

A Speculation as to the Nature of Mind

Every student of Psychology knows that the modern study of mind suffers very seriously from the want of a definite and acceptable working hypothesis as to the nature of the human mental process itself. And when I say definite and acceptable working hypothesis, I mean something much less significant than a final and demonstrated hypothesis. In modern physics two hypotheses, that of the material medium and that of the molecular [2] division of matter, enable investigators to state a vast number of facts in convenient form; and these hypotheses have again and again given evidence of possessing very great heuristic value. They hold together known facts; and they help one to find new facts. If the business of empirical science is, as some have expressed it, to describe the phenomenal world in the simplest possible terms, these two hypotheses form a vast uniform background upon which all concrete descriptions of what actually occurs may be drawn. Although this is true in the domain of physics, the facts of [3] chemistry are indeed incapable of description without the introduction of new and decidedly complicated hypothetical schemes. Instead of simple molecules we now have to deal with complex structures made up of atoms whose affinities, numerous and various cannot easily be conceived in purely mechanical terms. Still, granting the affinities, the grouping of atoms which the chemist presupposes serve not only to describe enormously complex facts, but also to guide progressive research in new fields. In the organic sciences neither the molecules of physics nor the atoms of chemistry suffice to explain at present the wealth of properties with which living tissues are endowed; but nevertheless the background of mechanical function by which [4] the physiologist draws his pictures aids him in simplifying his work and in making new discoveries. On the whole then, the general hypotheses of physical and natural science at the present time, is that nature is somehow a mechanism, composed of atoms and ether, and that the ideal of a complete explanation is given to us by analytical mechanics. Nobody can doubt the value of this general explanation of nature, even if some other sort of explanation than one in terms of moving material particles were some day to be successfully applied to nature, the experience of the present mechanical explanations, in so far as they are successful, would remain of incalculable value for all time; and the work already done in the fields of in question of atoms, [5] molecules and ether, would never be lost.

But in psychology we have as yet no such simple, far-reaching conceptions, no general background on which to draw our psychical descriptions. The well-known hypothesis of the soul as substance is for modern psychology not so much a working hypothesis, as an excuse for making no explanations at all. Mutual phenomena occur, such for instance as emotion, memory, self-conscious reflection and the like, and the soul, which remains throughout an *x*, is continually declared to be just such an *x* as is capable of emotion or memory or self-reflection. In case the mere existence of this accommodating of *x* seems sufficient, [6] I may be endowed with various faculties, whose inner nature is equally unknowable, i.e., indescribable; and

these faculties p, q, r, shall explain, — the one emotion, a second memory, a third reflection. Or possibly some other division of faculties and assignment of work to each may seem convenient. In any case we have simply the facts classified and labeled very empirically and accidentally, and our fundamental hypotheses are merely magic names, hung about the facts, like amulets around the neck of the devout. These defects of the popular hypothesis of a soul are sufficiently familiar. Less [7] obvious, but equally cogent objections may be argued against certain other now customary psychological hypotheses. Some of these objections will appear more fully in the course of this essay. That simple elements of feelings are the atoms, and that the whole mind is no substantial entity at all, but a composite built up out of the union of the elements determined by their affinities and repulsions is one of these now customary hypotheses. Such a way of viewing mind would be more valuable if there could be greater uniformity in the metaphors employed by the inventors of this quasi-scientific mythology. But alas, sometimes these atoms of mind simply “come together,” whatever that may mean, and compose by mere aggregation our consciousness. Some- [8] times, however, they “fuse,” the identity of each atom being lost in a sort of neutral pulp. Worse still they not only “fuse,” but certain elements in the fusion retain in part their own individuality and “assimilate” the others. This “assimilation” is a decidedly curious affair. The resulting mental product is neither made up of its original elements, nor is it anything else than its original elements? It consists of them, because there is nothing else of which it could be composed. Yet it is so unlike them that only the trained psychologist can guess the nature of the composition. For this peculiarity there are indeed plenty of physical analogies. Nobody can see the atomic structure of an apple, and yet nobody need doubt [9] that such is the structure. But in the case of mind our curiosity is aroused by the fact that the components have only a mental existence, while the very mind for which they exist is entirely unaware of their nature, of their attractions, repulsions, and fusion as such, until by chance this mind happens to read a textbook of psychology. To escape the problems suggested by such self-ignorance our hypothesis has to add the remark that of course a great deal of our neutral life must be unconscious, and that in fact only the products formed of mental atoms constitute consciousness, while the parts as such remain dumb and blind, or if you like dark. But here once more is precisely the problem [10] itself. Consciousness is to be described; and our hypothesis describes it as our organized mass of unconscious elements. It is as if we had to describe the experience of light, and did so by declaring it to be made up of a large number of experiences of darkness; or as if we had to give an account of what happened when we listened to a symphony, and declared that we had listened intently to an organized series of moments of silence. If the unconscious mental life is to play a large part in our psychology, as no doubt it must, surely we still need some better account than this of the nature of consciousness, and of the relations between the conscious and the unconscious. [11]

In brief then, neither the soul as an entity, nor the atomic feelings as the only elements of mind, can be called good working hypotheses in the psychology of the present day. For lack of a good background,

well attained, our little psychological descriptions often remain like figures in a Japanese picture, floating, and in uncertain relations with one another. We are doing well in empirical psychology; but we still need to develop more definite general hypotheses.

