

Subjective Facts and Other Minds:

Readings in *From Brain to Cosmos*

Mark F. Sharlow

Abstract

This document consists primarily of an excerpt (chapter 6) from the author's book *From Brain to Cosmos*. That excerpt presents an analysis of the problem of knowledge of other minds, using the concept of subjective fact that the author developed earlier in the book. (Readers unfamiliar with that concept are strongly advised to read chapters 2 and 3 of *From Brain to Cosmos* first. See the last page of this document for details on how to obtain those chapters.)

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

Chapter 6

Knowledge of Other Minds

It is a fact of everyday life that one person cannot directly witness another person's experiences. Philosophers who think about this fact have encapsulated it in the commonly made claim that experience is *private*. The inability of persons to witness the experience of other persons is, at very least, an important part of what philosophers have meant by the privacy of experience.

Philosophers have responded to the apparent privacy of psychological life in a variety of ways. Some thinkers, notably dualists, have given this privacy great significance.¹ Others, most notably the behaviorists, have tried to deny the existence of private mental processes.² The most important and best known problem raised by the apparent privacy of mental life is the *problem of other minds*.³

The problem of other minds may be stated as follows. Granted that you cannot directly witness other people's mental processes, how can you know that other people have any mental processes at all? Even if you are sure that you do

know this, there is a puzzle about *how* you know it. Imagine that you lived in a world in which you were the only conscious self, and other so-called persons acted exactly like real persons but lacked consciousness. In such a world, your experiences of other persons would be exactly the same as they are now. Since all of your knowledge about other people's thoughts, feelings, and the like is based on your experiences of other people's bodies and behavior, how do you manage to know that other people really have minds? How do you know that they don't just *act* like they have minds?

We also can state the problem in a less dramatic (and more general) way as follows: How can I know what is going on in another person's mind? What are the criteria for inferring that someone else is undergoing a conscious experience?

In this chapter I will investigate the problem of other minds with the help of the ideas developed in the preceding chapters. I will argue that under certain conditions, one can infer that there is a subject other than oneself from facts about how things seem to oneself.

The arguments in this chapter make use of the conclusions drawn in earlier chapters. However, these arguments are, for the most part, non-rigorous. Some of them are meant to motivate or illustrate certain concepts rather than to establish conclusions. At one point I will use an argument based on facts from psychology and biology to support one of my conclusions. The premises used in this argument go far beyond facts about how things seem. I have

included this argument to illustrate and lend plausibility to my thesis, and to show that my thesis does not conflict with certain widely held views derived from science. (Because of its non-rigorous character, this argument, and much of the rest of the chapter, belongs to the second part of the project of the book, as described in Chapter 1.)

The Privacy of the Psychological

In Chapter 5 I proposed a criterion for conscious subject identity. There I said that two consciousness events are part of the same subject history if they are connected by a chain of consciousness events, each member of which involves continuance of the previous member of the chain. This stipulation has an interesting consequence: a subject ordinarily cannot experience in continuance a consciousness event which belongs to another subject's history. The following argument shows this. If subject John experiences the continuance of a consciousness event which is in subject Jack's history, then there has to be a consciousness event *y* in John's history during which this experiencing occurs. The consciousness event in Jack's history which John experiences in continuance may be called *x*. Since *x* exists for *y*, *x* is in the immediate subjective past of *y*. It follows that every consciousness event in the subjective past of *x* also is in the subjective past of *y*. Therefore, up to the subjective moment *x*, John and Jack share exactly the same past! This cannot happen if John and Jack are two different

subjects. The only exception is if John and Jack were created by the splitting of a single conscious subject into two subjects. But ordinary subjects do not originate in this way and therefore cannot hold each other's consciousness events in continuance. (I will have more to say about splitting subjects in Chapter 12; for now I will only mention that there is a philosophical literature on splitting subjects.)

The preceding argument shows that a certain sort of privacy for mental processes follows from the structure of subject histories. A subject's inner contents are not *directly* accessible to another subject's awareness, except perhaps in odd cases in which subjects split. The privacy of the psychological, in this restricted sense, does not involve any mystery. Even if a subject's experiences could somehow be observed by others (for example, if behaviorism were true), those experiences still would not be *undergone* by others. The experiences would not be lived through by external observers in the way that they are lived through by the subject.

Perception of Other Subjects' Subjective Content

We can reformulate the problem of other minds in terms of consciousness events as follows: How can a subject know what is the case for a consciousness event in a subject history not his/her/its own? This question does not capture the entire content of the problem of other minds, but it

captures the most challenging part. I will not try to analyze this entire question in terms of subjective fact, since I have not framed a definition of knowledge in terms of this concept and do not intend to do so. Instead, I will sidestep all questions about the nature of knowledge and will simply try to find a way to determine what is the case for a subject who is not me.

