



NO MATTER, NEVER MIND II

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"Being" is always something which is mentally constructed by us, that is, something we freely posit (in the logical sense). The justification of such constructs does not lie in their derivation from what is given by the senses. Such a type of derivation (in the sense of logical deducibility) is nowhere to be had, not even in the domain of pre-scientific thinking. The justification of the constructs, which represent "reality" for us, lies alone in their quality of making intelligible what is sensorily given.

-Albert Einstein

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The investigations that resulted in this paper grew out of several years disquietude with the mind body problem. The problem bothered me because it seemed an obstacle to the completion of a world picture based upon scientific knowledge. While, with appropriate correlation statements the behavior of my sensations and thoughts seemed amenable to scientific description and prediction, it seemed that my experience, or "raw feels" of these sensations and thoughts are completely recalcitrant to description in the language of science, and in fact have no place in a world populated solely by things that are reducible to combinations of elementary particles. Thus, while my perception of and response to a red stoplight is completely explicable in physiological terms it seemed there was no way my experience of red could be predicted or described in scientific terms, or in fact it seemed there was no way the fact that I experienced the red of the stoplight could be fit into the picture at all. And, as I often said to myself, if science can provide no basis for understanding why the particular quality of red is experienced in conjunction with events in one layer of the visual cortex and blue with events in a different layer then science must be in some way incomplete.

The key to this mystery, I believe, involves coming to certain important conclusions about the nature of science and about the nature of raw feels. In a sentence, these are that a scientific description of the world tells us how things appear to behave, and nothing more, and that the important thing about raw feels is that they are not described when their behavior is described. Thus the fact that raw feels cannot be described in the language of science is not surprising. However, we can imagine a model of the world in

which the behavior of everything, including our sensations and thoughts is described by science and in which the fact, and the qualities, of my experience have a natural place. This paper is devoted to making these statements precise and to demonstrating them. We begin, as all good philosophy should, with skepticism.

We consider only statements that are consistent with experience. <sup>1</sup>  
 A statement is consistent with experience if it leads directly to claims about the content or behavior of experience that have at every *past* relevant observation been found to be verified. A statement may also be consistent with experience if it makes no claims about <sup>past</sup> experience. Since we are interested in constructing models of, and theories about, the world statements that have been found to be inconsistent with experience are not important for our present purposes. We call a statement that is consistent with experience an adequate statement.

We introduce the notion of skepticism this way: we may be skeptical about an adequate statement whenever we can find another statement that is in contradiction with the first and is also adequate.

The important thing about skepticism is the wide range of statements that we may be skeptical of. For we may be skeptical about any statement that is more than a collection of observation statements, or statements that can be deduced directly from observation statements. <sup>2</sup>  
 A demonstration of this proceeds by simple construction. First, an adequate statement may make no commitment to anything empirical, in this case its negation is equally adequate. Or, if a statement does <sup>3</sup> include some statements of empirical content, and some statements that cannot be deduced directly from the empirical statements, then

is not logically dependent on past observation statements. we may merely negate the portion that ~~makes no empirical claim to~~ have a statement that contradicts the first but is equally adequate.

Two pairs of examples are:

"The sun has risen every morning in the past, therefore it will rise tomorrow morning."

"The sun has risen every morning in the past, however it will not rise tomorrow morning."

"Objects exist independently of my experience."

"Objects do not exist independently of my experience."

The important result of skepticism is that no theory that is more than a report of observations has any claim to certainty. There are, therefore, only two absolute criteria that a theory about the world may be subject to. The first is that it must be consistent with experience. All statements included in the theory or deducible from it that make a claim about experience must have been confirmed in all relevant past observations. The second criteria is that the theory must be self consistent, no contradictions should be derivable from the theory.

Any theory that satisfies these two criteria we shall call an adequate theory. Any theory that is adequate cannot be in any absolute way further confirmed or refuted. We may have reasons to believe or disbelieve an adequate theory, but beyond the two criteria we will not be able to find any arguments to show that we should necessarily believe or disbelieve it, all further arguments are essentially arguments of preference.

