

Conscious Subjects in Detail:

Readings in *From Brain to Cosmos*

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Abstract

This document consists primarily of excerpts (chapters 5 and 10-12) from the author's book *From Brain to Cosmos*. These excerpts address several traditional problems about the histories of conscious subjects, using the concept of subjective fact that the author developed earlier in the book. Topics include the persistence of conscious subjects through time, the unity or disunity of the self, and the possibility of splitting conscious subjects. (These excerpts depend heavily upon the author's concept of subjective fact as developed in *From Brain to Cosmos*. Readers unfamiliar with that concept are strongly advised to read chapters 2 and 3 of that book 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 5

Conscious Beings and Their Histories

In Chapter 4 I showed how to take a preliminary step toward the first goal set forth in Chapter 1. To do that, I pointed out a logical fact about consciousness events: that one consciousness event can exist for another. This fact is interesting, not only because of its consequences for knowledge, but because of its bearing on another major philosophical problem: that of *personal identity*. In this chapter I will show how the ideas of subjective fact and of consciousness events can lead us toward a solution to this problem.

Personal Identity: An Introduction

The problem of personal identity¹ is one of the most important philosophical problems from a practical point of view. It amounts to the following question: How do all the different stages and events in a person's life form the life of a single, undivided individual? It is not obvious why these

events and stages don't just exist as separate phases, instead of amounting to the career of one person. If we look at a single snapshot from a person's life — a single moment or brief stage — it may be clear that there is one person there. But if we consider two such stages, perhaps many years apart, what are the grounds for claiming that they really are phases in the career of the same person?

The problem of personal identity becomes acute when we consider that some people change a lot over time, and that all of us change at least a little from moment to moment. The problem asks us to consider what, if anything, remains the same through all these changes.

The philosophical literature contains several different accounts of personal identity. Such accounts examine the conditions under which two given states or stages of personal existence are parts of the career of the same person. I will not attempt here to summarize all of these theories or to criticize them individually. Instead I will refer the reader to the literature on this topic for further information.

Different people have different intuitive views about what must happen if they are to continue existing through time. For example, many people feel that the persistence of memory is necessary for personal survival. On this view, a case of total, irreversible amnesia, followed by relearning of all the facts and skills that one person might know, would lead to the creation of a new person.²

Many philosophers have argued that the continuity of memory, or at least of memory-like mental traces ("quasi-memory"), is necessary for personal identity through time.³

But some people feel that even if they suddenly lost their memories and had to put everything back together from scratch, they still would survive in some form, provided that the "stream of consciousness" (William James' phrase)⁴ containing their experiences is not irreversibly interrupted.⁵ Some philosophers, notably James⁶ and more recently John Foster⁷, have supported views of personal identity in which the continuity of a stream of consciousness plays a central role. Such views differ substantially from those which require continuity of memory. One can think of puzzle cases (usually involving complete forgetting of everything, what Sydney Shoemaker has termed "philosophical amnesia"⁸) in which continuity of consciousness is preserved although continuity of memory is lost. Theories of personal identity also differ from one another in other ways far subtler than the ones I have described here.

Differences among views of personal identity have practical implications, some of them deadly serious. The most dramatic examples of these implications arise in medical ethics. Here I will mention only one such example, based on ones in the literature.⁹ Imagine that a patient has contracted a brain disorder which leads to complete amnesia but not to coma, and which leaves no permanent physiological impairment so that the patient can relearn everything from scratch and thereafter live a nearly normal life. If personal identity depends upon continuity of memory, then the original patient has ceased to exist. Thus, killing the patient immediately after the onset of total

amnesia merely prevents the formation of a new person. Such an act seems at first glance to have roughly the same moral import as contraception; it prevents the creation of an as-yet-nonexistent person. But if personal identity depends upon some version of continuity of consciousness, then the same person likely still exists after amnesia sets in. In that case the killing is a much more serious matter; it is euthanasia at best, murder at worst.

The differences between theories of personal identity sometimes are thought to have important consequences for beliefs about immortality.¹⁰ Suppose that you somehow got the straight information on what will happen to you after your death. Suppose that what you learned was that the perceptual processes now occurring with the help of your brain will either continue somehow in an immaterial soul or be transferred by scientists to the brain of a new body. However, all of your memories (along with "quasi-memories" and the like) of life on Earth will perish with your cortex. Would this form of "immortality" constitute your survival?¹¹ On the continuity-of-consciousness view of personal identity, this scenario may yield real survival — a continuation of your existence, albeit one in which you start all over again as what psychologists call a "blank tablet." On memory-based views of identity, this scenario leaves no hope of survival.

An Agenda

In this chapter I will develop a partial theory of the histories of conscious beings. I will not yet try to pass from facts about how things seem to the conclusion that there are conscious beings which persist through time. (I will address that task in Chapter 10.) But one does not need to assume that there are persisting conscious beings to study those interesting trains of events which we call "histories of conscious beings." For now, one can think of these trains simply as histories of *changing points of view*. Alternatively, one can think of them as *conscious lives* — temporally extended processes involving awareness.

The theory developed here will make use of the apparatus of consciousness events and subjective fact developed in previous chapters. My aim in developing this theory is twofold. First, I want to pave a little more of the road from experience to cosmos by showing that one can infer the existence of a conscious-subject history from facts about how things seem now. Second, I wish to clarify and rigorize some concepts which we often use informally and which will be used more carefully in later chapters of the book. The most important of these concepts is that of *subjective time* — time as experienced by a conscious subject.¹²

Before beginning, I want to examine a more general problem about the notion of personal identity.

The Vagueness of Personal Identity

Philosophers have noticed that the notion of personal identity may be vague in a significant way. Shoemaker has pointed this out explicitly¹³, and also has referred to "a parochial element"¹⁴ present in our usual thinking about that identity. Eli Hirsch has discussed the possibility of alternative notions of personal identity which might appear as normal to some (possible) beings as our notion does to us.¹⁵ The arguments with which these various philosophers support their various conclusions suggest that there is no unique, logically rigorous notion of personal identity, and that our ordinary criteria of personal identity may well contain a conventional (or at least a contingent) element. The differences among different notions of personal identity do make a difference; they can lead to distinct moral and religious conclusions. Hence we must *explicate*, or find a more precise version of, the notion of personal identity before we can hope to compare these alternative conclusions.

My objective here is to define and study one precisification of the notion of personal identity. I will provide a definition of a rigorous notion — that of the identity of a *conscious subject* through time — which corresponds roughly to the notion of the identity of a person. Foster already has proposed an interesting account of the identity of the conscious subject — what he has called "subject identity."¹⁶ My account will be similar to Foster's

in certain respects, though the two accounts differ in important ways.¹⁷ My account of conscious-subject identity is not supposed to capture the entire intuitive notion of personal identity, nor will it agree perfectly with everyone's feelings about personal continuity. (For example, I doubt that every person would feel comforted if it turned out that something identical to him/her in the suggested sense will continue to exist after his/her death — although I think that he/she should feel somewhat relieved.) The notion of the identity of the conscious subject does come close enough to the idea of personal identity to count as one plausible way of making the latter notion precise.

Continuance and Subjective Duration

In what follows I will use the term *conscious subject*, or just *subject*, informally to mean "conscious being." At this stage, I am not yet using the existence of conscious beings as a premise. However, it will be convenient to talk about subjects to motivate certain arguments. Without defining "subject" at this stage, I will take it for granted that a subject is an entity whose history includes consciousness events. This, I believe, would follow if one defined a conscious subject as an entity which is conscious. The most familiar conscious subjects are conscious humans — or, if one prefers, their conscious minds or selves. In Chapter 10 I will take up the topic of conscious subjects again, and will provide a more rigorous characterization of conscious

subjects.

Our immediate aim here is to find out in what the identity through time of a subject's consciousness consists. First we need to find an answer to the following question: Under what conditions do two consciousness events form parts of the same conscious-subject history? This is the analogue, for conscious subjects, of the question of the nature of personal identity.

We can restate the question of conscious subject identity as follows. Consider two consciousness events; call them *x* and *y*. What determines whether *x* and *y* are consciousness events in the same conscious life, or subject history? In other words, how are the consciousness events in the life of a conscious being strung together to form the conscious life of a single being?

In Chapter 4 I discussed the fact that one consciousness event can exist for another. If a consciousness event *y* exists for another consciousness event *x*, then in *x* it seems as if *y* exists. However, in *x*, it may be that *y* does not seem *present*, but seems just past; it may be the case (and normally always is the case) that *y* is not the same consciousness event as *x*. In *x*, it may seem as though *y* just occurred; although *y* seems to be past, some of the subjective content of *y* "carries over" into *x* as part of the realm of subjective fact associated with *x*. From now on I will use the word *continuance* to describe this relationship between two consciousness events. That is, if *x* and *y* are consciousness events and *y* exists for *x*, I will say that *y* undergoes *continuance* in *x*, or simply that *y* is *continued*

during, or in, x.

The next few paragraphs are intended to point out and emphasize some psychological features of continuance. In this paragraph I will speak freely of subjects, experiences, and the like. By doing this, I am not introducing the existence of such entities as a premise. Rather, I am using discourse about such entities to point out certain facts about the way things seem.

Continuance does not occur only during episodes of deliberately focused attention, like those which arise when one works through the examples (1)-(4) in Chapter 4. Continuance occurs all the time during ordinary experience. Normally you do not think about this phenomenon. Yet every moment that you are having experiences, you also experience the fading away of immediately past experiences. For example, continuance occurs when I turn my eyes in the customary way and look at different things. As each new view begins, I "feel," without thinking about it, that what I am looking at has changed. The previous view is no longer seen, but the fact that there was such a view is evident a very brief time after that view ends. A short while later, the previous view fades into memory, or (more often) simply is forgotten.

Immediately after hearing a sudden loud noise, you are aware that something has taken place. The noise still is a matter of "immediate" experience; it has not yet become a mere memory. During the moment immediately after you hear the noise, you are no longer hearing the noise. Nevertheless, you are *immediately, directly* aware that it

happened; the event of its happening still exists for you. At that moment, continuance is occurring. The instance of seeming in which you heard the noise exists for your consciousness, but the noise no longer is heard.

Continuance allows one to be aware that one has just had an experience. Also, it allows one to know this with certainty. These points were made in Chapter 4, where I argued, in effect, that a certain kind of knowledge about consciousness events in continuance is infallible in a limited way. Memory does not share this virtue with continuance. If continuance of a remembered experience is absent, one cannot be absolutely certain, on the grounds of present experience alone, that one has had that remembered experience. There always is the threat of a false memory. But with continuance, such a threat is not an issue. When a consciousness event of yours undergoes continuance, the consciousness event itself exists for you after it ceases to belong to your present experience. The continued experience could not have been pure fantasy, or something implanted in your mind through neurostimulation, as a remembered experience might have been. (If the experience of a continued consciousness event were somehow implanted, then that consciousness event would have to have been implanted also!)

The above remarks reveal a logical connection between continuance and our *awareness of time*. In ordinary human experience, the continuance of a consciousness event makes that event seem to be immediately past, or at least passing. If a consciousness event besides a present one is not being

continued now, then that consciousness event does not appear to be in the immediate past; it may seem to be remembered from the more distant past, or perhaps it does not seem to have happened at all. Hence what is immediately past *for me* — that is, in the time ordering of my experiences as they happen to me — is simply what I am experiencing in continuance.

It is important to recognize that this kind of *psychological* immediate pastness is not the same as immediate pastness in *physical* (clock) time. The difference between these two relations becomes more obvious in cases of anesthesia or very deep sleep. It is my understanding that persons undergoing surgery under general anesthesia sometimes wake up with the feeling that no time has passed since they became unconscious, and that the happenings immediately preceding unconsciousness have "just happened." A similar experience occasionally happens in connection with normal sleep. If an experience of this sort happens, then some final moment of experience, which occurs just before the onset of unconsciousness, must lie in the immediate subjective past of the first consciousness event after awakening. For the subject, nothing has happened in between, although for outside observers time has passed. (Often the subject does not remember the last moments before unconsciousness, but this possibility need not affect the validity of this argument.)

Another example of the difference between subjective and physical pastness comes from certain psychological experiments in which events are perceived to be in the wrong temporal order. Under certain conditions, stimuli

may seem to be in an order different from the order in which the stimuli actually occurred, or it may appear as though later sensations somehow influenced the perception of earlier ones.¹⁸ This suggests that stimuli occurring in a certain order in time may give rise to experiences which occur in the opposite order in the ordering of subjective time provided by continuance. (Of course, there are other possible interpretations of these experiments. Perhaps the experiences occur in the same order as the stimuli, but afterwards *seem* to have occurred in reverse order. This interpretation actually may agree with our first interpretation, especially if Dennett's conception of what happens in these experiments is at least partially correct. On his view, it normally is impossible to say whether the experiences only are recalled as if they occurred initially in the wrong order, or whether they really occurred in that order.¹⁹)

The Stream of Consciousness

A history of a conscious subject can be thought of as the history of a single consciousness as it persists through time. This way of thinking about subject histories is not new; it can be found in Locke's theory of personal identity²⁰ and more recently in Foster's theory.²¹ Using the language of Chapters 2 and 3, we can say that such a history is some sort of series of successive consciousness events, with one event giving way to another. A string of consciousness events of

this sort, with each event giving way to the next, is the only item which can be said to be a process of being conscious — that is, to be the history of an ongoing consciousness.

This view of the history of a conscious subject allows us to form a clearer picture of what holds such histories together. If one consciousness event comes just before another, then the two events form parts of the same subject history. However, it is not important that the second event comes after the first one in "real," physical clock time. It is enough that it seems, during the second event, that the first event just happened. As we have seen, if one consciousness event is continued during a second one, then the first event is in the immediate past, or is entering the immediate past, from the subjective point of view of the second one. This continuance of one consciousness event in the next is what makes one momentary viewpoint "flow into" another to make up the successiveness of our ordinary experience. Hence if one consciousness event is in continuance during another, both events belong to the history of the same conscious subject.

Two consciousness events belong to the same subject history if they are connected by continuance in this way. We can extend this to more than two consciousness events. Suppose that there are three consciousness events a, b, and c, and that a is continued in b and b is continued in c. Since a is continued in b, a and b belong to the same subject history. Similarly, b and c belong to the same subject history. Hence all three consciousness events can be thought of as belonging to the same subject history. In general, two

consciousness events are parts of the same subject history if one can get from one event to the other by tracing a chain of consciousness events, each of which has the previous one in continuance. In such a chain, each consciousness event dies away in subjective time as the next one begins; the new event involves an immediate awareness of the previous event and of some of the content of the previous event. This intimate mingling of consciousness events constitutes the continuity of a *single consciousness* through time. Each event is a moment of experience in the life of that consciousness.

The kind of identity described in the last two paragraphs can be thought of as the identity of a *naked consciousness* through time. (One should remember that it is no more than this. I do not pretend to know whether this kind of identity is the same as personal identity for any sense of "person" richer than "conscious subject" — for example, the moral or legal understandings of a person.)

