

Beyond Physicalism and Idealism:

Readings in *From Brain to Cosmos*

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Abstract

This document consists primarily of an excerpt (chapter 13) from the author's book *From Brain to Cosmos*. In that excerpt, the author presents a study of the notion of truth using the concept of subjective fact developed earlier in the book. The author argues that mind-body materialism is compatible with certain forms of metaphysical idealism. The chapter closes with some remarks on relativism with regard to truth. (This document depends heavily upon the concept of subjective fact developed in *From Brain to Cosmos*. Readers unfamiliar with that concept are strongly advised to read chapters 2 and 3 of *From Brain to Cosmos* first. See the last page of this document for details on how to obtain those chapters.)

For more information about the author's book *From Brain to Cosmos*, or to learn where to find other chapters of the book, please consult the last page of this document.

Chapter 13

Mind and Matter

In the past several chapters I have discussed a variety of questions about consciousness and time. The conclusions at which I arrived provide partial answers to the question which I posed in Chapter 1: "What can we learn about the nature of reality by deducing the consequences of facts about how things seem to conscious beings?" Beginning with the logical properties of subjective fact and with descriptions of how certain situations appear to observers, I have been able to develop a theory of conscious subjects and some accounts of various features of time. According to these accounts, many of our commonsense beliefs about the world around us are true. In particular, we live in a real world inhabited by conscious subjects which persist through some form of time, and which have experiences of physical objects which at least seem to exist and to persist through time. (Those who regard these findings as obviously true, and who regard the last sentence as troubling on these grounds, should re-read Chapter 1. The important point is not *that* we established

these obvious conclusions, but *how* we established them.)

So far I have sidestepped most of the "big" problems of traditional philosophy. In this chapter I will confront one of these problems: the question of the relationship between the mind and external reality. Traditionally, answers to this question have been of two sorts: *idealistic* ones, according to which mind is the underlying reality which somehow gives everything else existence, and *realistic* ones, according to which other things besides minds are truly real. In this chapter I will present a new solution to this problem of the link between mind and reality. This solution is the centerpiece of the new view of reality which I promised in Chapter 1.

The Notion of Objective Truth

Before I start to examine the relationship between mind and reality, I want to say a few words about the philosophical problem of truth.¹ The idea of truth will come up repeatedly in the later part of this chapter, and I want to prevent certain misunderstandings before they start.

The problem of the relationship between mind and reality is intimately connected with the problem of determining the truth conditions for statements about real objects — that is, the conditions under which those statements are true or false. Up until now, we have dealt largely with statements about how things seem or about instances of seeming. The truth conditions for such statements have not concerned us,

since we know how to tell whether such propositions are true or false. But if we want to ask ourselves what role mind plays in the makeup of objective reality, we must be able to say what, if anything, makes a statement about objectively real entities (not merely apparent ones) true or false. That is, we must know what the truth conditions for such statements are like.

Everyone has an intuitive feel for what "true" means. However, different people have different views about how truth may be arrived at, and about what makes a statement true or false. The existence of differences in prephilosophical usages of "true" and "truth" has suggested to philosophers that those words are somewhat ambiguous.² The following scenario shows how disagreements can arise from ambiguity of this sort.

Bill, a person who lives by sense experience, correctly asserts "The cat is black." When asked to explain why this claim is true (not merely to show that it is true), Bill asserts that it is true because the cat really *is* black, and that this is all that needs to be said. Then Bob, who is a religious believer, claims that "God exists" is true. When asked to explain why this claim is true (not merely why he believes it), Bob replies that belief in God is indispensable for making sense out of life — that without this belief, one will have great difficulty understanding the world or finding meaning in it. Bob might further state that the truth of the claim that God exists is not a question of "just facts."³ Upon hearing this opinion, Bill might reply that "God exists" cannot be true, and that it cannot be true precisely *because*

God's existence is not just a matter of "facts."

In this discussion, Bill and Bob are disagreeing about theology, but they are not disagreeing over theological points alone. Their disagreement stems from diverging insights about why statements are true or false — about what makes a statement true or false. Bill appears to think that for a statement to be true it is necessary and sufficient that it corresponds to the facts. Bob appears to think that this condition is not necessary; instead, he thinks it sufficient that the statement makes sense out of, or fits in well with, other truths.

The intuitions about truth which seem to be motivating Bill and Bob are reminiscent of two of the standard philosophical theories of truth.⁴ Bill's intuitions resemble an informal version of the correspondence theory of truth, while Bob's intuitions remind one of the coherence theory. In real life, one finds people with intuitive views about truth which remind one, in greater or lesser degree, of these theories. After noticing these differences of intuitions, one cannot help but wonder whether the intractability of the philosophical problem of truth might arise, at least in part, from the existence of these varying intuitions about the nature of truth.

Many fields of human endeavor, ranging from theoretical physics to law, require their practitioners to think about what is true. The particular role which truth plays in a given discipline often brings to mind one of the philosophical theories of truth. The idea of evidence used in experimental science seems natural if one accepts the correspondence

theory of truth. The methods which pure mathematicians use to determine the truth may look more natural on a coherence theory. The sort of truth with which engineers must cope every day looks much like the picture of truth painted by pragmatists. And formal logic is easiest to interpret when truth is given by Tarski's semantic definition.⁵ These differences in the roles which truth plays in different fields suggest that perhaps there is no unique answer to the question "What makes a statement true?"

Before continuing this discussion, I should say a word about my terminology. By "statement" I mean a linguistic item which is true or false. I will not specify the nature of these items (for example, whether they are tokens or types), because I do not need to so for what follows. I use "statement" instead of "sentence" or "formula" because I want to avoid the overtones which the latter two words have acquired from their association with formal logic. A reader who prefers to think of truth as a property of propositions could replace "statement" with "proposition" and still make use of my arguments.

Continuing the argument: Perhaps there is more than one general kind of circumstances that can make a statement true. Perhaps some statements (say, those of pure mathematics) are made true by coherence of some sort, while others (those of physical science, say) are made true by correspondence with fact. It is conceivable that none of the philosophical theories of truth exhausts the informal notion of truth, but that this notion still is based upon a perfectly sound intuition which everyone who thinks can

have. A precise definition of truth might best be regarded as a definition of truth for one class of statements.

