

## The Easy and Hard Problems of Consciousness: A Cartesian Perspective

Frederick B. Mills

*Bowie State University*

This paper contrasts David Chalmers's formulation of the easy and hard problems of consciousness with a Cartesian formulation. For Chalmers, the easy problem is making progress in explaining cognitive functions and discovering how they arise from physical processes in the brain. The hard problem is accounting for why these functions are accompanied by conscious experience. For Descartes, the easy problem is knowing the essential features of conscious experience. The hard problem is verifying our knowledge of the mathematical–physical world. While Chalmers admits that consciousness as subjective experience has something irreducible about it, he also presupposes that conscious experience arises from physical processes. These physical processes are posited as objectively real entities given prior to human experience. The knowledge of such entities is assumed without theoretical justification. This assumption arguably invites a reductive materialist theory of mind. I suggest that employing the Cartesian method to articulate the representational theory of knowledge provides an antidote to reductive materialism and illuminates the conceptual gap between physical processes and conscious experience. To illustrate this I contrast Dennett's heterophenomenology with the Cartesian method of crossing the conceptual gap. I suggest that the hard problem is attaining a knowledge of the extra-mental physical objects, not of conscious experience.

David Chalmers's landmark article, "Facing up to the Problem of Consciousness" (1995), has generated a renewed interest in the fundamental issues of consciousness studies. While Chalmers admits that consciousness has something irreducible about it, he also presupposes that conscious

---

Work on this article was supported by Grant 5–20005 Model Institutes for Excellence of Bowie State University. I thank R. Acampora, K. Bangura, and H. Tornabene for helpful comments on an earlier version of the paper. An earlier version of this paper was presented by the author at the Twenty-first Annual Fall Philosophy Colloquium On René Descartes: "The Father of Modern Philosophy," November 13, 1996 at Towson State University, Maryland. Requests for reprints should be sent to Fred Mills, Ph.D., Bowie State University, Department of History and Government, 14000 Jericho Park Road, Bowie, Maryland 20715–9465. E-mail: fmills@bowiestate.edu

experience arises from physical processes. Although it is not Chalmers's intention, this type of approach leaves the door open to a reduction of human conscious experience to the performance of functions based on neurophysiological activity (see for example, Churchland, 1988; Dennett, 1991). This paper argues that the Cartesian method provides a critique of the contemporary reductive physicalist approach and can help us better understand the conceptual gaps articulated by Chalmers in terms of the easy versus the hard problems of conscious experience.

I shall begin by examining the easy and hard problems of consciousness as formulated by Chalmers (1995). I then compare Chalmers's formulation to the easy and hard problems as they might be formulated from a Cartesian perspective (a perspective, incidentally, which Chalmers, 1996, p. 124, explicitly rejects). Both formulations reveal a common conceptual gap in our ability to relate conscious states to physical objects or processes. I then analyze two radically different ways of crossing this gap: (a) Daniel Dennett's "heterophenomenological" method (an attempt at a neutral point of view), and (b) the Cartesian method (which begins on the side of the subject). I argue that Descartes offers a more critical method for setting up the easy and hard problems and that Dennett's "heterophenomenology" assumes too much about human knowledge of physical objects.

### Chalmers's Easy and Hard Problems

#### *The Two Meanings of "Consciousness"*

According to Chalmers, "'Consciousness' is an ambiguous term" (1995, p. 200). It has two philosophically interesting meanings which generate two distinct philosophically interesting problems. On the one hand, the term consciousness may refer to psychological states (cognition or functions); on the other hand, consciousness may refer to phenomenal experience (see Chalmers, 1996, pp. 11–31 for a detailed discussion of this distinction). For Chalmers, "the easy problems of consciousness are those that seem directly susceptible to the standard methods of cognitive science, whereby a phenomenon is explained in terms of computational or neural mechanisms" (1995, p. 200). For example, awareness (as the ability to access information), and the abilities to discriminate, focus attention, and control behavior, may all be explained in a cognitive or neurophysiological model (p. 200). If this were all there were to the problem of consciousness, we might put Chalmers in the reductionist camp. Chalmers is not a reductionist because he admits that there is a hard problem, the problem of explaining why there is subjective (or phenomenal) experience (p. 201). By "subjective experience," Chalmers refers to the subjective raw feels, qualia, and "what" it is like to be

a conscious organism (p. 201; see Nagel, 1974/1981, for the classic discussion of “what it is like to be” a conscious organism). Chalmers asks,

Why is it that when our cognitive systems engage in visual and auditory information-processing, we have visual or auditory experience: the quality of deep blue, the sensation of the middle C? How can we explain why there is something it is like to entertain a mental image, or to experience an emotion? . . . Why should physical processing give rise to a rich inner life at all? (1995, p. 201)

Chalmers argues that the trouble with the term consciousness is that some reductionists use its different meanings to “bait-and-switch,” that is, they begin by promising to explain conscious states but end by explaining cognitive functions, ignoring the hard problem (p. 202). For example, cognitive psychology might identify the mechanisms that account for the performance of cognitive functions such as awareness and memory, but this does not answer the hard question: “*Why is the performance of these functions accompanied by experience?*” (p. 203). The “explanatory gap” (p. 203) would be crossed by an explanation of how the neural events that are responsible for (or cause) the performance of the cognitive functions are also responsible for (or cause) human conscious experience. We are now in search of a method for crossing this gap.

### *The Methodological Problem*

Neuroscience is developed through steadily progressing empirical research, but conscious experience is not completely amenable to the same research methods (Chalmers, 1995). Unlike a neuron, conscious experience is not an object because it is grounded in a point of view. As Nagel points out,

If the subjective character of experience is fully comprehensible only from one point of view, then any shift to greater objectivity — that is, less attachment to a specific point of view — does not take us nearer to the real nature of the phenomenon: It takes us farther away from it. (1974/1981, p. 399)

The scientific method, with few exceptions, requires that the *explanandum* be considered objectively. This method, therefore, is not completely adequate for the development of a theory of conscious experience (p. 393; see Chalmers, 1995, p. 211).