If one consciousness event "gives way" to another in the manner which I have just described, then the second event can be thought of as a continuation of the same process or "act" of being aware which began with the first event. One can find convenient examples of such continuing "acts" of awareness in one's own life. If you look at something, and then continue to look at the same thing, then the resulting prolonged experience of yours will span many new consciousness events which are connected to the first event in the way I described above. Each consciousness event within this experience (except for the last) is in the

immediate subjective past of another consciousness event within that experience. For all practical purposes, each consciousness event in such a chain embodies the same consciousness as does the previous event. A new consciousness event can comprise a different stage of each of the processes of sensing, thinking, and so forth which began during preceding events.

At each consciousness event in this chain, the relationship between that event and the one before it *seems like a change, or at least like a transition in time*. The following argument explains what I mean by this.

Consider a case in which a consciousness event (call it x) is continued in a second consciousness event, y . There is one point of view, or way things seem, associated with x . There is a different point of view associated with y . Suppose that there is a subject whose history includes x and y . Then both x and y involve pieces of the experience of that subject. However, the subject never experiences both of these instances of seeming as simply being present at once. This is because the subject has no experience of x and y *together*. There is no consciousness event z such that both x and y exist for z . There is no consciousness event z such that all the facts which seem to be the case either at x or at y , seem to be the case at z . Hence a subject cannot experience both x and y as if they were present at once. At any consciousness event, either x seems present, or y seems present, or neither one seems present — but both cannot seem present. Thus, during y , it seems as though the contents of y are there *now*, while the contents of x are not

there now but are close to "now," or are just leaving the "now," or enter somehow into the experience which seems present "now." In other words, from the viewpoint of y, the connection between x and y seems rather like a change.

This argument can be stated less formally as follows. When one sits and stares at a statue, one sees the statue in a continuing way; first one sees it, then one sees it, and sees it, and sees it, and.... Each of these viewpoints involving the statue is a little different from the others; at very least, it involves a sensation or impression or *feel* of having looked a little longer than one had looked during the previous moment. For an experience to persist — to "take up time" or to "last" — is for the experiencer to pass through various slightly different viewpoints in this way. Yet a single viewpoint, by definition, cannot involve passing through various viewpoints in this way. Hence it cannot be felt as something lasting, in the normal sense of "lasting." It does not "go on and on." It must feel as though it were "here and gone" — here during one consciousness event, gone relative to other viewpoints which come after that event in the subject's history.

Thus, when consciousness events are linked by a subject history, their contents must include kinds of experience somewhat like those one normally associates with the passage of time. If one takes "subjective time" to mean the apparent succession of consciousness events along a subject's history, then subjective time *feels like time*. (Of course, many of the features of human time perception — such as long-term memory, expectation of the future, the

sense of time's length, the feeling of inexorability, etc. — may not be common to all possible subject histories.)

The consciousness events in a subject history form what William James called a "stream of consciousness."²² Consider a series of consciousness events connected into a subject history in the way I just described — that is, consciousness events a, b, c, d,... such that a exists for b, b exists for c, c exists for d, and so forth. The event b involves the continuance of a. Thus b is the consciousness event to which a gives way as subjective time passes. The consciousness embodied in b has the event a as part of its subjective realm, so to speak; when b seems present, a seems to die away. A similar continuation of consciousness goes on through c, d,... Each of these events has among its subjective facts the existence of the previous consciousness event. For each consciousness event, the previous "moment" of subjective time is the consciousness event that is just ending. Hence for the consciousness at b, some subjective facts involved in a are in the immediate past. Those subjective facts belong to the fading experiences that happened in the immediate past. We can think of the consciousness in b as a stage in a process of being conscious; the event a which precedes b in the chain also is a stage in this process. It is intuitively plausible to speak this way, because b involves the experiencing as *just past* of some things which for a were *present*. In this way the events a, b, c, d,... make up a single stream of consciousness. Those events are stages in what amounts to an ongoing process of having experiences, embodied at each moment in

some particular consciousness event. Each moment of consciousness in that process "lives on" through continuance into new moments.

The relation of continuance which ties together the stream of experience also provides that stream with an *experienced temporal order*. If a consciousness event *y* exists for a consciousness event *x*, then for *x*, *y* happens "just before" *x*. The event *x* involves continuance, which is a sort of appearance of what has just passed; what has just passed is *y*. Thus we can say that *y* is *immediately subjectively past* for *x* if and only if *y* is continued during *x*. We can define a subjective time order relation in terms of this relation: say that *y* is *subjectively past* for *x* if and only if either *y* is continued during *x* or there is a chain of consciousness events *y, a, b, ..., z, x* such that *y* is continued during *a*, *a* is continued during *b, ..., z* is continued during *x*. (Actually, we only need three consciousness events to construct this chain.) This definition captures what we mean when we say that one experience occurs before another in the stream of consciousness. One cannot plausibly regard a consciousness event of a subject as being past in subjective time unless, in subjective time, it once was *immediately past* — that is, unless one can trace a chain of experience back to the event, by tracing the relation of immediate pastness. Conversely, if an event *x* once was immediately subjectively past (that is, if the event is followed in subjective time by an event, which is followed by an event, ..., which is followed by an event which is immediately past), then it is intuitively correct to say that *x* occurred in the subjective past.

This characterization of subjective pastness does not presuppose the existence of physical time or of physical temporal order. Under ordinary conditions, our experiences unroll as physical time marches forward, but these two time orders are logically distinct. Subjective time order is a felt ordering of experiences; physical time order is established with the aid of clocks or similar physical means. As we have just seen, subjective time order can be defined independently of physical time. Even if it turned out that the physical world were illusory (and I am *not* arguing that it is), there still could be subjective time for conscious beings. The search for a physical explanation for time perception is an important scientific task, but we do not need such an explanation to know that subjective time is real. Whether x is subjectively past for y depends only upon the subjective facts associated with x and with y . (Earlier I mentioned that subjective time may stop while physical time proceeds, if a person becomes unconscious.)

Using this characterization of subjective pastness, we can frame definitions of other subjective temporal notions. For example, by recognizing that a is in the subjective future of b if and only if b is in the subjective past of a , we can obtain a definition of subjective futurity in terms of continuance.

The notion of subjective time discussed above should not be confused with other psychological notions about time. It tells us nothing about phenomena like the awareness of time's apparent length or the understanding of past events.²³ These phenomena are not part of the naked successiveness of experience which I call "subjective temporal order."

An Empty Objection Defeated

One possible objection to the above picture of subject history arises from criticisms of the notion of the stream of consciousness. Dennett, in particular, has questioned this notion. On Dennett's view, the contents of consciousness result from what amounts to the ongoing "editing" of the data of experience, not from one unique, consecutive process.²⁴ But even if Dennett's theory were right, it could not imply that consciousness does not consist of a single stream — provided that we take "consciousness" to mean "the possession of a way things seem" (recall Chapter 2). Even if the stream of consciousness were an illusion of some sort (as Dennett's theory suggests it is), there still would be a way things seem *in the illusion* — that is, there would be subjective facts and consciousness events. Given a particular way things seem, it might sometimes seem that another consciousness event of a particular kind just happened. According to the arguments in Chapter 4, this would mean that there really was such a consciousness event. (This would be the case even if no "conscious" processes had happened in the brain before the later consciousness event. In that case, the "earlier" consciousness event could come into being at the same physical time as the "later" one, yet still be earlier in subjective time.) A chain of consciousness events linked together by this relationship would constitute a subject

history. Hence even if Dennett's "Multiple Drafts model"²⁵ were right, it would not have any bearing on my conclusion that there exist streams of consciousness events, and that the life of a subject consists of a stream of consciousness events.

In my opinion, the stream of consciousness which Dennett's theory criticizes is not the same as the phenomenon which I am calling a "stream of consciousness." The stream of consciousness which Dennett rejects is essentially a series of successive "presentations"; Dennett argues that the presentations which this would require do not really occur.²⁶ The stream of consciousness which I am championing is simply a stream of successive *viewpoints*, whose real nature remains open. The consciousness events in the stream need not be or involve "presentations" of the sort which Dennett rejected. Hence the "stream" presented here is not necessarily the same as the stream which Dennett has criticized. When James investigated the stream of consciousness, I think he had the stream of viewpoints in mind. Note also that the stream of consciousness events need not really be temporally continuous (that is, continuous in physical, clock time); it need only seem continuous. Hence Dennett's objection to the view that consciousness is continuous²⁷ is irrelevant here.

My remarks in Chapter 2 about theories of consciousness are important to remember at this point. No theory of consciousness can force us to believe that there are no consciousness events or that no subjective facts are the case.

At most, such theories can only provide us with views about what those items really are. My account of the stream of consciousness utilizes certain relationships among consciousness events, without regard to what consciousness events really are (material? immaterial? behavioral?). Hence no tenable theory about the real nature of consciousness can contradict my account. Furthermore, my account is not a theory of consciousness and does not imply such a theory. I should mention again that Dennett's theory of consciousness does not attempt to refute subjects' claims about the way things seem.²⁸

Subject Identity During Periods of Unconsciousness

A subject can undergo a temporary lapse of consciousness without starting a new subject history and without any interruption of the flow of subjective time. My earlier remarks on anesthesia should make clear why this is the case. States of total unconsciousness such as deep anesthesia need not interrupt the subjective temporal succession of consciousness events. During ordinary waking consciousness, consciousness events continually transpire as physical time passes. Thus, there is a correspondence between the passage of subjective time and that of physical time. During anesthesia, subjective experience fails to flow during some interval of physical time. But *prima facie*, the stream of consciousness is not

interrupted; instead, the usual relationship between physical and subjective time is modified. Anesthetic states do not really break the stream of consciousness. They merely allow an unusual quantity of physical time to elapse during the transition between one temporal phase of that stream and the next. They also may prevent remembering of subjective facts from consciousness events shortly before the anesthesia.

The above remarks hold for states in which a person becomes totally unconscious — that is, undergoes no consciousness events during an interval of physical time. Most so-called unconscious states are not of this sort. Dreaming sleep is accompanied by some subjective activity and therefore is a segment of the subjective time stream, not a gap in it. Such a condition is not a genuine instance of unconsciousness; it is a condition in which the *content* of consciousness has become markedly altered. The same can be said for any other odd state of awareness in which some subjective life persists. Fugues, near-comas with some residual sensation, periods of what Leibniz called "minute perceptions,"²⁹ and the like do not pose any threat to the identity of the subject. (Whether such states can affect *personal* identity is a separate question.)

Three Technical Notes

In the rest of this chapter I will lay out some technical details of my theory of subject histories. The three technical

notes which follow will be of interest mainly to those with interests in logic or in the philosophy of logic; it is possible to skip these notes without loss of continuity. The first note shows how the ideas of subjective time and of subject history can be made rigorous. It also underscores the point that a conscious subject history is not a logical construction. The second note asks the question "To which ontological category does a subject history belong?" The third note examines some topological properties of subjective time, and some possibilities for unusual topologies of subjective time.

Note 1: How To Formalize Subjective Time

This note indicates how the concept of subject history might be formalized. I will point out one way in which this can be done within a second-order formalized language. (For the required logic and set theory, see texts on those subjects.³⁰)

Let F be a class (or, if one prefers, a property) of consciousness events. Define the *subjective precedence relation* on F as the transitive closure of the continuance relation on F . More precisely, say that a relation R is a subjective precedence relation on F if and only if the following three conditions are met: (1) F is the field of R ; (2) for all x and y in F , if x is continued in y then x bears R to y ; (3) R is transitive on F ; and (4) R has no subrelation besides itself which satisfies (1), (2), and (3). Then define a

subject field as a class F of consciousness events with the following properties: (1) F is *nonbranching* — that is, no x in F is continued by two distinct consciousness events in F or continues two distinct consciousness events in F ; (2) F is *maximal* with respect to continuance — that is, (2a) if x is in F and there is some consciousness event y which continues x , then some such y is in F , and (2b) likewise with "continues" replaced by "is continued by"; (3) F is the field of a subjective precedence relation R on F which is *connected* — that is, for any distinct x and y in F , either x bears R to y or y bears R to x . A subjective precedence relation is what we informally call a relation of subjective pastness or "beforeness." Finally, an object is a *subject history* if and only if it is the *mereological composite*³¹ of all consciousness events in some subject field. In other words, the subject history is the whole of which those consciousness events are parts. The subject history is not the subject field (and hence is *not* merely a logical construct), but is a concrete event or process. It is composed of the consciousness events in the subject field, which can be thought of as its temporal parts in subjective time.

Some readers may be bothered by the idea of a whole whose parts are consciousness events. If consciousness events actually are events, then this whole probably is unproblematical; after all, the consciousness events in a subject history are related to one another in a most intimate way, and usually are spatiotemporally contiguous as well. But in the most general case, consciousness events cannot be supposed to be events; all we know for sure is that they are

instances of seeming. It is difficult to imagine how instances of seeming which are not events could be the parts of a whole! I will address these difficulties in the next technical note.

The definition of subject history, whether in the rigorous form above or in the informal version given earlier, reveals the following important properties of subject histories. A subject history is a single stream of consciousness; it cannot be, for example, two parallel streams of consciousness, or a swarm of disconnected consciousness events. The connectedness condition on the subjective precedence relation R insures this uniqueness of the stream. The stipulation that the subject field is nonbranching implies that for each consciousness event x in the subject history, there is a unique, linearly ordered series of consciousness events in the history which lie in the *near* subjective past and future of x (provided that x has a subjective past and future). That is, some segment of subjective time around x has a linear topology. The maximality condition on a subject field insures two things: (a) if a consciousness event x in the history of a subject gives way to some consciousness event y (that is, if x is continued during some y), then some such y also is a part of the history of that subject; (b) if a consciousness event y in the history of a subject has some consciousness event x in continuance, then some such x is part of the history of the same subject as y . In other words, the subject history does not begin later than, or end earlier than, the stream of consciousness. Hence any consciousness event which is part of the same nonbranching "stream of

consciousness" as an event x will belong to the same subject history (or histories) to which x belong(s).

This definition of subject history captures the informal notion of subject identity which I explained informally above. Intuitively, two consciousness events are events in the career of the same subject if and only if they belong to the same subject history.

Note 2: The Ontology of Subject Histories

Intuitively, one may think of a subject history as an event — specifically, as a temporally extended event which has consciousness events as parts. If a consciousness event is indeed an event, then my definition of a subject history agrees with this intuition. However, there is no *a priori* guarantee that all consciousness events really are *events* in the usual sense, or are items that happen in physical time. Thus, we cannot rule out subject histories which are not events or which do not occur in physical time. However, we are safe in regarding a subject history as a certain kind of whole having consciousness events as parts. If the consciousness events really are events, then the history is an event.

A further question arises when we consider the whole which the consciousness events are supposed to form. If consciousness events really are events, then it is possible to assume that these events form a whole, especially in view of the intimate way in which the events are interconnected. This plausibility increases if the events are, for the most

part, contiguous in time and space — as neural events in a single brain might be. It is likely that all consciousness events are events, so a whole composed of consciousness events probably is no more problematical than any other events composed of multiple temporal parts. However, we have not assumed that consciousness events are events. Would instances of seeming which are *not* events form wholes in the required way?