Note that the argument of the last paragraph *does not* endorse the relativist opinion that truth is merely relative or is a matter of viewpoint. Even if no single theory captured the entire notion of truth, there still might be a single, objective notion of truth. Such a notion would remain tenable because the different theories of truth never would deliver different verdicts on the truth of a single statement. If two supposed theories of truth did disagree in this way, no one could regard both of them as adequate theories of truth, for if either one were right, one could use it to show that the other theory is inadequate. The applicability of different theories of truth for different kinds of statements would not imply that there is more than one concept of truth, or that truth is relative. All it would imply is that truth is too rich a notion to be captured entirely by one theory or to be approached solely through one method. It would mean that no rigorous theory of truth is powerful enough to exhaust the content of the informal, intuitive notion of truth, which is the complete notion. Truth might be, in this sense, *unbounded*.

A situation like the one described in the last paragraph already exists in the field of axiomatic set theory. Set theorists know that in the standard formulation of set theory (ZF) there is no rigorous, formal characterization of truth in a model which assigns all formulas their correct truth values.⁶ In other words, the notion of truth used in ZF set theory cannot be exhausted by a single rigorous definition of

truth statable in the language of that theory. Yet this does not lead set theorists to regard truth in ZF as a mere matter of opinion, or as entirely viewpoint-dependent or relative. Set theorists are right in not thinking that way; the mere fact that truth in ZF cannot be formalized all at once in one definition does not justify regarding that notion as anything other than objective. If ZF is a consistent theory, then the different "theories of truth" (or formalizations of the notion of truth) available in ZF never will disagree on the truth of any formula. (If two of them did assign the same formula two different truth values, then they could not both be genuine truth definitions, for if one definition were right it would allow us to prove that the other was wrong.) The fact that the notion of truth in ZF cannot be captured by a single truth definition within ZF does not mean that there is more than one conflicting notion of truth in ZF, or that there are many divergent truths about what is a theorem of ZF, or that there is no objective notion of truth in ZF. It simply means that the notion of truth in ZF is too rich to capture in a single definition.

Another relevant example from formal logic has to do with the decidability of formal theories. Many formal logical theories are undecidable — that is, one cannot always tell whether a given wff (or generalized sentence of symbolic logic) is deducible from the theory, or at least one cannot always tell by rigorous, mechanical means.⁷ Different kinds of proofs are needed for different theorems; there is no single rigorous test which will tell us whether a given wff is a theorem. Yet it would be silly to infer from

this that there really are no theorems in such systems, or that the concept of theoremhood really is a set of different, irreconcilable ideas.

The conceptions of truth embodied in the various philosophical theories of truth are not logically equivalent to one another. If they are jointly right in the way I have suggested, then they are applicable to disjoint classes of statements, or else they must agree on any statement to which two or more of them are applicable. If two such conceptions assigned such a statement different truth values, then both conceptions could not be right, at least not in the absence of some amendments or caveats. Each of the theories of truth would capture certain features which common sense attributes to truth, but would overlook some other features of the same kind. The above example of Bill and Bob suggests how one can arrive at different theories by trying to rigorize the informal notion of truth. The correspondence and coherence theories describe what Bill and Bob might have meant by "truth" had they reflected carefully on their opinions and spoken more precisely.

This view that truth is *single and objective but multifaceted* is not essential to what follows. I am not going to defend this view any more than I already have. My point in discussing this view of truth is to show that the search for a single correct theory of truth may not be the best way to approach the problem of truth. Even more misguided are the relativistic attempts to debunk the notion of truth by showing that there are many different kinds of truth. Acceptance of different theories of truth for different kinds

of statements does not push us toward relativism *of any sort whatsoever*. It also does not immediately rule out relativism, although it undermines one particular line of argument for relativism. (Some relativists might misinterpret my views as a kind of relativism — but that is their problem, not mine.)

The rest of this chapter does not presuppose any particular theory of truth.

From Appearance to Knowledge⁸

To know anything, a conscious subject must have experiences of appropriate sorts. Information which never enters the consciousness of a subject cannot become part of what that subject genuinely knows. I am speaking here only of *discursive* knowledge — the kind of knowledge which philosophers typically profess to seek. There also are non-discursive forms of knowledge, such as the knowledge of how to ride a bicycle. (Some people would not regard this last form of knowledge as genuine knowledge at all, but their beliefs on this point do not prevent them from knowing how to ride a bicycle.)

If you find the answer to an arithmetic problem with the help of a nonconscious procedure like a mechanized calculation, then you do not know that answer until you become conscious of it. If a nonconscious machine carried out the same calculation in deep space, unexperienced by any subject, you could not be said to know anything as a

result of those operations. You can know only what affects your world of appearances — what has an impact upon the way things seem to you. It is only through conscious experience — through a way things seem — that a subject can know anything at all.

Suppose that the truth of a statement P does not have any consequences for the way things seem to conscious subjects. That is, suppose that every experience had by every conscious subject will be exactly the same whether P is true or false. Then there is no way for a conscious subject to know that P is true. No one ever will find any evidence for the truth of P.

The possibility that a subject would "just know" that P, without having to refer to any evidence, might seem to provide a loophole in what I have just said. But even if intuitive knowledge of this unsupported kind were possible (and I doubt that it is), still it would not weaken the argument in the last paragraph. Suppose that some subject "just knows" that P, and this knowing that P is brought about somehow by the fact that P. (Perhaps biological evolution forced this subject to believe that P; this could happen if P is a persistent fact about the natural environment and natural selection favored genes conferring this knowledge.) Then things seem different, to the subject, from the way they would seem if P were not the case; hence the subject's experience is not the same as it would be if P were false. In this case, the subject's knowing that P would not contradict what I said in the last paragraph. Alternatively, suppose that someone "just knows" that P, and this knowing that P is *not*

causally linked, or correlated in any other way, to the fact that P. Then if P were false, the experience of "knowing" still might occur. Such an instance of "knowing" is not a genuine instance of knowledge, but is merely an instance of belief backed by some sort of psychological compulsion.

If the truth of a statement (or proposition) P does not follow from some set of facts about how things seem to a subject, then regardless of how things seem to that subject, that subject cannot absolutely rule out the possibility that P is false. Therefore, a subject cannot know for certain that P is true unless P follows from facts about how things seem to that subject. Of course, the subject might be able to begin with facts about how things seem and infer in a less-than-certain way (non-deductively) that P is true. But this cannot happen unless P follows from facts about how things seem to the subject, by way of whatever kind of inference the subject is using. For example, if the subject is using inductive reasoning, then it must follow, from facts about how things seem to the subject, that the truth of P is probable. If the subject is using some kind of intuitive method, and if we assume, for the sake of argument, that this method can be trusted, then facts about how things seem to the subject must somehow render P intuitively acceptable or convincing. (Perhaps P simply *seems* true.) If P cannot be justified in any way at all beginning from facts about how things seem, then it could be the case that things seem exactly the way that they do and yet P is false. In this case, there are no real grounds for belief that P.