Even if neuroscience discovers all of the mechanisms in the brain that correlate with conscious experience, the manner in which these brain processes cause conscious experience would still stand in need of explanation. The problem is finding the empirical link between neural events (which are objective) and phenomenal experience (which is subjective). The concept of conscious experience, therefore, is not replaceable by a neurophysiological

explanation. The problem of explaining the origin and source of conscious experience is not analogous to the problem of explaining organic life. The *elan vital* that was once used to account for the principle of life has been discarded and replaced by an evolutionary biological account. As Chalmers points out, conscious states, unlike the now discarded *elan vital*, are not here posited provisionally, pending the discovery of a neurophysiological account; conscious states themselves stand in need of explanation (1995, p. 209).

### *The Epistemic Primacy of Physical Objects*

The way in which Chalmers sets up the easy and hard problem of consciousness gives epistemic primacy to physical reality. By epistemic primacy, I mean that physical objects are known first in the order of discovery about what sorts of things there are in the universe. On this view we not only know that physical objects exist; we also have a theory (subject to modification based on empirical research) which explains these phenomena. Physical objects then become the basis for explaining other sorts of phenomena that do not, at first, appear to be physical objects, such as organic life. Chalmers, however, wants to be both non-reductionist and physicalist. He maintains that “a nonreductive theory of experience will specify basic principles telling us how experience depends on physical features of the world” and “how experience arises from physical processes” (1995, p. 210; but see Chalmers, 1996, pp. 125–126 for qualification of the term “arises”). The critical question here is this: How do we know that “experience depends on physical features of the world?” It is important to note that for Chalmers, the extra-mental existence of physical objects is not problematic. Chalmers argues that it is part of the easy problem to discover the properties and laws of physical processes but it is hard to explain why there are conscious states. “Given any such [physical] process,” says Chalmers, “it is conceptually coherent that it could be instantiated in the absence of experience” (p. 208). How could we know about anything as it is instantiated in the absence of experience? This issue is philosophically interesting because it determines the parameters of the hard and easy problems.

Is there sufficient theoretical justification for assuming that physical processes can be instantiated in the absence of conscious experience? How do we know? From a Cartesian perspective, the human body and what goes on in the brain are themselves known through the mediation of sense perception. Chalmers (1995), however, seems to presuppose either a direct human knowledge of physical processes or some human access to a third person perspective. He acknowledges that “there is Descartes’s problem about the existence of the external world. It is compatible with our experiential evidence that the world we think we are seeing does not exist; perhaps we are halluci-

nating, or we are brains in vats" (1996, p. 75). Chalmers declares that he is "bypassing this sort of skeptical problem by giving myself the physical world for free . . ." (p. 75). But not so fast. With a critical conceptual gap at stake, we must pay a price for knowledge of the extra-mental. The payment appears to be in the form of an ungrounded positing of some sort of third person perspective. How else can the scientific realist conceive that the extra-mental exists in the absence of the first person perspective?

If we attempt to conceive of the extra-mental at all, the very act of conception threatens to undermine our project, for that which is conceived is not immediately itself an extra-mental object. More precisely, the two poles of the intentional relation, conceiving and conception, are both immanent features of a mental state. Scientific realism seeks to escape the epistemic limits of immanence and attain access to physical objects as they are in themselves. Such realism arguably presupposes that there are intrinsic or observer-independent features of the world in addition to observer-relative features (Searle, 1992, pp. 211–212). Since all human knowledge requires some perspective, the ideal of a neutral, third person perspective does the work of establishing the possibility of an object that is purified of its observer-relative qualities. Only then are we in a position to conceive of physical processes in the absence of our own experience. Scientific realism thus aims at the ideal knowledge of the third person when it studies the intrinsic features of the world.

The Cartesian method, in contrast, explicitly works out an argument for human knowledge of extra-mental physical objects. Although we encounter the third person perspective in the Cartesian manner of setting up the easy and hard problems, Descartes does not begin with a third person perspective, nor does he presuppose the existence of extra-mental reality. With Descartes, we start from the point of view of the subject, that is, from the other side of the conceptual gap.

### The Cartesian "Easy" and "Hard" Problems and the "Conceptual Gap"

This section offers (a) a Cartesian reversal of the easy and hard problems of consciousness studies, and (b) an interpretation of how a Cartesian might go about solving her hard problem. This discussion will lead to a reinterpretation of the conceptual gap in consciousness studies and examine how Descartes establishes human knowledge of extra-mental physical objects.

#### *A Cartesian Reversal of the Easy and Hard Problems*

For Descartes, the easy problem was establishing human knowledge of the *res cogitans*. In his second meditation on first philosophy the subtitle reads:

“Of the Nature of the Human Mind; and that it is more easily known than the Body” (1641/1967b, p. 149). The human mind is more easily known than the body because one is able to call into question the existence of a mathematical–physical world (with Soffer, 1990, I will hereafter use this term to refer to extra-mental reality). One cannot, however, rationally call into question the existence of one’s own mind. Presently, I will employ the first person voice in order to adequately capture the heart of Descartes’s argument.

In one formulation of the *cogito* argument (in the second meditation) Descartes states: “I am, I exist, is necessarily true each time that I pronounce it, or that I mentally conceive it” (1641/1967b, p. 150). I verify my own existence in the very act of thinking. Again, Descartes states: “What of thinking? I find here that thought is an attribute that belongs to me; it alone cannot be separated from me. I am, I exist, that is certain. But how often? Just when I think; for it might possibly be the case if I ceased entirely to think, that I should likewise cease altogether to exist” (pp. 151–152). Notice that these formulations of the *cogito* are not deductive arguments. While I am engaged in systematic doubting, I come up against a unique type of inconsistency when I attempt to doubt my own existence. For doubting is a form of thinking, and this thinking, in itself, reveals a form of existence. There is therefore something absurd in the very performance of a thought or speech-act by which I doubt my own existence. As Hintikka (1962/1967) points out, for Descartes, the indubitability of the existence of conscious experience is based on the existential inconsistency in declaring or thinking “I do not exist.” Notice that the inconsistency occurs not when someone else doubts my existence, but when I do. The performance of such a speech or thought-act is not consistent with the meaning of the act. And the meaning of the act is in part informed by the context (the person saying it). Hintikka argues:

The function of the word *cogito* in Descartes’s dictum is to refer to the thought-act through which the existential self-verifiability of “I exist” manifests itself. Hence the indubitability of this sentence is not strictly speaking perceived *by means of* thinking (in the way the indubitability of a demonstrable truth may be said to be); rather, it is indubitable *because* and *in so far as* it is actively thought of. In Descartes’s argument the relation of *cogito* to *sum* is not that of a premise to a conclusion. Their relation is rather comparable with that of a *process* to its *product*. The indubitability of my own existence results from my thinking of it almost as the sound of music results from playing it or (to use Descartes’s own metaphor) light in the sense of illumination (*lux*) results from the presence of a source of light (*lumen*). (1962/1967, p. 122)

Unfortunately, the well known “I think therefore I am” statement is not the best articulation of Descartes’s argument. It looks like an inference. The “I am,” however, is not deduced from the “I think.” To reiterate, I know about the existence of thinking immediately, as it were, from the inside. This knowledge is therefore relatively easy and has epistemic primacy for Descartes. My

knowledge of myself as a *res cogitans* is prior, in the order of discovery, to any knowledge I may achieve about extra-mental reality.