The answer to this question is implicit in the definition of consciousness events as instances of seeming. In Chapter 2, I pointed out that the existence of an instance of seeming or consciousness event does not involve anything over and above facts about how things seem. There is nothing more to the existence of a consciousness event than the obtaining of certain subjective facts. A similar statement can be made about wholes composed of consciousness events. The claim that there is a subject history says nothing more about the world than does the claim that consciousness events of certain sorts exist. (The required sorts of consciousness events include consciousness events for which other consciousness events exist, and which are ordered by this interrelationship in a certain specific way.) This last claim, in turn, says nothing more about the world than does the claim that things seem certain ways in certain instances. Thus, the claim that there are subject histories is as secure as the claim that things seem certain ways. The ways things must seem to make a subject history exist are rather specific; certain instances of seeming must seem in certain other instances to exist, as detailed in the definition of a subject

history.

Note that we may interpret quantifiers over subject histories substitutionally, as we did for consciousness events (and for the same reason).

Those who truly detest the idea that instances of seeming form wholes are free to adopt some other view of what a subject history really is. For example, one might think of a subject history as a *property* of consciousness events. All the consciousness events in John's subject history could be regarded as possessing a common property — say, that of being a "John-consciousness event." One could just as well regard John's subject history as a class of consciousness events (that is, identify the history with its subject field). One might even think of a subject history as a state of affairs involving consciousness events. For example, one can take the real content of "there is a John-history" to be the fact that there are John-consciousness events and non-John-consciousness events in the world. All of these alternatives, particularly the one involving classes, amount to the use of logical constructions as subject histories. As I said earlier, my aim in this book is *not* to find logical constructions which will substitute for objects, but to learn something about the objects themselves.³² I mention these three alternatives, not because I advocate them, but because they allow those who reject my characterization of subject histories to continue reading the book. One can accept much of what comes later in this book without believing that subject histories are wholes made of instances of seeming.

One might wonder whether subject histories even need to

fit into any of the standard ontological categories. Entities as special as *changing viewpoints* or *streams of seeming* might not exactly fit under any other heading. Perhaps subject histories are just — subject histories!

Note 3: The Topology of Subjective Time

The relations of continuance and of subjective pastness have certain formal properties which possess clear psychological meanings. Some of these properties follow from the definitions of continuance and of subjective pastness; others cannot be obtained deductively, but are suggested by ordinary experience. Here I will review some of these properties very briefly.³³ This note presupposes a knowledge of the elementary theory of order, such as is discussed in texts on set theory.

Reflexivity. In ordinary experience, the relation of continuance is irreflexive; a consciousness event does not "contain" itself in the way in which a consciousness event "contains" another consciousness event in continuance. However, the definition of continuance offers no prima facie guarantee of this. Similarly, in ordinary experience subjective pastness is irreflexive; a consciousness event is not experienced later than itself. But the definition of subjective pastness does not guarantee this. Also, the irreflexivity of continuance does not imply the irreflexivity of subjective pastness.

Symmetry. Reflection on everyday experience suggests that continuance is antisymmetric. A human being normally does not have a consciousness event *a*, then have another consciousness event *b* in which *a* is continued, and then immediately have *a* again. However, the definition of continuance does not, *prima facie*, exclude this possibility. Also, we have no *a priori* guarantees that subjective pastness is antisymmetric. The antisymmetry of continuance does not imply the antisymmetry of subjective pastness. If subjective pastness failed to be antisymmetric, then there could be consciousness events *x* and *y* such that *x* is both before and after *y* in subjective time. This would happen if the topology of the subjective time of a subject were closed.³⁴ The irreflexivity of subjective pastness also could fail under these conditions. Such things might happen to a physical observer in a universe which has closed time or permits time travel. I do not know of a way to rule out this possibility.

Transitivity. In our ordinary experience, continuance is not transitive. If it were, then a subject could, at any moment in his/her history, notice all of his/her past experiences in continuance. Such a subject would experience his/her entire past as immediately past; that entire past would seem that it had "just happened." If a subject history (as I have defined it) were like this and also contained more than two consciousness events, then there would be branches in the subject history (a distinct

consciousness event would have to continue more than one consciousness event). The definition of subject history rules this out. Hence there cannot be a subject history (as defined above) in which continuance is transitive, unless there is a subject whose history contains only two consciousness events. For such a short-lived subject, continuance would be vacuously transitive.

Trichotomy and nonbranching. In ordinary experience, continuance does not obey the trichotomy law on consciousness events in a subject history. If x and y are consciousness events in the same subject history and x is in the distant subjective past of y , then x is not continued in y , y is not continued in x , and y is not identical to x . Subjective pastness, restricted to a single subject history, obeys the trichotomy law.

The trichotomy of subjective pastness is an important feature of subjective time. Subjective pastness in a subject history obeys a trichotomy law: for consciousness events x and y , either x subjectively precedes y , or y subjectively precedes x , or x is y . (Since we have not ruled out universes with closed time, we cannot generally regard these "or's" as exclusive.) This trichotomy law excludes cases in which two or more streams of consciousness are parts of the history of the same subject. For example, if a subject splits to give two subjects, the resulting pair of streams of consciousness do not make up the history of a single subject. (I will discuss puzzles about splitting and merging subject histories in Chapter 12.)

For partial orders, trichotomy is known to imply the absence of branches in the order. This implication does not hold in general for the subjective pastness relation; since we cannot rule out the possibility that this relation is topologically closed, we cannot be sure that it is a partial order. Hence a separate nonbranching condition is needed in the formal definition of subject history (recall Appendix A).

Local properties. Subjective pastness also has a significant local topological property: for a subject history with more than two consciousness events (or for any subject history which is not closed), the subjective pastness relation is a linear order when restricted to a sufficiently short segment of the subject history. This is a direct consequence of the definition of subject history.

Summing up: By using the definitions presented in this chapter, we can show that the subjective pastness relation is transitive, and is trichotomous (in a nonexclusive way) if restricted to a single subject history. Ordinary human experience suggests that for human consciousness under ordinary conditions, continuance is antisymmetric and does not obey trichotomy, and that subjective pastness is irreflexive and antisymmetric. For subjects having three or more consciousness events, continuance is not transitive. Subjective pastness behaves like a linear ordering over sufficiently short stretches of an ordinary (that is, non-closed) subject history.

From Brain to Cosmos

Chapter 10

Conscious Beings and Physical Things

Conscious subjects and physical objects are the most important constituents of the observable world. They are the most obvious, and probably the only, sorts of things which persist through time. Nevertheless, the existence of such things is not an obvious consequence of facts about how the world seems. The existence of momentary mental phenomena, and the apparent existence of physical objects, clearly follow from facts about how things seem. However, the existence of real subjects and objects, which really persist through time, may not follow as readily from these facts. (Recall my earlier discussions of Descartes and Hume.)

In this chapter, I will argue that certain facts about how things seem imply the existence of persisting conscious subjects. I will argue also that such facts imply the existence of real persisting objects of which subjects are aware, if we grant that some objects which seem to persist are real. Although I have discussed conscious subject histories in

some detail, I have so far avoided the question of the existence of conscious subjects as such. Here I will try to derive the existence of subjects with the help of subjective facts, and also will build the beginnings of an analogous case for the existence of physical objects.

Of course, one does not have to doubt the existence of subjects or objects to find these arguments interesting. Although a Cartesian or Humean skeptic could take these arguments as refutations of skepticism, my chief motive is not to refute skepticism but to find out whether certain features of the world (the existence of persisting subjects and objects) follow from facts about how things seem.

What Are Diachronic Objects?

We are aware of objects that seem to persist through time. Physical objects are the most obvious examples. A subject may experience what seems to be the same physical object for more than one moment in that subject's history. Thus, what appears to be a single physical object may exist for more than one successive consciousness event in a subject history. I will call an entity *subjectively diachronic* if it exists for more than one successive consciousness event in some subject history.

Physical objects often persist through time while being observed by subjects. Hence physical objects are subjectively diachronic items. Persons or selves also are subjectively diachronic items, at least if they undergo more

than one consciousness event.

Certain puzzles arise when we try to understand the commonsense notions of physical object and of conscious subject. Among these puzzles are the problem of personal identity, which I discussed in Chapter 5, and the similar problem of *physical identity*, which is the problem of how the stages in the history of a physical object form the history of a single, persisting object.¹ The history of a physical object, like that of a person, consists of a series of stages or of events (either one or the other depending upon the exact way one analyzes these histories). These stages or events are tied together in some way to form the history of a single object. It is somewhat problematical that some sets of stages or events are histories of objects while others are not. There also is a problem about our knowledge of temporally persisting objects: how can we be sure that there are any such objects at all? Philosophers have recognized that one does not need to doubt the reality of the physical world to doubt that there are persisting physical objects. The following discussion of some of these ideas may make this point clearer.

Some philosophers have held that the traditional concept of a physical object is not really necessary for understanding the world we discover through sense experience. On this view, the sensible world can be described completely in terms of entities other than physical objects, such as temporary stages or sense data.² If such a description is possible for any experience, then no set of experiences can serve as sufficient evidence for the existence of physical

objects. There always is an alternative description of the experienced world which does not make use of physical objects, and this description has a sort of simplicity on its side.³ If this view were right, then there still would be the strings of stages or events which we usually regard as the histories of physical objects, but there would be no physical objects of the kind in which people normally believe — that is, objects which really persist through time. We must ask whether physical events might frequently occur in temporal series which behave precisely as though they were the histories of diachronic objects, even if there is no single thing which exists during each of these histories.⁴

Philosophers also have expressed doubts about the existence of a persistent self underlying personal experience. Hume is well known for having such doubts.⁵ On views like Hume's, the stream of experiences that makes up the conscious life of a person suffices to account for all the facts of what we normally call personal experience; there is no need to postulate an enduring self behind the stream of experiences.⁶ Even the feeling that I am, that there is a self that persists through time, may be regarded as just another kind of experience in the stream.⁷ On this view there is no need of persons or subjects to account for any feature of sensory experience; histories alone will suffice. A more recent (and very different) critique of the traditional notion of a persisting self comes from Dennett, who has suggested that the self is a fictional entity of a specific sort.⁸

Doubts about the reality of temporally persisting objects

pose a real philosophical challenge. I am not speaking of doubts about the reality of the external world, but of doubts about the temporal persistence of objects in that world, such as I have described in the last two paragraphs. *Prima facie*, these doubts force one to choose between acquiescing in skepticism about persisting objects, or attempting to demonstrate the existence of persisting selves and physical objects.

One convenient way to overcome skepticism about a thing's existence is to find an object of whose existence you are fairly sure and then show that that object is the thing whose existence you doubt. To do this, you must show that the known object answers to the definition of the kind of thing you are skeptical about. The results of such identifications of the known with the unknown sometimes involve substantial side assumptions. (For example, Russell and Carnap attempted to portray physical objects as logical constructions.⁹ Such attempts will yield genuine objects, rather than convenient substitutes, only if one supposes that a physical object can be a logical construct of a certain sort — which I do not.) Fortunately, the theory of subjective time which I introduced earlier provides us with ready-made objects which fit the informal notion of *conscious subjects* in all important respects. I will spend the next several pages leading up to an identification of conscious subjects with those objects.

What Is a Persisting Object?

The history of a diachronic object, as we normally conceive of it, consists of a series of things that happen. Such a history normally includes, and may be composed entirely of, events. Mellor has discussed phases in the careers of objects, during which phases no change happens to the object. Such "thing-stages," Mellor claims, are best not regarded as events.¹⁰ Mellor may well be right about this, but his usage of the word "event" appears to be slightly different from mine.¹¹ Any thing-stage is an entity that transpires, that passes as time passes. It exemplifies happening, and hence is an event in my sense of that word. Thus we can say that the history of a temporally persisting object is a series of events.

We want to try to derive certain claims about the existence of diachronic objects from facts about how things seem. We should ask whether diachronic objects might be identical to anything whose existence we already have derived from those facts. Is there anything in the domain of consciousness events, as described in Chapters 2 through 9, that might be a diachronic object?

Some philosophers, most notably Broad, Russell and Quine, have proposed that diachronic objects are identical to, or should be identified with, their entire histories.¹² At first glance this identification looks implausible. The chief source of this implausibility is the fact that a diachronic

object exists as a whole at each moment in its history. Intuitively, if a diachronic object exists at a time, then at that time the entire object exists; all of its parts exist at that time.¹³ An object history lacks this feature; it has temporal parts,¹⁴ so there is no time at which the entire history presently is happening. Thus, the view that a diachronic object is a history implies that a thing with parts spread out over various times can exist *entirely at a single time*. This looks like a contradiction.

There are at least four sorts of things which a diachronic object might be:

(I) The most skeptical possibility is that it might not be anything. That is, there might not be any real diachronic objects underlying the flow of events. On this view, discourse about such objects is little more than a figure of speech. Hume took (or came close to) this position with regard to subjects.¹⁵ Bergson took a position at least reminiscent of it with regard to physical objects.¹⁶

(II) A diachronic object might be something distinct from its history — some sort of enduring substrate to which the object states or events in the object history somehow belong. This view is essentially the commonsense view of physical objects and persons: an object is not the same thing as a history, but it *has* a history. Common sense suggests that where there is a physical object history there also is something else (a physical object), and that this "something

else" exists entirely at each moment of its history and persists from one moment to the next. One can have a theory of physical identity without knowing exactly what this "something else" really is.

This view seems natural in the light of certain philosophical views of physical and personal identity which do not depend upon the identification of diachronic objects with histories or with composites of events or stages.¹⁷ These views of identity can be carried through even if we do not identify an object with its history; they demand only that the existence of a suitable history implies the existence of an object of a certain sort. Such theories provide analyses of physical or personal identity, but need not explicitly say what kind of an entity a physical object or a person really is.

(III) A diachronic object might be something which is real, but which only seems to exist entirely at each moment. This way misses the notion of a diachronic object. To be diachronic is to persist from one moment to the next. If an object is diachronic, then somehow or other it persists as a whole from one moment to the next. If an object does not exist in this way then the object is not diachronic. This alternative also misses the informal notions of physical object and of person. Things which never exist in their entireties are not normally regarded as persons or as physical objects.¹⁸

(IV) A diachronic object might be an entity which exists entirely at each moment of its existence, *yet also happens*.

That is, it might be something which has temporal parts located at various times, and yet exists entirely at each moment in its history. This alternative seems self-contradictory, but it is inconsistent only if one assumes that temporal parts which exist at one time cannot also exist at another time. This assumption seems obvious on the commonsense conception of time, and on most philosophical accounts of time as well. However, we have arrived at some new views of time in the preceding chapters. We should consider the possibility that these views may make the assumption just mentioned less obvious.

We need to look closely at alternative (IV). On its face, (IV) is simply inconsistent; it appears to imply that there can be an object which exists entirely in the present, and yet has parts which exist in the future or in the past. But on the view of time which I presented earlier, this is not a contradiction at all. The following example shows why not.

Consider a coffee cup which exists at 1 pm. Suppose that the cup has a part — call it *x* — which is an event. The part *x* is located at a time other than 1 pm — say, at 1:30 pm, during a later stage of the cup's existence. We have seen (Chapter 9) that all events both exist and happen tenselessly. Thus it is the case at 1 pm that *x* both exists and happens, even though *x* is not present at 1 pm. Of course, *x* is not located at the time 1 pm, but since *x* exists and happens tenselessly, it is correct to say, at 1 pm, that *x* both exists and happens. (If this sounds strange, re-read the discussion of tenseless happening in Chapter 9.)