I do not think an effort to formulate a general psychology hypothesis, in the present day, either an original or a premature or an unnecessary undertaking. Original the undertaking certainly is not. Reflective thought began [12] amongst men with psychological hypotheses; and however much we may criticize the actual hypotheses now in vogue, one cannot doubt that alternative views must be at best only recombinations of the very elements out of which older views have been made. Yet surely some such recombination is not unnecessary, in view of the present chaos of fundamental psychological theories; and equally plain it is that, with such a wealth of facts as empirical psychology now offers to us, an hypothesis that does not pretend to be infallible, and that does attempt to be only provisional and incomplete, need not be premature, in case it is in spirit truly philosophical. As for the philosophy which is to guide the present attempt I need hardly [13] explain that my psychology, like all my philosophy of nature, must needs be idealistic in its basics in so far as, for me, the question, "What is the truth about the human mind?" means, "What must the human mind *appear* to be when from the point of view of an absolute or standard all-knowing intelligence?" This question, of course, my essay does not hope to be able to answer with assurance. But all science is only an hypothetical answer to the question: "How does the world look to God?" In geometry and in analysis we hold that we know already how a portion of the world of truth appears in the eyes of the highest intelligence. In empirical science [14] we everywhere only approach, hypothetically such a knowledge. We want to approach the same thing in psychology as nearly as we can.

One thing, however, I must still insist upon in this introductory statement, and this is that the fundamental problem of empirical psychology, if more easily approachable for a philosophical idealist than it would be for a naturalist, is still at the onset for the idealist just as genuine a puzzle as it would be for anyone else. Idealists have too often overlooked this fact. In their lofty and yet really weak-minded contempt for empirical [15] psychology they have said: "Surely, if all the world is only one great mind with its contents, there is no serious difficulty in explaining the nature and existence of individual minds. All that is needed is to define the nature of a finite personality. Now a finite personality is merely a self-determined and free limitation of the one great universal Self. *Freundlos war der grosse Weltenmeister, fühlte Mangel, darum schuf er Geister.* To enjoy his own infinite wealth, the Divine One becomes flesh in myriad self-conscious forms, whose mental relations, essentially spiritual, need rather to be [16] estimated ethically than to be studied physically and empirically. A finite mind is simply the Infinite engaged in a particular reflection upon a select portion of his own majesty. He is the game, and accordingly he appears phenomenally both as the players, who are the individuals, and as the rule of the game, which are the laws of nature, and finally as the hits, bases, runs, fouls, and outs, which are the facts of the physical and psycho-

physical world. Whoever knows him not, loiters about on the outskirts of the field, a curious and helpless observer, noting here and there a running and a shouting, a stroke and a catch, a jumping or a sprawling player, but never making [17] out the true sense, the inner rationality, the self-surrendering freedom, the self-determined necessity, which marks the whole blessed business. In view of this fact empirical psychology is like an effort to comprehend the game by counting the threads in each player's stockings as he lolls on the ground awaiting his turn. You may gather facts in that way, if you will, but they aren't the essential facts. You heap up erudition, but it is not wisdom. The specific gravity of the bat may be an important fact; but you can't solve the secret by finding out that. Be a player yourself, and then reflect self-consciously and rationally on your po- [18] sition in the game; and you will get all the wisdom you are capable. Or, to drop the metaphor, an understanding of what is meant by a finite personality, in physically necessary relations, is to be gained only from a logical and ethical criticism of life. Beyond such a critical analysis of your relations, empirical psychology has no need to go. Within the limits of such analysis one will form and feel all the needed hypotheses about what a finite personality is and means."

But to such overweening pride even an idealist, if he is a man of hard head, may very properly reply that an ethical or logical analysis of the significance of life can [19] as yet make clear to us *a priori* the great puzzles of mental heredity, of insanity, of the normal psycho-physical relations, or the concrete social order. The value of the point of view just described is indeed, I think, very great. I shall in fact hereafter, in essence, return to it. Nobody believes more than I do that the deepest problems of life are ethical, that finite persons are God's numberless ways of doing his thinking, and that the world is a tragic game, played with himself by the one great artist, as the pastime of his eternity. But then for us he is, after all, — this great player — in large part, although not wholly, a *Deus absconditus*. His secrets are manifold, his ways subtle, his hiding [20] places of wisdom as endless as his treasure-house. Whoever, by mere self-consciousness, finds out god, finds only himself after all, and might have done better if he had looked further. This human subject whom psychology treats is in fact enmeshed in the finite world; and only vanity can assure him that in his own rational and ethical inner experience he can find all the insight that he needs. He is an object for others, as well as a delight to himself. Like Mars in the net of Vulcan he is shamed in the midst of his subjective joys by the sense that for all others who see him in the meshes of physical bondage, he is a mere thing among things and not a god triumphant in his love. He may be, and therefore must be, [21] scrutinized from without as well as from within. If he is one of God's ways of thinking, the question why God's laws binds this way of thinking to a particular nervous system, to special states thereof, to a special set of sense-organs, to one determined series of experiences, and in general to one kind of bondage, is a question that ethics cannot answer *a priori*, but that once answered scientifically, would throw in its turn a great light upon ethics.

Empirical psychology then, which takes the human subject and makes him into an object, which looks at him from beyond, and which is not content with merely describing his rational personality, is, even for an idealist, an essential part of human thinking. And the question, “What then is the human mind?” is for the idealist at the onset as serious a puzzle as for his neighbor? [22]

I.