What other sort of knowledge is part of the easy problem from the Cartesian perspective? I am also certain that I myself formulate ideas and that other ideas present themselves without my volition as the content of my conscious states, whatever be their cause (see, for example, 1641/1967b, pp. 153, 161–164). Though I may have doubts about the origin of those ideas which constitute the appearance of the world, I cannot doubt that these ideas present themselves as the immanent content of conscious states.

Can I be mistaken about my ideas? Descartes admits it is possible that perceptions “are false and that I am dreaming. Let it be so; still it is at least quite certain that it seems to me that I see light, that I hear noise and that I feel heat. That cannot be false . . .” (1641/1967b, p. 153). Even if these ideas (in this case sense perceptions) turn out to be illusions, they nevertheless present themselves. In short, coming to know my own existence and the appearance of the everyday world is part of the easy problem.

The hard problem, for Descartes, was establishing knowledge of the mathematical–physical world, the object of natural science. The precise reason why this is a hard problem is that the essential properties of physical objects are known only indirectly, by way of the idea. In order to establish a theoretical foundation for the natural sciences, Descartes sought verification for the representative nature of our ideas. For example, when I have the idea (visual perception) of this computer monitor, I suppose that the monitor itself (*qua* physical object) is not literally in my mind. What I have immediately in mind is the visual perception of the monitor. In order to know the mathematical–physical correlate of my visual perception, I need to know what, if any, aspects of my idea represent the mathematical–physical object. Descartes uses the example of our visual perception of the sun to make this point clear:

I find, for example, two completely diverse ideas of the sun in my mind; the one derives its origin from the senses and should be placed in the category of adventitious ideas; according to this idea the sun seems to be extremely small; but the other is derived from astronomical reasonings, i.e. is elicited from certain notions that are innate in me, or else it is formed by me in some other manner; in accordance with it the sun appears to be several times greater than the earth. These two ideas cannot, indeed, both resemble the same sun, and reason makes me believe that the one which seems to have originated directly from the sun itself, is the one which is most dissimilar to it. (1641/1967b, p. 161)

One of the issues raised by the double sun problem is that (perceptual) ideas represent certain features of mathematical–physical objects by resembling those features. This resemblance must be corrected by astronomical, optical, or other appropriate theory. How does one verify that certain fea-

tures of perceptual (phenomenal) experience resemble certain properties that belong to the mathematical–physical world? Soffer (1990) goes right to the center of the difficulty:

To judge whether a perception accurately represents the objective state of affairs causing it, one would need to compare the possibly distorted perception with a reliably undistorted representation of the causing object. But it is just this latter for which we have no justified standard of comparison. (p. 71)

If one cannot get out of one's conscious experience in order to compare the mathematical–physical objects with the corresponding immanent representations, how does one verify the correctness of one's representations?

One solution is to deny that ideas (in the Cartesian broad sense) represent anything extra-mental. Berkeley (1713/1979) argues that the problem of verifying the representative nature of certain aspects of our ideas is a pseudo-problem. It is a pseudo-problem because there is neither a theoretical justification nor a practical justification for positing the mathematical–physical world in the first place. For Berkeley, the primary qualities that scientific realists argue compose the extra-mental are “extension, figure, solidity, gravity, motion, and rest” (p. 23). These qualities, like the secondary qualities that are admittedly merely subjective (taste, sound, smell, tactile qualities, visual perceptions), exist only in the mind. (I return to the primary versus secondary quality distinction below.) This entails the peculiar claim that the brain too, is merely an idea in the mind. As Philonous declares to Hylas in Berkeley's famous *Dialogues*:

The brain therefore you speak of, being a sensible thing, exists only in the mind. Now, I would fain know whether you think it reasonable to suppose, that one idea or thing existing in the mind, occasions all other ideas. And if you think so, pray how do you account for the origin of that primary idea or brain itself? (p. 44)

Interesting question. It does not deter Berkeley, however, from reducing the brain to an idea in the mind. Yes, for Berkeley, the brain is in the mind! Berkeley did, however, substitute another sort of representationalism by positing “archetypes” of our ideas in the mind of God (pp. 47, 49). These archetypes, however, are nevertheless phenomenal because they depend for their existence entirely upon being objects of God's thought.

The denial of the traditional representational theory of knowledge led Berkeley to a radical phenomenalism. What alternative is there for a Cartesian who is not prepared to go Berkeley's route? Ironically, the path to a theoretical justification of physics as a science was often through theology.



*Theological Resolution of the Hard Problem in Descartes's Theory of Knowledge*

From a Cartesian perspective, the “conceptual coherence” that Chalmers maintains, noted earlier, requires crossing the conceptual gap between phenomenal experience and physical processes in the brain starting from the side of the subject. Rather than begin, as Chalmers does, with both an irreducible conscious experience *and* physical objects considered apart from experience, Descartes starts solely from the immanent content of conscious experience — the appearance of the world. Yet the appearance of the world is a problem for Descartes. Unlike Berkeley (1713/1979), who identified *being* with *being perceived*, Descartes did not believe the appearance of the world exhausted the real. What reason did Descartes have to seek knowledge beyond mere appearance? The answer is found in the distinction between two very different sorts of ideas: those that are generated a priori (the innate ideas) and those which are empirical, the adventitious ideas.