In Chapter 4 I argued that we sometimes can know for certain whether a fact is true for a consciousness event in the immediate subjective past. Clearly this account cannot be extended to any arbitrary consciousness event. Consider a consciousness event in your own distant past. You cannot be certain what facts were the case for this event; your knowledge of those facts will rest on memory and perhaps on non-deductive inference from present facts, and both of these sources of knowledge are fallible. This fallibility becomes particularly serious for consciousness events which are not part of your history at all. What if the consciousness event belongs to another person, and you wish to know about some secret thought which that person harbors? In this case you cannot know immediately what is the case for that consciousness event, and memory is no help either. What other sources of knowledge could be of use?

In real life we garner information about other persons from our observations of those persons' bodies. This information comes by way of our own sense experiences. We know something about other persons because certain bodily facts about those persons are the case for us. In particular, we learn something about persons' mental

contents from those persons' behavior. But philosophers have noticed⁴ that this method of knowing cannot be reliable unless there is a *dependable correlation* between mental contents and observable behaviors. In my terminology, this would amount to a dependable correlation between the contents of consciousness events in one person (the observed) and the contents of consciousness events in another person (the observer). An observer may have the sorts of experiences which we call experiences of another person's behaviors. If the required dependable correlation exists, then the observer can get information about the mental states of the observed person.

Consciousness events which are not in one's own history do not exist for one's own consciousness events. But this does not rule out the possibility that *general facts* about external consciousness events may be the case for one's own consciousness events. Perhaps you could become aware that some fact is true of consciousness events in another subject, even though the consciousness events themselves do not exist for you.

Reflection on ordinary experience discloses certain happenings which appear to involve knowledge of this sort. I am referring to one's everyday "instinctive" or "gut" perceptions about the psychological states of other persons. Some psychologists and philosophers have recognized that perceptions of this sort occur and can convey information. Such perceptions are quite normal; they do not involve anything like mind-reading. Consider the fact that one often can notice when another person is afraid. I am referring to

the "gut reaction" one has to the presence of fear in another person, not to any inference based upon descriptions of that person's behavior. This reaction often occurs before one has time to think about the observed person or the objective situation. It does not require any conscious logical thought on one's own part.

Biological evidence suggests that the direct communication of information through emotion is a phenomenon common in mammals, both human and nonhuman.⁵ Scientists have proposed that one biological function of emotional expression is communication.⁶ The reception of such communications would form an example of "gut" perception of the sort I have described.

Philosophers have uncovered other possibilities for access to others' mental states. On P.F. Strawson's view of persons, the attribution of mental states to other beings is a prerequisite for the use of certain kinds of mental language.⁷ I take this to imply that our knowledge of others' mental states is not a matter of mere inferences from facts about behavior. Frank A. Tillman has studied (from a phenomenological standpoint) the idea that one may notice conscious states in other persons.⁸ I will have more to say about Tillman's ideas later.

Emotion supplies the clearest examples of direct perception of others' psychological states, but the same sort of perception evidently occurs with other psychological phenomena as well. For example, one sometimes feels that one can "just see" that another person is thinking or

concentrating very hard.

It is important to remember that perceptions like these require only the normal processing of sensory information. This point bears repeating because some people may find it implausible that the "direct," perceptual knowledge of other minds could occur through normal sensory perception. Yet such knowledge can be understood neurophysiologically and does not require anything like mind-reading. The fact that the acquisition of such knowledge is not simply a matter of sensation does not make this knowledge any less "direct" or immediate. Other forms of perception also have neural mechanisms, but that does not make them any less direct. Of course, we cannot yet use ideas about neurophysiological mechanisms in the deductive argument from facts about how things seem, since facts about neurophysiology go beyond such facts. The last few paragraphs belong to the second part of this book's project (as described in Chapter 1). They are intended to point out that perceptual knowledge of the mental states of others need not involve anything paranormal — or even anything unusual.

If one notices that another person is afraid, overjoyed, or deep in thought, one is noticing a psychological fact about that person. Then it is the case for one's consciousness events that fear, joy, or some other psychological phenomenon is occurring. But this does not imply that one actually notices the consciousness events occurring in the other person. For despite our ability to be aware that another person is afraid, we still cannot notice that person's consciousness events, even though those are associated with

subjective facts involved in the person's feeling of fear. Another, rather loose, way to put this is as follows: you can notice that someone is afraid, but you cannot notice that person's *experience of fear*.

