it gets an entirely reflex perfection, and then, as in a well-known reported case, a man struck senseless by a street-accident, and suffering from severe cerebral injury, is seen, as he is carried to the hospital, automatically twirling his moustache, from time to time, in what, from our human point of view, appears as absolute unconsciousness, since we are unable, either then or later, to get into any sort of communication with the conscious experience, if such there be, that forms an inner aspect of this nervous habit. Just so, if one's nervous habits were so well formed, and if one's environment were so changeless, that one's whole physical life were a settled series of rhythmically performed activities, recurring with the regularity of breathing, or of the tides, the empirical evidence is that one would have no conscious life of the sort now communicated to us by our social fellows. Consciousness, as we know it in man, and interpret its presence in animals, is an incident of an interrupted adjustment to our environment—an interrupted adjustment which, seen from without, expresses itself in conduct that involves *alteration of old habits to meet new conditions*. As Romanes well asserted, the signs of mind, in any animal, are best to be defined as just such relative *novelties of conduct in the presence of new situations*. Not routine, then, as such, but irregularity, gives the physically interpretable sign of mind. Habit is always present, in the actions of the obviously conscious being; but, whenever he shows interpretable signs of consciousness, habit is always undergoing alteration.

If one considers these various groups of facts together, one gets, at first, an impression of the place of consciousness in nature which seems quite unfavorable to our hypothesis.

Inorganic nature seems to be, as we view it, a realm where physical routine is, at present, obviously much more nearly verifiable, in an exact degree, than is the case with organic nature. In the inorganic world, then, what might be called, by analogy, the habitual process of the cosmos, the observable routine of physical phenomena, seems to be especially fixed, and open in its fixity to our human observation. In the organic world, whether or no the same ultimate natural laws would, if we knew the whole truth, ideally explain the facts, it is obvious that, at present, we *see* less regularity — less perfected observable habits, so far as our present imperfect experience goes. But, just where we now see least regularity, there we get the only signs of finite minds that we can at present definitely interpret. The ordinary generalization from this whole situation is, that, phenomenal irregularity being characteristic of the physical processes which indicate mind, phenomenal regularity must, by contrast, indicate the presence of the Unconscious — whatever that may mean.

But now this generalization is open to many objections. The unconscious, as such, is, as a fact, a mere *Ding-an-sich*, a meaningless abstraction. And, on the other hand, if one leaves out the ultimate presupposition that *all* of nature's processes, organic and inorganic, are, in some fashion still unknown to us, absolutely and equally uniform, — if one, I say, leaves out this ultimate metaphysical presupposition, which I intend to examine in another place, and which does not here concern us, — and if one confines one's self simply to the phenomenal, and to the empirical differences between organic and inorganic nature, then one must say that the observable or the scientifically computable and verifiable routine of rhythmic repetition in inorganic nature is nowhere concretely known to us as phenomenally invariable. The rhythm of the tides, at any given point, or over the surface of the globe at large, is invariable only if you do not take account of long periods of time. The same holds true of the regularity of the earth's revolution on its axis, and of the change of the seasons. The planetary orbits undergo secular variations, which are, within certain

long periods, relatively rhythmic; but if you take a period sufficiently long, these variations are doubtless no longer rhythmic.

As a fact, then, the permanence of the phenomenally obvious 'habits' of inorganic nature is only relative. It is true that, if you pass from such observably regular rhythms, whose actual degree of regularity is itself only a varying function of the time taken into account, and if you consider the ultimate and ideal 'laws of nature,' upon which all such approximate regularities are conceived to be founded, you do, indeed, reach systems of 'force-functions' conceived as absolutely independent of time. But thus to pass to the ultimate is to substitute a metaphysical conception of rigid causation for the empirically observed uniformities. And this conception, which we here omit from consideration, must apply, if true at all, to organic nature quite as much as to inorganic nature. If, however, you cling to the observable 'habits' of nature, then the difference between the organic and the inorganic is one only of the length of time required to make a given alteration of habitual sequence in the phenomena manifest. Our solar system is 'adapting' itself to an environment of seemingly limitless extent by the well-known dissipation of its energies. This adaptation involves, in varied ways, slow processes of phenomenal change which must, in the end, alter every known phenomenal rhythm of regularly repeated nature-habits. When read backwards, the same tendencies indicate that the present phenomenal order must have been reached by processes whose phenomenal manifestations would have been, in past times, enormously different in their routine from any process now manifest. Even if ultimate laws exist, then, and involve absolutely ideal regularities, which hold for all phenomena, organic and inorganic, it still follows that the observable and relatively rhythmic regularities of inorganic nature must be as truly cases of constantly altered 'habits,' continually adjusted to numerous conditions in the environment, as are the seemingly so irregular expressive acts of our socially expressive fellows. The difference lies in the enormously different times required to make manifest the alter-

ations of phenomenal conduct in question. A business man, in a great commercial crisis, or a great general, directing his army during a battle, adjusts his regular routine to the new conditions by changes of conduct that occur within very brief periods. A planet or a solar system alters the routine of its rhythmic processes in ways that it may take millions of years to make manifest. But in both cases the essentials of adjustment are present, *viz.*, variations in the rhythm of characteristic movements occurring in correspondence to changing situations.