Innate ideas did not pose the problem of extra-mental reality because Descartes thought such ideas were inborn (1641/1967b, p. 160). Innate ideas include the system of ideas in formal logic, mathematical axioms and theorems, and certain metaphysical truths, such as the proposition that every finite thing has a cause. Innate ideas may be employed without resorting to any particular sense data. For example, when I add two plus three and calculate that the sum of these two numbers is five, I do not need any empirical evidence to support my claim nor to discover that the claim is true. Bringing two apples together and then getting three more does nothing at all to enhance the proof though it may provide an illustration. A priori demonstrations are not based on induction.

Adventitious ideas, however, pose a critical problem. Adventitious ideas are those that appear to come from without, that is, I do not experience myself as the cause of these ideas. For example, the idea I have of the computer monitor in front of me does not come about in the same way as the idea of Euclidean parallel lines. It seems to me that something beyond my own rational intuition and analytical skills brings about the visual perception of the monitor. In the third meditation Descartes poses the problem of the origin of these adventitious ideas:

And my principle task in this place is to consider, in respect to those ideas which appear to me to proceed from certain objects that are outside me, what are the reasons which cause me to think them similar to these objects. It seems indeed in the first place that I am taught this lesson by nature; and, secondly, I experience in myself that these ideas do not depend on my will nor therefore on myself — for they often present themselves to my mind in spite of my will. (1641/1967b, p. 160)

Descartes goes on to admit, however, that this lesson taught by nature is merely an inclination and is in no way a theoretical justification for positing

an extra-mental cause of adventitious ideas. Moreover, Descartes goes on to raise the possibility that these adventitious ideas come from his own mind after all, though he is not aware of creating these ideas and he has not yet discovered in what manner they arise (p. 161).

These adventitious ideas arguably have a cause, since every finite thing has a cause. The epistemological point of Descartes's method, however, is that if I uncritically try to establish the cause of adventitious ideas, I may easily fall into error. As I know from dreams and illusions, it is not always easy to avoid being deceived by the evidence of our senses. Establishing the cause of the adventitious ideas is the hard problem. At stake is the question of the cause of the appearance of the natural world. Let us make this question more precise: Is there an extra-mental cause of the appearance of the world, and if there is, what are its essential features?

The claim that a world appears is not in question. If I suspend my judgment with regard to the ontological status of the natural world and consider the appearance of the world merely as it is given, that is as immanent appearance (the content of a mental state), I avoid falling into error. This, I believe, is the starting point of phenomenology. As Descartes states in the third meditation,

Now as to what concerns ideas, if we consider them only in themselves, and do not relate them to anything else beyond themselves, they cannot properly speaking be false; for whether I imagine a goat or a chimera, it is not less true that I imagine one than the other . . . . But the principal error and the commonest which we may meet with in them, consists in judging that the ideas which are in me are similar or conformable to the things which are outside me; for without doubt if I consider the ideas only as certain modes of my thoughts, without trying to relate them to anything beyond, they could scarcely give me material for error. (1641/1967b, pp. 159–160)

At this point in the argument, Descartes has not yet discovered the origin of adventitious ideas. Any solution to Descartes's hard problem must come from within the immanence of meditative thinking. Meditative thinking performs what Husserl calls the phenomenological epoché (1913/1958, pp. 110–111). The epoché refers to the "bracketing" of (or suspension of judgment toward) the natural world. By bracketing the natural world, Husserl does not doubt that it is there. Since bracketing is an attempt to let the phenomenal world show itself without imposing metaphysical presuppositions on it, we can exercise our freedom to withhold judgment. I am free to suspend the uncritical habit of referring the cause or basis of adventitious ideas to mathematical–physical objects. As a critical thinker, I require a criteria for determining whether propositions which affirm the existence of an extra-mental object are true. Locke was well aware of this problem (1690/1956):

It is evident the mind knows not things immediately, but only by the intervention of the ideas it has of them. Our knowledge therefore is real, only so far as there is a conformity between our ideas and the reality of things. But what shall be here the criterion? How shall the mind, when it perceives nothing but its own ideas, know that they agree with things themselves? (p. 253)

In order to bridge the explanatory gap between the idea as a representation and that which it represents, I must establish at least indirect access to a third-person perspective that knows directly, that is, without mediation, the mathematical–physical world.

In the early modern period the third person perspective was often attained by appeal to an omniscient and benevolent God. God knows the real world as it is in itself, without mediation. For Spinoza humans have direct, but limited access to divine knowledge. This access in turn provides the human intellect with direct, but limited knowledge of the mathematical–physical objects! Spinoza argues that “a true idea in us is an idea which is adequate in God, in so far as he is displayed through the nature of the human mind” (1677/1955, p. 114). Spinoza adds, “our mind, in so far as it perceives things truly, is part of the infinite intellect of God” (p. 115). This sort of access to the extra-mental object is clearly anchored in human participation in the divine intellect.

Descartes took a similar but less direct strategy. He escapes from solipsism only by first establishing the existence of a benevolent deity (1637/1967a, pp. 104–105; cf. 1641/1967b, p. 185; and 1644/1967d, Part One, Principle LX, pp. 243–244). This deity would not deceive Descartes about Descartes’s natural inclination to posit the mathematical–physical world (see Soffer, 1990). Moreover, for Descartes, both the existence and knowledge of the real distinction between mind and body depend on God: “God can effect whatever we clearly perceive just as we perceive it . . . . But we clearly perceive the mind, i.e. a thinking substance, apart from the body, i.e. apart from any extended substance . . . . Hence, at least through the instrumentality of the Divine power, mind can exist apart from body, and body apart from mind” (1641/1967c, p. 59). In both Spinoza and Descartes the “instrumentality” of the Divine power is critical to advancing human knowledge. For the same reasons Locke also appeals to the divine: “God has given me assurance enough of the existence of things without me . . .” (1690/1956, p. 270).

Notice that while for Spinoza one has a direct view of reality (in so far as one has true ideas) as a mode of God’s intellect, Descartes relies on God’s creative power and benevolence. The Cartesian God guarantees that some aspect of the finite intellect’s idea of the natural world authentically represents the mathematical–physical objects. How do I know which aspects of the idea get the seal of approval? The distinction between the primary and

secondary qualities is employed to clearly distinguish the merely subjective from the representational aspects of ideas.

For early modern physics the primary qualities of physical objects (commonly extension, figure, motion, and number, though there are other variations) were generally viewed as belonging to the mathematical–physical objects themselves. These primary qualities could be known mediately through the representative content of sense experience. The secondary qualities were generally viewed as belonging only to the mental content of sense perception. They were presumed to have no extra-mental correlate (see Locke, 1690/1956, pp. 182–183, for a the classic articulation of the representational theory of knowledge).