The preceding distinction is rather subtle, but it makes a big difference. To be aware that Jack is afraid is to be aware that a certain fact about Jack, or about Jack's subjective realm, is the case. If John notices that Jack is afraid, then it is the case for at least one of John's consciousness events that Jack is afraid. But to be aware of someone's experience of fear is to notice instances of seeming; if John actually notices Jack's experience of fear, then certain consciousness events of Jack's also must exist for John's consciousness events. A subject who does not share Jack's past cannot experience Jack's consciousness events in continuance. Hence that subject cannot literally be conscious of Jack's experience of fear. Nevertheless, such a subject might be conscious of the fact that Jack is afraid. Thus the privacy of consciousness events, in the limited sense described above, does not logically exclude the possibility of perception of the psychological states of others.

The Logic of Noticing Other Subjects' Mental States

The claim that one can notice that a person is afraid without noticing that person's *experience of fear* may seem strange. Actually, there is nothing strange or obscure about

this distinction. People often notice that something is the case without noticing the events whose occurrence makes it the case. For example, you can notice that a wall is brightly lit without noticing events of reflection of photons by the wall. Similarly, it is possible to notice that someone is experiencing fear without noticing the consciousness events which play parts in that experience of fear. To notice that Jack is afraid is to notice that a certain fact is the case. To notice Jack's fear (or Jack's experience of fear) is to notice events of a certain sort — either Jack's experiences, or his consciousness events (which either are, or are much like, real events).

The possibility of noticing that someone fears without noticing the event of their fearing is an example of the logical incompleteness of consciousness events, which I mentioned in Chapter 3. This incompleteness implies that even if a fact *P* implies a fact *Q*, and *P* is the case for a consciousness event *x*, it does not have to follow that *Q* is the case for *x*. The fact (*P*) that Jack is experiencing fear implies the fact (*Q*) that Jack has consciousness events which involve fear. If John notices that Jack is afraid, then it is the case, for some consciousness event of John's, that (*P*) Jack is experiencing fear. However, this does not imply that for some consciousness event of John's, (*Q*) there are consciousness events of Jack's which involve fear. John need not experience Jack's consciousness events.

Similar failures of logical completeness may occur during experiences of illness. Sick people typically become aware that they do not feel well without being able to see or

otherwise directly experience the cellular causes of their illnesses. Suppose that you contract a cold and begin to feel ill. You are aware that you feel a certain way; the fact that you are having sensations of a particular sort might, for all we know, even imply that you are suffering from a cold. Yet you are not immediately aware of the cold viruses themselves; without expensive instrumentation, you cannot even see these viruses. In this example, you notice that you feel a certain way, but you do not notice the virus, even if the fact that you feel that way implies that the virus is present. It is the case for my consciousness that I feel a certain way, and perhaps it even is objectively true that if I feel that way then viruses exist. But it is not the case for my consciousness that viruses exist.

The Fallibility of Perception of Other Minds

The perception of mental states in other beings is quite fallible. Philosophers have framed arguments in which an actor puts on a very good imitation of pain, which cannot be distinguished from the behavioral correlates of real pain.⁹ It is conceivable that I might see and hear such an actor and have the same "gut reaction," or subjective emotion-laden perception, that I would have in the presence of real pain. To what extent do examples like this cast doubt on the reliability of our perceptions of facts about other minds? How can I know that an experience of mine which seems to be an experience of a mental state external to myself is not

simply an experience of a well-done piece of fakery?

The following partial answer to this question is compatible with the account of conscious subjects outlined in Chapter 5. This answer can be thought of as a variant of Frank Tillman's account of the perception of other selves. Tillman suggested that by "reducing the ambiguity" in a certain manner in our experiencing of certain perceived behaviors, we come to know, non-inductively, of others' mental states.¹⁰ Here I will defend a version of this answer, with my own changes of detail.

Suppose that an actor appears on the street before me and suddenly feigns terror. I may have the same "gut reaction" that I would have to real fear. Of course, I am not actually noticing that someone is afraid; I am only seeing a form of deliberate physical activity (or excitement) which the actor performs in order to create an impression of fear in others. My gut reactions cannot distinguish immediately between this imitation and real fear. But after concentrating carefully on the actor's movements and expressions, I might finally notice something out of place. I might notice that the actor seems to be *concentrating on his appearance* while acting — that he seems to be "keeping an eye on himself" — or that he is making an effort to act well. These other perceptions (or perhaps I should call them *suspensions* of mine?) would make me feel unsure about what sort of state I really am seeing.

In this example, my initial perception of emotion was based upon incomplete information. My mind had processed some sensory information and perceived "fear."

But after seeing more, I began to undergo new perceptions which altered that perception of fear. The key fact here is that my initial perception of "fear" was based on insufficient information. I misperceived the actor's emotional state because I had not had the opportunity to notice all the relevant sensory cues — much as I might misperceive a textbook optical illusion before I examine the diagram very closely.