It is because of this that I have come to regard all metaphysical

systems and all science that is more than a collection of observation statements (as any good science is) as a model, or a myth, that we construct to represent the world to ourselves. Such a model must satisfy the criteria of adequacy, beyond that the reasons, conscious and unconscious, that we choose to believe in a particular model cannot be strictly justified. Thus we give up any claim to the kind of certainty that many philosophers felt reason was or ought to be capable of providing. However, while giving up hope of achieving certain knowledge about the world we may reserve for ourselves the pleasures of myth making, or model building, the challenge of building a model that faithfully mirrors experience, and the inspiration of the beauty and the subtlety that good models often have. Finally, because we are human and we construct models and myths in order to have something to believe in we may, as long as we remember that we will find no rational justification for it, forget that our models are not the world and imagine that the beauty and profundity we see in our model is in some sense an indication or a reflection of what lies forever unknowable in the world in itself.

From this point of view, my disquietude about the mind body problem resulted from the apparent impossibility of constructing a model that contains all of the following features.

A) I want a myth that postulates the existence of objects that exist independently of my experience, and that all that exists in the world is composed of these elements. In specific terms, these are spacetime and the elementary particles of physics.

B) The behavior of all these postulated entities, and hence of

all that is composed of them should be describable and predictable on the basis of a small number of universal laws.

These two postulates amount to materialism. The problem is to construct a materialist theory in which the existence and qualities of experience have a natural place.

C) The existence and qualities of conscious experience should fit in a natural way into the world and arise out of it in an unforced way.

None of the established metaphysical theories satisfy all of these criteria. However, once coming to the previously mentioned conclusions about the nature of science and of experience I found it not too difficult to construct a theory that does.

We are further restricted by these two results of natural science:

1) It appears as if every part<sup>?</sup> of my conscious experience will be found to be correlated with the machinations of some part of the brain, such that the behavior of things in my experience (although not the qualities by which I experience them) will be understood on the basis of the <sup>behavior of the</sup> respective portion of my brain. To put it another way, the logic of my sensations and thoughts will be completely explicable by an examination of the logic of my brain.

The major result of this is to make the standard sort of dualism untenable. Physical law suffices to explain and correlate all events and we have no need for a separate set of psychical laws, nor, indeed, do we have any place for them. What I am asserting is that while the cause of a sensation is adequately explained by physical theory, the direct quality of that experience is not.

2) The theory of evolution. I mean this in <sup>an</sup> ~~the~~ extended sense, to include both theories about how life came to exist and the theory of evolution proper. The important implication of this is that we cannot consider the qualities of conscious experience to be anything fundamental in nature, inasmuch as they exist attached to the nervous systems of certain organisms who exist rather incidentally in a tiny corner of space and time. Moreover the existence of such organisms is in no way necessary or even important in the scheme of things, their existence is largely due to chance and it is quite conceivable that nature as we know it might have existed without any living beings at all. Thus we are in a very difficult position; the qualities of conscious experience cannot be derived from physical law, at the same time it makes no sense <sup>within a model based on physical law,</sup> to introduce them into the world ad hoc.

Another implication of the theory of evolution for the mind body problem is the question, "When did the light go on?" For if the existence of conscious experience is associated with the machinations of human brains, then surely it also must be associated with the brains of higher mammals, which are not really very different. But then why not lower mammals, and reptiles and so on down the line, we can imagine that their experience would be less organized and less differentiated, as their nervous systems are, but it is very difficult to see why experience, if it <sup>is</sup> associated with the human nervous system should not also be associated with these nervous systems. The puzzle is that it is very difficult to imagine what sort of thing would enable us to draw the line, on the other hand it is very difficult to see what the implications of not drawing the line are. We will come back to this.

Once we commit ourselves to materialism, the notion that the behavior of everything in the world is explicable through the laws of physics there is a mistake that is commonly made and that is at the root of the apparent impossibility of fitting the qualities of experience into a materialist theory. This is to consider the properties that we employ to describe the behavior of matter to be the intrinsic properties of the object in itself. Once this mistake is made it is indeed very difficult to see how one could construct a theory that satisfies all three of my requirements. For it is very difficult to see how such things as the qualities of my experience of red, or pain could arise out of such things as charge and mass and energy and angular momentum.