This basic distinction between primary and secondary qualities is the foundation of the representational theory of knowledge. According to the representational theory of knowledge, the primary qualities are the proper objects of scientific investigation of the physical world. The ideal of the scientific method is to account for the laws of nature by applying the a priori truths of mathematics, logic, and metaphysics to the empirical data obtained from observation. To succeed in this endeavor, the scientist must get clear of the subjective secondary qualities and grasp the primary qualities.

The secondary qualities, though merely phenomenal, do bear some relation to the primary qualities. Following Barnes's (1940/1968) interpretation of Locke, secondary qualities are, strictly speaking, "*powers in bodies to produce various sensations in us by their primary qualities*" (p. 81). For my purposes, I shall interpret the secondary qualities (with Soffer, 1990, pp. 69, 71) as those aspects of sense experience that are caused by the primary qualities but pertain to merely subjective qualities. This is the more common understanding and it helps make the distinction between these two types of qualities clear. Some examples will illustrate that the representational theory of knowledge is very much the folk science understanding of perception.

This phenomenal musical sound of the acoustic guitar that I hear has a qualitative feel to it, not identical to the primary qualities that cause the phenomenal sound. The primary qualities of this sound have to do with certain objective conditions, namely, vibrations in the air at certain frequencies and the auditory and neurological mechanisms that convey and process the auditory information. The physical processes in the brain associated with auditory functions in turn cause the phenomenal experience of sound. Thus real (mathematical–physical) sound, is not even heard, but to some degree it may be seen with the aid of instruments, such as an oscilloscope. (Of course, the visual experience of the oscilloscope is itself analyzable into both primary and secondary qualities!) Another familiar example is the tactile sensation of room temperature. One day I asked my students how the room feels at a temperature of sixty eight degrees Fahrenheit. For some students it felt a bit cool,

to others very cold, to still others, comfortably warm. These different phenomenal experiences of room temperature were presumably caused by the same objective conditions, that is, the primary qualities. The singular primary quality description of room temperature refers to the motion of molecules in the air that is measured by a thermometer. Similar analyses in terms of both primary and secondary qualities may be given for visual and olfactory sensations.

The primary versus secondary quality dichotomy can be mapped onto the subjective versus objective dichotomy. The primary qualities refer to objective features of reality as opposed to the merely secondary qualities, or subjective features of reality. The primary qualities do indeed appear in the subjective representations of physical objects. We have only mediate access, however, to the primary qualities as they are in themselves. For the Cartesian, human knowledge of this mediation and the very existence of the physical objects is possible only because of divine goodness, knowledge, and power. Thus for Descartes, God guarantees both the truth of our judgments about the qualities of physical objects and creates this reality external to mind. God's creativity, goodness and omniscience form the epistemic and ontological bridge across the conceptual gap (see Soffer, 1990 for a more detailed discussion of the third person perspective in the early modern period).

One may not agree with the manner in which the conceptual gap is crossed. One also might not accept Descartes's proofs for the existence of God. It is true, however, that Descartes and other primary quality realists were keenly aware of the presuppositions they employed in order to cross the conceptual gap that lay between the idea and the extra-mental world represented in the idea. The conceptual gap is not crossed, as it is for Chalmers, and for naïve realism, "for free," but at the cost of accepting theological presuppositions.

#### *Descartes's Hard Problem — A Closer Look*

Now we can pinpoint the hard problem from the Cartesian perspective. The goal of physics is objective knowledge. Objectivity requires the overcoming of a variety of merely subjective points of view. Due to the complete immanence of every sensation, my perception of the computer monitor is not publicly observable. But, neither is the extra-mental monitor publicly observable. The extra-mental monitor is the substantially extended monitor which is the occasion for the appearance of the phenomenal monitors in all who attend to the monitor from their own perspectives. Only the ideal spectator, God, knows the substantially extended monitor directly, without mediation and without a limited perspective (see Soffer, 1990, p. 72 on the "ideal cognitive being"). As Husserl points out, "The same realities . . . are present

to the eyes of all and can be determined by all of us according to their 'nature.' Their 'nature,' however, denotes: presenting themselves in experience according to diversely varying 'subjective appearances'" (1911/1965, p. 104; cf., p. 109). We may bring together "diversely varying subjective appearances" by forming a community of researchers (see Soffer, 1990, on science and the "intersubjective community," pp. 85, 91ff).

If a community of researchers is acquainted with merely phenomenal nature, how can one claim that there is a science of nature? Phenomenal nature is mixed with qualities that depend on the constitution of the subject, such as the taste, smell, tactile sensation, sound, and visual perception of things. These are the secondary qualities. Science, however, is supposed to achieve objective knowledge, that is, knowledge of the primary qualities. If phenomenal nature, which is mixed with secondary qualities, is numerically distinct from the mathematical-physical world of theoretical physics, what does human understanding have to work with in order to develop the ideal point of view, the view of an infinite intellect? Does one's abstractions from the sensuous content yield the right likeness to the mathematical-physical world? And if these abstractions do correctly describe the mathematical-physical world, how would one verify this? These issues completely specify the hard problem for Descartes.

What became progressively clear to primary quality realists in the early modern period is that thinking is immediately related to phenomenal experience and that without the ability of finite intellect to attain the point of view of an ideal spectator who knows things as they are in themselves (the good God) we arguably ought to suspend our judgment, that is, remain agnostic as to whether the phenomena point beyond themselves to extramental reality. We do not get the thing-in-itself "for free" (for a related interpretation of the problem of primary qualities in early modern thought and in Husserl, see Soffer, 1990).