This argument extends to any object which has events as parts. Therefore, if an object has events as parts, that object may have parts which are not all located at the same moment of time, and yet still may *exist tenselessly* as a whole at each moment in its existence. This is possible because every event exists tenselessly.

Thus, alternative (IV) is not as inconsistent as it looks. An object which has parts located at different times still can exist as a whole at each moment of its history. At each moment, all of the object's parts really exist. They are located at different times, but nevertheless each of them exists at each moment, in the tenseless way described in Chapter 9. The possibility of all this depends upon the distinction between an event's existing at a time and its being present at that time. If these two notions are not distinguished (and in ordinary discourse they seldom are), then the claim that an item present at one time may be part of an object at another time leads to contradictions.

Of the four alternatives listed above, only (IV) and (II) promise to give us an object which really might be a subject or a physical object. (I) amounts to abandonment of belief in diachronic objects, while (III) implies that there are no genuine diachronic objects, though there may be pseudo diachronic objects. (II) yields an object, but there is nothing we have discovered in our project that could be such an object; for all we know, (II) might be true, but if it were, we could not determine this from the conclusions we have drawn so far. Only (IV) allows us to preserve any immediate hope of deriving the existence of a diachronic

object within our present conceptual scheme. If (IV) holds, we might be able to identify diachronic objects with their *histories*. We already know that there are subject histories; if diachronic objects are histories, this would allow us to conclude that there are subjects. Perhaps we can do something similar for physical objects.

The above arguments suggest that some histories are diachronic objects. However, they do not show that diachronic objects are histories. The conclusion that histories of certain sorts are diachronic objects does not imply that the subjects or physical objects which we think we experience are just histories. Perhaps alternative (II) is right, and subjects and physical objects exist but are not histories. Perhaps physical objects and conscious subjects are real, but the arguments presented in the previous chapters simply leave them out, and do not allow us to show that they exist. These entities might have to be secured in some other way, or (alternative (I)) they might not exist at all.

These other possibilities can be disposed of or rendered harmless. I will do this next.

Intuitively, one thinks of a physical object as a unified whole which has a history and which exists at every moment in that history. One witnesses a stream of events of a certain sort (such as light reflection happening here, then there, then somewhere else), and one supposes that each of these events is part of the history of a single underlying thing. According to our intuitive understanding of physical objects, the physical object is the thing to which the events of the object

history happen — the substratum in which all those events inhere. But the preceding arguments show that the physical object history *itself* is a substratum of precisely this sort. This history exists at each moment of the physical object history, and all events in that history take place within it. And each event in the physical object history is, from one point of view, *something that happens to the history*. To recognize this last point, imagine that the object is a billiard ball and its momentum is changed by the impact of a cue at time t . Then the trajectory of the ball is changed at time t ; hence at time t , something is added to the ball's history. If the ball is destroyed at some time t' , then the history is supplied with an end at t' . Each event happening to the ball takes place in the history and is something that happens to the history; the fact that the event also is a part of the history does not change this. Hence a physical object history has the essential characteristics which define the object *undergoing* a history. A physical object history has properties which we expect to find in the physical object whose history it is.

Similar remarks apply to subject histories. Intuitively, a subject is the locus of consciousness; it is the entity in which consciousness resides. It is an entity for which facts can seem to be the case. A subject history made of consciousness events answers nicely to this description. It is an entity for which facts can seem to be the case (with different facts being the case for different consciousness events in the history). It is a locus of consciousness. It is a thing which has consciousness in it; consciousness is seated

in it. It has a subjective world of apparent facts and beings at each moment. In a certain obvious sense, it is "made of consciousness."

If the conclusions about time discussed in Chapters 7-9 are right, then physical object histories and subject histories answer to the informal notions of physical object and of subject respectively, in all important respects. Hence there is no excuse not to identify these objects and subjects with their histories. Once we have done this, there is no need to doubt the existence of persisting physical objects or of subjects as long as streams of events of the appropriate kinds exist.

We do not need to postulate a separate underlying persisting thing or substratum, distinct from its own history, just to secure the existence of a diachronic object. *The histories already are persisting things, and already are substrata for events.* We cannot strictly rule out the possibility that there is a persisting object distinct from the history. But if there is no such object then there still is a diachronic object — namely, the history itself.

This conclusion completely defeats any skepticism about the existence of diachronic objects. If a follower of Hume's skepticism challenges us to show that a self exists amidst the stream of "impressions,"¹⁹ we can reply that even if there is no self over and above the stream of impressions, the stream itself still is a diachronic object and has the most essential features of what normally is called the self. That is, the stream of impressions to which Hume points *is* the very self for which Hume asks. Skepticism about the existence of

persisting physical objects meets with a like fate. If there is no physical object distinct from the stream of physical events or stages which make up a physical object history, then that history *is* the physical object.

One objection to alternative (IV) is that it seems to imply that a diachronic object exists at times earlier than its beginning or later than its ending in time. If an object exists tenselessly, then at each time it is correct to say that that object exists. Hence a diachronic object exists as a whole at each time, even before its history begins or after its history ends. This seems to imply the falsehood that the object has no beginning or ending in time. This objection, like other objections to alternative (IV), is based on a misunderstanding of the distinction between existing at a time and being located at a time. The tenseless existence of a diachronic object does not imply that that object always is present. The object is temporally located between the beginning of its history and the end of its history; it can be present only during those times. Nevertheless, it exists tenselessly. At times before or after its history, it is located in the future or in the past instead of in the present. It exists — but that does not make it present.

All objections aside, the view that physical objects and subjects are histories may simply seem strange. Normally we do not think of ourselves or of physical objects as things that *happen* in the same way that dawns and fires happen. The following argument may help to counteract this uneasiness. It suggests that the persisting objects which we perceive actually *appear to us to be temporally extended*,

whether or not we realize it or think about it.

Suppose that a coffee cup is subjectively diachronic for someone's subject history. The cup exists for each consciousness event in a certain segment of that history. Think about two consecutive consciousness events in that segment. Call those events *y* and *z*. The cup exists for *z*; hence for *z*, the cup is present. But since *y* is continued in *z*, *z* may also involve the appearance that the cup was present a moment before. (Recall what I said in Chapter 4 about hearing a loud noise.) Thus, the subject can notice, during *z*, that the cup exists in the immediate past. But at the moment *z*, the cup also is located in the present moment of subjective time. These two facts together imply that the coffee cup is temporally extended in subjective time — that is, it occupies at least two subjective moments, as viewed from the vantage point of the single subjective moment *z*. Thus, the experience of the coffee cup involves items at different subjective moments being present simultaneously to a subject's consciousness. In other words, the cup *as experienced now* has temporal parts at different subjective times.

This argument, when suitably generalized, suggests that all subjectively diachronic objects in our experience have temporal parts which exist at different subjective moments. This supports the view that diachronic objects are histories of some sort. The argument is suggestive rather than conclusive, but at least it shows that it is not too strange to suppose that the diachronic objects which we perceive are temporally extended. Our perceptions of physical objects

carry over into future moments in a way which allows us to be aware of those objects (directly or indirectly) at two different subjective times at once.

In any case, we achieve no conceptual economy or simplicity by refusing to identify diachronic objects with their histories. If we postulate, along with each diachronic object history, another object which we identify as the diachronic object itself, then we are positing two entities of different kinds rather than one entity. In view of what I just said about the coffee cup, this other object probably would have to be temporally extended anyhow. Such redoubling of objects is not inconsistent; we might find other reasons for duplicating entities in this way, but economy is not one of them.

Why Things Appear to Be Temporally Unextended

A physical object is a history. Nevertheless, physical objects appear to us to be purely spatial and devoid of temporal parts. The physical basis of this fact is well-known to physicists: at any given time in an observer's history, the observer can perceive only a three-dimensional slice of a four-dimensional object history. In other words, at any given moment in one's own history, one only perceives a brief stage in the object's history. There is little more to be said about the reason why things appear three-dimensional. In this section I will offer a few remarks connecting this

reason to the ideas presented earlier in this chapter.

Look at a coffee cup. At any moment (consciousness event) in your history during the time you are looking at the cup, only a short stretch of the cup's history exists for you. This stretch amounts to a three-dimensional slice through the history of the cup, which is four-dimensional. (This slice has finite temporal thickness, since our sense organs obviously do not have infinite time resolution.) But according to the arguments of this chapter, the history of the cup *is* the cup. Hence if spacetime is four-dimensional, then a coffee cup, as it really is, is four-dimensional. It only seems to be three-dimensional. At any moment of your subjective time, you perceive the cup as an instantaneous (three-dimensional) object. These remarks apply not only to coffee cups, but to all physical objects which you might perceive. At any given time, your senses (actually, stages in the histories of your sense organs) receive information from the events in a brief slice of the object's history and not from other events in the history.

A diachronic object is "wholly spatial" in a generalized sense: at any given time, it is the case that all parts of the object exist. Hence there is an extended but legitimate sense in which a physical object is wholly spatial or three-dimensional. But speaking literally, we can say that diachronic objects have more than three dimensions, because they are temporally extended histories.

It is important to note that I have not yet showed that the existence of persisting physical objects follows from facts about how things seem. Instead, I have shown that

persisting physical objects are histories if they really exist. The argument here also shows that the appearance of a physical object is an apparent history — that is, to have an experience of a physical object (whether illusory or not) is to have an experience of a history.

Closing Remarks on the Self

The view of the persisting conscious subject presented in this chapter allows us to overcome any lingering skepticism about the self. There can be a self even if there is no diachronic ego of the traditional sort — no core of a person's makeup which exists first wholly at one moment, then wholly at another moment, and so forth.

My account of subject history leaves open the possibility that there is nothing to a subject but a stream of consciousness events. Certainly such a stream of consciousness suffices to account for the properties of personal experience. But according to my view of time, such a stream of consciousness also is a diachronic entity. One consequence of this identification of subject with history is that the self not only exists now, but also contains its past and future (or possible futures) as parts. This conception of the subject resembles Bergson's in some respects. Bergson held that for living beings, the past persists and builds up in the present; apparently he also held that the future exists as "potentialities."²⁰

Another consequence of this account of the self is that no

subject is located exclusively at a particular time, even if that subject does pass through stages at particular times. Hence subjects transcend time in a way reminiscent of the way in which the personal idealists George Howison and Borden Bowne said they did.²¹ Despite their possession of temporal lives, subjects are in one sense timeless. This transtemporal character of the subject is fully compatible with the subject's possession of a life in time.

Of course, the consciousness of a subject can be confined to the present moment in an obvious sense, even though the subject is temporally extended. During a particular consciousness event in a subject's history, that consciousness event is the only consciousness which the subject presently has. At that subjective moment, the current consciousness event is the subject's only present consciousness. From the subject's point of view, this consciousness moves forward in time as one consciousness event seems to replace another and to become the present consciousness of the subject.

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Chapter 11

The Structure of the Self

In the previous chapter I proposed the beginnings of a theory of the conscious subject. In this chapter I will investigate the *psychology* of conscious subjects — that is, the specific mental characteristics which subjects must, or may, have. I will concentrate on two characteristics which are important in human mental life: the presence of unconscious mental processes and the possibility of a lack of unity within the self. Both of these features of mental life play important roles in psychological and philosophical theories about the human mind.

The importance of the idea of the unconscious in psychological theories is well-known. The hypothesis of a nonunified self or mind also has psychological and philosophical importance; it plays major roles in theories of irrationality¹ and of certain problems of personal identity.² My chief aim here is to show that the existence of unconscious contents and of multiple "compartments"³ within the ego is compatible with my account of the subject.

Indeed, my account predicts that these features are possible for subjects. Another aim of this chapter is to show that disunity of the ego, of the sorts postulated by the theories mentioned above, cannot compromise in any way the unity of the conscious subject. It is wrong to use the psychological disunity of the subject to infer that there is not really one single subject.

The Conscious Subject: A Review

Let me begin by reviewing in three paragraphs some of my earlier conclusions about conscious subjects.

A subject's history consists of a series of consciousness events. These events are specious moments of conscious life; they are not to be confused with individual events of sensing, thinking, feeling, and the like, since one can sense, think, feel, etc. simultaneously during the course of a single consciousness event. Also, the same subjective mental process — the same thought, emotion, or sensation — may go on in you during more than one consciousness event. (For example, you may look at a green rectangle and continue to stare at it for a while, thereby having a single prolonged sensation of green.)

Subjective time is a feature of the stream of consciousness events; this stream constitutes the history of a subject. The subjectively experienced succession of events results from the subjective existence, for each consciousness event, of a consciousness event which preceded it. There

are subjective tenses and there is a subjective movement of time; these can exist for the consciousness of the subject, although tense is not objectively real.

A subject contains as parts its own past and future. The subject's past and future exist objectively, and the subject's own immediate past exists for the subject's present consciousness event as well. This inclusion of the past and the future in the subject make the subject a temporally extended entity. Due to certain features of subjective time, this temporally extended entity also is an entity which *persists* through time. There may not be any persistent, substantial self apart from this entity.

A Subject Is Not an Ego

Some philosophical views of personality seem to imply that a person is an ego, or conscious mind. Descartes is notorious for making this identification explicit — or seeming to do so. The soul with which Descartes identifies a person is "a thinking being"⁴ and is more or less transparent to introspection⁵; hence it is, more or less, what we today would call an ego. (The well-known fact that Descartes conceived this soul as a nonphysical substance distinct from the brain is irrelevant here. The relevant fact is that on Descartes' view, a conscious subject is first and foremost a being with intellect and volition. One need not accept Descartes' dualism to accept this.) Views like Descartes' suggest that drives and similar psychological

processes do not really belong to the self. On such views, these processes might be regarded as bodily rather than as mental — perhaps as disturbing influences on the self arising from processes in the body.⁶

Other philosophers, before and after Descartes, have rejected this ego-oriented viewpoint. They have developed views of the self in which the rational, moral ego does not occupy the entire picture. Plato admitted "appetitive" and "spirited" factors (that is, urges, drives and emotions) into the makeup of the soul.⁷ Some German idealists, notably Hartmann and Schopenhauer, stressed the ascendancy of unconscious over conscious processes.⁸ More recently, several philosophers have emphasized the possible *disunity* of the ego. Donald Davidson and David Pears both have explored models in which different mental components or compartments exist together within the same person.⁹ Some scientists and philosophers have interpreted neurosurgical findings in ways that seem to imply that the ego can become disunited under certain circumstances.¹⁰ For quite different reasons, some current philosophers of mind portray the human mind as arising from interacting "homunculi."¹¹

The view that one's entire self consists solely of one's ego is hard to reconcile with most modern psychological theories. Psychologists long have known that there are "mental" processes going on in us of which we know nothing. Psychoanalytic theory depicts the unconscious as the largest part of the psyche.¹² But even those who reject

psychoanalysis have to recognize that many psychological phenomena happen without the participation of what we call our consciousness. Even a person who knows nothing of psychological theories cannot help but notice that people undergo dreams, involuntary habits, and other phenomena which seem to originate from the person but not from the person's conscious self.