If, thus viewed, the difference between the larger phenomenal alterations of inorganic and of organic nature appears mainly as a matter of the time-span involved in each alteration, it remains to consider a little more carefully the relation which we all experience between the inner processes of our conscious experience and those expressive alterations of habit to suit environment which accompany our conscious life.

What appears to our fellows from without as habit altered to meet circumstance, appears from within, in the experience of each of us, as the apperception of relatively new elements of experience by virtue of their relations of similarity and contrast to relatively old or familiar or established masses of inner states. The old, the familiar, the established in consciousness we have always with us whenever we experience. It is the element of our consciousness which corresponds, at any moment, to the established nervous habits just then aroused, — to the routine of our lives so far as it is just then repeated. The novel, the puzzling, the intruding element in our consciousness corresponds to the alteration which the environment is at the moment producing in our established physical routine as at that moment represented. We breathe regularly, and are not conscious of the fact. But an alteration in breathing, produced by a novel physical situation, gets represented in consciousness as a shock of surprise. Thus the alteration of our physical routine, at any moment, corresponds to the degree of our conscious experience. The greater the masses and the contrast of the opposing new and old elements, the sharper is

our consciousness, and, externally viewed, the more marked is our adjustment. If either mass of mental contents tends utterly to overbalance the other, consciousness becomes dim. The effacement of either element means the temporary or final cessation of our whole stream of conscious experience. In sleep one's physical routine is nearly regular, and one's conscious experience vanishes.

Meanwhile, our human experience is subject to another and very important limitation, which we may call *The Limitation of our Apperceptive Span*. This limitation, so far as we can see, is something purely arbitrary — a mere fact, which we have to accept like the rest of our finite situation. The existence of all such arbitrary limitations is, like the existence in general of any form of finitude, a proper problem for a general metaphysical inquiry. But a merely cosmological study has to be content, in such cases, with accepting the arbitrary fact as such. What is meant, however, by this apperceptive span is the fact that what we call a present moment in our consciousness always has a brief but still by no means an infinitesimal length, within which the 'pulse' of change, which that moment apperceives, must fall. Changes of mental content which occur either too swiftly or too slowly to fall within the span of the least or of the greatest time-interval which our human apperception follows, escape us altogether, or else, like the slower changes occurring in nature, are only indirectly to be noticed by us. Since the momentary change in the contents of our consciousness corresponds, in a general way, to the externally observable alteration of our physical routine to meet new conditions, one may say, on the whole, that where our established habits are changed too slowly or too quickly, the change is inadequately represented, or is not represented at all, in our individual experience.

Yet a change in our routine which is so slow as to escape our own apperceptive span, is still a fact in the phenomenal world, a fact capable of being recorded and verified. *Why may not just such facts be represented by experience which accompanies our own, and which is just as real as ours, but which is charac-*

terized by another apperceptive span? This supplementary hypothesis is worthy of special consideration.

No element or character of our human experience, in fact, appears more arbitrary than does the apperceptive span when we submit its phenomena to experimental tests. That the whole of the contents of a series of temporal instants of finite length should, despite the fact of this temporal succession, form one moment of our consciousness, — that, for instance, a rhythmic phrase, made up of a number of successive beats, should constitute one presented whole, and stand before our consciousness as such, is in itself a remarkable fact. That, when once this is the case, the length of such a single and presentable rhythmic phrase or other presentable conscious moment should be as limited as it is, is an entirely arbitrary characteristic of our special type of human experience. When once we recognize this aspect of our conscious life, we can conceptually vary indefinitely this temporal span of consciousness, and can so form the notion of other possible experience than ours whose essence, like that of our own, should consist in the contrast between relatively familiar or changeless contents and relatively new contents, but whose apperceptive span should differ from our own in such wise that for such experience a 'present moment' might be, when temporarily regarded, as much longer or as much shorter than ours as one pleases. A millionth of a second might constitute the span of one such conceivable type of experience. In that case changes of content far too subtle to mean anything to us would be matters of immediate fact to the experience in question. A minute, an hour, a year, a century, or a world-cycle might form the apperceptive span of some other possible type of consciousness. In that case inner changes of content which utterly transcend our direct apperception might be matters of presentation to such another type of experience.