It is worth noting that in the above scenario I am not wrong about the actor's being *in some mental state or other*. I was only wrong about the *content* of that state — about *what kind of* mental state the actor was in. I noticed that the state was one of arousal or excitement, but I did not correctly perceive the subjective content of the state of arousal into which the actor had passed; it was a state of *intense mental concentration* (of the sort required for convincing acting), not one of *fear*. Upon getting a less one-sided impression of the actor's bodily state, I noticed more accurately some characteristics of his mental state. To do this I had to make a mental effort — my own effort of concentration.

This example illustrates why your initial impression of someone's mental state can be misleading. It can be deceptive because of *what you fail to notice*. In the above example, after collecting enough impressions of the actor's actions, I finally notice the actor's mental state: one of intense, deliberate concentration.

It should be clear from the above example of the actor that the direct perception of psychological states is fallible

but correctable, and is reliable only to the extent that it is *unambiguous*. Thus we arrive at an idea close to Tillman's idea which I mentioned earlier.¹¹ The main difference between my proposal and Tillman's is that on Tillman's account, a certain lessening of ambiguity makes the perception of another's mental states inevitable,¹² while on my account, the lessening of ambiguity is of a slightly different kind and makes the *content* of a mental state more clearly discernible.

Trustworthy perception of another subjects' mental state is possible. To be completely trustworthy, such a perception would have to be founded on subjective facts which leave one no choice as to what the state is. All examples of misperception of mental states must violate this requirement to some extent; that is, they must contain some perceptual ambiguity. Such misperceptions involve perception of a mental condition based on subjective facts which together do not contain enough information to specify just what the state is. A particular perceived mental state could be fear or feigned fear — or perhaps even joy in a person who, because of neurological abnormalities, reacts in an unusual way when possessed by joy. But if one does not perceive with the help of enough subjective facts to disclose the nature of the mental state, one might notice only that there is a mental state — if one even notices that much.

Despite its limitations, perceptual access to mental situations external to oneself provides a knowledge of other minds far more secure than anything that can be obtained through rational inference. This is true even if such

perceptual knowledge is quite unreliable. If a link between mental states and bodily states of other beings is only something that I infer, then this inference is quite uncertain. Unless I base this inference on a particular philosophical view of the nature of consciousness, the inference must be inductive rather than deductive.¹³ Such an inference is well known to require generalization from facts about my own consciousness to conclusions about consciousness in general.¹⁴ This generalization from the consciousness of *one subject* to all consciousness everywhere is known to be a rather weak inference — how do I know that it isn't just my own mind that works that way?¹⁵

Summing Up

The above remarks on perception of other minds lead up to my proposed partial solution to the problem of other minds. I summarize this solution (and its limitations) as follows.

A subject cannot experience in continuance the consciousness events in the history of another subject. In this sense, a subject's mental states are private. When we say that people's thoughts and feelings are private or personal, this is the kind of privacy we primarily have in mind — no one else actually can share our experiences. However, there is another way to perceive mental facts about other beings: some such facts can be true for the observer's own consciousness events. Ordinarily, we do not

distinguish between these two kinds of perception of others' mental states, but the difference is important. Perception of the second sort is grounded in sensations of others' bodily states. For it, mental facts about others are not "private." This capacity to perceive the mental condition of others is one example of a deep property of consciousness events: their logical incompleteness.

The ability to perceive others' subjective states is quite fallible; it does not provide a way to find out, once and for all, whether one's perceptions of the mental states of another being are right. However, the knowledge obtained from such perceptions is *self-correcting*. Errors in perception of others' mental states result from perceptual ambiguity; one cannot be sure one has perceived accurately unless one's experience of the physical state of the other subject determines the other subject's mental state uniquely. If one's experience of another subject is rich enough to meet this condition, then the associated perception of mental states is reliable. If one's experience does not contain enough information to specify fully the character of the mental state, then the impression of the content of the mental state can be a red herring.

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 6. Knowledge of Other Minds

1. On the link between dualism and privacy, see for example Ayer 1963, 90-91.
2. For descriptions of behaviorist views see for example Kagan and Havemann 1976, 22, and Campbell 1984, 59-64, 132-133.
3. This problem is discussed in Campbell 1984, 132-134, and (in relation to dualism) in Cornman and Lehrer 1974, 251-253, among many other works.
4. For example, in the view that dualistic interactionism raises a severe problem of other minds (see Cornman and Lehrer 1974, 251).
5. See Bloom and Lazerson 1988, 233-234.
6. See Bloom and Lazerson 1988, 234.
7. See Strawson 1959, 99.
8. Tillman 1967.
9. This is the "superactor" whom philosophers of mind

have discussed. (See Searle 1992, 35.) The actor I will discuss is not quite as convincing as the superactor.