The psychological theories and observations mentioned in the last paragraph do not strictly force us to believe that unconscious or non-rational psychological processes take place within the self, rather than originating from some (bodily) source outside the self. One can acknowledge the existence of unconscious phenomena, and even of the psychoanalytical unconscious, and still tenaciously hold that one is one's ego and nothing more. One can stubbornly hold that reasoning is an activity of the self while also maintaining that the drives are not activities of the self. Nevertheless, the psychological facts do suggest that the equation of the self with the ego does not quite balance. Although that equation does not really contradict any of the data of psychology, it is difficult to find any supportable basis for such an identification. From a metaphysical point of view, "bodily" drives are just as "mental" as abstract thoughts or religious feelings. All these processes take place in the realm of subjective experience, even though some of them feel more "physical" than others. The drives either are conscious mental contents or are capable of "surfacing" and becoming conscious mental contents. Even if one attributes the causation of the drives to processes outside the self, one

cannot help but regard them as parts of the life of the self once those causes have acted. The same conclusion applies to alleged unconscious things that are even more difficult to make conscious, such as repressed fears and information denied through self-deception.

A subject's history is a stream of consciousness events. Each of the consciousness events may involve many different subjective processes; for example, a thought, an emotion, a biological urge, and a visual sensation may all play roles in the same moment of subjective life. Each of these subjective processes contributes to the consciousness event as much as any of the other processes does. Each process plays a part in experience in exactly the same way as do all the others. All of the processes play parts in the subject's "inner world" — the mental realm comprised by the way things seem. There are no grounds for regarding some of the contents as "truly mental" and others as exclusively "bodily," or for regarding some as belonging to consciousness and others as somehow extraneous to the mind.

Unknown Experiences

The following argument points out a way in which a subject may undergo an experience *without being able to know that that experience has happened*. The conclusion that this is possible has an interesting consequence: that some of the *conscious* processes going on within a subject

may not be directly knowable by that subject.¹³

Suppose that a subject John has a consciousness event — call it *x* — and that one of the psychological contents which exists for *x* is (to use a Freudian-sounding example) a wish to commit adultery. If *x* is not the last consciousness event in John's history, then there is another consciousness event — call it *y* — in John's history such that *x* exists for *y*. But this does not imply that it is the case for *y* that a wish to commit adultery has occurred. This lack of implication follows from the logical incompleteness of consciousness events, which I discussed in Chapter 3. It is the case for *y* that *x* exists, and it is the case objectively that an adulterous wish is among the contents of *x*. But this does not imply that for *y*, it is the case that an adulterous wish occurs. Thus it is logically possible that it is *not* the case that for *y*, an adulterous wish occurs. The logical incompleteness of consciousness events ensures that a consciousness event may "overlook" some of the contents of its predecessor in this way. Such "overlooking" leaves the subject *incapable of thinking about some of his or her own contents*.

In Chapter 4 I argued that the contents of a consciousness event which exists for another consciousness event can be known with certainty under certain conditions. The argument of the preceding paragraph does not contradict this. If *y* involves continuance of *x* and *y* also involves feeling the adulterous wish present to *x*, then John might be able to know with certainty that the wish had occurred. But the fact that *y* involves continuance of *x* does not imply that *y* involves awareness of *all* of the content of *x*. It could be

the case that the existence of *x* is a fact for *y*, but the presence of the wish is not. Continuance of a consciousness event *x* need not involve awareness of all subjective facts about *x*. There is no reason why it must involve awareness that a particular fact is the case for *x*, even if that fact really is the case for *x*.

The Nature of the Unconscious: An Hypothesis

This possibility of having an experience and not being aware later that one has had that experience amounts to the possibility of unconscious mental processes of a sort. In the adultery example above, John never notices directly the presence of his own adulterous wish. It is conceivable that John never becomes aware of the existence of that wish at any later subjective time. If that were the case, then John never would be able to think consciously about the fact that he once had the adulterous wish. Nevertheless, he really did experience that wish when he had it. John's adulterous wish is much like what psychologists call an item of unconscious content. It is genuinely mental, an element of John's inner life; if we like, we can say that it is in John's psyche, just as much as John's conscious thoughts are in his psyche. Yet the wish, though technically a content of consciousness, is *unconscious* in the sense that John, who has it, never knows that it happened.

Contents which become unknowable to the subject in this way are genuine contents of a subject's consciousness. They

are in the subjective realms of the consciousness events of a subject; they are things that exist, or are the case, for that subject's consciousness events. But those contents are unconscious in the sense that the subject who has them does not know that they are there. In particular, they never can be discovered through introspection. One must be careful not to fall into verbal confusion here, for a content that a psychologist would call "unconscious" still can be "conscious" in my sense of that word. (Recall my discussion of consciousness in Chapter 2.) Unconscious contents of this sort are facts and things that one experiences without knowing that one has experienced them.¹⁴ They belong to the subject in exactly the same way in which, for example, a well-considered thought about morality belongs to the subject.

The chief difference between the unconscious adulterous urge and the conscious moral thought lies in the way in which these two elements of experience are experienced *after* they occur. The presence of the unconscious content involves the subjective truth of some fact for the subject. Yet it never is the case for the subject that that fact *once was* the case for that subject. The consciousness event for which that fact is the case nevertheless exists for the consciousness of the subject.

The conception of the conscious subject which I put forth in earlier chapters has turned out to be far richer than it first appeared to be. The stream of consciousness events that constitutes a subject's life need not contain only psychological processes which we ordinarily regard as

"conscious." It also may include processes which a psychologist would call "unconscious."

The preceding discussion of unconscious processes shows that I have been using the term "consciousness" in a sense different from the standard psychological one. This should be no surprise; in Chapter 2 I said that I would use the word "consciousness" in a special sense. There I characterized consciousness as the possession of a way that things seem, or of a point of view. Phenomena that are unconscious in the psychological sense can still be contents of consciousness in my sense. Psychologists and others often use the word "conscious" to refer to the realm of psychological phenomena of which the subject *can know directly*, that is, to the contents of the subject's ego; they designate all other mental processes "unconscious."¹⁵ This is not the sense of "conscious" which I laid out in Chapter 2. My characterization of consciousness was meant to capture certain commonsensical and philosophical usages of "consciousness" — not standard psychological usages. It encompasses all subjective phenomena, whether known to the subject or not. It is a concept far broader than what many psychologists and others call "consciousness."

Conscious mental life, according to the sense of "conscious" in which I am interested here, may encompass much or all of what some psychologists call the "psyche" — the entire inner or psychological life of a subject.¹⁶ We may speculate that the unconscious mind is just that section of the subject's consciousness which is unknown to the subject for reasons described above. If this speculation is correct,

then one's unconscious might be a genuine part of one's self, and indeed the *greater* part of that self.

Of course, this is only a speculation. We have not shown that real unconscious mental phenomena are phenomena of the sort which I have described. However, this interpretation of the unconscious appears to be compatible with all that we know about the unconscious.

It is important to keep in mind that this hypothesis is not a full explanation of the unconscious, or of any particular unconscious mental phenomenon. An explanation of unconscious mental life would have to account for the phenomena of that life in terms of brain activity, as well as dealing adequately with the metaphysics of those phenomena. My remarks about the unconscious are meant only to make one point about the metaphysics of the unconscious. This point is that unconscious processes may be, in a wider sense, *conscious* — that is, they may be conscious processes of a peculiar sort. They may involve subjective fact and a viewpoint, just as do the phenomena which are more conspicuously conscious.

A conscious subject has a subjective side as well as an objective side — an inner as well as an outer aspect. There are ways things seem to a subject, and there are apparent realms of things that exist for a subject (or at least of facts that are the case for the subject) in addition to the world of things that exist objectively. It is this involvement in subjective fact that makes a conscious subject a truly psychological being — a being which has a psychological life. It is subjective fact which confers upon psychological

phenomena their peculiarly mental character. The occurrence of subjective fact in the world is not restricted to the sort of consciousness demarcated by the boundaries of our egos. Instead, it pervades all genuine psychological life. All beings endowed with real subjective life of any sort, conscious or unconscious, are beings for which facts sometimes are the case.

The Absolute Unity of the Subject

The idea of a non-unified mind is contrary to some views of human nature. However, as I have mentioned, this idea is important in the philosophy of mind and of action as well as in psychoanalytic theory. As I will show, my account of subjects allows subjects to be psychologically fragmented or compartmentalized in a way which seems adequate for the purposes of philosophy and psychology. However, this fragmentation does not compromise the underlying unity of the subject in any way. The subject still is one stream of consciousness. It is merely the *content of the subject's experience* which is compartmented. There are no divided selves; there are only selves with divided experience.

We may characterize a psychologically fragmented subject informally as one who has several distinct contents of which he/she is aware, but who is not aware of all of those contents together. For example, a psychologically fragmented person might love and hate the same person, might feel the love and simultaneously feel the hate, and still

fail to notice that he/she both loves and hates the same person at the same time. On some philosophical accounts of irrationality¹⁷, mental contents are grouped into compartments in such a way that contents in different compartments do not affect each other's behavioral roles in the usual way and to the usual extent. For example, suppose that a person knows enough to realize that a belief P is irrational but believes P anyhow; on a view explored by Pears, this may indicate that P and the "cautionary belief" that P is irrational are in different "systems."¹⁸

The account of the conscious subject presented in this book suggests a way to understand this compartmentation. Let us begin with an example. Suppose that a subject (called A) has a consciousness event x whose contents include love of another person (called B) and hate toward the same person. Let y be the successor of x in A's history. Suppose that y involves direct awareness of both the love of B and the hate toward B — that is, for y love of B is present, and for y hate toward B is present. Then A is aware of love of B and of hate toward B. Yet because consciousness events are logically incomplete, it is possible that A never has any direct awareness of the love of B and of the hate toward B *together*.

The Logic of Confusion: Some Technical Points

Let us look at this example in great detail, using the language of subjective fact.

If at y , A both loves and hates B, then the following are true:

- (1) For y , love of B is present.
- (2) For y , hate toward B is present.

If A becomes aware that he simultaneously loves and hates B, then the following is the case:

- (3) For some consciousness event z in A's life, love of B is present and hate toward B is present.

Note that (3) does not follow from (1) and (2). Due to the possible logical incompleteness of the consciousness event y in (1) and (2), we cannot pass from (1) and (2) to

- (4) For y , love of B is present and hate toward B is present.

We also cannot infer (4) with y replaced by some other consciousness event besides y , since (1) and (2) only tell us what is the case for y .

We cannot pass from (1) and (2) to (3) because consciousness events are logically incomplete. A logical consequence of what is the case for a consciousness event need not be the case for that consciousness event. In this instance, both "Love of B is present" and "Hate toward B is present" are the case for y ; these two sentences imply the conjunction "Love of B is present and hate toward B is

present." But this does not allow us to infer that the conjunction is the case for y . That is, it need not be the case that A is aware that he both loves and hates B . Because y is logically incomplete, y may involve awareness of love of B and awareness of hate toward B , but still need not involve awareness of the combined love-and-hate toward B . The two emotional tones may be noticed separately without ever being caught together.

It may seem odd that a basic logical principle such as the rule of adjunction (from L and H , to infer $L\&H$) may fail to hold for our awareness in this manner. Actually, such failures are commonplace — and needless to say, they do not involve any real contradiction. The following example illustrates one such failure. I glance briefly at a disorderly pattern of eleven dots of different colors. At once I am aware that the dots are distinct from each other; they are at different locations in my visual field, and they are differently colored. But the fact that there are 11 dots may not be a fact of which I am immediately aware; I may have to count to find out that I have in fact seen 11 dots. In this example, all the dots initially are perceived in one perceptual act; it may well be that all the dots are perceived during a single consciousness event E . Suppose, for the sake of the example, that this is what happens. If we give the names ' x_1 ', ' x_2 ', ..., ' x_{11} ' to the dots, then the following premises are the case for E :

(P_1) x_1 is a dot and is not identical to any of x_2, x_3, \dots ,

x_{11} .

(P₂) x_2 is a dot and is not identical to any of $x_1, x_3, x_4,$
..., x_{11} .

(P₃) x_3 is a dot and is not identical to any of $x_1, x_2, x_4,$
..., x_{11} .

...

(P₁₁) x_{11} is a dot and is not identical to any of $x_1, x_2, x_3,$
..., x_{10} .

The conclusion that there are precisely 11 dots follows from these 11 premises by logic alone. (There even is a way to express "there are 11 dots" in the language of quantifier logic alone, without using any numbers.¹⁹) All of the 11 premises of this argument are true for my consciousness at the moment that I see the dots, provided that all the dots are in my visual field and that my visual capacities are normal. (Note that this does *not* mean that I have named the dots, whether with names like ' x_1 ' or otherwise.) Yet the conclusion which follows from these premises — that there are 11 dots — is not the case for E. To confirm this conclusion, I have to count. Although it is not the case for me then that there are 11 dots, neither is it the case for me that there are *not* 11 dots. Nevertheless, it is the case objectively that either there are 11 dots or there are not 11

dots.

The fragmentation of our consciousness of our emotions provides an example of logical incompleteness analogous to the example of the eleven dots. This incompleteness is reflected in the psychological fact that feeling love and simultaneously feeling hate does not guarantee an awareness that one is feeling love and hate at the same time. It is possible to experience love and simultaneously to experience hate without experiencing the combination of the two — that is, without noticing that one has conflicting feelings.

There is another way in which two feelings may be kept from simultaneous awareness. This way is closely analogous to the way in which contents may become unconscious. A person can fail to be aware, at any given time, of one of the two opposing feelings — but the person may be unaware of one feeling at one time and of its opposite at another time. A consciousness event in A's history may have hate toward B but not love of B as contents, while another consciousness event may have only the love, not the hate. Thus A is aware of loving B or of hating B, but never is aware of both at once. In this form of fragmentation, one content is "conscious" at a given moment; the other content is "unconscious" at that moment. At a particular time, A may only love B or only hate B. If events of the two kinds alternate rapidly, A may appear to other subjects to love and hate B at almost the same moment. A may or may not become aware of these alterations.

The logical incompleteness of consciousness events allows mix-ups like these to happen with beliefs as well as with emotions. A subject may fail to see that there is a contradiction among contradictory beliefs, even though the contradiction is glaring. Psychologists describe certain real-life cases of this as the possession of "logic-tight compartments."²⁰ Such compartmentalization can be understood in much the same ways that the having of opposing feelings can be understood. A subject A who holds contradictory beliefs that P and that Q might have a consciousness event x during which the belief that P and the belief that Q are present. Yet he might have no consciousness event in which he is aware that he believes both P and Q. If this happens, then A is unaware that he has both beliefs. He cannot convict himself of inconsistency, in spite of his inconsistency.

The second sort of fragmentation described above — in which two feelings become conscious but not at the same time — also may happen with beliefs. One need only replace the love of B and hate toward B in my previous example with the belief that P and the belief that Q.

These simple examples extend easily to more complicated cases in which a compartment "contains" several beliefs, feelings, or the like. One can get complex compartmentalizations in this way. For the record, I will write out in full one example of this sort.

Suppose that the following statements are true of a consciousness event y in a subject's history. As before, let P and Q be two mutually contradictory sentences (or

propositions) and let B be a person.