### *Ontology and the Easy and Hard Problems*

Both Chalmers's and the Cartesian version of the easy and hard problems arguably require a third-person perspective in order to cross the conceptual gap between the phenomenal and the physical objects. They each start from different sides of the gap. The easy problem is easy — I suspect — because Chalmers appears to accept the conventional wisdom (of physicalists) that physical objects can be known in themselves. I would agree, as do Hut and Shepard (1996), that

the standard approach builds on an epistemologically weak foundation: what it takes for granted is a physical world containing physical brains composed of atoms,

molecules, ions, electric fields, and so on. But what are directly given to any scientist are only the consciously experienced appearances . . . that are interpreted as independently existing physical objects. (p. 315)

Claims about independently existing (or extra-mental) physical objects presuppose an ontology. Although Chalmers is not a reductive physicalist, he does presuppose, without argument, the extra-mental existence of the mathematical-physical objects of modern physics. This has immediate epistemic consequences because Chalmers defines the hard problem in such a manner as to exclude a strictly phenomenological approach to the theory of mind. The phenomenological approach, which developed out of the Cartesian tradition, begins with an ontology that asserts the existence of conscious experience and the immanence of the everyday world. The physicalist approach generally begins with an ontology of observer-independent mathematical-physical objects. Setting the parameters of the debate in Chalmers's way arguably gives an ontological primacy to physical objects and thereby invites, but does not entail, the reduction of all mental states to functions based on brain states (e.g., Dennett, 1991), or to brain states themselves (e.g., Churchland, 1988). Setting up the problem in Descartes's way, invites, but does not entail, the Berkeleyan reduction of all *being* to *being perceived*. If one accepts the claim that the intuitions involved in the *cogito* (discussed above) are indeed indubitable, and that we do not have a direct knowledge of mathematical-physical objects, then Descartes's way of setting up the problem is theoretically preferable to the physicalist model.

### A Case In Point: Dennett's *Consciousness Explained*

In this section I compare Dennett's reductionist method to the Cartesian method. The first reason for this is that Dennett's approach illustrates how Chalmers's way of setting up the easy and hard problems invites a reductive theory of mind (in this case functionalism and physicalism); the second reason is that Dennett's argument is explicitly in direct opposition to the Cartesian method; and the third reason is that Dennett attempts to resolve the conceptual gap by doing away with one side of the gap, conscious experience (in the phenomenal, not some functional sense). I am claiming that Dennett is also eliminativist, that is, he denies the existence of conscious experience (again in the phenomenal, not some functional sense).

#### *Dennett's Eliminativism*

I believe that Dennett (1991) reduces human conscious experience to the performance of functions based on the activities of the brain. This elimina-

tivism can be discerned clearly in Dennett's critique of Descartes's theory of mind. In this critique, Dennett joins a recent anti-Cartesian tradition beginning with Ryle (1949) that views Descartes's metaphysical dualism as an obstacle to a correct understanding of the human mind. It was Ryle who used the phrase "the dogma of the Ghost in the Machine" in a deliberately abusive manner to characterize Cartesian thought (1949, pp. 15–16). It is indeed the case that one of the main conceptual obstacles to seeing things Dennett's way is the legacy of Descartes. This legacy includes the claim that there is an irreducible *res cogitans* and that a variety of ideas (in the broad Cartesian sense) form the *cogitatum*. Dennett describes the Cartesian theater as a "persistently seductive bad idea". . . which will "continue to haunt us until we have anchored our alternative firmly to the bedrock of empirical science" (p. 227). Dennett's empirical theory of the mind, the multiple drafts theory, aims at "toppling the dictatorial idea of the Cartesian Theater" (p. 171). Dennett is correct in identifying Cartesian thought as an important obstacle to a theoretical reduction of human conscious experience to functions of neurophysiological events. Why is Cartesian thought such an obstacle? Descartes's *res cogitans* is not identical to any physical object or process, nor can it be considered a function of a physical object. The *res cogitans* is also not a mere epiphenomenon, nor yet an emergent property of neural networks. As a substance (a fundamental feature of the universe) the *res cogitans* is absolutely irreducible.

Dennett aims at conceptually exposing the *res cogitans* as part of an unproductive myth. This myth, according to Dennett, sets up some sort of "theater" where an "audience" beholds qualia (mental contents). Dennett rejects both the theater and the audience (1991, p. 128). The Cartesian theater, however, far from being a myth or a ghost, is a productive analogy for the horizon of conscious experience. Within this horizon, all of my experiences are unified in such a way as to belong to one subject (myself) just as all of the reader's experiences, I presume, belong neither to me nor the reader's acquaintances but to the reader. Yes, we can share experiences with others, but not the numerically same experiences. I also take this theater to be a productive analogy for the horizon within which original intentionality occurs. Original intentionality is that property of consciousness by which consciousness is directed toward or is about a mental content (for a discussion of *original* as opposed to *as-if* intentionality, see Searle, 1991; cf. Dennett, 1978, pp. 3–22, 233–255).

The "audience" I take to be an analogy for the *Ego* of the *Ego cogito*. "Audience" evokes an image of multiplicity. This might not be a fair analogy for the Cartesian theory of mind according to which each person's ideas are modifications of that same person's *res cogitans*. Perhaps "spectator" would evoke a better analogy for what Descartes means by the *Ego*.



I am suggesting that the so called Cartesian theater may be used productively to describe intuitions about what is called thinking and the object of thought and that we not hastily jump on the anti-Cartesian bandwagon. It is true that having rejected the existence of a *res cogitans*, it is only one step to eliminating what is intended (the *cogitatum*). The intentional relation (consciousness is consciousness of something) requires both *cogitans* and the *cogitatum*. Reject one side of the relation and the other is rejected. I cannot reject either side of the relation because I am certain of my own subjectivity and the qualitative feel of my perceptions, feelings, and emotions. And I do not know what perspective I could take that would convince me that I didn't have these experiences. For Dennett,

these [experiences] are all "merely" the "performance of functions" or the manifestation of various complex dispositions to perform functions. In the course of making an introspective catalogue of evidence, I wouldn't know what I was thinking about if I couldn't identify them for myself by these functional differentia. Subtract them away, and nothing is left beyond a weird conviction (in some people) that there is some ineffable residue of "qualitative content" bereft of all powers to move us, delight us, annoy us, remind us of anything. (1996, pp. 5-6)

How do I free myself from this "weird conviction"? The key to explaining away consciousness (in the phenomenal sense) is, for Dennett, to adopt a third-person perspective, "since all science is constructed from that perspective" (1991, p. 71). This "heterophenomenology" (Dennett's term) is supposed to give us a "neutral way of describing the data . . ." (pp. 71-72). To summarize, "heterophenomenology" provides a "neutral path leading from objective physical science and its insistence on the third-person point of view, to a method of phenomenological description that can (in principle) do justice to the most private and ineffable subjective experiences, while never abandoning the methodological scruples of science" (p. 72). This method is intended to give us an empirical science of consciousness. Such a "methodological scruple" is employed to a large degree by neuroscience, computer science, and cognitive science.