The above arguments show that a subject can know that a

statement is true only if that statement can be justified, in some way or other, beginning from facts about how things seem. (I will not argue here for the superiority of any particular method of justification; my point is independent of such controversies as empiricism vs. rationalism, or empiricism and rationalism vs. mysticism.) If a subject can know with certainty that a statement is true, then it must be possible for that subject to infer that statement with certainty from facts about how things seem. If a subject can know that a statement is probable, then it must be possible for that subject to infer from such facts that the statement is probable. If a subject can know on some other grounds that a statement is credible, then it must be possible to infer, from facts about how things seem, that the statement is credible on those grounds. If the truth of a statement has no bearing whatsoever on how things seem to a subject, then that subject does not have justification for supposing that that statement is true.

All this shows that facts about what is the case for subjects can be used to evaluate the truth value of any statement, *to the extent to which that truth value can be known.*

It follows that if we had a complete description of how things seem to all subjects, then we would be able to determine the truth value of any statement whose truth value is knowable, and we would be able to do this with the highest degree of certainty possible. (Of course, such a description is a practical impossibility, although in principle we can get as big a finite fragment of it as we need.) We can

determine the truth value of any statement, to the extent that it is knowable, from facts about what is the case for various subjects. But a fact which is the case for a subject is the case for that subject only at a particular consciousness event. Therefore, the truth value of any statement or statement can in principle be determined, to the extent that it is knowable, from enough data about what is the case for consciousness events.

The preceding remark is not meant to suggest that all the required data about "what is the case for what" can be expressed in a particular language. It is safe to suppose that no language can express *all* subjective facts. (A language which could do this would have to be able to express every subtle shade of how every subject feels at every time.) Nevertheless, if we want to talk about a particular subjective fact, we always can manage to do so by extending our language a bit. If we want to express how things seem to someone by using a sentence of the form "For x, it is the case that P," we need only invent a new word or other symbol to express the fact which is the case for x. People often make up or adopt new words or phrases to express things which previously were inexpressible for them. Children do this all the time as they learn language. For anything which seems to be the case, we can invent a sentence to express that "something". If worse comes to worst, we can simply invent a new sentence letter or mathematical symbol, and use it to express the previously inexpressible fact that _____.

All of the preceding arguments lead up to the following

conclusion.

Let P be a statement. Suppose that it is logically possible that some subject knows the truth value of P. Then the truth value of P can be determined, to the extent to which it can be known, from facts about what is the case for consciousness events.

I will call this conclusion the *experiential principle*.

The Experiential Principle: What It Is Not

The experiential principle has some interesting consequences. Before exploring these consequences, I wish to mention some consequences that the principle does not have. Each of the views discussed here bears some superficial resemblance to the experiential principle, but should not be confused with it. All of them differ from it in significant ways.

First, the experiential principle does not imply that any form of *empiricism* is correct. This is because it does not imply that sense experiences are the only experiences which could bear on the truth of a statement. The subjective facts which the principle requires could be those associated with sense experience, but for all we know they could just as well be those involved in thought, emotion, intuition, mystical experience, or Platonic recollection. (I am not arguing here that all of these sources of knowledge are equally

meritorious; I am simply claiming that the experiential principle alone cannot be used to rule out any of them.) The experiential principle does not specify what *kinds* of subjective experience can yield knowledge. Hence it neither supports nor conflicts with empiricism. (Note particularly that it does not imply positivism or verificationism. Far from it.)

Second, the experiential principle is not a *foundationalistic* thesis. It does not imply that one can begin with facts about what is the case for whom and build up all knowledge from them. The procedure which leads from subjective facts to the truth value of a given statement need not be a deductive one or even a rational one. For all we know, it could be a scientific procedure involving intuitive leaps and guesswork, or even an intuitive method (Bergsonian, phenomenological, or other) by which one plumbs experiences for their inner meanings. I am not arguing for or against the merits of any of these methods; I am simply pointing out that the experiential principle does not rule out the use of such methods as paths to knowledge. The open possibility that some of our knowledge may be available *only* through such methods may not be compatible with foundationalism as we know it.

The experiential principle tells us that if it is possible in principle to know the truth value of a statement, then it is possible in principle to determine that truth value from facts about how things seem to subjects. It does not specify how this determination is to be done.

Third, the experiential principle does not imply that one

can know only about one's own experience. The principle says that any fact that one can know discursively, one can in principle derive from facts about conscious experience. This may appear to harbor the beginnings of solipsism, but the experiential principle does not imply that one knows only about the contents of one's own consciousness. It allows one to know about external things *through* the contents of consciousness, and that means the consciousness of other subjects (indirectly) as well as that of oneself. For example, you might be able to ascertain the existence of an object of which you are not aware, by examining the reactions of other persons to the object. The resulting inference may indirectly utilize other people's subjective facts (which, as I pointed out in Chapter 6, may be more accessible to you than you think). Of course, your knowledge of other peoples' subjective facts is obtained with the help of your own subjective facts.

Fourth, the experiential principle does not imply or even suggest that only perceptible objects exist. The principle is compatible with the possibility of knowledge about imperceptible things. The experiential principle tells us that any such knowledge would have to be derived, deduced, induced, intuited, or obtained in some other way from facts about what is the case for consciousness events. For example, invoking an object as part of a theory which explains regularities in our experience might be a legitimate way to establish the existence of an object, though I will not try to argue this point here.⁹

Reality and Subjective Facts

The experiential principle places strong constraints upon the truth conditions of knowable statements. (Here and in the sequel I call a statement *knowable* if it is conceptually possible that some being knows its truth value, either with certainty or not.) The principle implies that the truth value of a knowable statement can be determined from the truth values of sentences which specify what is the case for consciousness events, insofar as that truth value can be determined at all. Sentences of this latter sort (those which state what is the case for some consciousness event or other) embody or correspond to subjective facts. As in Chapter 2, let us call such sentences *subjective-fact sentences*.