The fundamental problem of empirical psychology may be summarized in its well-known outlines as follows: — The mental life of every empirical subject is found in connection with a nervous system. The physiological business of a nervous system is to conduct reflex responses to external stimuli. In proportion to the complication of the nervous system is the coordination of these responses. Their physiological purpose is the adaptation of the animal organism to its environment. Their variety and their union must vary in direct proportion to the organization, to the activity, and to the degree of [23] adjustment of this organism to its surroundings. “In the earliest stages,” says Romanes (*Mental Evolution in Animals*, p. 28), “reflex action is nothing more than a promiscuous discharge of nervous energy by nerve-cells, when they are excited by a stimulus passing into them from their attached nerve-fibres. But as the animals become more highly organized, and distant muscles are by degrees set apart for the performance of distinct actions, we can readily understand how particular nerve-centres are likewise by degrees set apart to preside over these distinct actions; the nerve centres then perform the part of triggers to the particular muscular mechanisms over which they preside — triggers which can only be loosened by the reception [24] of stimuli along their own particular lines of communication, or nerves. Thus, for instance, in the star-fish — animals which are somewhat higher in the zoological scale than the jelly-fish and which have a more highly developed neuro-muscular system — the ganglia are arranged in a ring around the bases of the five rays, into which they send, and from which they receive, nerve-fibres; the ganglia are likewise connected with one another by a pentagonal ring of fibres. Now experiment shows that in this simple, and indeed geometrical plan of a nervous system, the constituent parts are able, when isolated by section, to preside over the movements of their respective muscles; for if a single ray be cut off at its base, it [25] will behave in all respects just like the entire star-fish — crawling away from injury, towards light, up perpendicular surfaces, and righting itself when turned upon its back. That is to say, the single nerve centre at the base of a single separated ray is able to do for that ray what the entire pentagonal, or central system, is able to do for the entire animal. -- --- The beauty and delicacy of this mechanism is shown when in the un mutilated animal all the nerve-centres are in communication as one compound nerve-centre. For now, if one ray is irritated, all the rays will cooperate in making the animal crawl away from the source of irritation; if two opposite rays are simultaneously irritated, the star-fish will crawl away [26] in a direction at right angles to an imaginary line joining the two points of irritation. And more pretty still, in the globulus Echinus, or sea-urchin, (which is,

anatomically considered, a star-fish whose five rays have become doubled over in the form of an orange, soldered together and calcareous so as to make a rigid box), if two equal stimuli be applied simultaneously at any two points of the globe, the direction of escape will be the diagonal between them; if a number of points be simultaneously irritated, one effect neutralizes the other, and the animal rotates upon its vertical axis; if a continuous zone of injury be made all the way round the equator, the same thing happens; but [27] if the zone be made wider at one hemisphere than the other, the animal will crawl away from the *greatest amount of injury*.”

What Romanes thus illustrates in the case of the lower animals, is observable in various degrees all the way up the scale. Each single nervous adjustment is a special response to a particular stimulus. By means of a complicated system of ganglia and of connecting fibres, complicated responses to many simultaneous and successive stimuli are rendered possible, and are coordinated together so as to be useful to the organism. Even the most elaborate conduct of the highest beings, unless one supposes free will to be contained in it, is only a complex of such reflex adjustments. Increasing complexity and coordination are observed as we go up the scale, but nothing essentially novel marks the elementary process itself. [28]

In view of these facts the theory of the relation between the mind and the nervous system seems at first sight to have its way comparatively clear before it. It must apparently recognize as an ultimate mystery the fact that consciousness and nervous system have any relation at all; but admitting this mystery, the rest of the matter seems to be determined once for all. In connection with these complicated nervous structures we find, as we go upwards, evidences of more and more complex and unified mental life. Corresponding to the number and [29] variety of the nervous adjustments, we find the mental life of higher animals complex and various. Corresponding to the unity of the higher nervous structures, we find the same mental life increasing in self-conscious wholeness and interconnection. Consciousness, then, runs simply parallel to the nervous structure. Seen from without, the higher animal is a self-adjusting mechanism, which responds to its environment in such a way as to show itself to be one organism with many organs, one system of endlessly numerous parts. Seen as [30] it were from within, this same organism reflects its multiplicity in a mental life that possesses endlessly variable thoughts; and asserts its unity as an organism by uniting these thoughts into one consciousness. The mental life runs parallel to the nervous life. How near then lies the conclusion of Wundt, a conclusion which, repeated in every successive edition of his *Psychology*, represents the views of a host of modern authors: — “Nach seiner physischen wie nach seiner psychischen Seite ist der belebte Körper eine Einheit. Diese Einheit beruht aber nicht auf der Einfachheit, sondern im Gegenteil auf der sehr zusammengesetzten Beschaffenheit [31] seiner Substanz. Das Bewusstsein mit seinen Mannigfaltigen und doch in durchgängiger Verbindung stehenden Zuständen ist für unsere innere Auffassung eine ähnliche Einheit wie für die äussere der leibliche Organismus, und die durchgängige Wechselbeziehung zwischen Physischem und Psychischem führt zu der Annahme, dass was

wir Seele nennen das innere Sein der nämlichen Einheit ist, die wir äusserlich als den zu ihr gehörigen Leib anschauen.”¹

This, then, is *der Weisheit letzten Schluss!* But alas! it is so much the more the beginning of problems, which, if they be indeed [32] unrecognized by much which takes itself for modern wisdom, are none the less human, inevitable, and genuinely philosophical.