For y, hate toward B is present.

For y, acceptance of P is present.

For y, hate toward B is present and acceptance of P is present.

For y, love of B is present.

For y, acceptance of Q is present.

For y, love of B is present and acceptance of Q is present.

It is *not* the case that for y, hate toward B is present and love of B is present.

It is *not* the case that for y, acceptance of P is present and acceptance of Q is present.

It is *not* the case that for y, hate toward B is present and acceptance of Q is present.

It is *not* the case that for y, love of B is present and acceptance of P is present.

In other words: for y, "Hate toward B is present" and

"Acceptance of P is present" are the case together, and so are "Love of B is present" and "Acceptance of Q is present"; but the hate toward B and the acceptance of P cannot coexist with the love of B or the acceptance of Q. The existence of such a consciousness event would imply a mental situation in which the hate toward B and the belief that P are in one "compartment" and simultaneously the love of B and the belief that Q are in another "compartment." Worse yet, one can imagine an example in which these two compartments enter the subject's awareness at different times.

It should be clear by now that my model of the subject allows for the possibilities of fragmentation and compartmentation of the self. These possibilities are consequences of the logical incompleteness of consciousness events. (Note that I have not provided any kind of an *explanation*, neurophysiological or otherwise, for the fragmentation or compartmentation of the self. Rather, I have simply shown that my account of the subject allows this possibility.)

The Self: Real Unity in Apparent Multiplicity

Now we can see how a human subject might suffer from psychological disunity and fragmentation even while that subject remains *absolutely one* in an ontological sense (that is, remains a single subject with a single stream of consciousness). A subject's inner life may contain incompatible feelings, thoughts, and impulses. It may have

many compartments. It may be subject to rapid changes and fluctuations of feeling and of belief. A subject might even be quite contradictory and manifold in all of these ways without ever being aware of his, her or its own fragmentation. Yet such fragmentation of experience does not change the fact that the subject is *one entity* — a *metaphysical unity*. At each moment of a subject's life, there is one underlying stream of awareness, one diachronic seat or substratum of awareness.

Psychological disunity does not imply the metaphysical disunity of the self. Psychological unity actually has little to do with metaphysical unity. It is not the self, but the content of the experience had by the self, which can fail to be one.

The analysis of psychological disunity presented in this chapter shows that philosophical viewpoints which uphold the unity of the self are compatible with the hypotheses that the mind is partly unconscious and suffers from fragmentation and impermanence. The idea that the self is a true individual cannot be threatened by the disunity of our experience.²¹ Of course, the disunity of the self can have practical consequences; it may explain weakness of will and so forth. But even a weak-willed subject is an ontological unit. In such a subject, the unity may be well-hidden, but it is there.

A subject may have different conflicting thoughts, feelings, and intentions at the same moment. A subject also may have different and conflicting contents at different moments. Behind this panorama of psychological fragmentation is an underlying metaphysical unity — the

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diachronic subject, tenselessly real, *possessor* of the inner realms in which the fragmentation occurs. There is at all times a single flow of consciousness which belongs to the subject. This stream, which exists both temporally and tenselessly, is the real conscious subject, who may be far more inclusive than the empirical self one normally thinks one is. The subject is a true *individual*.

Chapter 12

Personal Identity: Some Problems

In this chapter I will explore a specific application of the theory of conscious subjects developed earlier. I will address the puzzling question of what happens when one conscious subject divides in two, or when two conscious subjects merge into one.¹ Problems about dividing and merging subjects have been studied extensively by philosophers. Such problems may be of great practical significance. In neurosurgery, cases arise in which a person's brain is divided down the middle, resulting in a person who seems in some respects to be of two minds.² Attempts to understand the philosophical issues raised by such cases can lead to difficult logical puzzles; the toughest puzzle cases regarding personal identity are those in which persons divide or fuse.³

The problems of splitting and merging persons are among the standard philosophical problems about personal identity. Here I will study the same problems, but with conscious subjects, as defined in Chapters 5 and 10, taking the place of

persons. (The difference between the notion of person and that of conscious subject was discussed in Chapter 5.) The ideas about subjects and time developed in earlier chapters will enable me to propose solutions to these problems. These solutions depend crucially upon my earlier conclusion that a subject is, or is intimately related to, a history of a special sort. I will show that if one sticks to my view of the subject at every step in the analysis of dividing and merging subjects, the problems about such subjects begin to look very different and to be much more tractable.

Splitting Subjects

Consider first the case in which one subject splits to become two subjects. This is the most realistic of all the puzzle cases I will discuss, since it parallels what happens during split-brain surgery for epilepsy.⁴ (Later I will argue that this parallel is not close enough to justify regarding a split-brain patient as a double subject. But the parallel might be exact if the patient were split into two nearly equal, *fully separated* parts. Such a split eventually might become technically possible.)

To understand what happens during the splitting of a conscious subject, we must study in detail the different things and events that appear or disappear during this remarkable process. It is much easier to do this if we label those things and events with symbols. I will do this here, though I will not be using any symbolic logic or other

mathematics. The following argument is somewhat intricate, but intricacy is unavoidable when one is dealing with an intricate problem.

Let *S* be a subject who persists through time. For concreteness, suppose that *S* is a human subject who persists through physical time, and let all the times in the following argument be physical times indicated by some particular clock.

Suppose that *S* exists at time t_1 as indicated by some clock. (*S* also may exist before t_1 .) Suppose further that *S* persists through time until t_2 , and then splits into two essentially equal parts, which we call *T* and *U*. I will not discuss the possible means of splitting here; these details have been covered elsewhere in the literature.⁵ After the split, each of *T* and *U* exhibits behaviors that we normally regard as conclusive evidence of personhood, or at least of subjecthood. *T* and *U* continue to exist at least until time t_3 . There is no splitting of any person other than the one at t_2 .

A conventional description of this sequence of events might run as follows. Between t_1 and t_2 there is only one person, *S*. Between t_2 and t_3 there are two persons, *T* and *U*. Apparently, *T* and *U* were created when *S* divided.

If *S* really divided and *T* and *U* really were created by the splitting, then some widely discussed questions about personal identity confront us. Is either *T* or *U* the same person as *S*? Is neither one the same person as *S*? Are both *T* and *U* somehow the same person as *S*? One also can ask these questions with "person" replaced by "conscious

subject." The answers to these questions are far from obvious.

My account of the conscious subject allows us to propose answers to these questions, if we ask the questions about subjects instead of about persons. If my account is right, then the above conventional description of the splitting of a subject leaves out something crucial. That description treats the subject as though it were simply an entity which persists through time. But as we saw in Chapter 10, a subject is a temporally extended entity. A revised description of the events described above, taking into account the view of subject as history, makes questions of subject identity much more tractable.

The following argument shows us what the needed description must be like.

Consider the set V of all consciousness events involved in the splitting-subject scenario outlined above. This set includes a consciousness event x_1 which is present at t_1 . It also includes two events, x_3 and x_4 , at t_3 . At t_2 there is a fork in the series of events. One side of the fork leads to x_3 ; the other leads to x_4 . There also is a final consciousness event x_2 in the pre-split part of V — that is, in the set of all consciousness events in V which are subjectively earlier than the split. (For those who care, the proof of the preceding statement runs as follows. If there were no such final consciousness event, then there would be no final element in the segment G of V that comes before the split. Hence G would have to include an infinite series of

consciousness events approaching but never quite reaching the split. But this implies that no consciousness event in V after the split would be the successor of any of the events in G.)

One can trace an unbroken chain W of consciousness events from any consciousness events earlier than x_1 , through x_1 , through x_2 , and thence to x_3 and later consciousness events. One can trace another similar chain X from before x_1 , through x_1 , through x_2 , and thence to x_4 and later consciousness events. Each of the chains W and X is a series of consciousness events in which each member besides the very last is connected to the previous member by the continuance relation.

The part of V up to and including x_2 is like a subject history but with one difference. In Chapter 5 I pointed out that a subject history is maximal — that is, one cannot follow it to the end and then find more consciousness events that immediately succeed the one at the history's end but are not part of the history. The part of V up to and including x_2 is not maximal; one can trace through its end at x_2 and find more consciousness events which are not parts of it. The same can be said for each of the branches of V after x_2 ; both are like subject histories except that they can be extended into the subjective past. If one glues together the part of V up to x_2 with the branch of V from x_2 through x_3 , one gets a stream of consciousness which *is* maximal. But this is just W. Thus W turns out to be a subject history. By a similar argument, X is a subject history. But the part of V earlier

than x_2 is not a complete subject history, and neither of the branches of V after x_2 is a subject history. Finally, V itself is not a single stream, and therefore is not a subject history. (In the terms I used in the technical notes for Chapter 5, V is not locally linearly ordered.)

In view of these considerations, we arrive at the following description of the splitting of a subject, which is more accurate than the original description. Before t_2 there is a subject whose future includes x_3 (this subject is the history W). Before t_2 there also is a subject whose future includes x_4 (this subject is the history X). After t_2 there are the same two subjects, W and X . But W and X have an unusual feature: *they share a segment of history in common*. Every consciousness event in X 's history subjectively earlier than or at x_2 also belongs to W , and vice versa. In other words, the piece of history up to and including x_2 belongs both to W and to X . W and X do not share any parts of their histories after x_2 ; after x_2 , they act like ordinary independent subjects.

This new description embodies a possibility mentioned by Foster — namely, the possibility that dividing or merging subjects possess a common piece of history.⁶

In this new description, there is no single subject S that divides at t_2 . Instead there are two subjects before the "split" and two subjects afterward. These two subjects share the piece of subject history preceding the split. Because of this sharing of history, there *appeared* to be one subject before the split. At each moment between t_1 and t_2 , the subjects W

and X have the same spatial parts and undergo the same events. But since the two subjects are distinct as histories, they are not the same subject at any time. There were two subjects to begin with. Using standard terms of physical identity theory, one could say that W and X are constitutively identical between t_1 and t_2 though they are not numerically identical.

This description of the dividing person seems both fantastic and paradoxical. That it seems fantastic should not be cause for alarm. The very idea of dividing a person in half, body and soul, to obtain two viable persons, each possessing a piece of the original person's mind, seems fantastic to begin with. One might wonder whether such an operation can *fail* to have fantastic results. But there also are some other, more substantive objections which must be countered.

The most fundamental objection arises from the fact that before the split there exist two subjects but one series of consciousness events. On some intuitions a single consciousness should be symptomatic of a single conscious entity.⁷

My reply is this: There is not just one stream of consciousness before the split; there are two streams. A stream of consciousness is not something located entirely in the present; it cannot consist only of someone's present awareness. If a stream of consciousness is anything, it is something that goes on over time — something temporally extended. If consciousness events really are events, then the

stream is an extended event or process. Two streams of consciousness, regarded as temporally extended processes, are not identical if they differ at any time during their entire durations. In the above example the histories W and X differ in this way. Thus the numbers of subjects and of streams of consciousness in this example are equal, but there are two streams and two subjects, even before the split.

The two subjects W and X are two distinct conscious subjects who *share a common past*. This is a strange idea, but it is no more strange than the idea of a splitting subject with which we began. Actually, there is no really compelling reason why a single series of consciousness events — found by looking only at a short segment of time and ignoring the past and future — has to indicate the presence of only one subject. Since a stream of consciousness is something that stretches out over time, streams of consciousness which differ at any time should be regarded as different streams of consciousness, even if they sometimes share the same events. But a subject is just a stream of consciousness — so two different subjects may share consciousness events in common and still remain distinct, provided they do not share *all* of their consciousness events.

One can imagine a universe containing exactly two subjects having exactly similar, indistinguishable experiences. It is not intuitively clear whether there really are two subjects in this case, or whether there is only one. (This example is analogous to Max Black's example — proposed for a different purpose — of two spheres, identical

in their qualities, in an otherwise empty world. Black asked, in effect, whether there really is any distinction between these spheres.⁸) But if at any moment the two subjects differ in their experiences, then they cannot be regarded as the same subject. Although there are few intuitions suggesting that conscious beings can share parts of their histories, there are no really strong intuitions suggesting that this is impossible, especially in the intrinsically counterintuitive case of the splitting subject.

Someone might object that two subjects which are indiscernible at any time have to be identical at that time. (A traditional philosophical principle, the law of identity of indiscernibles⁹, might lead one to think that way.) My reply to this is that the two subjects W and X are not indiscernible even before the split. They cannot be said to live the same life at any time. This is because they always have different *futures*. Before the split, W and X may be indiscernible with respect to some properties, but not with respect to all properties which refer to the future. For example, if after the separation X goes on to become a professional hit man and W goes on to graduate school instead, then at any time before the split it is the case that X *will be* a professional criminal and that W *will not*. In lay people's terms, X is a budding hit man and W is a budding professor. Such future-referring present properties can *individuate* (establish separate identities for) subjects. To deny that they can is to deny that subjects include their entire histories; this contradicts my account of subjects. But aside from my account, such a denial seems to run counter to intuitions

which suggest that a person's future path is an important feature of that person. To be "going somewhere," headed for a particular destiny or outcome, is a property a person may have now. Intuitively, it sometimes seems that persons who are very similar in their present attributes, yet doomed to very different fates, are different by virtue of these non-present differences alone. It is not obvious that subjects who have largely the same present properties at a particular time, but who differ with respect to some important property involving the future, are the same subject now. (Note that none of what I have just said depends upon the existence or nonexistence of free will, or upon the truth or falsity of determinism.)

The above discussion points out a reason why we should not say that W and X "live the same life" before the split. At all times before the split, W and X have different futures; hence their lives, which include their futures, are different. (Ask yourself thoughtfully whether a future hit man and a future professor could be said to be living exactly the same life now, even if their lives are the same in all *present* particulars.) If one maintains that "living the same life" means having the same present experiences, then W and X live the same life before the split, but then it is not strange that they can do so and still be distinct.

Could I Be Two People?

A more serious potential problem with this view of the

splitting subject arises from the possibility that the two subjects before the split may believe that they are one.¹⁰ Since the subjects before the split share the same consciousness events, any thought or other experience had by one during that time will be had by the other as well. For example, the two subjects may simultaneously decide, on the basis of easily available evidence, that they are *one* subject. In this situation, they may simultaneously call themselves "I." So how do I know that I am now one subject, and am not really two subjects who have not yet divided? If a person living now divides sometime in the future, can he justifiably conclude that he always had been two persons after all?

A related problem stems from the observation that the splitting of a subject can appear to influence the past. If it is possible that I might split in the future, then my being one subject or two subjects *now* appears to depend upon whether or not a certain event will occur in the future.

These difficulties vanish when one looks at them more carefully. I will address them in turn.

First, I can be sure that I am one subject and not two because the fact athat I am one subject follows from what I know about my immediate past consciousness events. (In Chapter 4 I showed that some such knowledge is trustworthy.) I am now in the midst of one consciousness event. I am experiencing in continuance one consciousness event. From this knowledge I can infer that I am not now identical to two distinct subjects. Of course, if by "identical" I mean "having the same present parts now," then this

conclusion may be wrong. I cannot know for certain that another subject is not sharing my consciousness events; to know that, I would have to know that I will not undergo a brain split some day. What I can know by reflection on direct experience is that what I now call "I" is a single subject — that when I utter "I am *this* subject," the statement uttered refers to a single stream of consciousness. From this it follows that I am not a cluster of subjects, and that my usage of "I" is not ambiguous between two or more subjects.