*Explain & Argue*

The point is that when we know how an object appears to behave we know absolutely nothing about its essential existence, its existence in itself. Indeed we cannot even know if it has any independent existence, since the fact that science describes the behavior of everything in our experience is perfectly consistent with idealism. Commitment to materialism commits us to absolutely nothing concerning the actual essence of things in the world. All we know about them is that their behavior is such that it is explicable under a certain set of physical laws.

*what Kant called  
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Socrates*

Consider the fact that the variables of all physical theories so far proposed are parameterized by the four space time variables. Does this mean that we may conclude that the world actually consists of extended objects that have their existence within a four dimensional continuum that also exists? Not at all. All we may conclude is that the world is such that the observed events may be correlated simply



within a theory that assigns a continuous four dimensional metric to the set of all events. Whether the space time continuum actually exists independently of our observations and our theories, or whether space and time are merely convenient illusions and constructions is beyond our abilities to ascertain.

*A Moore document* There is a two step process, a kind of loss of innocence, by which one comes to understand that all one may actually know concerning objects in the world concerns only the way they are observed to behave. The first step is when one loses the ability to believe in naive realism, because it is more reasonable to believe that ones perception of an object are really the result of interactions between the elementary particles in the object and the elementary particles in your nervous system. The appearances of color, sound, taste, smell, heat and texture can all be shown to be the result of the interactions of elementary particles, in the body, perhaps in an intervening medium, and in my nervous system. Neither can we ascribe to the body any properties such as rigidity or fluidity or chemical and electrical properties, these also are merely the result of interactions of more basic entities to which it makes no sense to ascribe these properties. Bertrand Russell, in An Inquiry into Meaning and Truth gave an excellent description of this first loss of innocence.

" We all start from "naive realism," i.e., the doctrine that things are what they seem. We think that grass is green, that stones are hard, and that snow is cold. But physics assures us that the greenness of grass, the hardness of stones, and the coldness of snow are not the greenness, hardness and coldness that we know in our own experience, but something very different. The observer, when he seems to himself to be observing a stone, is really, if physics

is to be believed, observing the effects of the stone upon himself. Thus science seems to be at war with itself: when it most means to be objective it finds itself plunged into subjectivity against its will. Naive realism leads to physics, and physics, if true, shows that naive realism is false. Therefore naive realism, if true, is false; therefore it is false."

Thus, there is nothing left of our idea of a body except that it is a <sup>world</sup> collection of elementary particles whose behavior and interactions are described by certain mathematical laws. Moreover these laws as presently understood, the laws of quantum mechanics, are well known for the apparent impossibility of seeing into them and forming any intuitive idea or picture as to the nature of the fundamental particles they describe. Finally we ask, surely our theories give us some qualities or properties of these elementary particles that we may ascribe to being essential properties of the particles independent existence. But this will not work either, for it <sup>is apparent</sup> ~~seems~~ that all of the properties with which we label our particles, mass, charge, strangeness and the rest are nothing more than statements as to how the particles may be observed to behave and interact in various circumstances. This is the second stage of the loss of innocence; the object is reduced to a conglomerate of elementary particles, but of the existence or nature of these particles we can have no knowledge except that they are such that their observed behavior can be summarized by certain mathematical statements.

Now I am not saying that it is impossible that mass or charge

correspond to something that exists in the world independent of us, or that space and time really exist, I am saying that we can never know whether they do or not. What I want the reader to see is that inasmuch as he or she believes in the existence of a physical world that exists independently of experience, all that may for certain be ascribed to that world is that it is such that its past behavior may be summarized by certain mathematical statements. The actual existence or nature of the world remains unknowable. Of course, this actually all follows from the possibility of skepticism, for every claim about the ~~actual~~ nature of the world in itself one could construct an opposing claim that was equally adequate. *you have not shown this*

On the other hand, since to make a metaphysics is to make a myth, we have complete freedom to attribute any properties to objects in the world beyond those needed to describe the way they appear to behave. As long as we construct a myth that is consistent with experience and self consistent we are free to include any features and attribute any properties or qualities to objects in the world.