A subjective-fact sentence says that something is the case for some consciousness event. By the experiential principle, the truth value of any sentence is determined, insofar as it can be determined at all, by a sufficiently long list of subjective facts. If we had enough names for consciousness events and enough sentences to express all relevant facts about how things seem, then we could express any subjective fact with a subjective-fact sentence. Then the truth value of every sentence would be determined, to the greatest extent possible, by a choice of truth-values for a sufficiently long list of subjective-fact sentences. Thus one can find a set of truth conditions which give the truth value of any sentence in terms of the truth values of subjective-fact

sentences. (By "give" I mean, of course, "determine to the extent to which it can be determined" — not "fix uniquely.")

A possible technical objection to truth conditions of this sort is their seeming circularity. The objection runs as follows. I have claimed that the truth conditions for a sentence P can be formulated in terms of the truth values of various sentences R of the form "For x it is the case that Q," where Q is some other sentence. Clearly Q contains one less phrase indicating being-the-case-for than R does. By repeating this argument, we find that the truth conditions for P depend finally upon the properties of other sentences Q which do not concern being-the-case-for. These sentences are not subjective-fact sentences, and their truth values are not fixed by those of subjective-fact sentences.

Fortunately, it is easy to rebut of this argument. One only has to recall (from Chapter 3) that the being-the-case-for operator creates nonextensional contexts. The truth value of the sentence "For x, it is the case that Q" does not depend upon the truth value of Q; hence the truth conditions of the sentence just quoted need not depend upon the actual truth value of Q. The truth conditions for "For x, it is the case that Q" can be stated in terms of *what seems to be the case* — that is, in terms of *subjective facts alone*. We already know how to evaluate such sentences in practice, using facts about how things seem to us.

In principle, one can find truth conditions for any knowable statement which make the truth value of that statement depend upon the truth values of subjective-fact statements. This is a consequence of the experiential

principle.

Idealism

Now I am ready to propose a partial answer to a traditional philosophic question about the relation between mind and reality: Does the external world which we perceive have an existence independent of our experience of it?¹⁰

We can restate this imprecise question in a more linguistic form by replacing talk about reality with talk about truth.¹¹ Then the question becomes: "Is the truth value of each statement about the real world determined completely by facts about what is experienced, or does it depend upon other facts as well?" We can rewrite the question further by replacing talk about experience with talk about subjective fact. Then the question takes this form: "Is the truth value of any statement about reality determined solely by facts about what is the case for various consciousness events?"

The preceding discussion already has answered this question in part. The truth value of any statement *whose truth value is knowable* is a function of facts about what is the case for various consciousness events. Which statements are true depends upon which facts are true for which consciousness events. For statements whose truth values cannot be known with certainty, the truth value can be fixed by such facts to the greatest extent possible. Thus, all knowable facts about reality are dependent — though in a

logical sense only — upon circumstances which are essentially mental. Any statement which might possibly be known by some subject can be true only if certain mental circumstances hold. Any statement whose truth is not a function of the mental is unknowable even in principle.

Note that this implies that a knowable statement about the objective world contains no new information that is not already in the subjective facts which determine its truth value. Once we have evaluated certain subjective-fact statements, the truth value of the other statement is fixed, at least to the extent that anyone ever can know those truth values. It is pointless to postulate an additional "something," besides the facts about how things seem, which must be real to make the statement true.

This conclusion is a version of idealism. It implies that any truth about the world which we know and experience is logically dependent upon truths about what conscious subjects are experiencing. But this idealistic thesis is far weaker than most previous versions of idealism.¹² In particular, it does not say that things depend upon mind in any manner that is causal, or that is even remotely like causality. For instance, it does not imply that things must be perceived or known in order to exist. Even less does it imply that only minds and their contents ultimately are real. All that it entails is that a knowable fact is true if and only if certain *mental circumstances* obtain. The occurrence of the mental circumstances forms a necessary and sufficient condition for the truth of the fact. In this respect, my idealism resembles the transcendental idealism of Kant.¹³

The form of idealism proposed here does not rule out the existence of knowable extramental objects, if by that one means objects which are not mental constructs or which do not depend causally upon mental activity. This idealism claims only that the facts of the knowable world are logically dependent, in a certain sense, upon the presence of consciousness in the world.

My idealism may be regarded as akin to phenomenalism, insofar as it regards the existence of physical objects as a consequence of certain facts about the possibility of experiences. However, it cannot be equated to phenomenalism of any familiar sort, since it does not attempt to reduce physical objects to anything mental — as, for example, Mill did in his equation of matter with "a Permanent Possibility of Sensation."¹⁴ In my view, matter does not consist of sensations or experiences, either of an actual or of a possible sort. Rather, the possibility of experience of a certain sort is merely a *necessary and sufficient condition* for the existence of matter. I am not suggesting that matter is "made of experience" in any sense of that phrase.

The idealism which one gets from the experiential principle does not even rule out objects which are impossible for anyone to perceive. Such an object can exist provided that the statement that it exists has truth conditions of the sort which the experiential principle requires. For example, a strictly imperceptible object might exist by virtue of the fact that the experiences of subjects always are ordered in such a way that they seem to be caused by such an object. If this is

the case, then a scientist who postulates such an object to explain certain regularities in experience will be getting the ontology right. There really would be such an object, since the regularities in experience are mental circumstances sufficient for the object's existence. The object's existence is tied to subjective facts in a way which forces the object to exist if subjects' experiences suffer from certain regularities. I am not arguing that statements about objects postulated in existing scientific theories really have truth conditions of this sort. Rather, I am introducing this possibility to show that on the idealistic view proposed here, existence cannot be reduced in any manner to being perceived. Using well-known Berkeleyan terms,¹⁵ one can say that in my idealism *esse* is very far from *percipi*.

We have arrived at this idealism by means of an argument which is essentially epistemological. This argument even has something in common with one of Berkeley's idealistic arguments — the one that begins with the observation that matter is in a sense unknowable.¹⁶ Berkeley refused to posit extramental objects, on the grounds that such objects are not needed to explain our experiences. I have no doubt that there are extramental objects, but I have refused to posit objects whose existence is not *implied by features of consciousness*. Those extra objects are not needed to explain anyone's experiences, ever. But despite the Berkeleyan flavor of my argument, my idealism is much closer to realism than Berkeley dared to go. My brand of idealism admits objective, extramental objects of perception; it is an idealism only because it postulates that the existence

of those objects depends upon the existence of consciousness in the world.

