

A Place for Consciousness

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1.1 The Topic

Consciousness is a refugee. It gathers the interest and sympathy of many disciplines without claiming a true home in any of them. Often abused by skeptics, it has been protected by moralists and exploited by dreamers. Until recently it was ignored by experimentalists, and theorists have not always taken it seriously. If any important and fundamental piece of nature could lay claim to being an intellectual exile, consciousness has been it. The purpose of this book is to find a place for consciousness.

Consciousness is an ambiguous term,ⁱ and not all senses of the term pose the same kinds of problems. The central problem it poses is where in nature to place *subjective experience*, which is responsible for the subjective quality of our existence. Philosophers call this sense of consciousness *phenomenal consciousness*. Phenomenal consciousness is special. It is different from just wakefulness, for instance. Dreaming is a way of experiencing, and, therefore, in the sense that needs placement, we are conscious during sleep.

Phenomenal consciousness is not necessarily consciousness *of anything else*. For example, when I close my eyes and cover my eyelids with the palms of my hands, I see diffuse shapes floating in the blackness and jumpy patches of diluted color. These are experiences and are thus elements of phenomenal consciousness, even though they do not seem to *represent* anything.

Phenomenal consciousness does not necessarily involve language or self-understanding. For example, when a newborn infant cries on first experiencing the world, it must be *feeling* something, even though it has not yet developed language or self-understanding. Because it feels, it is phenomenally conscious.

We identify phenomenal consciousness by being acquainted with it, not by looking up a scientific definition. Even though “phenomenal consciousness” does not have a scientific definition yet, I mean phenomenal consciousness when I use the word *consciousness* in this book. If we need a definition, the best we can do

is to create an operational definition by calling attention to it in increasing levels of detail.

The most succinct way to convey the meaning of the term is through Thomas Nagel's popular phrasing: A creature's subjective experience constitutes *what it is like* to be that creature. For example, part of what it is like to be a person with normal color vision is for purple things to subjectively appear in a certain way, as having a certain kind of visual quality to that person. Purple subjectively appears different from pink, which is subjectively different from orange, which is subjectively different from black, and so on. Together, the subjective appearances of these qualities help make up *what it is like* to be a person with normal color vision.

After becoming aware of these visual qualities *as* qualities, you may naturally wonder what the colors from a larger color space *look like*. For example, some birds can see colors that no person can see. What is the experience like when these birds see the extra colors available to them? Once you know about their ability, a question about the character of their conscious experience remains. The facts about these birds' phenomenal consciousness include what it is like for them to see the extra colors they see.

Similarly, just as the subjective qualities involved in seeing something (e.g., colors, shape, and depth) are different in kind from the ones involved in hearing something (e.g., tone, pitch, and rhythm), there must be a set of distinct qualities that make up what it is like for a bat using its echolocation. Are the qualities that the bat experiences like those you experience when seeing something, or are they like those you experience when hearing something, or are they like something else altogether? In the same spirit, you may also wonder what the qualities and sensations associated with a manta ray's sensing of electromagnetic currents on the ocean floor are like for the manta ray.

Examples multiply easily. Philosophers call the subjective qualities these questions point to *phenomenal qualities*, or *qualia*. At the extreme, you may even wonder, however implausibly, whether it is like *anything at all* to be these creatures. Perhaps they are unconscious robots, all "dark inside," without any qualia at all.ⁱⁱ

Phenomenal consciousness is richly varied, complex, and subtle. For example, the exact organization of the qualities of experience, and perhaps even their character, seems to be very responsive to conceptualization. An example of this occurs when we stare at visually ambiguous figures such as the Necker cube in figure 1.1: The qualitative experiences associated with seeing its face *as* oriented upward or *as* oriented downward are very distinct. This suggests a location for the world's repository of facts concerning phenomenal consciousness. For a particular creature, the facts concerning what it is like to be that creature are constituted by (1) its capacities for experiencing phenomenal qualities in the first person and (2) its way of conceptualizing the world.ⁱⁱⁱ

What is the place of consciousness in our world? From where does phenomenal information come? Are phenomenal facts ordinary physical facts? Are they