For what follows I would like to summarize the point this way: We are only acquainted with objects in the world through our perception of them, and thus the only knowledge we can have of them that is not subject to skepticism is a description of the way they have appeared to behave in the past. *Why not doubt your memory?* To have any further knowledge about an object, to know whether it existed independently of experience, or to know something about an object to be necessarily true *See - this is a charged word - that's doubly* it would be necessary to have a more direct or intimate acquaintance with it than is possible. *x=x* However, in the construction of a myth, or a model of the object we may attribute to it any nature or properties we like as long as we conform to the requirement of adequacy.

This brings us to the second major point, that the raw feels of our experience are not described when the behavior of the experience is described. The first point we must establish is that there is indeed something indescribable about raw feels. This is actually something that I think occurs to every young child at some point, when the child realizes that whenever she and someone else look at something colored, say a blue wall, that there is no way of knowing whether the other persons experience of blue is anything like her own. We all have learned to <sup>call things with a certain</sup> color blue, but maybe what you experience when you look at a color is what I experience when I look at the complimentary color. Now if we both look at a colored object there are things we can describe, and in a way check out whether we see the same thing or not, the shape of the color in our visual field, any movement the patch of color may be undergoing, the brightness and the tone of the color. These are all what I mean by the behavior of the experience, and they are indeed all related to events in the brain that we can measure, the patterns and intensities of the neural impulses in the visual cortex. But the actually quality of blue is something that we cannot describe and check out. We can check out shape, movement brightness and tone and still your experience of blue could be like my experience of red. We experience things by means of qualities that are not described when the behavior of the experience is described.

J. C. C. Smart, in his paper "Sensations and Brain Processes" considers whether this situation constitutes an objection to the identity theory. "That is it may be possible to get out of asserting the existence of irreducibly psychic processes, but not out of asserting the existence of irreducibly psychic properties." This is

indeed what I believe the situation is, and it does constitute a very basic objection to the identity theory. However, what is very interesting for our present discussion is how he attempts to get out of it.

My suggestion is as follows. When a person says, "I see a yellowish-orange after-image," he is saying something like this: "There is something going on which is like what is going on when I have my eyes open, am awake, and there is an orange illuminated in good light in front of me, that is when I really see an orange." (And there is no reason why a person should not say the same thing when he is having a veridical sense-datum, so long as we construe "like" in the last sentence in such a sense that something can be like itself.) . . . The strength of my reply depends on the possibility of our being able to report that one thing is like another without being able to state the respect in which it is alike.

The something that is going on, that we can recognize similar occurrences<sup>of</sup> without being able to describe them or state in what respect they are similar are the raw feels, evidently J. C. C. Smart also finds them indescribable.

Now why is it that raw feels are indescribable? I have asserted that the indescribable qualities of raw feels are qualities that are not described when the behavior of the experience is described. That is they are qualities over and above those needed to describe

the behavior of mental events. Now we have agreed that all mental events are correlated with neural events in such a way that the behavior of the mental events is understood strictly in terms of the behavior of the neural events. Thus, if the qualities of raw feels are properties of a mental event over and above those properties needed to describe the behavior of the mental event they are properties of the neural event over and above those needed to describe the behavior of that event.

Now since the behavior of all our mental processes is to be understood in terms of the behavior of the brain it follows that all of our information processing and communicating must be understood only in terms of those properties needed to describe the behavior of our neural processes. Or, to put it another way, the only kind of information our brains (and hence our minds) can process is that information that is in terms of the behavior of elements of the brain. Since raw feels are properties of those elements over and above those properties that relate to their behavior it follows that the brain cannot process any information regarding raw feels. Thus we cannot describe them.

The reason for the inability of science to deal with the existence and qualities of raw feels is implicit in the last argument. Raw feels are properties of certain events that are not involved in the behavior of those events and science, which is no more and no less than a concise description of the way things appear to behave, can have nothing to say about them. Raw feels are on the level of questions as to the independent existence of matter and the ultimate nature of things in themselves in that while we can construct models that assert various things about them

such statements are devoid of empirical content. Of course we have an intimate acquaintance with raw feels that we do not have with questions like whether matter independently exists, however, as already pointed out, this intimate acquaintance is through qualities that have nothing to do with the behavior of anything and which are also essentially indescribable. Therefore statements about raw feels, beyond the mere assertion of their existence and catalogues of the various types, cannot have any empirical content. And even assertions as to the existence of raw feels, because they do not involve the behavior of anything cannot be spoken in the language of science.