The mental circumstances which can make statements objectively true need not even be "mental" in the standard sense of that word. In Chapter 11 I argued that there may be unconscious mental processes which involve subjective fact in the same way that conscious mental processes do. The above argument for idealism does not show that conscious mental processes give rise to objective reality, as Berkeley evidently supposed sense perceptions to do.¹⁷ It shows only that subjective facts can logically "force" statements about objective reality to be true. It is conceivable that the subjective facts which do this might belong at least partly to subjects' *unconscious* psychological processes — to things that no subject knows he or she is experiencing.

All reality has the minds of individual subjects as its sources in the manner described above. However, reality does not consist solely of minds and their contents, and the minds which underpin reality need not be egos. Reality has a mental or psychological origin, but the real world is not a mere mental construct. The ultimate determinants of existence are psychological, but things can exist outside of any mind and fail to be reducible to subjective experiences. Thus, mental happenings can ensure the existence of an *extramental* world — one which cannot be said to exist only in minds.

Idealism and Physicalism

All knowable facts, including facts about the physical world, ultimately owe their truth to consciousness. The existence of physical objects and events, insofar as such phenomena are knowable, is a logical consequence of certain facts about consciousness. These are idealistic conclusions. Yet the version of idealism which I am proposing does not rule out the possibility that consciousness itself is a physical phenomenon. In fact, it is fully compatible with a *materialistic explanation of consciousness*.

Of all theories of the mind-matter relationship, idealism seems the least compatible with the view that mental processes are physical. According to idealism, matter is a product of consciousness. According to the materialist view of mind, consciousness is merely a process which takes place in a material brain. It does not seem possible for both of these views to be true.

Actually, the situation is not so simple. The particular version of idealism that I have proposed does not exclude the possibility that all mental events are events that happen to physical systems, or that consciousness has a physical explanation. Although consciousness events are the logical wellsprings of physical existence, it is logically possible that they also are events produced by the action of physical brains. I will show that this possibility does not involve any

vicious circles. An idealistic theory of reality is logically compatible with a materialistic solution to the mind-body problem. Furthermore, the possibility just mentioned has strong precedents in the literature; as I will show, ideas very much like it have been proposed both by philosophers and by noted scientists.

According to my version of idealism, the truth values of knowable statements about physical reality depend upon facts about what is the case for which consciousness event. It follows that the truth values of sentences like "John possesses a brain of such-and-such a sort in which such-and-such things are happening" also depend upon such facts. Brains owe their existence to mental circumstances, and facts about brains owe their truth to such circumstances. But this does not rule out the possibility that the consciousness events in John's history are events which happen to John's brain. Note that the circumstances which make sentences about John's brain true need not consist solely of facts about John's experiences. The experiences of other subjects would contribute as well. Consider the above quotation-marked sentence; imagine that the "such-and-suches" are filled in with real descriptions of a brain and of neural events. The mental circumstances which would make this sentence true presumably would include the fact that anyone who looks inside John's head is able to observe certain things. These circumstances also would include the performance by John of behaviors (including linguistic behaviors) which could only plausibly be explained by the presence of a brain of a certain sort. The circumstances also

might include John's having experiences of certain kinds, if these experiences can best be explained by the presence of a brain of a certain sort. The existence of John's brain, and of the events which happen to it, arise solely from mental circumstances. But none of this contradicts the possibility that certain goings-on in John's brain are themselves mental circumstances.

In this way a mental event may be physical even though the physical circumstances which explain it are products of mental circumstances. The thesis that reality arises from mental circumstances is compatible with the hypothesis that mental facts have physical explanations. Idealism, as I have formulated it here, implies only that any physical events which cause or are identical to mental events must themselves be products of mental circumstances. It has nothing to say for or against the hypothesis that mental events are simply happenings in physical systems.

The most obvious objections to the view that idealism is compatible with mind-body materialism are the threats of a causal loop and of circularity in explanation. I will address the first objection first.

The view that idealism is true but that mental events are physical seems to imply that physical events cause mental events and in turn are caused by those mental events. Actually this result does not follow, for two reasons.

The most obvious reason why there is no causal loop is that the mental events which guarantee the existence of John's brain need not be mental events belonging to John. A little earlier I listed some of the facts which could contribute

logically to the existence of John's brain and its activities. Most of these facts were not facts about what John was experiencing. (If John becomes unconscious, then his brain continues to exist. To guarantee this continuity, it is sufficient that if anyone looked inside John's head, they would find that certain tissues seem to exist there.)

A second reason why there is no causal loop is that in my idealism, mental events do not actually *cause* physical ones. The mental circumstances which underlie the being of physical events and things do not cause those events or create those things. If I observe a fire, then the fact that for my current consciousness there is a fire is at least part of the circumstances which give the fire its existence.¹⁸ But my act of observation did not set the fire; no idealist, and no arson investigator, could argue successfully that it did. The fire had its causes (say the dropping of a lighted match) which were external to my consciousness. Physical events may perhaps cause mental ones in much the same way that dropping a match causes a fire. But the act of observation which guaranteed the fire's existence did not cause the fire — and the mental events which guarantee the existence of the corresponding events in the brain need not cause those brain events.

The claim that something guarantees the existence of something else without causing it is not at all strange. A physical state of affairs can guarantee the existence of a fire without being its cause. Chemistry tells us that if electrons are being transferred from fuel atoms to oxygen atoms in a certain way and under certain conditions, then there is a fire.

But the movement of electrons described in the antecedent of the preceding sentence did not cause the fire; the dropping of the match did.

Thus one possible objection to my argument — the threat of a causal loop — is defused. I have not claimed that consciousness causes brain activity which in turn causes that same consciousness. Physical events may cause (or be) consciousness, but consciousness does not cause the physical events whose existence it underpins. The physical processes which cause (or are) consciousness events are not caused by those same consciousness events.

The second objection is that I am courting a vicious circle of explanations. Is it legitimate to explain matter as a product of mental processes, and then maintain that mental processes are goings-on in matter? Such a position looks like a viciously circular explanation — an explanation of A in terms of B and of B in terms of A, which explains nothing. Fortunately, this explanation only *seems* circular. My idealistic account of physical reality may perhaps count as an explanation of physical being (albeit an incomplete explanation), but a materialistic explanation of mind is an explanation of a fundamentally different sort. A materialistic explanation of mind ultimately has to identify mental processes with processes which happen to a physical object. Yet my idealistic explanation of matter does not identify matter with processes occurring in minds, or with anything else mental. It does not reduce physical objects and events to mental phenomena. All it claims is that the existence of physical objects and processes logically

requires, or presupposes, the occurrence of mental processes. Hence there is no vicious circularity of explanation.