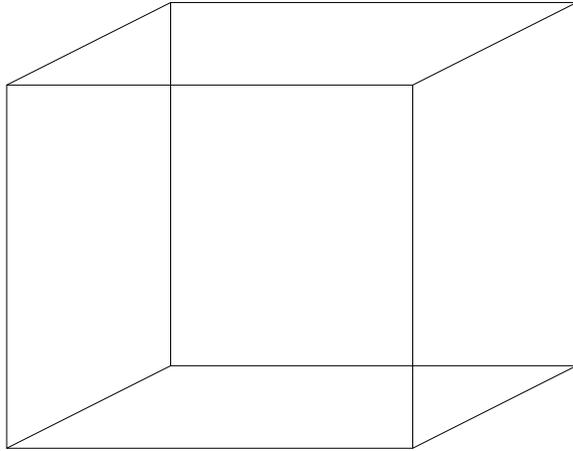


Figure 1.1A Necker cube. When we stare at the Necker cube, our phenomenal experience changes depending on whether we perceive it as facing upward or downward.

the kinds of facts that ordinary physical facts can form a basis for? And, if so, in what way can physical facts provide a basis for them? We do not have good answers to these questions yet.

Moving just slightly beyond Nagel's slogan, Brian Loar (1997) delivers a longer description of the intended target by concisely expanding the slogan, What it is like to be:

On a natural view of ourselves, we introspectively discriminate our own experiences and thereby form conceptions of their qualities, both salient and subtle. These discriminations are of various degrees of generality, from small differences in tactual color experience to broad differences of sensory modality, e.g. those among smell, hearing and pain. What we apparently discern are ways experiences differ and resemble each other in respect of what it is like to have them. Following common usage, I will call those experiential resemblances phenomenal qualities; and the conceptions we have of them, phenomenal concepts. Phenomenal concepts are formed "from one's own case". They are type-demonstratives that derive their reference from a first-person perspective: "that type of sensation", "that feature of visual experience". And so third-person ascriptions of phenomenal qualities are projective ascriptions of what one has grasped in one's own case: "she has an experience of that type."

I disagree with Loar's characterization in one important respect. Rather than using *phenomenal qualities* to denote the *relations* of resemblance between experiences, I use the phrase to denote the qualities within experience that are *responsible for* these resemblances between them.

At the next level of detail, you can catalogue varieties of phenomenal experience by paying close attention to the different kinds of experiences you can have. Cataloguing exercises can direct and refine your awareness of the subject matter by highlighting for you your own subjective acquaintance with the characters of your inner life. David Chalmers catalogues experience in the first chapter of his *The Conscious Mind* (1996). He calls attention to, and gives short accounts of, the fascinating variety of phenomenal content found in experiences as diverse

as: visual, auditory, tactile, olfactory, and taste experiences; experiences of temperature; pains; other kinematic and proprioceptive sensations; mental imagery; conscious thought; emotions; and the sense of self. When thoughtfully done, catalogues vividly create awareness of phenomenal consciousness and its many elements and forms.

At the most extreme level of detail, you can isolate the meaning of *phenomenal consciousness* by comparing and contrasting it with other senses of the term *consciousness*. Ned Block (1995) does this in a concise way by comparing and contrasting “consciousness” in the sense of having cognitive access to information with “consciousness” as experience. Charles Siewert’s (1998) *The Significance of Consciousness* contains an extremely detailed attempt to isolate the sense of the term that picks out the mystery, drawing it out from its hiding place among the other senses of the term.

1.2 The Mind-Body Problem

If you want to understand the problem, Descartes is a good place to start. René Descartes is often credited with creating the modern form of the question, What is the relationship between the mind and the body? This is called *the mind-body problem*.

Descartes believed in a metaphysics of substance and properties. A *substance* is supposed to be the metaphysical substrate that supports the existence of properties. *Properties* are repeatable characteristics of things, in the sense that many different things can have the same property. For instance, mass is a property, as many different things can have mass.

Descartes proposed that the substance *matter* essentially has properties of spatial extension and causal power. He also believed that the *mind* is a substance and that it essentially has the properties necessary for rationality and causal power. Beyond this, Descartes believed that rationality was inessential to matter, that spatial extension was inessential to mind, and that, because they have different essential properties, matter and mind could not be the same substance. This is called *substance dualism*.

Substance dualism raises a question about creatures like us who have both minds (composed of the rational substance Descartes called *mind*) and bodies (composed of the spatial substance Descartes called *matter*). How are these substances, which are so different, brought together to be a person?

Descartes suggested that they *interact* with one another through the brain. He admitted to not really understanding how this occurs, but he believed that it must occur. Today we call that position *interactionist dualism*. Together, Descartes’s positions made him an *interactionist substance dualist*.