10. Tillman 1967, especially 170-172; quote on 171.

11. Tillman 1967.

12. Tillman 1967, 171-172.

13. On the possible ways of making this step, see for example Cornman and Lehrer 1974, 251; for a particularly promising way, see Searle 1992, 71-77. On the bearing of different philosophies of mind on the problem of other minds, see for example Cornman and Lehrer 1974, 306-307, and Campbell 1984, 132-134.

14. See Ayer 1958, 249-251, and Cornman and Lehrer 1974, 251.

15. *Ibid.*

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.

- Alberts, B., D. Bray, J. Lewis, M. Raff, K. Roberts, and J. D. Watson 1983. *Molecular Biology of the Cell*. New York: Garland Publishing.
- Armstrong, D.M. 1989. *Universals: an Opinionated Introduction*. Boulder, Colorado: Westview Press.
- Ayer, A. J. 1958. *The Problem of Knowledge*. London: Macmillan & Co.
- 1959. Privacy. Reprinted in *The Concept of a Person and Other Essays*. N.Y.: St. Martin's Press, 1963.
- 1963. The concept of a person. *The Concept of a Person and Other Essays*. N.Y.: St. Martin's Press.
- Baynes, K., Bohman, J., and McCarthy T. (eds.) 1987. *After Philosophy: End or Transformation?* Cambridge, Mass.: The MIT Press.
- Bergson, H. 1907. *Creative Evolution*. Trans. A. Mitchell. N.Y.: Henry Holt and Co., 1923.
- Berkeley, G. 1710. *A Treatise Concerning the Principles of Human Knowledge*. In *Principles, Dialogues, and Philosophical Correspondence*, ed.. and intro. by C. M. Turbayne. Indianapolis: Bobbs-Merrill Educational Publishing, 1965.
- 1713. *Three Dialogues Between Hylas and Philonous*. In *Principles, Dialogues, and Philosophical Correspondence*, ed.. and intro. by C. M. Turbayne. Indianapolis: Bobbs-Merrill Educational Publishing, 1965.

- Black, M. 1952. The identity of indiscernibles. In *Universals and Particulars: Readings in Ontology*, ed. M. J. Loux. Revised ed. Notre Dame: Univ. of Notre Dame Press, 1976.
- Block, N. 1996. How can we find the neural correlate of consciousness? *Trends in Neurosciences* (Reference Edition) 19:456-459.
- Bloom, F. E. and A. Lazerson 1988. *Brain, Mind, and Behavior*. 2nd ed. New York: W. H. Freeman & Co.
- Boethius, 524. *The Consolation of Philosophy*. Trans., with intro. and notes, by R.H. Green. Indianapolis: The Bobbs-Merrill Co., 1962.
- Bowne, B. P. 1908. *Personalism*. Boston: Houghton Mifflin Co.
- Broad, C. D. 1927. *Scientific Thought*. Reprint ed. New York: Harcourt, Brace & Co.
- Bueche, F. J. 1986. *Introduction to Physics for Scientists and Engineers*. 4th ed. N.Y.: McGraw-Hill.
- Campbell, K. 1984. *Body and Mind*. 2nd ed. Notre Dame, Ind.: Univ. of Notre Dame Press.
- Carnap, R. 1928. *The Logical Structure of the World*. In *The Logical Structure of the World; Pseudoproblems in Philosophy*, trans. R. A. George. Berkeley: University of California Press, 1969.
- Carruthers, P. 1986. *Introducing Persons*. London: Croom Helm.
- Church, A. 1956. *Introduction to Mathematical Logic*. Vol. 1. Princeton, N.J.: Princeton Univ. Press.
- Cornman, J. W. and K. Lehrer, 1974. *Philosophical*

- Problems and Arguments: An Introduction*. 2nd ed. N.Y.: Macmillan Pub. Co.
- Danto, A. C. 1959. On consciousness in machines. In Hook 1960.
- Davidson, D. 1982. Paradoxes of irrationality. In *Philosophical Essays on Freud*, ed. R. Wollheim and J. Hopkins. Reprint ed. Cambridge, England: Cambridge Univ. Press, 1982.
- Dennett, D. C. 1969. *Content and Consciousness*. London: Routledge & Kegan Paul.
- 1991. *Consciousness Explained*. Boston: Little, Brown and Co.
- Descartes, R. 1637. *Discourse on the Method of Rightly Conducting the Reason and Seeking Truth in the Sciences*. In *Discourse on Method and Meditations*, trans. and intro. by L.J. Lafleur. Indianapolis: The Bobbs-Merrill Co., 1960.
- 1641. *The Meditations Concerning First Philosophy*. In *Discourse on Method and Meditations*, trans. and intro. by L.J. Lafleur. Indianapolis: The Bobbs-Merrill Co., 1960.
- Drake, F. R. 1974. *Set Theory: An Introduction to Large Cardinals*. Amsterdam: North-Holland Pub. Co.
- Dummett, M. 1964. Bringing about the past. In *Truth and Other Enigmas*. Cambridge, Mass.: Harvard Univ. Press, 1978.
- Durant, W. 1953. *The Story of Philosophy*. 2nd ed. N.Y.: Simon and Schuster.
- Einstein, A. 1955. *The Meaning of Relativity*. 5th ed.