It might indeed be circular to claim that physical objects and events are nothing but mental constructs, and then to claim that minds are nothing but processes occurring in material systems. ("What is matter? Just a figment of the mind. So what is mind? Just matter in a special sort of motion.") But I have not made this combination of claims. In my idealism, matter is not reducible to mind. Although there could be no matter in a consciousness-free world, material objects are not mental constructs. Hence the possibility that the mental is physical remains open.

A similar harmless apparent circularity of explanation can occur in arguments about ordinary physical events. Consider my earlier example of the fire. One might argue that a fire is reducible to certain events involving electrons in atoms and molecules. This account of fires rules out an analysis of those electronic events in terms of fires; any such account would be circular. But it does not rule out the possibility that a particular fire can guarantee the occurrence of a particular electronic event — for example, the oxidation of a particular molecule in the fuel, which event forms part of the process of burning. (This analogy is imperfect, because the fire also causes the molecular event, but it makes the point.)

My version of idealism does not preclude the physicalistic explanation of consciousness events or of experiences. It allows for the possibility that mental

processes may be events that happen to physical brains. Although the physical realm derives its being logically from the mental realm, mental events may be events in physical systems, so that a complete neurophysiological explanation of mind may exist. Well-known scientific evidence suggests that such an explanation is possible, though I think we are far from owning one. I think that the possibility of such an explanation is primarily a scientific question rather than a philosophical one.

The view that mind grounds the existence of the material world and yet still is a product of physical processes is a form of idealism quite different from any of the classical idealisms. Unlike the idealism of Berkeley or the phenomenism of Mill, it refuses to reduce the material to the mental. Unlike the transcendental idealism of Kant, it places the self squarely in the physical world. We may call this new viewpoint *physioidealism*.

According to physioidealism, the traditional idealistic view of the physical cosmos as a product of mind is essentially correct, but it must be qualified and extended. Traditional idealistic reasoning tries to beat a path from mind to cosmos. Physioidealism suggests that such a path is too short; to fully understand the relationship between cosmos and mind, one also must take into account the origins of mind in the physical world. According to this view, the path which idealism ultimately will find is a path *from brain to cosmos*.

The concept of physioidealism has strong precedents in current philosophy and physics. A number of authors,

including both scientists and philosophers (not necessarily metaphysical idealists), have proposed ideas quite similar to it. Harold J. Morowitz has suggested that consciousness may play a fundamental role in physics but concurrently may have a natural explanation. On his view, the physical understanding of the mind may be combined with the view that mind plays an important role in quantum mechanics, to yield "an epistemological circle" which incorporates matter and consciousness.¹⁹ Erich Harth has proposed a physicalistic theory of mind, yet also has suggested that mind may play a certain role in the unification of items in the world we experience, so that mind has a crucial place in the universe.²⁰ Roger Penrose has taken a physical approach to the problems of consciousness, yet has suggested that the "actual existence" of the physical world may be related, in a way, to the existence of consciousness.²¹ John A. Wheeler has suggested that we live in "a 'participatory universe.'"²² On Wheeler's view, reality (including the past) is largely a product of observation, or of "registering" processes (which need not be conscious), even though observers and instruments are themselves parts of the universe.²³ Also, I should mention the work of various authors on the anthropic principle.²⁴ On some versions of that principle, certain properties of the physical universe are, in a sense, consequences of the presence of conscious subjects in that universe.

In my opinion, none of the earlier ideas cited in the preceding paragraph can be called explicitly and

unqualifiedly idealistic. This distinguishes them from physioidealism — though Morowitz's and Harth's ideas come quite close to physioidealism. Physioidealism acknowledges that consciousness has physical properties, but it also recognizes that the physical realm derives its being *entirely* from the mental realm. Consciousness — the occurrence of viewpoints — is the spring; the physical world is the river.

Recursive Idealism

The above discussion of the mind-matter relationship has brought us to a new view of that relationship — and of reality itself. I will now lay out this view explicitly.

The most fundamental feature of reality is consciousness. The world is first and foremost a world of conscious subjects. These subjects are genuine individuals; they are not fictions or constructs of any sort, nor are they mere composites of mental subsystems (though sometimes they behave as if they were). The fact that these subjects have the experiences they do implies the existence of an objectively real extramental world — the world of physical phenomena. That world owes its existence to the consciousness of subjects, yet it is not a mere figment or construct of minds. Physical reality is consciousness-dependent, but it is objective.

Empirical evidence drawn from neuroscience suggests that subjects are themselves products of the physical world.

The consciousness of a subject is some sort of process which happens to physical systems. Strictly speaking, empirical evidence cannot tell us whether the conscious states simply are *controlled* by happenings in the brain or actually *are* happenings in the brain. (It is easy to forget that this choice must be made on philosophical as well as scientific grounds, and to think of the mind-body problem as strictly a scientific affair.) But at very least, scientific evidence supports the view that conscious states are controlled by physical happenings in the brain.

The physical world is a logical resultant of the experiences of conscious subjects. Each physical object owes its existence to mental circumstances. Those circumstances may include, not only the fact of the object's being perceived by a subject, but also the mere *possibility* that some subject, no matter how distant at present, might perceive the object or might have its experience influenced in some way by the object.²⁵ Earlier I said that a regularity in subjects' experiences may ground the existence of an object. A tiny, almost imperceptible particle in interstellar space might never be experienced by an observer, yet it would lead to a regularity of the following sort: *if* there were an observer there with a proper detector, *then* that observer would have certain experiences. There is no compelling reason why such a counterfactual regularity cannot ground the existence of an object as surely as can an observed regularity.

A physical object, such as a bit of matter, owes its existence to experience. However, it does not owe its

existence solely to the experiences of any observer who currently is aware of it. As the above remarks about the tiny interstellar particle show, a physical object may owe its existence to its potential effects upon conscious observers who are not currently present. Thus, a physical object may ultimately owe its existence to the combined consciousnesses of *all subjects in the universe*.

A subject either is identical to a process taking place in the material world, or is linked closely to such a process. Consciousness is a product of physical phenomena. Yet the physical world is itself the byproduct of all the consciousness in it. Every conscious subject contributes, through its mental activity, to the existence of all other subjects, of itself, and of all physical items which are not subjects. A subject's present consciousness even can contribute to the existence of past and future events as well as to that of present ones. Today's memories may amount to perceptions of the past. Present historical traces and relics may make it reasonable to infer that an event happened long ago, and this may be sufficient to ensure the existence of that event (recall my remarks on imperceptible objects). That is why there can be a world before there are subjects. Past events are not brought into existence retroactively by experiences which happen now. Rather, they existed in the past because they were going to contribute to our experiences now and because they could have been experienced then if an observer had been there to do so.