Not many philosophers or scientists today believe in interactionist substance dualism. Most philosophers and scientists believe that mental activity is physically constituted by brain activity. Among academic scientists and philosophers, the most commonly held position is now *physicalism*, which holds that every

thing is physical *in some sense*. Physicalism is basically the position you would expect to be called *materialism*, except without the historical commitment to the existence of a material substance. In place of Descartes's substances, physicalism just commits itself to the existence of the basic physical properties and events, whatever they turn out to be.

Physicalism belongs to the branch of metaphysics called *ontology*. Ontology is the study of what kinds of things exist, with particular emphasis on the different *ways* of existing possessed by different kinds of things. For example, hurricanes, speed limits, bosons, moral values, numbers, and minds all exist.^{iv} On their surfaces, at least, these all seem to be very different sorts of things, each with its own unique nature and way of existing.

Ontologists generally focus on two kinds of questions. First, what is the nature of these things? Second, how do all these diverse things come together so that they are able to exist in the same world? Philosophers usually answer this second kind of question by proposing *fundamental* categories of properties, objects, events, or processes whose existence they can see as grounding the existence of other kinds of things. By *fundamental*, philosophers mean that these are the things from which the existence of every other thing is derived.

If one is religious, one probably believes that this fundamental thing is God. If one wants a more scientific hypothesis, however, one needs to find another category of things to do this job. That is where physicalism steps in. *Physicalism* is the thesis that all other kinds of things wholly derive their existence from the existence of the physical. Among these *other kinds of things* are hurricanes, speed limits, moral values, numbers, and, most important in this book, conscious minds.

Physicalists often charge Descartes with serious errors that still infect our thinking about the mind. I argue that Descartes's most dangerous errors were the ones he made about matter, not mind. Descartes felt forced to his dualism chiefly because the science of his time had revolutionized our ideas about matter. After the scientific revolution, people thought of matter as something primarily *quantitative* and *geometrical* and best described in terms of how these quantitative states vary at different points in space and time. Thus mathematics and geometry, rather than perception and sensation, came to provide the best models for understanding the essential nature of matter. This revolution in thinking was as radical and important as any intellectual revolution has ever been. I believe it is hard for us now to fully appreciate it.

Prior to this revolution, in which Descartes himself was a leading figure, educated people had primarily thought of matter as something *qualitative*. Qualities are attributes, not necessarily quantitative, found in sensations that make each kind of sensation fundamentally unlike the other kinds. For example, the distinct feelings of itches are qualities and are different from the qualities of smells. Although found in sensations, qualities were thought to exist in matter quite generally, whether sensed or not. Common opinion was that matter is best understood by proposing qualities and investigating how these qualities are *qualified* or
con

ditioned through intimate causal relationships that bind them to one another and give them *form*.

This pivotal shift from thinking about matter as something qualitative to thinking about it as something quantitative drew a revolutionary line that has sharply differentiated modern from premodern thinking. In this book, I argue that Descartes's error, and the error that still haunts us, is that we have come to believe that this revolutionary view of matter is *all there is* to matter.

As revealed from a fundamentally Cartesian perspective on the physical, the human body is a marvel whose subtlety, flexibility, and complexity uplift the word *machine*. Natural science tells us that the body is made ultimately of very tiny and exotic physical entities, and we know that it consists in the motions of, and interactions among, delicately layered physical structures. Our bodies are spatiotemporal organizations of these tiny entities, driven by an enormous number of microphysical interactions.

From this perspective, the mind-body problem arises immediately: How could a collection, *any* collection, of microphysical interactions have macrolevel *experiences*? According to physical theory, the entire being of these microphysical entities consists in the quantitative dispositions that produce their intrinsic dynamics and their intimate couplings. The mystery of consciousness is the question of why this assembly, this whirlwind of causation, should ever *feel*. Couldn't this causation go on without feeling, without sensation, without experiencing at all? Viewed in the large, these finely layered patterns are dynamical wonders, but it is hard not to wonder why the dynamics should be conscious. Physical causation produces changes in quantity, shape, and motion, but why should a congeries of quantity in motion, however complexly shaped, ever experience the delightful sweetness of cheesecake? Questions such as this pose the greatest obstacle to the challenge of naturalizing the mind.