In this paper I shall for lack of time say little about the first and most familiar of these problems. Granting namely all the premises upon which this conclusion of Wundt is founded, we still have well-known efforts to interpret the genuine nature and sense of the parallelism itself. Shall we define this, which Wundt calls *die nämliche Einheit*, seen by the observer as body, by the subject as his own mind, in terms of mind, or in terms of matter, or in terms of the unknowable? The third view is Spencerian. Mind and body are aspects of the unknowable, [33] their true relation is mysterious, because they are respectively the inner and the outer appearances of an ultimately mysterious X. Were I content with this view, I should write no further, nor even think further on this or in fact upon any topic. If I am always and everywhere in presence of an Unknowable, as Spencer frequently declares me to be, I should certainly regard all my opinions about both the problem of mind and the affairs of daily life as alike dreams. I should believe neither Spencer nor anybody else as to any topic in heaven or earth. If, however, there is in such sense a knowable element in my world that all fair questions might conceivably be answered, then I shall [34] search for answers to my question so long as I retain my interest in things. And what fairer question can well be found than this one about the nature of the most familiar of all humanly interesting relationships. If the relation of body and mind is a mystery, as, so far, it no doubt is, that is because of our ignorance, and not because the relation is essentially an absurd one, or because questions about it are necessarily irrational.

Meanwhile, by asserting our X, we have actually gained nothing. We have only stated our problem, defined our ignorance. If mind is one aspect of the same reality which an outside observer calls a nervous system, what is this reality? [35]

I pass over the old fashioned materialistic answer to this question, for reasons which the readers of Büchner and of the controversy of which Büchner was the centre will not need to have repeated here, and come to the first answer on our list, that of the Mind-Stuff Theory. It is not however my intention to go at length into the Mind-Stuff controversy. In an article in *Mind* for July, 1881, I suggested some criticism of Clifford's doctrine which I do not mean now to repeat. A later form of the Mind-Stuff doctrine written independently and with beautiful clearness and force by Dr. Morton Prince in his book on *The Nature of Mind and Human Automatism* (Philadelphia, 1885), [36] may however serve for further citation in this connection. Consciousness, according to Dr. Prince, is not the “inner side” of the same mysterious

¹ Wundt, *Physiologische Psychologie*, Bd. II, p. 553 (3rd ed).

“substance” which, received from without constitutes what somebody calls my body, but rather, in case of any particular mental event, said to become named by nervous change, consciousness “is the actual physical change as it *really* occurs, not as it appears to us” (i.e. to an outside observer) “objectively. It may be called the essence of physical change in protoplasm. In other words, a mental state and those physical changes which are known in the objective world as neural undulations are one and the same thing, but the former is actuality, the latter a mode by which it is presented to consciousness of a second person, i.e. to the now-possessor of it.” (Op. cit. P. 54.) As for the parallelism between neural changes and mental states, Dr. Prince insists that it is no mere parallelism of aspects of the same unknown entity, but rather, in exact terms, you feel a pain and I conceive that with a microscope I could look at your trembling nerve structure as at the physical side of the feeling. “It is one process in you, the sensation of pain, which is the real activity. Here then,” continues Dr. Prince, “lies the parallelism of the phenomena: your consciousness as neural vibration. The parallelism is between your consciousness and my consciousness of your consciousness, or what is the same thing, between the consciousness in you and the picture [38] in my mind of neural vibrations. The former is the reality, the latter the symbol of it. There is an invariable concomitance of these facts.”² The connection of mind and matter “becomes apparent,” says Dr. Prince, elsewhere, “now that the problem is found to be not how molecular changes become transformed into consciousness, but how consciousness comes to be apprehended [by an outside observer] as physical changes.”³

This way of interpreting the facts which Wundt states in such a solemn and mystical way, is at any rate refreshingly fearless and straightforward. But the reader of Dr. Prince’s book notices with some [39] anxiety that very little is said about the other matter which plays such a part in Wundt’s summary. Wundt’s conclusion is “dass was wir Seele nennen das innere Sein *der nämlichen Einheit* is” &c. Now of this *Einheit*, which, after all, mysticism apart, has its very noteworthy meaning, Dr. Prince has as little to say as the advocates of the ancient hypothesis of the Soul have had much. In any case the puzzle of the so-called “parallelism” is two-fold. I have a pain, have while it is mine. You as ideal observer in Dr. Prince’s account look at my brain, say through a conceived microscope, and see what you call “neural tremors.” Now here Dr. Prince is on safe ground, and his hypothesis moults no feather. The fact is, he declares, that I have [40] a pain, and that you have a feeling which you define as a seeing of neural tremors, and that these two facts run parallel to each other. If my pain alters or ceases, you, as observer, will have a feeling as if what you call the neural tremors changed their aspect. So far all is well. But now, as it chances, I have in me something called an unity of consciousness, as for instance, when I think out a problem in geometry. Here again, you, as observer, see what you call neural tremors. These, as in case of the pain, still correspond with my complex of feelings, and so are parallel to the contents of my consciousness. Do they, however, correspond with the

² Op. cit., p. 59.