Consciousness is a biological function, yet the physical world in which biological processes occur is the product of

the activity of minds. Mind grounds the being of matter, which in turn forms the medium in which minds happen. The material world gives rise to minds, and these minds are what sustain the material world in its ongoing existence.

This theory of mind-matter relations combines the chief strengths of materialism and of idealism. It allows us to maintain an idealistic view of reality — which is more satisfactory than materialism from an epistemological standpoint²⁶ — while fully acknowledging the bodily origins of mind and the successes of the scientific approach to the study of the mind. We no longer have to decide between metaphysical idealism and scientific materialism. The view of reality suggested here combines the logical virtues of idealism with the possibility of a scientific explanation of mind.

The version of idealism presented here can accurately be described as a personal idealism, since it postulates a plurality of individual subjects. It also could be labeled a process idealism, since those subjects are histories possessing genuine temporal flux. Using the terminology of the last section, we also could label it a form of physioidealism. Yet the most striking feature of this theory is its *recursive* or *self-referential* character. It uses mind to ground the existence of matter, and then declares that same matter to be the cause of mind. In the cosmos as portrayed by this theory, the experiences of each conscious subject contribute to the existence of that subject, of every other subject, and of every other object that there is. *Recursive idealism* seems a fitting name for this point of view.

The arguments for idealism given earlier in this chapter do not by themselves support recursive idealism. They lead us to a personal process idealism, but they leave open the question of whether the subject is (or is caused by) a process in physical systems. The hypothesis that subjects are physical processes, or at least are closely tied to physical processes, is supported by scientific evidence, but this hypothesis is not necessary for an idealism based on the experiential principle. Taken by itself, the experiential principle neither implies nor rules out this hypothesis. Recursive idealism is based upon a combination of the experiential principle with scientific findings.

The main lesson to be learned from recursive idealism is that scientific approaches to consciousness are compatible with the view that mind is the central feature of reality. The mere fact that every mental event has physical causes, or even that mental events are only events in utterly physical systems, cannot be used to support the view that consciousness is ontologically subordinate to matter. The discovery by scientists of a physical explanation for consciousness would not place the idealistic interpretation of reality in doubt. The possibility would remain open that the consciousness of various individual subjects ultimately gives rise to the physical conditions which cause, and even constitute, mental life.

Appendix: An Epistle from the Far Side of Relativism

As an afterthought to this discussion of recursive idealism, I will point out the implications of certain arguments in this book for philosophical relativism. The relativisms with which I am concerned are those fashionable in some quarters today, particularly on university campuses. These relativisms are doctrines which deny, in one way or another, that there is such a thing as knowable objective truth, and which attempt to replace the idea of objective truth with that of multiple truths or of multiple perspectives or viewpoints. These viewpoints may be conceived of as individual or as collective (for example, cultural, ethnic or sexual). I will not attempt to catalog all these doctrines here, since the point I will make about them is quite general.²⁷

Consider once again the argument for idealism which I completed several pages ago in the section titled "Idealism." (This was an argument for idealism as such, not for physioidealism or recursive idealism.) That argument leads to a view of reality in which every knowable object, and every knowable objective fact, is grounded entirely in subjective facts. On this view, an objective fact (or fact about the objective world) is true if and only if it follows, via some method, from some combination of subjective facts. Ultimately, a subjective fact is just a fact about how things seem. Hence an objective fact is a consequence of

facts about how things seem.

Aside from its metaphysical implications, this view of reality has profound consequences for relativism. In particular, it implies that *if relative viewpoints and perspectives exist, then there also exists an objective world.* The truth of an objective fact, if there is such a fact, depends upon the truth of a number of subjective facts. Thus, objective facts can exist or be true solely by virtue of the existence of multiple, seemingly conflicting perspectives on "reality." If one concedes that there are perspectives of this sort, or if one uses perspectives in any way in one's thinking, then one is conceding the possibility of objective truth. One cannot use perspectives in one's thinking without tacitly admitting, at very least, that the concept of objective truth makes sense.

It does not matter whether the relativism in question is a relativism of individual viewpoints, or a relativism of cultural, societal, or ethnic viewpoints. None of these viewpoints or perspectives can exist unless it is possible for things to seem some way or other. Philosophical or critical views which make use of "perspectives" always tacitly presuppose the reality of subjective fact. All discourse about perspectives is laden with subtext about subjective fact, whether those who use such discourse realize it or not.

A relativistic or anti-objective approach to knowledge implicitly acknowledges the existence, or at least the possibility, of an objective world. Within any critique of objective reality from a relativist or anti-objective standpoint, there is a subtext of subjective factuality which

undermines the overt argument of the critique. This unavoidable subtext of subjective factuality is implicitly a subtext of *objective* factuality. There is no way out of this bind in which relativism finds itself — for to abandon "subjective fact" is to abandon "perspectives."

Many versions of relativism include a critique of the notion of the conscious subject. This critique also looks different when viewed in the light of subjective fact. Consider what the world would be like if there were no objective reality, but only subjective facts — facts about how things seem in various instances. If the instances of seeming associated with those subjective facts exist for each other in the ways described in the main definitions in Chapter 5, then there are conscious subjects. Thus, there are real subjects in the world, simply by virtue of the occurrence of certain subjective viewpoints. The existence of subjects of a certain sort follows from the existence of multiple perspectives in the world, provided only that some of these perspectives are of specific kinds.

Any relativist critique of the notion of the conscious subject or self will completely miss conscious subjects of this sort. Such a critique cannot gainsay the existence of subjects without also denying that there are perspectives of a particular sort — perspectives which must exist if there is to be even the illusion of the existence of conscious subjects.

The most that a relativist critique of the subject can do is dismantle some narrower conceptions of the subject — for example, views of the subject as something introspectible, uniformly rational, or transcending the biological and social

worlds.²⁸ (I have attacked all of these views myself, especially in Chapter 10 and in the present chapter.) But no such critique of the subject can do away with the subject as such. Even a critique which purports to show that the subject is a product of social processes cannot dispose of the subject, for the possibility that the conditions for the existence of the subject are *social* cannot conflict with the fact that those conditions are *subjective*. Critiques which claim that the subject is underlain by something linguistic cannot touch the actual conscious subject — for the possibility that subjective facts are *linguistic* in character cannot alter the conditions for the existence of a conscious subject. Furthermore, the subject always is a genuine individual; a subject is not in any way conflated with other subjects, unless an actual merger or division of subjects occurs. This is the case even if the genesis of the subject is linguistic or social.