1.3 Liberal Naturalism

Even though I argue against physicalism, I am a *naturalist*. The view I favor is Liberal Naturalism. I view naturalism as a methodological requirement to place human beings in the world without making special, ad hoc assumptions that are discontinuous with everything else we have good reason to believe about nature. A fundamental message of this book is that we have good reasons, reasons independent of mind, to understand nature differently than physicalists typically do, and I propose a specific way of doing it that allows us to find a place for consciousness.

The position I develop is a kind of dual-aspect view that I think respects what is right about the intuitions of both physicalists and substance dualists. Dual-aspect views provide an alternative to substance dualisms for antiphysicalists. Whereas substance dualism proposes that there are two fundamentally different and potentially independent kinds of entities, matter and mind, dual-aspect views hold that there is one fundamental kind of entity but that this entity has more than a physical aspect. It is like the difference between thinking the evening star

and the morning star are different stars and thinking that they present different aspects of the same thing, the planet Venus.

Like physicalism, Liberal Naturalism holds that the world is probably composed from a single fundamental kind of thing. This fundamental kind of thing, if it exists, probably has a set of fundamental properties that are mutually related in a coherent and natural way by a single set of fundamental laws. However, like substance dualism, Liberal Naturalism holds that some of these properties and laws are not physical properties and laws. What ties the physical and nonphysical together is a deeper kind of thing of which they are both aspects.

As a Liberal Naturalist, I identify (to a greater or lesser degree) with David Chalmers, Thomas Nagel in some of his moods (e.g., his 1998 work), Wilfrid Sellars on some ways of reading his work (e.g., his distinction between his physicalism₁ and physicalism₂), Abner Shimony, Grover Maxwell in his writings on *structural realism* (1970, 1979), Michael Lockwood, Alfred North Whitehead, David Ray Griffin, and Bertrand Russell in his neutral monist phase. The Liberal Naturalists recognize the possibility that the specifications of physics and what could subsist in a world wholly portrayed by physics may not circumscribe nature's limits. That allows the Liberal Naturalist to step comfortably outside the standard physicalist ontology while retaining a naturalist outlook.

The positive project in this book is to identify what these nonphysical properties are; to explain why they should exist; and to give reasons for believing they fit cohesively within a scientific and naturalistic worldview. I pursue these goals by introducing a substantive view of causation. This metaphysically rich picture of causation provides the bridge that takes us from the physical to consciousness. It also respects the causal closure of the physical, as I attempt to complete our view of causation by adding elements that are complementary to the structure of activity described by physical science and that, for that reason, are every bit as essential to it as is the physical.

I make and develop several distinctions between aspects of causation, including:

1. Distinguishing the *effective* properties as properties that give individuals the inherent potential to place constraints on one another.
2. Developing a theory of shared *receptivity* to provide a context in which the effective properties can be realized and do their work, thus forming the basis of the *connectivity* between individuals.
3. Proposing that the effective and receptive causal dispositions must be *carried* by fundamental intrinsic properties. It is through understanding these carriers that we can understand why consciousness exists.

After developing this model, I argue that physics describes only spatiotemporal patterns in the appearances and values of effective properties. I argue that a realist account of the causal nexus goes beyond this physical aspect because physical theory leaves out information about receptive connectivity and the intrinsic carriers. It follows that a complete theory of the causal nexus needs to go beyond physical theory.

If the model I propose and develop in this book is right, experiencing is a fundamental element of nature. It has a natural place in the implementation of causation, and phenomenal qualities implement nature's effective constraints. In the terminology I introduce later, experiencing acts as an intrinsic carrier for causation itself. The phenomenal qualities carry the effective properties of individuals within a causal nexus, and the experiencing of these qualities carries the receptiveness had by members of the nexus to these effective properties.

It turns out that the place of consciousness in the natural world intrinsically connects it to a larger, metaphysical background via its intimacy with causation itself. Under the kind of realist account of causation I detail, a picture emerges that does not drive a wedge between consciousness and the physical world. Instead, it locates us within a world that is richer both naturally and metaphysically than the one previously available. The resulting view avoids the interaction of Descartes's substance dualism without slipping into the brute and inexplicable identities of physicalism, and so provides the foundations for a possible Liberal Naturalism.