³ Op. cit., p. 60.

unity of my consciousness? Is this second kind of parallelism to be affirmed of things just as was the first. What, in these whirlpools of tremors looks [41] to you like unity. Having learned one parallelism, namely that between your feeling of what you call nerve-tremors, and my feeling of what I call pain, you now have to learn of this other parallelism, very novel, and very delicate. When, as I study geometry, looking back over hours of work, I say at last, "I have it; the proof is found, the problem is solved," and when, in consequence, all my ideas unite in one self-conscious and rational insight, in one triumphant comprehension of many things with a single mental glance, you, looking on as ideal observer, witness eddies upon eddies of interlacing nerve tremors, and [42] must learn afresh that here your observation of a most confusing mass of various facts is "parallel" to an extremely connected and clear inner unity of mine, viz., to my consciousness that I see the one in the many, the geometrical explanation in its consequences. It is hard indeed to comprehend what in you is here parallel to my unity as such at all.

But I hasten to suggest myself a solution for the difficulty into which I have perhaps unfairly brought Dr. Prince's ideal observer of the neural tremors. Of course this observer is no doubt a rational enough creature himself, and, while he observes the interlacing eddies of nerve processes, he will not lose his own head. [43] He will see not only the tremors, but my whole organism. He will use not only his ideal skull-piercing microscope to examine what he calls the molecules of my brain, but he will use his unaided eye to observe my whole conduct. At the moment when I solve the problem he will find this conduct altered. Before, while I wandered about in the mazes of my puzzle, he will have found me confused and uncertain in demeanor; the eyes now fixed, now wandering; the fingers now writhing or tapping, now running themselves through my hair, now scratching my head, now tearing bits of paper; my mouth now closed, now muttering appropriate objurgations; my legs now crossed, now stretched, now bent in under me. Corresponding [44] to all these uncertainties of action he will have seen vague and confused innervations, — nerve tremors now leading to convulsive general discharges, now losing themselves in mental inhibitions, or finding relief in incomplete motor stimulations. "This organism," he will have said, "is just now like sweet bells jangled, out of time and harsh. It is a reed shaken by the wind. It lacks teleological unity of response to its environment." But when I have solved the problem, then, if my moment of self-conscious unity has any kind of extent or life in it, my observer will find my whole inner and outer demeanor changed. The relatively diffuse and irregular functional hyperaemia of my brain cortex during [45] my puzzled mental wanderings, will, after the first flushed moment of the mere feeling of personal triumph, give place to a definitely marked distribution of circulation in narrow channels as I repeat in mind the process of reasoning which lead to the desired result. My motor reactions will grow precise, connected, significant. With pen in hand I shall hastily jot down my result and my method. Perhaps I shall write to my friend who set me the problem, telling him that he hit on a good thing that time, but that he could not quite catch me by such trifling difficulty after all. [46] In short, to my observer, I shall appear as engage in

definite, if ideal, motor responses, having a connected significance, and expressing, in a very peculiar but very important sense, the unity of my organism. No wonder then that an activity which, considered as a whole, has such a fine teleological unity, such elaborate relations to my place in the world, should be the mere physical apparition to another of what in and for me is known as the unity of my consciousness.

In short, just as the single group of tremors is the appearance, behind which the inner pain is the only substantial and real experience, so the unity of my motor reactions, expressing as it does my high organic evolution, and my adaptation to my environ- [47] ment, is after all only the show, behind which the real truth is my own consciousness of myself as one.

Such, as I judge, is the answer which Dr. Prince might make to any objector who appealed to the unity of consciousness as a fact incomparable with his Theory. The highest rational and self-conscious thought, after all, displays itself in more or less obvious motor reactions. These may be symbolic, but they are none the less real, and they are, physically speaking, very highly organized. They may be so far inhibited as to take the form of faint innervations only, as in case of unspoken words, which innervate imperceptibly the organs of speech. But visible or invisible, effective or expressed, the motor reactions [48] which accompany abstract thinking, and which thus express the momentary form assumed by our self-consciousness, are such as come from the innermost essence of the unity of our organism. Here then we find an expression, in terms of the Mind-Stuff hypothesis, of the nature of self-consciousness. An observer sees in my behavior the significant reactions of an united organism upon its environment. I for my part know that the true fact corresponding to this observation is my own knowledge of myself as one.

II.

So far then, I have given to Dr. Prince's view, or at any rate to my interpretation of it, the benefit of the facts. On the subject of the nature of [49] the "Ego," Dr. Prince has spoken, but in another connection, namely with special relation to the problem of Free Will.⁴ While his account of the consciousness of personality as there given, seems to me on other grounds faulty, I find nothing in it that would oppose such an interpretation as I have just suggested. At all events I am anxious to give the foregoing view a very fair hearing. I believe myself that the actual facts of the unity of consciousness are really fatal to the Mind-Stuff theory, at least in its unadulterated form. But as this is no place for an exhaustive discussion of the many puzzles that [50] the world of Mind-Stuff would leave on our hand regarding the theory of Knowledge, the theory of physical causality, the theory of Evolution, and other important doctrines, I can only say now that in speaking of its bearing on the Unity of Consciousness I have no desire to use that phrase as a mere name to conjure with. The Unity of Consciousness is a great problem, not an easily definable datum, and the Mind-Stuff theory may as well have its chance at that problem as any other doctrine.

⁴ Op. cit., p. 135.