Regardless of the origins of individual consciousness, the existence of the subject, and the existence of the subject as a *true individual*, are facts safely beyond the reach of any form of relativism.

All this points to the conclusion that relativism, at least of the kind fashionable today, must be abandoned. The claim that all truth is true only from some perspective or other is so self-undermining as to be unmaintainable. Any perspective, of any kind, is a sign of the existence of an objective world. This objective world is not the property of any single individual, group, or culture; it is the joint product of all perspectives everywhere. Yet despite this diverse

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origin, the objective world lies outside the perspectives of any individual and of any group. Even a blatant contradiction between individual or cultural perspectives cannot compromise the reality and coherence of our common world, for somehow all perspectives manage to fit together within that shared substratum, ever partially unknown, which we call *reality*.

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Notes

Bibliographical references, cited here by author and year, can be found in the "Works Cited" section of the book. Numbers following such citations are page numbers unless otherwise indicated.

Chapter 13. Mind and Matter

1. The major kinds of theories of truth are discussed in Grayling 1982, Chapters 5 and 6, which contains background information used in this chapter.

2. This ambiguity was noted by Tarski (1944, 342).

3. Hartshorne, a believer in God, has made what amounts to the suggestion that the existence of God cannot, strictly speaking, be regarded as a fact (1962, 296). He also has written that "for religion, God is a principle and not a mere fact" (Hartshorne 1965, 126). However, what my Bob character has in mind is more prephilosophical in character.

The ideas of my Bill and Bob characters are not based on Hartshorne's theories.

4. For a reference on theories of truth in general, see note 1 above.

5. On the semantic definition or theory of truth see Tarski 1944 and Tarski 1931; also Grayling 1982, 157-163.

6. See Drake 1974, 97, for the real result which I am paraphrasing here.

7. An example is the pure first-order quantifier calculus; see Church 1956, 246. (Church 1956 explains the concepts involved far more rigorously than I have done, and gives the exact result which I am loosely paraphrasing here.)

8. The arguments in this section owe something to Berkeley's well-known arguments for idealism (see Berkeley 1710 and Berkeley 1713). However, my conclusions will be quite un-Berkeleyan in several respects.

9. Kant seems to have allowed for a possibility much like this. See Kant 1781, "Transcendental Logic," 1st Division, Book II, Ch. II, Sec. 3, pt. 4 (especially pp. 190-193). Mill's view of matter as "a Permanent Possibility of Sensation" (Mill, 243) certainly implies this or something close.

10. The argument and conclusion which I am about to present have precedents in Kant, Mill and Berkeley. I will discuss these precedents later.

11. For ideas distantly relevant to this replacement see for example Quine 1939.

12. Traditional idealisms and weaker versions are contrasted in Grayling 1982, 280-288, where some idealistic concepts quite different from mine are discussed.

13. See Kant 1781, especially "Transcendental Logic," 1st Division, Book II, Ch. II, Sec. 3, pt. 4 (pp. 190-193).
14. Mill 1865, 243.
15. Berkeley used the two italicized terms in Berkeley 1710, part I, par. 3 (p. 23).
16. Berkeley 1710, Part I, pars. 18-20 (pp. 29-31).
17. See especially Berkeley 1710, Part I, par. 1 (p. 22).
18. I should mention that I thought of this example after reading a very different example of Mellor's (1981, 177-178), which is about an entirely different topic (not related to idealism) and has a different conclusion unrelated to mine. The two examples share only the mention of fire, matches, and causal loops.
19. Morowitz 1980, 39-40.
20. Harth 1993, 7-10 and 172-173. (Harth's theory of mind is discussed in Harth 1993.)
21. Penrose 1989, 448. (The physical approach to consciousness is found in Penrose 1989.)
22. Wheeler 1983, 194.
23. Wheeler 1983, 194-199; the word "registering" is found on 194.
24. Brief discussions of the anthropic principles as they relate to problems of consciousness are found in Penrose 1989, 433-434, and in Harth 1993, 12-14.
25. See the sources cited in note 9 above for precedents to this view in Kant and Mill.
26. Berkeley already recognized this advantage of idealism; see for example Berkeley 1710, part 1, par. 88 (65).

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27. This summary of the current wave of relativism is based on a wide range of literature and discussions. More sophisticated ideas on the so-called "end of philosophy" are discussed in the General Introduction to Baynes et al. 1987 and/or represented in some of the articles in that work.

28. See the General Introduction to Baynes et al. 1987 (especially p. 4) for a discussion of recent criticisms of these ideas of the subject.

Works Cited

(Note added later: This list pertains to the entire book, not just to the excerpts.)

This list contains all works used as sources of information or ideas in this book. It is not a comprehensive bibliography of any sort. Many of the topics discussed in this book are subjects of vast bodies of published literature; others, such as introductory physics, are covered in many good books. In cases of these sorts, I concentrated on typical reference sources which I felt would be useful to the reader, or which I personally found helpful. (In areas of active research, these may not be the most current works available.) No slight is intended toward any work not mentioned in this list.

Dates following author's names are meant to be (approximate) publication dates unless a separate publication date is given, in which case they are meant to be (approximate) dates of first publication or creation. The latter dates come from the works themselves or their front matter, or occasionally from Durant 1953. Dates listed in this section should not be treated as exact; some may be educated guesses.

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About This Document and *From Brain to Cosmos*

Mark Sharlow's book *From Brain to Cosmos* was out of print at the time this document was prepared (late 2010). Most of the chapters of *From Brain to Cosmos* appear in the following documents, which may be available online:

“An Introduction to Subjective Facts” (chaps. 2-3)

“Knowledge of How Things Seem to You” (chap. 4)

“Personal Identity and Subjective Time” (chap. 5)

“Subjective Facts and Other Minds” (chap. 6)

“Time and Subjective Facts” (chaps. 5, 7-9)

“Conscious Subjects in Detail” (chaps. 5, 10-12)

“Beyond Physicalism and Idealism” (chap. 13)

“Which Systems Are Conscious?” (chap. 14)

Each of the above documents has “Readings in *From Brain to Cosmos*” as its subtitle and Mark F. Sharlow as its author.

Copies of the printed book may be available through sellers of used books.

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