If science could not explicate the behavior and the logic of experience there would be something incomplete about it, for we would need to devise a separate set of mental laws. But as a result of the fact that mental events are found to be correlated strictly with certain physical events science can encompass the logic of our mental life through an analysis of the related physical processes. Indeed we can consider mental events and the respective physical events to be the same events. It is because those events have the properties, in addition to those involved in the behavior of the events, of having the qualities of raw feels that we experience them and call them mental events.

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This is the central idea of the myth which, as promised, the behavior of everything is completely described by natural law, while at the same time the existence and the qualities of conscious experience have a natural place. We hypothesize the existence of one kind of substance, or being, that exists independently of experience and of which everything in the world is formed. This

substance, which we may call matter, has first of all the property that its behavior is always such that it may be described by the mathematical statements of physical law. However, this matter may also have other properties or qualities uninvolved in the behavior of the substance. Remember that since we are constructing a myth we may, as long as we satisfy the criteria of adequacy attribute to things in the world any properties we wish. Of course observers in this world cannot have any knowledge of such properties since observers are objects in the world and perceive other objects only through their behavior. However there are certain events, in the central nervous system that observers do have a more intimate acquaintance with. This more intimate acquaintance exists because the observers experience those events; the existence and qualities of that experience can be considered as properties of those certain events beyond those needed to describe the behavior of the events. Thus if one person examines the brain of another they can only perceive it and work with it in terms of properties that involve ultimately no more than the behavior of the object. However if one is that person then one has direct acquaintance with properties of certain of those events that are not involved in their behavior, these are the qualities of conscious experience, and this is what it means to experience.

It is thus easy to construct a myth that is consistent with the first of the empirical results mentioned on page five, that of strict correlation between the behavior of mental events and the behavior of certain physical events, and in which the existence and qualities of my conscious experience have a natural place. Indeed we even have an explanation, in the sense of reduction to simpler



or more basic things, of the question that originally puzzled me: why conscious experience exists at all. Within this model we can say that conscious experience exists simply because the qualities of experience exist as properties of certain events in the brain. The only thing left to do is to fashion the myth so that it is consistent with the second result of natural science that I mentioned, the theory of evolution.

We have come to see that we may regard the qualities of experience to <sup>be</sup> properties of certain physical events or processes. However, the result of our discussion of the theory of evolution was that we cannot regard the existence of qualities of experience to be anything fundamental in the world. Indeed the discussion implied that it is most natural to assume that conscious experience evolved as the nervous system evolved. The point of view we are developing here reinforces this, for if the qualities of experience are properties of certain kinds of physical events or processes then parsimony leads us to expect that the qualities of experience would be associated with those events <sup>kinds of</sup> wherever they occurred, i.e., in the brain of whatever organism they occur in. Moreover those physical processes that are involved in our mental life, and of which the qualities of our experience are properties, almost surely owe their special characteristics to the fact that they are uniquely highly organized states of matter. The upshot of all of this is that it is natural to postulate that as matter evolves from an unorganized state into the highly organized systems that make up the brain the qualities of conscious experience, as properties of the organized state, evolve continuously from some properties of unorganized matter, properties also uninvolved in the behavior of

the matter and hence beyond the reach of scientific discourse.

This completes the myth. We cannot ask what these properties of unorganized matter, that evolve into the qualities of my conscious experience, are, or are like, anymore than we can ask what the intermediate steps, the qualities of experience of lower animals, are like. We can not know what the quality of a bee's experience of ultraviolet is like, we cannot even know what a bee's experience of red or black is like. Similarly we cannot know, and in fact could not imagine or comprehend what the experience is like of certain dogs or fishes whose sense of smell is so acute and differentiated as to indicate direction and distance as our vision does. What we can do is to construct an adequate myth that also contains the three features I desired and is consistent with the two important results of natural science I mentioned if we assume that these things, as properties of neural tissue in a certain stage of development evolve continuously into the qualities of my conscious experience, which are properties of the neural tissue in my human brain.