- Trans. E. P. Adams, E. G. Straus, and S. Bargmann.
Princeton, N.J.: Princeton Univ. Press.
- Findlay, J. N. 1948. Can God's existence be disproved?
Mind 57:176-183.
- Forbes, G. 1985. *The Metaphysics of Modality*. Oxford:
Clarendon Press.
- Foster, J. 1979. In *self-defence*. In *Perception and Identity*,
ed. G. F. Macdonald. London: The Macmillan Press Ltd.
- Goldenson, R. M., ed. (Editor-in-Chief), 1984. *Longman
Dictionary of Psychology and Psychiatry*. N.Y.:
Longman.
- Gorovitz, S., and R. G. Williams, in collaboration with D.
Provenance and M. Provenance, 1969. *Philosophical Analysis:
An Introduction to Its Language and Techniques*. 2nd ed.
N.Y.: Random House.
- Grayling, A. C. 1982. *An Introduction to Philosophical
Logic*. Sussex: The Harvester Press Limited; Totowa,
N.J.: Barnes & Noble Books.
- Green, M. B., J. H. Schwarz, and E. Witten, 1987.
Superstring Theory. Vol. 1. Cambridge, England:
Cambridge Univ. Press.
- Green, M. B., and D. Wikler, 1980, Brain death and personal
identity. Reprinted in *Medicine and Moral Philosophy*,
ed. M. Cohen, T. Nagel and T. Scanlon. Paperback ed.
Princeton, N.J.: Princeton Univ. Press, 1982.
- Grice, H. P. 1941. Personal identity. *Mind* 50:330-350.

- Harth, E. 1993. *The Creative Loop: How the Brain Makes a Mind*. Reading, Mass.: Addison-Wesley Pub. Co.
- Hartmann, E. v. 1868. *Philosophy of the Unconscious*. Trans. W. C. Coupland. N.Y.: Harcourt, Brace & Co. 1931.
- Hartshorne, C. 1962. *The Logic of Perfection and Other Essays in Neoclassical Metaphysics*. La Salle, Ill.: Open Court.
- 1965. *Anselm's Discovery: A Re-examination of the Ontological Proof for God's Existence*. La Salle, Ill.: Open Court.
- 1984. *Omnipotence and Other Theological Mistakes*. Albany, N.Y.: State Univ. of New York.
- Hegel, G. W. F. 1816. *Hegel's Science of Logic*. Trans. A. V. Miller. Reprint ed. N.Y.: Humanities Press, 1976.
- Hirsch, E. 1982. *The Concept of Identity*. N.Y. and Oxford: Oxford University Press.
- Hook, S., ed., 1960. *Dimensions of Mind*. N.Y.: New York Univ. Press.
- Hook, S. 1959. A pragmatic note. In Hook 1960.
- Howison, G. H. 1904. *The Limits of Evolution and Other Essays*. 2nd ed. (rev.) N.Y.: The Macmillan Co.
- Hume, D. 1739-40. *A Treatise of Human Nature*. Ed. and indexed by L. A. Selby-Bigge; revised by P. H. Nidditch. Reprint of 2nd ed. Oxford: Clarendon Press, 1983.
- Husserl, E. 1950. *Cartesian Meditations: An Introduction to Phenomenology*. Trans. Dorion Cairns. Dordrecht: Kluwer Academic Publishers, 1993.
- James, W. 1884. On some omissions of introspective