I conclude then at this point of the discussion, that the Mind-Stuff theory is the best expression possible of the true sense of Wundt's mystical formula, and that the real [51] question before us is to see whether, even thus interpreted, the mystical formula is an adequate expression of the facts of consciousness and of nature. And in particular, is what we call the Unity of Consciousness really capable of being regarded as so parallel to the physical unity of the organism that the one may be "dass innere Sein der nämlichen Einheit" which is externally perceived as the other.

One very familiar objection to this doctrine has in the foregoing been deliberately set aside. We generally hear that the brain is many, being made of atoms, while the mind is one. This fact is sufficient to answer ordinary materialism, but not to refute so cautiously elaborate as [52] Wundt's. Wundt defines his "Einheit des Leibes" in frankly teleological terms, and Dr. Prince, for all I can see to the contrary, may, if he chooses to do the same. For Wundt's teleology is of course an empirical and not a theological one. The physical organism is One because its behavior in adjusting itself to its environment has a systematic and useful relation to its own preservation and evolution. This unity, moreover, is genuinely objective. It is for Wundt as real a physical fact as are the atoms. A metaphysical explanation of the essence of this unity is meanwhile darkly hinted at by Wundt, who has a habit in his summaries of giving you an impression that he feels himself the possessor of many clear ideas which he [53] has never yet felt himself read to bring to light. But Wundt's metaphysics seems to less cautious speculators somewhat unfinished, his assertions are surely quite capable of metaphysical development. Grant that the body is in its empirical reality, no mere multitude of atoms, but a teleological and at the same time objective unity, and why can you not hope to find as the inner meaning of this unity precisely the unity of self-consciousness itself? Will not the great problem then be solved? And the old fiction of the X called a soul, which was to be different from the body — will it not go where it belongs? Everything then turns upon the answer to the question: "Will the word *parallelism* [54] exhaustively express the discoverable relations between what we call the physical conditions of the organism and the inner states of consciousness? And in discussing this question we shall wholly grant, for the sake of argument, that the body is actually known, on its physical side, to be an objective and teleological unity.

As I approach afresh this, the central problem of the essay, I want to make clear my attitude towards a certain very familiar conflict. It is customary in this whole discussion, to take either one of two positions. Either, investigating the matter from the mental side, a philosopher insists upon some aspect of consciousness [55] which, as he thinks, simply cannot be regarded as the mere parallelism of any physical fact at all. In this case he triumphantly says, "Now I have proved by this non-parallelism the utter separateness and independence of that which lies at the basis of spiritual life. And so my way is open to prove in the sequel freedom, or immortality, or whatever else has a hyperphysical meaning." Or, on the other hand, our investigator approaches the matter from the physical side, and observes empirically the

absolute dependence of every element and process of mind upon the state of the physical organism. And hereupon he assures us that the parallelism [56] is proved; and that the mind's unity is only an inner assertion of the same fact which an observer's eye sees as the unity of the body. If I could rest content with either one of these ways of viewing the facts, the present paper would not have been written. But my great trouble in philosophy is that all deeper problems have such a way of being not merely puzzles, but paradoxes, where the truth is not so much hidden, as tangled into a Gordian knot of seeming contradictions. If one could state the facts and be done with the business, if one could say: "The mental unity is incapable of expression in terms of any physical or organic unity," or again: [57] "The mental unity is the inner correlate of certain organic conditions": — in either case I should be as satisfied as any triumphant investigator of the past has ever been. I should preach my little sermon on spiritual unity and the superiority of mind over matter; or, if I took the other view, I should discourse of the unity of nature and of the humble place of the human organism in the physical world. It is so easy, after all, to win a cheap victory by either of these methods, so hard to face the paradoxical fact, which both modern investigation and philosophical reflection force upon us from every side, and which, whatever we may say, gives us the real present problem of the nature of mind. This para- [58] doxical fact is simply that *both* the foregoing opposing opinions are actually true and can be shown to be so. That is, *at once* we can and must say that much of the unity of our consciousness is no possible correlate or inner aspect of any physical fact, and we can and must affirm that every element of our consciousness, including the unity of our consciousness in reflection and of our most abstract thinking, is through and through dependent upon physical conditions. These two views, usually so sharply contrasted in discussion, are not only equally admissible, but, if we face the truth are equally inevitable. Yet perhaps the nature of the paradox can better be understood if we examine a little [59] more clearly the problem. I am anxious to have both the foregoing propositions understood, because just in the seeing of this paradox, as I fancy, lies our chance of at least hypothetically solving the problem. The unity of consciousness then, in the first place, contains elements which cannot be regarded as parallel to the unity of the bodily life. What I call myself is simply not "das innere Sein der nämlichen Einheit" which other men call my organism. This assertion I make notwithstanding my foregoing admission. In my discussion of the supposed case of the solution of a geometrical problem I have made all possible concessions to Wundt's view. I must now insist on another aspect of the same facts. Thinking, namely [60] not only the correlate of numerous and definite motor reactions. It is also a series of reflections on my own meaning as my own meaning. Thinking as a momentary and direct putting together of conceptions may be simply parallel to my present motor reaction in presence of my environment. In such direct cases, as when I write a letter, my pen and paper are my direct objects. My thought is simply the accompaniment of my self-adjustment to these objects and to their unseen but well-known physical relations to distant things. But when, as in self-criticism, in introspection, in philosophical analysis of the work of thought, in common-