Now, however, imagine a system of finite series of experiences, agreeing, in a great measure, in their contents, but differing in some graded fashion, in their apperceptive span. Let each of these series be characterized by the fact that

everywhere there were present, in the inner world of each experience, changing groups of contents *A, B, C, D*, the rate of change, however, differing in all the series alike for each group of contents, so that in every one of the series in question the group *A* changed at some rapid rate r , the group *B* at some slower rate r' , the group *C* at a still slower rate r'' , and so on. Now suppose it arbitrarily agreed that if, for any one of these series, a given change of contents Δ took place within the span of one of the presented moments of that series, then this degree of change should mean a clear consciousness of the nature of just that change from older to newer conditions, whereas, in so far as contents changed either much less or much more than Δ during such a presented moment, then these contents and their changes should be relatively obscure for the experience in question, forming only the background upon which the clearly apperceived changes stood out. It would then become possible, in one of these series of experiences (whose apperceptive span was so related to the rate r that the required change Δ took place in the group *A* during one presentable moment of this series), that the changes of *A* should stand out clearly, as definite facts, on a dimly apperceived background of the contents *B, C, and D*. In a second series, whose contents we may suppose the same as those of the first, but whose apperceptive span has relation to the rate r' , the changes of *A* would become obscure, while the changes of *B* were clear, and so on. Thus what for one of these series of experiences was the clearly apperceived relation of new and old, would be, in another series, represented only by bafflingly swift and confused tremulousness of contents, or by apparently changeless contents. What one experience might indirectly come to regard as a conceivable secular variation of the content which, so far as its own direct apperception went, is found unalterable, another experience, substantially agreeing with the first in all but the apperceptive span, would have presented to itself as definitely changing material. What one experience, therefore, viewed as seemingly unalterable, and consequently unmeaning routine, the other would apperceive as significant and momentary change.

Let one now further suppose, however, that through the addition of still other elements to each of these series of experiences, the presence of one series became communicated to the others, by phenomenally observable manifestations. Then surely one can conceive each series of experiences as aware, more or less indirectly, of the presence, and even of the inner reality of its neighbors. But of the meaning of this other life each series could form a directer sort of appreciation only in so far as the apperceptive span of one series agreed with that of another. Socially definite communication could occur only between types of experience of substantially the same apperceptive span. Finally, if one supposes the phenomenally indicated contents of the various series to involve many unlikenesses, as well as many agreements in the different series themselves, one approaches the conception of a system of series of experiences whereof any one series might manifest its presence to its neighbors, while the inner life and meaning of one series could be concretely realized by another only in so far as, along with much agreement in their contents, there was also close agreement in apperceptive span. But if a series of slowly changing contents, and of vast apperceptive span, manifested its presence to a series of swiftly changing contents, and of brief apperceptive span, then the only representative of the first series in the life of the second would be a group of changeless, or of rhythmically repeated phenomena, which would seem to manifest no intelligible inner life as such, but only those habits which form, not the whole, but a single aspect of the phenomenal life of any being whose inner experience his neighbor can interpret, — only such habits, but no significant variations or adjustments of habits.

If one again reviews, in the light of these considerations, the facts before considered, one finds a situation which our single supplementary hypothesis now enables us in general to understand. This hypothesis is that the apperceptive span of finite experience is a quantity relatively fixed for our social fellows, but very vastly variable in the realm of cosmical experience in general. The “other experience than ours,” of which we sup-

pose the inner life of nature to consist, is everywhere an experience of new contents viewed on the background of old contents, of changes arising on a basis of identity, of novelty contrasted with familiarity. In order that such streams of gradual change should be inwardly appreciable, the change must everywhere be present, to a finite degree, within one presented moment of the series of experiences to which, in each case of conscious experience, this appreciation belongs. But a present moment does not mean a mathematical instant. It means, in any type of conscious experience, a period of time equal to the apperceptive span, and this period, in case of any given finite experience, might as well be a world cycle as a second. Only, in case a type of changing experience whose apperceptive span is a world-cycle, hints its contents to a sort of experience whose apperceptive span is brief, like ours, then the phenomenal manifestation in question may, to any extent, take the form of an apparently final uniformity of contents, such as we seem to observe in the secular uniformities of physical nature. But, where uniformity alone is suggested, the element of change of contents, upon which every appreciation of any inner experience depends, is absent. One then seems to be apperceiving only fixed laws, absolute routine, settled habits of nature, and can detect no inner meanings, unless by the aid of the most fanciful analogies. Between experience of this august span, and our human experience, a relatively continuous series of types of experience may lie, whose presence gets manifested to us in processes of increasing phenomenal irregularity, such as those of organic nature. Nearest to our own type of human experience would doubtless lie masses of 'subliminal' experience related to those changing habits of our own organisms which escape our apperceptive span. Below our own brief span there may lie types of experience of still briefer span, whose phenomenal manifestations have, like the hypothetical collisions of the molecules of a gas, an enormous irregularity, such as only the law of averages, as revealed by the doctrine of chances, enables us to conceive as resulting, by virtue of the vast numbers of facts that are concerned, in a secondary regu-

larity of outward seeming when these facts are grouped in great masses.

But in itself, nature, as such, would be neither a world of fixed habits nor yet a world of mere novelties, but rather a world of experience with permanence everywhere set off by change. For the rest, the problem which has been raised by Mr. Charles Peirce (to whose brilliant cosmological essays the foregoing discussion, despite the indicated disagreements, obviously owes very much), — the problem whether in nature there is any objective ‘chance,’ and whether all natural law is, in the last analysis, a product of evolution, has been, in the foregoing, deliberately ignored. It is a problem, as above remarked, whose discussion belongs elsewhere than in this context.

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