- psychology. In *Essays in Psychology*. Textual editor, Fredson Bowers. Cambridge, Mass.: Harvard Univ. Press, 1983.
- Jennings, H. S. 1906. *Behavior of the Lower Organisms*. Intro. D. D. Jensen. Bloomington: Indiana Univ. Press, 1962.
- Jensen, D. D. 1962. Foreword to the 1962 edition. In Jennings 1906.
- Kagan, J., and Havemann, E. 1976. *Psychology: An Introduction*. 3rd ed. N.Y.: Harcourt Brace Jovanovich.
- Kant, I. 1781. *Critique of Pure Reason*. Revised and expanded from translation by J. M. D. Meiklejohn. Ed. Vasilis Politis. Everyman Library (London: J. M. Dent; Vermont: Charles E. Tuttle), 1993.
- Kenny, A. 1979. *The God of the Philosophers*. Oxford: Clarendon Press.
- Krech, D., Crutchfield, R. S., and Livson, N. 1969. *Elements of Psychology*. 2nd ed. N.Y.: Alfred A. Knopf.
- Lachman, R. 1959. Machines, brains, and models. In Hook 1960.
- Leibniz, G.W.v. 17xx. *Monadology*. In *Monadology and Other Philosophical Essays*, trans. P. Schrecker and A. M. Schrecker; intro. and notes by P. Schrecker. Indianapolis: The Bobbs-Merrill Company, 1965.
- Leighton, R. B. 1959. *Principles of Modern Physics*. N.Y.: McGraw-Hill Book Co.
- Lewis, D. 1991. *Parts of Classes*. Oxford: Basil Blackwell.
- Locke, J. 1689. *An Essay Concerning Human*

- Understanding*. Ed. and foreword by P.H. Nidditch.
Reprint paperback ed. Oxford: Clarendon Press, 1979.
- Loux, M. 1970. Particulars and their individuation. In
Universals and Particulars: Readings in Ontology, ed. M.
J. Loux. Revised ed. Notre Dame: Univ. of Notre Dame
Press, 1976.
- Malcolm, N. 1960. Anselm's ontological arguments. *The
Philosophical Review* 69:41-62.
- Marks, C. E. 1980. *Commissurotomy, Consciousness, and
Unity of Mind*. Montgomery, Vt.: Bradford Books.
- McTaggart, J. E. 1909. The relation of time and eternity.
Mind 18:343-362.
- 1927. *The Nature of Existence*. Ed. C. D. Broad. Vol.
2. Cambridge: Cambridge Univ. Press, 1927
- Mele, A. R. 1987. *Irrationality: An Essay on Akrasia, Self-
Deception, and Self-Control*. N.Y.: Oxford University
Press.
- Mellor, D.H. 1981. *Real Time*. Cambridge, England:
Cambridge Univ. Press.
- Merzbacher, E. 1970. *Quantum Mechanics*. 2nd ed. N.Y.:
John Wiley & Sons.
- Mill, J.S. 1865. *An Examination of Sir William Hamilton's
Philosophy, and of the Principal Philosophical Questions
Discussed in His Writings*. Vol. I. Boston: William V.
Spencer.

- Minkowski, H. 1908. Space and time. In *The Principle of Relativity*, trans. W. Perrett and G. B. Jeffery. N.Y.: Dover Publications, 1952.
- Morowitz, H.J. 1980. Rediscovering the mind. Reprinted in *The Mind's I*, composed and arranged by D.R. Hofstadter and D.C. Dennett. N.Y.: Basic Books, 1981.
- Nagel, T. 1974. What is it like to be a bat? *The Philosophical Review* 83:435-450.
- Natanson, M. 1973. *Edmund Husserl: Philosopher of Infinite Tasks*. Evanston: Northwestern University Press.
- Newton-Smith, W.H. 1980. *The Structure of Time*. Paperback ed. London: Routledge & Kegan Paul, 1984.
- Orenstein, A. 1978. *Existence and the Particular Quantifier*. Philadelphia: Temple Univ. Press.
- Parfit, D. 1971. Personal identity. *The Philosophical Review* 80:3-27.
- Parsons, T. 1980. *Nonexistent Objects*. New Haven: Yale Univ. Press.
- Pears, D. 1984. *Motivated Irrationality*. Oxford: Clarendon Press.
- Penrose, R. 1989. *The Emperor's New Mind*. N.Y.: Oxford University Press.
- Pfeiffer, J., and the editors of *Life*, 1964. *The Cell*. N.Y.: Time Inc.
- Plantinga, A. C. 1977. *God, Freedom, and Evil*. Reprint ed. Grand Rapids, Mich.: William B. Eerdmans Pub. Co., 1989.