In the process of doing away with Chalmers's hard problem of conscious experience in exchange for the "bedrock of empirical science," we are led by Dennett through a series of interesting discussions on folk psychology, neuroscience, cognitive science, and artificial intelligence, to a conception of mind as, in at least the human case, an organic-based (parallel architecture) multiple draft information processing machine. Dennett declares that "anyone or anything that has such a virtual machine as its control system is conscious in the fullest sense, and is conscious *because* it has such a virtual machine" (1991, p. 281). Notice the "bait-and-switch" (Chalmers's expression, 1995, p. 202). Here conscious experience is not phenomenal experience; it does not intend qualia nor have raw feels. Human conscious

experience, what ever is left of the concept, has been reduced, to a large extent, to information processing functions based on brain events.

To help us understand this functionalism, Dennett employs his own analogies. We are now to think of the brain as a type of computer. This computer's information processing functions, however, neither produce nor correlate with a *res cogitans*. Instead, the brain, an organically based computer, is responsible for cognitive functions, none of which is conscious experience in the phenomenal sense.

In place of the Cartesian "theater," Dennett offers new "crutches of imagination": "By thinking of our brain as information-processing systems we can gradually dispel the fog and pick our way across the great divide, discovering how it might be that our brains produce all the phenomena" (p. 433). What does Dennett mean by "all the phenomena"? I believe that for Dennett, "all the phenomena" includes mental processes understood as functions or operations (1991, see especially pp. 431-440). Do any of these mental processes include conscious experience? The way I interpret the "great divide" that Dennett is crossing between the phenomena (mental processes) and the brain, neither side of the divide is the immanent appearance of the world. The phenomena (mental processes), just like conscious experience, are here explained in terms of cognitive functions (or an information processing program) implemented by the brain. There is no bridge to cross!

Dennett is aware of such concerns:

Consciousness, you say, is what matters, but then you cling to doctrines about consciousness that systematically prevents us from getting any purchase on why it matters. Postulating special inner qualities that are not only private and intrinsically valuable, but also unconfirmable and uninvestigatable is just obscurantism. (1991, p. 450)

Dennett's critique of the Cartesian perspective must be taken seriously because there is indeed a great deal that is obscure about consciousness. I believe the peculiar obscurity of conscious experience as expressed in the above passage is not generated from what we do not know about it, but from what we do know about it! It is precisely some of the features mentioned in the above passage that are both manifestly evident and stand in need of explanation. Conscious experience: "private," yes; "valuable," I won't speculate here; "unconfirmable," no; "uninvestigatable," absolutely not. Let us take each aspect of "obscurantism" in turn.

Subjectivity is by nature "private." If privacy poses an epistemic problem, however, it is not unique to the Cartesian standpoint. The publicly observable empirical evidence is arguably reducible to the same fate; all such evidence is always gathered by individuals from their subjective points of view! I do not see any way around this.

With regard to the “value” of consciousness, while the issue is morally significant, it is not relevant here. In terms of “confirmability,” I have argued that the existence of conscious experience, from the first person perspective, is indubitable. There is no more rigorous form of certainty than indubitability.

A community of phenomenologists can investigate the necessary conditions of possible conscious experience and reach common ground with respect to both inner and outer phenomena as well as the “heterophenomenologist,” but the heterophenomenologist pretends to have a direct window, a third-person perspective on the world. I believe that heterophenomenology is a valuable tool for cognitive science research, and I agree with Dennett’s interdisciplinary approach to the philosophy of mind, but I am not sure how “heterophenomenology” gets its handle on conscious experience in the phenomenal, qualitative sense. There is a new ghost in the machine, but it is not the *res cogitans*. The new ghost in the machine is the redefined consciousness (emptied of its phenomenal content) of the robot, except here it is not like anything to be a robot; nor for that matter, is it like anything to be a person!

*Does Cartesianism without God lead to Solipsism?*

The Cartesian perspective calls into question the intuitions of any physicalism that glosses over important conceptual gaps in the theory of consciousness. A return to the early modern period reminds us that the foundation of the easy versus the hard problem arguably should include a discussion about what sorts of being(s) there are in the universe and how we know about them. If we begin with immanent phenomenology, the divine spectator can only guarantee the objective reality of the primary qualities as they are abstracted from certain mental contents (for an excellent detailed discussion of whether this sort of abstraction is possible, even for a God, see Soffer, 1990). This abstraction aims at representing the mathematical-physical world of physics. This real physical world, however, is perceived only as it is constituted by the conditions of possible perception (see Soffer, 1990, pp. 70–71 for a discussion of “the transforming mediation carried out by the subjective faculties”). Thus if we begin our search for the link between the brain and conscious experience by first positing the mathematical-physical world, we pass over the constitutional and representational functions of human perception involved in this very positing.

The Cartesian formulation of the easy and hard problems does not begin by uncritically positing a physicalist ontology. Nor does it deny the very important role of physical science in the project of constructing a theory of everything there is (Descartes himself was a great mathematician and a natural scientist). The issue here is at once both epistemic and ontological. Our

original knowledge of human conscious experience is grounded in our *being* a feeling, perceiving, thinking activity. This self-knowledge is not based on logical inference; it is immediate and indubitable. In contrast, our knowledge of the mathematical–physical world is mediated by the perceived, that is, phenomenal world and is guaranteed either by theological proofs of the existence of a benevolent God or the positing of an ideal third person perspective.

How do Cartesians who do not posit a third person perspective “for free” (that is, without theoretical justification) attain scientific knowledge. After all, the pure divine spectator of the seventeenth century is long gone from the scene. I presume all of the philosopher’s gods are dead. Furthermore, the comparison of various reports by investigators in any science can only give us an intersubjective object, not a truly neutral point of view (Soffer, 1990). Does this leave the Cartesian one choice: solipsism?

It is important to distinguish intersubjective research from solipsism. Solipsism is indeed a vicious skepticism because it asserts that one can only know about one’s own mental states. Research based on inter-subjectivity, however, is based on the communication between persons who share similar, though numerically different phenomenal experiences. As Hut and Shepard argue, “intersubjectivity provides an antidote against solipsism that is not more mysterious or artificial than any other form of knowledge, based on experience, including the more abstract varieties” (1996, p. 317). Inter-subjectivity as a form of knowledge also provides an antidote to reductive physicalism while providing a method for scientific inquiry. An intersubjective research model, however, has the burden of articulating a theoretical justification for positing the real communication between distinct points of view.