sense efforts to [61] give a truthful account of my own motives and purposes, I make my self my own object, think about my thoughts, confess my own previous failures to understand myself, bring to consciousness unconscious elements of my own mental life, my object is no longer external, my adjustment is no longer one capable of being stated in physical terms. To be sure, physical processes accompany this new adjustment. Reflection too depends upon healthy or unhealthy brain activity. Self-examination, self-confession, brooding analysis of the work of thought all alike go on only when the brain is disposed to favor such processes but the point is that the inner *meaning* of [62] the mental process is no longer parallel to the unity of the nervous process. Connection there no doubt is; but similarity of significance is now lacking. The organism is still going through a series of reflex adjustments to its outer environment, but the mind is corresponding to its own other self. The observer sees me in the attitude of deliberation, as if doing a yet nothing, but preparing to do something. Actually I am all the while pursuing very actively game which feeds in no earthly pasture, hides in no physically discoverable forests. I am hunting in mental wildernesses, and my quarry is thought itself. Plainest of all is this curious non-parallelism of physical and mental in case of the activity which, most [63] most familiar of all mental processes, is nevertheless the great *crux* of all empirical psychology. I refer to conscious memory, Kant's *Synthesis der Recognition*, which according to him, involves his wonderworking *Einheit der Apperception*.⁵ Memory is dependent, in one sense, upon the actual repetition in some form of the conditions of previous experience. In this sense memory is a mental fact that may correspond to a present state of my organism. All organic adjustments depend upon a sort of physical memory. I touch a glowing coal some time during early childhood, and feel a pain, while the shock causes a reflex [64] contraction of the arm. In future the sight of a glowing coal too near my hand brings about a similar reflex without the touch. Mentally correspondent to this adjustment is the thought: "Glowing coals will burn if I touch them, and so its best to shrink." But notice: although the present physical adjustment to the glowing coal depends upon my previous physical experience, I need not consciously remember the former experience as a past actuality in order to have the thought: "Glowing coals burn," or in order to shrink. Physically speaking, all that is necessary is that my organism should have seen altered by its former experience that it now adjusts itself to the present [75] of this glowing coal. My organism, in fact, cannot adjust itself to the past glowing coal that burnt me once, and simply does not do so. For the same reason the thought that in parallel to my present organic adjustment is simply the thought: "Glowing coals burn," — nothing else. How I came by that thought makes no difference to a consciousness which shall be simply parallel to my present organism. Even so, numberless highly organized instinctive adjustments might be inherited by me from the experience of my ancestors. I should not need to remember in any conscious or reflective sense what my ancestors went through in order to get those [76] instincts. I

⁵ *Kritik der reinen Vernunft*, in *Deduction der Kategorien* as expounded in the First Edition.

should inherit those instincts as part of my organic unity. My consciousness, running parallel to this unity, would reflect it in the form of certain fixed prejudices, desires, expectations, choices. In all this there would be no sort of conscious memory, although the process would depend upon a nervous conservation of the effects of former experiences.

But now, in some cases, we *have* conscious memory. We then do indeed, just as before, revive the past organically, old brains states repeating themselves. So far, however, there is only material for present consciousness. The memory would be simply actual recall, not reflective knowledge that this *is* a recall. I not only repeat past states of my brain and have correspondent thoughts, but say to myself “This thing was for me in the actual [67] past,” to what does my present thought correspond? To the adjustment now made by my organism as physical unity? No; only to the actual world does my organism adjust itself. To what then? To a thought of mine which *is* no longer, but which *was*. In its day that thought *was* parallel to an organic condition of mine. But the parallelism between *this* thought and that past thought has no meaning expressible in physical terms: *My knowledge that the revival is a revival is not correlated to any present physical reality.* Dr. Prince’s observer would see in my brain neural tremors corresponding to the [68] present idea in my mind. *But he would and could see nothing corresponding to the correspondence between my present and my past.* Yet the thought of such a correspondence is the presupposition of all higher reflection.

From the physical point of view, my organism, mystical Einheit and all, is a present fact. The thought which shall be *das innere Sein* of this organic unity must then be thought of something present.⁶ But thoughts which correspond not directly to present facts at all, but to distant and no longer existent thoughts, cannot then belong to this inner reality of the present organic unity. [69] The organic unity cannot be parallel in any proper sense of the theory of parallelism, to the parallelism between a pair of ideas one of which no exists nowhere in this present consciousness or in any other.

Even so, however, we find it to be the case with all reflective thought, whereof, in fact, conscious memory is only a simple case. When I reflect I first think, and then make my thought my own object, with which I either agree or fail to agree, according as I succeed or do not succeed in my reflection. Now the thought which reflects is no doubt accompanied by nerve tremors, like the thought upon which it reflects. But if [70] these nerve tremors were the same, the reflecting thought and the thought upon which it reflects would doubtless be the same thought repeated. This however is not the case. The reflecting thought may be very unlike the thought reflected upon. The latter may have been the proud self-praise of a man about to do a kindness: “How generous I am!” The reflecting thought may be the cool observation: “I deceived myself,

⁶ Spinoza, *Ethics*, P. II, Prop. XI: “Primum quod actuale Ventis humanae esse constituit, vilius aliud est, quam iea rei alicuius *actu existentis*.” — On this very rock of the existence of memory and of reflection, Spinoza’s whole system, in fact, suffers shipwreck.