- Plato. *Plato's Republic*. Trans. G.M.A. Grube;
Indianapolis: Hackett Pub. Co., 1974.
- Popper, K. R. and Eccles, J. C. 1985. *The Self and Its Brain*.
2nd printing (corrected). Berlin: Springer International.
- Prior, A. N. 1957. *Time and Modality*. Oxford: Clarendon
Press.
- Quine, W. V. O. 1939. A logistical approach to the
ontological problem. In *The Ways of Paradox and Other
Essays*. Revised & enlarged ed. Cambridge, Mass.:
Harvard Univ. Press, 1976.
- 1959. *Methods of Logic*. Rev. ed. N.Y.: Henry Holt
& Co.
- 1960. *Word and Object*. Cambridge, Mass.: The
Technology Press of the Massachusetts Institute of
Technology; New York and London: John Wiley & Sons.
- Rescher, N. 1959. The ontological proof revisited.
Australasian Journal of Philosophy 37:138-148.
- Russell, B. 1912. *The Problems of Philosophy*. Reprint
paperback ed. London: Oxford Univ. Press, 1976.
- 1918. "The Philosophy of Logical Atomism." In *The
Philosophy of Logical Atomism*, ed. and intro. by D. Pears.
La Salle, Ill.: Open Court, 1985.
- 1924. "Logical Atomism." In *The Philosophy of
Logical Atomism*, ed. and intro. by D. Pears. La Salle, Ill.:
Open Court, 1985.
- 1940. *An Inquiry into Meaning and Truth*. N.Y.: W.
W. Norton & Co.
- 1948. *Human Knowledge: Its Scope and Limits*.
N.Y.: Simon and Schuster.

- Schlesinger, G. N. 1980. *Aspects of Time*. Indianapolis: Hackett Pub. Co.
- Schopenhauer, A. 1844. *The World as Will and Representation*. Trans. E.F.J. Payne. Vol. 2. N.Y.: Dover Publications, 1966.
- Schrecker, P. 1965. The unity of Leibniz' philosophic thought. In Leibniz, G. W., *Monadology and Other Philosophical Essays*, trans. P. Schrecker and A. M. Schrecker; intro. and notes by P. Schrecker. Indianapolis: The Bobbs-Merrill Company, 1965.
- Scriven, M. 1959. The compleat robot: a prolegomena to androidology. In Hook 1960.
- Searle, J.R. 1992. *The Rediscovery of the Mind*. Cambridge, Mass.: The MIT Press.
- Shoemaker, S. 1970. Persons and their pasts. *American Philosophical Quarterly* 7:269-285.
- 1989. Personal identity: a materialist's account. In Shoemaker and Swinburne 1989.
- 1989a. Sydney Shoemaker's reply. In Shoemaker and Swinburne 1989.
- Shoemaker, S. and Swinburne, R. 1989. *Personal Identity*. Reprinted (first published 1984). Oxford: Basil Blackwell.
- Smullyan, R.M. 1981. An epistemological nightmare. In *The Mind's I*, composed and arranged by D.R. Hofstadter and D.C. Dennett. N.Y.: Basic Books, 1981.
- Spinoza, B. 1677. *Ethic*. Trans. W.H. White. In *Spinoza Selections*, ed. John Wild. N.Y.: Charles Scribner's Sons, 1930.

- Strawson, P. F. 1950. On referring. *Mind* 59:320-344.
- 1959. *Individuals: An Essay in Descriptive Metaphysics*. London: Methuen & Co.
- Stump, E. and Kretzmann, N. 1981. Eternity. *The Journal of Philosophy* 78:429-458.
- Swinburne, R. 1989. Personal identity: the dualist theory. In Shoemaker and Swinburne 1989.
- Tarski, A. 1931. The concept of truth in formalized languages. In *Logic, Semantics, Metamathematics*, trans. J.H. Woodger. Oxford: Clarendon Press, 1956.
- 1944. The semantic conception of truth and the foundations of semantics. *Philosophy and Phenomenological Research* 4:341-376.
- Taylor, E. F. and J.A. Wheeler 1966. *Spacetime Physics*. San Francisco: W. H. Freeman and Co.
- Tillman, F. A. 1967. On perceiving persons. In *Phenomenology in America*, ed. and intro. by J. M. Edie. Chicago: Quadrangle Books, 1967.
- Visser, M. 1995. *Lorentzian Wormholes: From Einstein to Hawking*. Woodbury, NY: American Institute of Physics.
- Watanabe, S. 1959. Comments on key issues. In Hook 1960.
- Weiss, P. 1959. Love in a machine age. In Hook 1960.

From Brain to Cosmos

- Wheeler, J.A. 1983. Law without law. In *Quantum Theory and Measurement*, ed. J. A. Wheeler and W. H. Zurek. Princeton, N.J.: Princeton Univ. Press, 1983.
- Whitrow, G. J. 1973. *The Nature of Time*. N.Y.: Holt, Rinehart and Winston.

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.

From Brain to Cosmos was published by Universal Publishers (Parkland, FL) in 2001. ISBN: 1-58112-683-2

From Brain to Cosmos, and all excerpts therefrom, are copyright © 2001 by Mark F. Sharlow. Other parts of this document are copyright © 2010 by Mark F. Sharlow.