This intuitive insight remains true even if there is another subject having exactly the same consciousness events that I am having. If there is such a subject, that subject will not be the subject which *I* just called "I." Of course, *he* will say "I," or "I am this subject," at the same moment when I do; but when *he* says it, he is referring to *himself* — a numerically distinct piece of subject history. Since "I" is a word which always refers to the speaker, no one lies.

If you are going to split, you already are one of the subjects who will exist after the split. If you are the incoming "subject" S in the above example of splitting, then in reality you now are either W or X. Of course, you may not know now which one you are. But after the split, you will begin experiencing either the life of W or the life of X, and not both. If we fall back on the conventional and erroneous description in terms of S, T, and U, we can describe the outcome this way: Before the split you are S; after the split, you will become either T or U, but not both.

If you are to divide in the future (more correctly, if a process which you ordinarily would call "division of myself"

is to happen in the future), then you will be one of the subjects which will result from that process, but you will not be both of those subjects. You already are the subject you will be after the split; you will not become a different subject after the split. In other words, you, as a conscious subject, will not really divide. The other subject who will result from the split also exists now and shares your present consciousness events.

As for the possibility of changing the past, note that *your* being one subject or two subjects now does not depend on the happening or nonhappening of a future event. You are one subject, and no future event can alter this fact. The happening of the future event may bear on the presence now of other subjects who share your present consciousness. But this does not involve any real change in the past, for the consciousness events happening to you now are not themselves changed in any way. The later split may result in an earlier consciousness event's belonging to two different histories, but that does not constitute a change in the past. Also, since histories exist tenselessly, the number of subjects which exist now is the same number which exist after the split.

If one still wants to say that the split "creates" a new subject, one can say that only in the following sense: if the split in a stream of consciousness did not occur, there would only be one subject in that stream.

Despite its bizarre, counter-commonsensical look, this account of the dividing subject apparently involves no inconsistency and does not really violate our most central

intuitions about subjects. It appears to clear up entirely the problem of subject identity in the case of a dividing subject. In conventional language, the upshot of the solution is this: If a subject divides, that subject will end up as one of the subjects resulting from the division.

Splitting Subjects with Psychological Compartmentation

The above account of the dividing subject also suggests a way in which a subject might predict in advance which product of a split he or she will become. This way works only for certain kinds of subjects: those whose mental processes are divided into two or more subprocesses, each of which is partially independent of the other. I will argue that human conscious subjects are subjects of this sort on account of the functional division between the two hemispheres of their brains. This section is even more technical than the preceding one, but those interested in the split-brain problem should not skip it.¹¹

Let us return to the splitting-subject example detailed above. When S divides at t_2 , any subject having S's history up to that time finds that he is either W or X. Which one he is depends upon whether he was W or X to begin with. Now suppose that all consciousness events in the example really are events (as they are for human conscious subjects), and that each consciousness event which W or X undergoes before t_2 is a composite of two events, each of which is not a

consciousness event. Specifically, suppose that the instance of seeming which is the consciousness event involves *two different kinds* of appearance; the facts which are the case for the event can be partitioned into two classes which are different in some significant way, and the subject's being aware of the facts in one of these classes is an event. It is not hard to find consciousness events which probably are of this sort. For example, some of our consciousness events involve acts of thought accompanied by emotional states. In such a case the occurrence of the act of thought is an event and the occurrence of the emotion is a distinct event; the consciousness event consists in the occurrence of both. (Of course, these other two events need not be *spatial* parts of the consciousness event, although if they are neural events, then they might be such parts.) Another example: a consciousness event might involve the seeing and hearing of the same external event.

Suppose furthermore that these partial consciousness events form two chains in the following manner.

Let y and z be successive consciousness events in the subject's history, with y continued in z . Let y_a and y_b be the partial consciousness events comprising y , and likewise z_a and z_b for z . During z it seems that y_a just occurred in the immediate past — that is, that some of the subjective facts of y , which also are involved in y_a , were the case in the immediate past. Similarly, it seems during z that y_b just occurred. The fact that y_a just occurred is among the facts whose being the case for z defines z_a . But it is *not* among

the facts whose being the case for z defines z_b . In other words: the event y_a is in the subjective "realm" associated with the event z_a , but is not in the subjective "realm" associated with the event z_b . Similarly, the event y_b is part of what is experienced in the event z_b , but not in the event z_a .

We can suppose that each of the consciousness events prior to t_2 is divided into an "a-part" and a "b-part" in this way, and that the "a-parts" of successive consciousness events in the chain are linked together in the way described in the preceding paragraph. We assume the same for the "b-parts." Intuitively, this means that the subjective life of the subject is divided into two streams of experience which the subject does not witness together. Such division of experience is a special case of the psychological compartmentation discussed in Chapter 11.

Just for convenience, we will call these two chains the *right hemisphere* and the *left hemisphere* instead of the chain of "a-parts" and the chain of "b-parts." (These terms should not be taken too literally; the subjects involved may be Martians who lack brain hemispheres as we know them. Later, my real motive for using these terms will become manifest.)

Recall that x_2 is the final consciousness event in the part of W 's and X 's history before the split. Let x_a and x_b be the a- and b-parts comprising x_2 , with x_a in the right hemisphere and x_b in the left hemisphere. Suppose that the split occurs

in such a way that the first consciousness event (say y_W) in the branch belonging to W alone involves continuance of x_a , but not of x_b . (That is, y_W holds x_2 in continuance and is a successor of x_2 , but it does not seem at y_W that *all* subjective facts true at x_2 were true; it only seems that way about *some* of those facts, specifically some facts belonging to the "part" x_a .) Suppose similarly that the first consciousness event (say y_X) in the branch belonging to X involves continuance of x_b but not of x_a . Both y_X and y_W continue x_2 and thus are successors of x_2 , but each one continues only some of the contents of x_2 — the part associated with one of the two partial events associated with x_2 .

The hypotheses of this thought experiment imply that before the split, the facts which are the case for W and X belong to two "compartments," in the psychological sense of that word. We may speak of a given subjective fact as belonging to the a-compartment or to the b-compartment. By this, we do not mean that there are actual entities called "compartments," although if one must, one can regard the two compartments as properties, classes, or predicates of subjective facts. We can say that for y_W , contents of the a-compartment, but not those of the b-compartment, are continued. (By this we mean only that the event y_W involves the awareness, in continuance, of some facts in the a-compartment in the manner described above, but not of any facts in the b-compartment.) Similarly, y_X involves the continuance of the contents of the b-compartment but not

those of the a-compartment. At the moment after the split, W is the subject whose immediate past contains contents from the a-compartment, but none from the b-compartment. Analogous statements hold for X.

Now we have a way to trace the careers of the subjects W and X before the split. Suppose it is I who split. If immediately before the split, I *know* that I am experiencing the contents of the a-compartment only, then my present conscious contents are linked, in the way described above, to the contents of W. If immediately before the split I am knowingly experiencing only the contents of the b-compartment, then my present consciousness is a predecessor, in the same way, of the consciousness of X. Hence if before the split I am aware of experiencing the contents of the a-compartment, after the split I will be W. If before the split I am aware of experiencing the contents the b-compartment, then I am to be X.

The alternatives to these outcomes are less plausible than the outcomes just proposed. If I experience the a-compartment but I turn out to be X, then X's history after the split begins from x_a , which, by hypothesis, X never experiences in continuance after x_a . Similarly for W and b.

Splitting Subjects Again, in Less Detail

The argument of the last section has the following consequence. Suppose that the contents of a subject's consciousness fall into two groups — that is, two different,

mutually exclusive kinds of subjective facts. Now suppose that that subject splits in such a way that each final subject experiences, in continuance, only one of those groups of facts. Under these conditions, each of the two groups of subjective facts will belong to the past of only one of the final subjects. If just before the split, a subject is aware of having only one of the two kinds of experience, then that subject will become the final subject which has that kind of experience in its past.

The scenario of the last section is, of course, designed to resemble the division of a human being into two halves, each controlled by a single brain hemisphere. To make the resemblance clear I will list some well-known background information from neurophysiology.¹² The right and left hemispheres of the human brain perform different functions in mental life. Our mental processes can be classified, roughly and nonexhaustively, into two sorts. Some processes, such as spatial perception, are associated primarily with the functioning of the right cerebral hemisphere. Other processes, such as language production, are connected similarly with the left hemisphere. The division of mental processes along hemispheric lines is neither exhaustive nor anywhere near exclusive, but its approximate correctness seems to be well-established.

The two sets of subjective facts associated with these two kinds of processes correspond to the two compartments in my argument. If one grants this correspondence, then the mental processes associated with the functioning of the two hemispheres are the processes which I called "hemispheres"

in the argument. (Hereafter I will call them *hemispheric processes*.) One's having of an experience via either left or right hemispheric processes constitutes an event. These are the events which belong to the left and right hemispheric processes. During any consciousness event, two events occur; experience via the right hemisphere constitutes one event, and experience via the left hemisphere constitutes another event. The simultaneous occurrence of these two events is sufficient for the occurrence of a consciousness event in the subject. Of course, this correspondence between the division of a real brain and the hypothetical division described in the last section is a gross oversimplification, since the hemispheres are not tight compartments — they do not even come close to complete separation. But subjective facts which are associated with the joint functioning of the hemispheres can be assigned to both compartments without changing anything essential in my argument.

Note that in the above arguments about hemispheres, the two events which comprise a consciousness event are not themselves consciousness events of the subject. A single instance of seeming in the subject's experience may involve subjective facts originating with both hemispheres. One might think of a consciousness event in a normal human mind as constituted of two events (or groups of events), neither of which is itself a consciousness event and each of which is an event associated mainly with the activity of one brain hemisphere.

Human beings differ from the double subject of the

example in another way as well. In addition to having leaky and overlapping hemispheric processes, humans are known to exhibit so-called *hemispheric dominance*.¹³ John C. Eccles has noted an important aspect of this dominance: we experience the contents associated with one hemisphere (usually the left one) more readily than those associated with the other hemisphere. Eccles has suggested that neural processes which are conscious occur in the dominant hemisphere, while processes in the opposite hemisphere are in themselves unconscious.¹⁴ This suggests that if I am a human conscious subject, my dominant hemisphere's compartment is the one which I normally experience in continuance. We may conclude that if I am split in such a way that one hemisphere remains in control of each of the resulting hemi-beings, my consciousness will go with that product of division which includes my dominant hemisphere.

Eccles has suggested, on the basis of clinical evidence, a similar conclusion about the results of dividing the brain. From clinical evidence, he concludes that in cases of split brain or of the loss of one hemisphere, the subject's conscious functions typically go with the dominant hemisphere.¹⁵ This supports the suggestion which I made at the end of the preceding paragraph.

This argument may be extended to beings which lack brain hemispheres like ours. If such a subject has two or more "hemispheric" processes, one of which is more readily accessible to the subject, and the division isolates the more

accessible process in one of the products of division, then the product having that process will be the subject.

Commissurotomy and Subject Splitting

Cases of human commissurotomy (split-brain surgery) differ in significant respects from genuine subject splitting. In commissurotomy, the processes associated with the two hemispheres still can interact with each other causally; they clearly influence each other in ways which presumably alter their subjective contents.¹⁶ A split-brain patient really is no more divided than are some of the psychologically compartmented ordinary subjects whom I discussed in the previous chapter.¹⁷ Hence it is rash to regard the processes in the two separated hemispheres as two different series of consciousness events. Split-brain patients generally seem to be directly conscious of perceptions associated with their dominant hemispheres, but not of processes in the opposite hemisphere.¹⁸ Yet even if this were not the case, it is unlikely that two streams of consciousness would exist in the history of the patient; there still would be one subject. The worst that has happened is a very dramatic *compartmentation of content* of the same sort that I discussed in Chapter 11.

If the two hemispheres were *completely* severed so that each one could function without even indirect communication with the other, then two subjects might exist. On my model of the splitting subject, the patient we

knew before the operation would continue as the half of him/herself controlled by the dominant hemisphere. The weaker hemisphere would continue to live as a separate subject, with (for reasons discussed above) different capabilities.

Merging Subjects

Puzzle cases in which subjects merge can be treated along the same lines as those in which subjects divide. Such merging-subject cases have been discussed in the literature.¹⁹ The following scenario is typical. At time t_1 there are two persons A and B. At a time t_2 later than t_1 , A and B fuse (not necessarily instantaneously). At times later than t_2 there is only one person C, whose history begins with the fusion event at t_2 .

We can redescribe this chain of events in terms of temporally extended subjects, much as we did for the case of the dividing subject. The resulting description runs like this. There are two subjects, D and E. The parts of these subjects' histories earlier than t_2 are distinct; D and E do not contain those parts of their histories in common. The parts of the histories of D and E at and after t_2 belong both to D and to E. In other words, at and after t_2 , D and E share a common future.

In this scenario, the "person" resulting from fusion actually is two subjects, just as is the "person" who has not yet divided in the previous scenario. When two subjects

fuse, the result is two subjects sharing a future. Neither of the original subjects ceases to exist, and no new subject is created. The being resulting from such a fusion is much like the initial being in the dividing-subject case. Both of these beings are composites of two subjects which behave like one subject but nevertheless are not identical to one another.

The fact that neither subject ceases to exist suggests that it may be logically possible to undo the fusion. Since neither subject is lost, there is no reason to believe that the subjects could not later separate. This possibility directs our attention toward a more confusing (and also previously studied) puzzle case. What happens when two subjects merge and the being resulting from their merger subsequently divides?²⁰ Can either of the incoming subjects be identified with either of the outgoing ones?

An analysis similar to the ones above shows that in this puzzle case there are *four* subjects, and that no subject is created or destroyed. The following scenario illustrates this fact.

Suppose that at t_1 there are persons F and G. At a later time t_2 , F and G undergo fusion to form a being H. Later still, at t_3 , H divides to produce two new conscious beings, I and J. Can we say whether F or G is H, whether F or G is I or J or neither, and whether H is I or J or neither?

Here is the same scenario redescribed in terms of temporally extended subjects. There are four subjects. One of these subjects has a history consisting of what we call the history of F before the merger, followed by the history of H,

followed by the history of I after the split. In an obvious notation we may call this subject FHI. Another subject has in its history the history of F before the merger, then the history of H, then the history of J after the split. We call this subject FHJ. By similar means we trace the subject histories GHI and GHJ. Each of these four histories counts as a subject. There are four subjects before the merger, four subjects between merger and split, and four subjects after the split.

We see now that the the initial "person" F actually is two subjects leading one conscious life. Those two subjects are the ones which share the history of F as parts of their own histories, namely FHI and FHJ. The beings at G, I and J also are dual subjects of this sort; each of them is a pair of merged subjects. The being at H is a composite of four subjects sharing a common piece of history: it is a phase in the life of each of FHI, FHJ, GHI, and GHJ. The objections which arise in the splitting case also arise (with appropriate changes) when more than two subjects share a piece of subject history. These objections do not seem any more troubling in the four-subject case than in the two-subject case. The arguments which defuse them in the splitting case can be adapted to accommodate more than two subjects.