### Conclusions

Conscious experience is the horizon within which the natural world appears to human beings. The immanent content of conscious experience, the Cartesian *cogitatum*, contains primary and secondary qualities. According to the early modern representational theory of knowledge, the primary qualities of the *cogitatum* correctly represent the essential features of the extra-mental physical objects. All human knowledge of the natural world is arguably mediated by this immanent content of the appearance of the world.

In the Cartesian perspective, knowledge of the physical processes in the brain is mediated by visual (and perhaps other sensory) perceptions. The brain qua visual perception is observer-relative; it is the immediate object (*cogitatum*) of the *cogito*. In contrast, the reductive physicalist ontology begins not with the visual perception of the brain, but with the extra-mental cause of the visual perception, the observer-independent brain. But to begin consciousness studies on the side of the extra-mental physical object is to

cross what Chalmers calls the “*explanatory gap*” (1995, p. 203). It is this crossing that requires theoretical justification.

This paper has argued that eliminative physicalism resorts to a third person perspective in order to cross the explanatory gap and establish a method for scientific research in consciousness studies. Yet this resort to an ideal third person raises the same question as the early modern use of the good God: How do humans attain this ideal third person point of view? The lesson of the Cartesian method is that a third person perspective is accessible only through a first person contemplation of that third person perspective. There is simply no way out of the immanence of human knowledge.

I suggest that a return to the essential insights of the Cartesian method provides an antidote to uncritical leaps into eliminative physicalism. I am thus in basic agreement with Hut and Shepard that “the biggest mystery is no longer consciousness but the objective physical world which is never directly experienced but is only inferred on the basis of order and correlation within subjective experience” (1996, p. 317). By anchoring at least one of our research strategies into the nature of consciousness in the existential certainty of the *cogito*, we are bound to acknowledge the indispensable role of phenomenological research in psychology.

### References

- Barnes, W.H.F. (1968). Did Berkeley misunderstand Locke? In D.M. Armstrong and C.B. Martin (Eds.), *Locke and Berkeley* (pp. 78–85). Notre Dame, Indiana: University of Notre Dame Press. (Original work published 1940)
- Berkeley, G. (1979). *Three dialogues between Hylas and Philonous*. Indianapolis, Indiana: Hackett Publishing. (Original work published 1713)
- Chalmers, D. (1995). Facing up to the problem of consciousness. *Journal of Consciousness Studies*, 2, 200–219.
- Chalmers, D. (1996). *The conscious mind*. New York: Oxford University Press.
- Churchland, P.M. (1988). *Matter and consciousness* (revised edition). Cambridge, Massachusetts: The MIT Press.
- Dennett, D. (1978). *Brainstorms*. Cambridge, Massachusetts: The MIT Press/A Bradford Book.
- Dennett, D. (1991). *Consciousness explained*. Boston, Massachusetts: Little, Brown, and Co.
- Dennett, D. (1996). Facing backwards on the problem of consciousness. *Journal of Consciousness Studies*, 3, 4–6.
- Descartes, R. (1967a). *Discourse on the method of rightly conducting the reason*. In *The philosophical works of Descartes* (Volume 1, pp. 79–130) [E. Haldane and G.R.T. Ross, Trans.]. New York: The Syndics of the Cambridge University Press. (Original work published 1637)
- Descartes, R. (1967b). *Meditations on first philosophy*. In *The philosophical works of Descartes* (Volume 1, pp. 131–199) [E. Haldane and G.R.T. Ross, Trans.]. New York: The Syndics of the Cambridge University Press. (Original work published 1641)
- Descartes, R. (1967c). *Objections urged by certain men of learning against the preceding meditations; With the author's replies*. In *The philosophical works of Descartes* (Volume 2) [E. Haldane and G.R.T. Ross, Trans.]. New York: The Syndics of the Cambridge University Press. (Original work published 1641)
- Descartes, R. (1967d). *Principles of philosophy*. In *The philosophical works of Descartes* (Volume 1, pp. 201–302) [E. Haldane and G.R.T. Ross, Trans.]. New York: The Syndics of the Cambridge University Press. (Original work published 1644)

- Hintikka, J. (1967). *Cogito ergo sum: Inference or performance?* In W. Doney (Ed.), *Descartes: A collection of critical essays* (pp. 108–139). Garden City, New York: Doubleday. (Original work published 1962)
- Husserl, E. (1958). *Ideas: A general introduction to pure phenomenology* [W.R.B. Gibson, Trans.]. New York: The Macmillan Company. (Original work published 1913)
- Husserl, E. (1965). *Phenomenology and the crisis of philosophy* [Q. Lauer, Trans.]. New York: Harper and Row. (Original work published 1911)
- Hut, P., and Shepard, R.N. (1996). Turning “the hard problem” upside down and sideways. *Journal of Consciousness Studies*, 3, 313–329.
- Locke, J. (1956). *Essay concerning human understanding*. In S.P. Lamprecht (Ed.), *Locke selections* (pp. 81–317). New York: Charles Scribner's Sons. (Original work published 1690)
- Nagel, T. (1981). What is it like to be a bat? In D.R. Hofstadter and D. Dennett (Eds.), *The mind's I: Fantasies and reflections on self and soul* (pp. 391–403). New York: Basic Books. (Original work published 1974)
- Ryle, G. (1949). *The concept of mind*. New York: Hutchinson.
- Searle, J. (1984). *Minds, brains, and science*. Cambridge, Massachusetts: Harvard University Press.
- Searle, J. (1991). Consciousness, unconsciousness, and intentionality. In E. Villanueva (Ed.), *Consciousness* (pp. 45–66). Atascadero, California: Ridgeview Publishing.
- Searle, J. (1992). *The rediscovery of the mind*. Cambridge, Massachusetts: The MIT Press.
- Soffer, G. (1990). Phenomenology and scientific realism: Husserl's critique of Galileo. *Review of Metaphysics*, 44, 67–94.
- Spinoza, B. (1955). *The ethics*. In R.H. Elwes (Ed.), *On the improvement of the understanding, the ethics, correspondence* (pp. 43–270). New York: Dover Publications. (Original work published 1677)