I can very well imagine that someone will object to what I have done here on the basis that it is a trick, or is meaningless. To be crass, all I have done is found a hole, and a plug, stuck the plug in the hole, and exploited the situation to tell a pretty story. The hole is that science is only capable of speaking about the way things appear to behave<sup>and</sup> the plug is that we experience through qualities that are not described when the behavior of that experience is described. The pretty story is that we can imagine the world to be such that natural law describes the behavior of every part of it, while associated with certain events or processes

in highly organized neural tissue are certain properties that are not involved in the behavior of anything, and are the qualities of my conscious experience. Moreover, these qualities evolved continuously from some properties of unorganized matter that we cannot further specify or describe except to assert that they are uninvolved in the behavior of anything.

But let me emphasize what I think are important aspects of what I have done. The fact that when we have a world in which the behavior of everything is described by natural law we are committed to nothing, and in fact know nothing about any essential or necessary properties of the world is an important, if hardly an original, idea. The fallacy that the properties involved in the description of the behavior of matter within physics constitute the essential properties of matter is one that has led many materialists astray, regarding the mind body/<sup>problem</sup> and other problems. When this fallacy is removed it is difficult to understand the motivation of those who frame identist or behavioral theories of mind in order to escape from "essentially psychic properties."

Similarly, the fact that we experience through qualities that are not described by a description of the behavior of that experience and are in fact essentially indescribable is an important observation on the nature of experience. Both of these things are independent of any model or theory and are observations that any reasonable theory should deal with and incorporate.

Finally, the model that I have constructed here is the only one among all those I have read of, or been able to conceive of, that contains all of these features.

- 1) It is adequate.
- 2) It satisfies all three of the features I specified on pages four and five. A) All that exists is composed of objects that exist independently of my experience and B) whose behavior is described completely by natural law. In addition C) the existence and qualities of my conscious experience can be seen to fit into and arise out of this world in a natural way.
- 3) It incorporates the fact that all mental events have been found to be correlated strictly with events in the brain and the theory of evolution.
- 4) It leads to a reasonable explanation for the fact that raw feels are indescribable.

The laws of physics, such as the equations of motion for classical or quantum mechanical particles are expressed in the form of differential equations. A single differential equation will <sup>often</sup> have a great variety of solutions, differing in significant ways so that to solve the equation in a meaningful way one must specify additional conditions that the solutions must satisfy. For example in solving the problem of motion one must specify the position <sup>of the particle</sup> and state of motion at some initial time. Finding a solution to a problem like the mind body problem is very much like solving a differential equation. The possibility of skepticism implies that there does not exist a single "true" solution to the problem, instead many, very different, solutions have been found which satisfy different auxiliary conditions, these are conditions that various

philosophical prejudices require of the solution, and in no way can be shown to be necessary.

It is only in this sense that I claim to have found a solution to the mind body problem, and it is only because I did not know of any solution that satisfied the conditions listed on the last page that I consider this in any way important. Its importance lies in the fact that the existence of a theory in which the behavior of everything in the world is described by natural law and in which the existence of conscious experience has a natural place means that the mind body problem is not an obstacle to the construction of a complete and adequate model of the world based on natural science. And it is this that has been my primary concern.

I end on a note of caution. I have here assumed that it has already been shown that all mental events are correlated strictly with physical events in the brain. Of course this is an extrapolation from present knowledge, although it is one that is quite reasonable. However, even if this statement is completely confirmed there remain questions that seem to have empirical content whose answers will have important implications for discussions on the mind body problem. Primarily, it would be very interesting to find out exactly what sort of physical events or processes are correlated with mental events, or to see if we could find general features or properties (involved in the behavior of the events) to distinguish these events from otherwise similar neural events. For example, it is well known that a great deal of perception and reasoning goes on in the brain that is not

experienced. What distinguishes these processes from those that are experienced?

The answers to these questions will at the very least be extremely interesting, and could very well be as puzzling as any result of natural science obtained so far. Until this work has been done no one can claim to have written the last word on the mind body problem.