We also can imagine a case in which two subjects merge and redivide without any blurring of their original identities. This can happen if the initial, final, and middle segments of subject history have dominant hemispheric processes (with "hemispheric processes" defined as in the splitting case). Suppose that the dominant hemispheric processes of F and

G are continuous with the two hemispheric processes of H, in the sense that the initial event in each hemispheric process in H subjectively succeeds either the final event in the dominant hemispheric process in F or the same thing in G. If later on, the hemispheres of H part company to yield two separate beings, then one can make a case for the conclusion that one gets back the same subjects (also known as F and G) that went in. I leave the details of this to the reader since they are quite similar to the splitting of the subject with hemispheric dominance. There now are two subjects; one of the two is simply F and the other one of the two is simply G.

In Conclusion

The accounts of division and merger of subjects which I have presented here have a fantastic air about them. I would argue that from the viewpoint of an adequate understanding of the conscious subject, they are not fantastic at all. At least they are no more fantastic than the already bizarre ideas of splitting one person into two and of merging two persons into one. Such happenings, by their very nature, stretch our everyday concepts of personal identity to their outermost limits. Ordinarily one does not even conceive of the possibility that two or more distinct subjects could have exactly the same experiences during an interval of time, or that what happens to a body in the future determines how many subjects it houses now. But any uneasiness should disappear when the reader recalls that I have identified

subjects with their *histories*, and re-reads my arguments with this fact firmly in mind. It is not mysterious for two *histories* to have some events in common; certainly World War II is an event in the history of England and also in that of France. Nor is it strange when a single series of events, by virtue of its relationship to other events, is a segment of two distinct histories. The history of the United States coincided with that of the thirteen original colonies only for a circumscribed period.

If one forgets that subjects are histories, then my description of what happens when subjects split will seem to imply that before a human being splits, two minds always exist in the same body — or something like that. Actually, I have made no such incredible claim. The most I would claim is that before a human being splits, two *personal histories* are exemplified by one *consciousness*.

Everyday thought, and some philosophical views as well, regard a subject as something without temporal parts.²¹ On my account, subjects do have temporal parts; they are coextensive with their histories. My assignment to subjects of properties typical of histories is what lends my accounts of splitting and merging subjects their air of unfamiliarity. But the absence of this same feature in other accounts of personal identity makes the problems of splitting and merging subjects seem far more difficult than they really are. On my account, a conscious subject is something which exists entirely at each moment in its history but also is temporally extended. The compatibility of these two features of subjects is a fortunate consequence of my

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nonstandard view of persistence through time. If one accepts the identification of subjects with subject histories, then the above stories about what happens when subjects fuse and divide lose much of their oddness — and the puzzle cases about splitting and merging subjects become far more tractable.

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 5. Conscious Beings and Their Histories

1. For background information and ideas about this problem, see for example Shoemaker and Swinburne 1989 and Hirsch 1982 (especially Ch. 10). For my understanding of this problem earlier in my career (though not for my position on it), I owe much to Shoemaker and Swinburne 1989 particularly.

2. This example is adapted from Shoemaker 1989, 86. I will discuss an example like this more thoroughly below.

3. For discussions (favorable, unfavorable, or otherwise) of such theories, see for example Carruthers 1986, 76-82; Grice 1941; Shoemaker 1970; Swinburne 1989, 8-13; Shoemaker 1989, 77-88; Hume 1739-40, Book I, Part IV, Section VI (pp. 261-262). The term "quasi-memory" is used especially in Shoemaker 1970 (272, 271 and elsewhere). Shoemaker 1989 (77-82) and Swinburne 1989 (8-11), among other authors, discuss a classic theory of this sort due

to Locke. Grice (1941, 342) discusses and rejects a view on which a kind of remembering of a state just before the present one establishes personal identity. The role of *immediately preceding experience* in this view matches that in the theory I am going to propose. The account at which Grice finally arrives in Grice 1941 is quite different from my account.

4. James 1884, 146. There are similarities between James' view of the stream of consciousness and the view I will present here. In particular, James noted that "earlier segments [of the stream] become objects for the later" (James 1884, 167, footnote). He entertained, but rejected, the view that this kind of unity of the stream simply *is* the ego (James 1884, 167, footnote); he attributed to some Hegelians a view rather similar to this view he rejected (James 1884, 149, footnote).

5. For remarks on personal identity after memory loss, see Swinburne 1989, 24-25 and Shoemaker 1989, 86-88.

6. James 1884 (though James' aim there was not to solve the problem of personal identity).

7. Foster 1979.

8. Shoemaker 1989, 86-87. For other relevant remarks on total amnesia, see Swinburne 1989, 24-25.

9. The example here is based on one from Shoemaker (1989, 87-88); I have altered some points and added the conclusion about killing. Green and Wikler (1980, 69) give a similar example, though apparently with a more thorough obliteration of brain characteristics (and with a different philosophical purpose).

10. See Swinburne 1989, 23-25, on personal identity questions about disembodiment, re-embodiment, and survival of death. On p. 25, Swinburne discusses the question of personal survival without memory.

11. *Ibid.*

12. Time as experienced by the subject of consciousness has been studied by Foster (Foster 1979, 175-176) and by Russell (Russell, 1948, 210-217), among others. Russell uses the terms "subjective time" and "objective time" (Russell 1948, 212), and refers elsewhere to "a public and a private time" (Russell 1912, 32). My ideas on the topic differ from these authors' ideas in crucial ways, though, as I have pointed out elsewhere, I owe intellectual debts to each.

13. Shoemaker 1989a, 145-147. See also Shoemaker 1989, 130-132.

14. Shoemaker 1989, 130.

15. Hirsch 1982, 286-301.

16. In Foster 1979. The quote is from p. 177.

17. The items unified into a subject history are quite different (consciousness events on my view, "presentations" on Foster's (1979, 175)), as are the relations which unify those items (continuance on my view, instead of Foster's "double overlap" (176)). My account of the subject also resembles Russell's and Carnap's views in certain respects (see chapters 1 and 3 in the present book, as well as note 32 to this chapter).

18. Relevant experiments and ideas are discussed in Dennett 1991, 114-115, 139-170.

19. See Dennett 1991, 119, 125.

20. Locke 1689, Book 2, Chap. 27 (p. 336).
21. Foster 1979, 182.
22. James 1884; the phrase itself is used on p. 146. (I should mention that James' aim in that essay was not to solve the problem of personal identity.)
23. On some psychological aspects of time, see for example Krech, Crutchfield and Livson 1969, 98, 228-229.
24. Dennett 1991, 113; see also 111-112, 253-254.
25. Dennett 1991, 111. The model is discussed in Dennett 1991.
26. Dennett 1991; particularly 135, 144, 166, 407; "'presentations'," 169 (see also 107).
27. Dennett 1991, 356.
28. Dennett 1991, 96-97.
29. Leibniz 17xx, paragraph 21 (p. 151). See also Leibniz 17xx, paragraphs 19-20 and 22-24 (pp. 150-151), and the modern commentary of Schrecker 1965, xv.
30. For example, Church 1956 and Drake 1974.
31. Mereology (the formal theory of wholes and parts) is discussed in an accessible way, in the context of the philosophy of mathematics, in Lewis 1991 (see especially pp. 1-3 and 72-74).
32. The logical constructions used by Russell (see for example Russell 1918, especially 143-146, and Russell 1924, 163-166) and Carnap (Carnap 1928, especially secs. 132, 136, 163) were, in my view, such substitutes. Russell's and Carnap's accounts of the self are different in central respects from mine. According to their accounts, the history of the self is a class of experiences (taken to be entities)

unified by a relation which can involve long-term memory (see Russell 1918, 148-150; Carnap 1928, pars. 78 (pp. 127-128), 108 (pp. 178-179), 120 (pp. 188-189), 132 (pp. 203-205)).

33. For a general discussion of the topology of time, covering some of the properties mentioned here, see Newton-Smith 1980, 48-54.

34. On closed time see for example Newton-Smith 1980, 57-65.

Chapter 10. Conscious Beings and Physical Things

1. On identity and its puzzles, see e.g. Hirsch 1982

(mostly on physical identity) and Shoemaker and Swinburne 1989 (on personal identity).

2. For a scenario of this general sort, see Hirsch 1982, 138-140.

3. Russell recognized the possibility of such an alternative description. He appeared to recognize the simplicity too, when formulating his logical atomism (Russell 1918, 143-146). Earlier, he had claimed that simplicity favors the existence of physical objects as an explanation for the regularities in experience (Russell 1912, 22-25).

4. For a closely related question (about the language used to describe the physical world), see Hirsch 1982, 138-140.

5. See Hume 1739-40, Book I, Part IV, Sec. VI (pp. 251-252) and Appendix (pp. 633-636).

6. *Ibid.*

7. See Hume 1739-40, Book I, Part IV, Sec. VI (pp. 253-254, 261-262) and Appendix (p. 635).

8. Dennett 1991, ch. 13 (especially p. 429).

9. See especially Russell 1918, 143-146, and 1924, 163-166; and Carnap 1928.

10. Mellor 1981, 127.

11. Russell's and Broad's usages of "event" seem to cover what Mellor (1981, 127) has called "thing-stages" as well as other events. See Russell 1948, 275, 305; Broad 1927, 406.

12. See Broad 1927, 393, 406-410; Russell 1948, 323, 487-488; Quine 1960, 171.

13. Mellor (1981, 17-18, 104-107) discusses this idea, and states (104) that "things are wholly present throughout

their lifetimes, and events are not."

14. See Mellor 1981, 104-105.

15. Hume 1739-40, Book I, Part IV, Sec. VI (p. 259).

16. Bergson 1907, 11, 188-189.

17. I read Hirsch 1982, for example, in this way. The views of identity proposed there do not seem to require acceptance of the view I just mentioned.

18. See Mellor 1981, 104-107, for some arguments which would refute my possibility (III) along these general lines.

19. On Hume's skepticism about the self, see Hume 1739-40, Book I, Part IV, Sec. VI (pp. 251-252); see also Appendix (pp. 633-636). For an introduction to Hume's concept of "impressions," see Hume 1739-40, Book I, Part I, Sec. I (pp. 1-7)

20. See Bergson 1907, 4-5 and 23 (on the past); 96, 179-181 (on the future); "potentialities," 179, 181.

21. Howison 1904, xiii-xiv, 352, 338-339; Bowne 1908, 143-148. (Bowne attributed "the transcendence of time" to God alone (1908, 146), but I understand this transcendence differently.)

Chapter 11. The Structure of the Self

1. For presentations and discussions of such theories, see Pears 1984 and Davidson 1982. See also Mele 1987, chs. 6 and 10, for discussion and analysis of views of this sort.

2. These problems include those revolving around the

results of split-brain surgery; on these latter problems see Marks 1980. For related or relevant ideas see Parfit 1971, and also Popper and Eccles 1985, 328-329.

3. Such "compartments" could include what are called "logic-tight compartments" (discussed in Krech, Crutchfield and Livson 1969, 766).

4. Descartes 1641, 2nd Meditation (p. 84).

5. Descartes 1641, 2nd Meditation (pp. 83-86) and 2nd and 3rd Meditations (pp. 90-91); Descartes 1637, Part Four (pp. 24-25).

6. See Descartes 1641, 6th Meditation, 133-143.

7. Plato, 439 d-e (p. 103).

8. Hartmann 1868, for example part I, Introductory, Sec. I (pp. 3-5); Schopenhauer 1844, especially vol. II, Chap. 19.

9. See Pears 1984 (especially Ch. 5) and Davidson 1982.

10. See for example Marks 1980. For related or relevant information and ideas see Popper and Eccles 1985, 311-333 (especially 329).

11. See for example Dennett 1991, 14, 259-263.

12. See, for example, Kagan and Havemann 1976, 379.

13. Marks (1980, 17) considers split-brain cases in which "simultaneous conscious experiences" are not noticed at once in a single mental act.

14. Block has suggested (Block 1996, 457) that the contents of the Freudian unconscious might be instances of what he calls "phenomenal consciousness" (1996, 456). This suggestion amounts to the same thing as I am proposing here.

15. For definitions of the relevant terms see Goldenson

1984, 173 and 771. The definitions I have used may not be exactly equivalent to these.

16. See Goldenson 1984, 597, for a definition. (This definition may not be exactly equivalent to mine.)

17. See note 1 above for a reference on such views.

18. Pears 1984, 67.

19. See Quine 1959, 231-232, for the method I have in mind.

20. The concept of "logic-tight compartments" is discussed briefly in Krech, Crutchfield and Livson 1969, 766.

21. Carnap anticipated this view in a way; he held that the self is both a "unit" and a "class of elementary experiences" (1928, 260 (sec. 163); italics removed from second quote). However, Carnap viewed the self as something abstract — specifically, a class, which for Carnap is a unity of sorts.

Chapter 12. Personal Identity: Some Problems

1. A good introduction to questions like this is Shoemaker and Swinburne 1989. My way of presenting these problems owes much to that work, but its authors should not be blamed for my conclusions.

2. On split-brain operations, see for example Marks 1980 (especially 1-6); Popper and Eccles 1985, 311-329. My general line of interest in these operations owes much to Marks' book, which discusses and analyzes the idea "that the

split-brain patient has two minds" (1980, 1).

3. On dividing and/or fusing persons, see for example Parfit 1971, 4-7; Shoemaker 1970, 278-280; Swinburne 1989, 14-16, 21, 45; Shoemaker 1989, 84-85.

4. See note 2 above for some references on split-brain surgery.

5. See Parfit 1971; Swinburne 1989, 14-16; Shoemaker 1989, 84-85. See also Shoemaker 1970, 278.

6. Foster 1979, 182.

7. See James 1884 and Foster 1979 (especially p. 176) for viewpoints which cohere with this intuition.

8. Black 1952, 253-262.

9. This principle is described in (for example) Loux 1970, 236; see also Black 1952.

10. Marks (1980) has mentioned an idea which can be considered a variant of this — namely, that a person (ordinarily so called) might be, in some sense, two conscious beings. (See Marks 1980, 7, 35.)

11. Marks (1980) considers problems of the identity of the mind in split-brain cases, and considers the question of which splitting product is the original person's mind (p. 9).

12. For this or related background information, see for example Marks 1980, 1, 5, 8; Popper and Eccles 1985, 350-354.

13. Popper and Eccles 1985, 350-354.

14. Popper and Eccles 1985, 325-326, 315, 331. See also 328-330.

15. Popper and Eccles 1985, 315, 330-333; see also 316-329. (However, Eccles did not advocate the view that the

minor hemisphere has its own consciousness (Popper and Eccles 1985, 328).)

16. See Marks 1980, 17-19, 26-28, for relevant facts about these influences.

17. The view that split-brain patients are in some sense double persons has been debated by philosophers. See Marks 1980 on this and related issues.

18. See Popper and Eccles 1985, 315-329 (especially 328).

19. See for example Swinburne 1989, 21, 45.

20. A more specific scenario for splitting-and-fusing beings is found in Parfit 1971, 22-23.

21. See e.g. Mellor 1981, 104-107, for a view like this regarding people (and a mention of the prephilosophic view).

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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