and in fact I was hypocritically selfish all the time, and was seeking only my personal glory.” This reflection is surely *das innere Sein* of a very different organic Einheit from the first. Yet the second [81] thought has for its object the first. Rightly or wrongly it pretends to judge the other. Now how can one nerve tremor have another nerve tremor for its object of criticism? And if Dr. Prince’s observer sees with his microscope all that is visible of both thought and so has an experience that seems parallel to each, surely his experience does not and cannot run parallel to precisely that relation of the two which gives the second thought its whole significance. For this critical relation, whereby the one thought estimates the other, and fairly or unfairly deciphers its inner meaning, is a relation which simply has no conceivable physical aspect, expressions [72] or parallel. And yet of just each interrelationship our self-conscious thinking is made up. Unless we are prepared to describe one nerve tremor as criticizing another, one state of the organic Einheit as laughing at the former state, one configuration of brain atoms as deciphering the meaning and intent of another configuration, we must simply give up the hope of describing reflective consciousness as *das innere Sein* of anything whatever that can be *äusserlich angeschaut*. Notwithstanding then all my previous concessions I must draw the line at reflective thought, and must regard the favorite modern theory of the parallelism [73] of brain and consciousness as in this respect hopelessly defective.

Many others, of course, have done the same, and have forthwith taken refuge once more in the ancient hypothesis of that convenient X, the Soul. So for instance Lotze, a man who had in general no great love for X and all its works. So, very recently, again, Professor Ladd has done at the end of his fine Physiological Psychology. But, without regard to the soul as a structure furnishing convenient points of attachment for the wings of our traditional immortal life, I feel that in this life X is an hypothesis for which we have no serious need. [74] An idealist, for the rest, has all the immortality that anybody needs ready prepared in his world for all beings may prove to be significant enough to be needed in a future state. But *unless* the moral order of the world needs me in a future state, I shall certainly end here like a dog, though I had as many souls as there are tiles on the roofs of the houses. And *if* God’s moral order *does* need me after I am dead here, and if the day of the Lord proves to be, in my unworthy case, light and not darkness, doubtless the moral order which in that event will command me [75] to do more work, will provide the necessary arms and legs and wings suited to my state, and will find no difficulty in fastening them in some way onto whatever X I shall then carry about with me. Hence the hypothesis of a soul needs at present only a theoretical scrutiny. Its moral and religious significance is, for the enlightened thinkers, simply will. Homer believed in the soul; but as he had a gloomy idea of what the future state might be, he very sensibly observed that the wrath of Achilles sent the souls of many valiant heroes to Hades (where they had, as we know, a rather dull time), but left *themselves* (i.e. the only part of them that ever fought men or wooed [86] women) a prey to the days and the birds of air. Such is the uselessness of having a soul if, like most people

who even in our day, and with wholly different intent, become sentimental over the tedious inanities of their imaginary future state, you do not know what to do therewith.

But to return to our business of theoretical scrutiny: — That the mental life is not simply the inner aspect of the physical life, seems now clear. If it were, we should never reflect; we should live in the present with our minds, as we do with our bodies. We should adjust ourselves. We should even use our past experience. But we should never know that this was our past experience. We should know no self-examination, no self-criticism, no analysis of our thinking. But in fact we do live constantly in the midst of second intentions, rules, maxims, memories, reflective generalizations, self-estimates. To none of these forms of thinking is there any physical unity directly parallel, however much they may all be *accompanied* by nerve changes. To what then shall we refer this conscious reflection? To a higher self, independent of the body?

Here enters upon the field another empirical guide. Lest in our health and pride we should forget the utter and abject dependence of even our highest reflective consciousness upon the condition of our organisms, mental pathology, that grim keeper of a treasury of curious psychological information which modern research is now opening to science, appears to warn [78] of our helplessness. The value of mental pathology lies to be sure not so much in its fundamental principles, which it shares with physiological psychology, as in the wealth and many-sidedness of its illustrations. Apart from pathology we should know that all reflective processes have *some* dependence upon brain states; but we should underestimate the significance of this dependence. We should not know, as we now do, that not only thought as a whole but every element and every function of consciousness has the most intimate connection with processes in nervous tissue. We should perhaps say, as many have done, Consciousness is aroused to activity by brain processes but, once aroused, can continue in some respects its own higher spontaneous processes without [79] more than a general support from nerve function. Or we should say, as men who ought to know better have but recently said, The material that reason uses comes from below, through the aid of nervous activities. But the rational digestion of this material is not determined in any way by our nerve structure. An insane man, we should then declare, must be one whose deranged nerves gives him falsified data, hallucinations, painful feelings of melancholy or of terror, fixed ideas, illusions, exaltation, or the like. Having false data, he must needs in reflecting reach false results, and the diseased change in his nervous processes alters, not the inner form of his rationality, not the true type of his reflective consciousness, but the premisses of his experience. [80] Reason thus still soars exalted above even the wreck of a degenerate nervous system. Self-consciousness is in form and function the same, however its materials alter.

But in fact this pride of reason is unfounded. Reason does well to say its own inner functions are not mere internal views its accompanying physical organism; but as a matter of experience its functions are slavishly dependent upon the health of this organism, and alter therewith. Nor can the alteration be

explained as merely a change of the stock in trade with which reason works. The very functions of reason themselves suffer when [manuscript ends]