1.4 The Structure of the Book

The main body of the book is divided into two parts. In part I, "Liberal Naturalism," I first argue that physicalism cannot adequately account for consciousness. To establish physicalism's failure, I analyze what it means to be a physical fact by establishing an analogy with an artificial kind of world. The analysis shows, in a concrete way, why no physicalistic theory will entail the facts of consciousness and defends the importance of entailment to the truth of physicalism. The failure of physicalism creates a puzzle regarding just what consciousness might be, if not physical.

After presenting this puzzle, I explore problems and tensions created by the implication that there must exist fundamental nonphysical properties. *How* can the world have both physical and phenomenal aspects? And *why* would it? By searching the places at which these two aspects seem most incompatible with each other, I try to discover clues about where the incompleteness in our knowledge might lie. Among other conclusions, I argue that the existence of consciousness is evidence for hidden structure within nature. Also, I argue that, at every turn, our search points us toward the need to more fully understand causation itself.

Perhaps the metaphysics of causation is richer than materialists usually suppose. I devote part II of the book, "Faces of Causation," to a direct analysis of causation and the conditions on the possibility of causal interaction. As a first point, I build a case that the explanation of causation also requires nature to have multiple aspects: its effective aspect, its intrinsic connectivity, and the intrinsic carriers of the causal dispositions. I build a speculative metaphysics for causation, a metaphysics in which the roles of each type of element are specified in a rigorous way. The detail of my development allows me to place consciousness in

the world in a way that answers the puzzles, paradoxes, and tensions I raise in part I while avoiding the usual objections to dualist views.

1.5 The Sliding Tile Puzzle

The mystery of consciousness is both profound and exciting. If one thinks hard and long about it, the questions it raises will linger and endlessly deepen. Eventually, they seem to transcend specific questions about consciousness, touching insecurities about our understanding of nature herself. At first one tries to solve the puzzle as though it were a jigsaw puzzle, with pieces nestled stably in their proper places. Eventually one begins to realize that, to solve the puzzle of conscious experience, we may have to view the project as being more like trying to solve a sliding tile puzzle.



Figure 1.2 Understanding how the pieces of nature fit together is sometimes like trying to solve a sliding tile puzzle.

A sliding tile puzzle consists of a rectangular frame with movable tiles within it, each tile decorated with a different part of the puzzle. Initially, the tiles are scrambled, and the goal is to unscramble them to retrieve the puzzle's picture. The rectangle contains one empty space, and the puzzle solver must rearrange the

tiles by sliding them into and out of this empty space. By repeating this, the puzzle solver hopes to undress the confusion and reveal the puzzle's ornamental face.

Sliding tile puzzles contain a trap, a seductive property that lures the unsuspecting. Often the puzzle solver can bring order to *almost* the whole puzzle, perhaps fitting every piece into its proper slot except the last two tiles. These last tiles might be transposed, for instance, each in the other's slots. The trap is sprung when the puzzle solver holds stubbornly to the hard-won order in the rest of the puzzle, afraid that disturbing it too much will cause it to disappear, never to return. Seduced by the order already in the puzzle, the puzzle solver searches desperately for a minimally disruptive solution, one that places the pieces without disturbing the rest of the puzzle very much.

Unfortunately, the puzzle solver cannot usually solve the tile puzzle this way. To fit the final pieces in place, one has to regress first and then rebuild the old order from a new direction. The trap is that, because the puzzle solver flinches at every challenge to the old order, the ideal of completing the puzzle becomes a hopelessly elusive goal. The irony is that the hard-won old order would eventually reappear within a more completely ordered context, if only the puzzle solver could find the strength to first challenge it and, temporarily, relinquish it.

In writing this book, I have approached the problems of consciousness and causation as though they are the final two pieces in a sliding tile puzzle. I wish to help put them into their proper places within a naturalist framework, and I believe that sound arguments exist that this achievement will carry a cost. This cost will require temporarily reneging on some of the hard-won order that science has brought to our understanding of nature. The cost is this: We must concede that physicalism is an inadequate version of naturalism. To justify this cost, I have to touch many other tiles. With luck, the richness of the puzzle will serve to make the effort worth the investment.

<FN>ⁱBaruss (1990) catalogs twenty-nine separate definitions of the term, which he groups into three categories. Chalmers (1996) distinguishes eight senses of the term in his first chapter.

<FN>ⁱⁱThese qualities provide *phenomenal information* to subjects of experience. For an extended defense of the existence of phenomenal information, see Lycan (1996). Lycan is a physicalist.

<FN>ⁱⁱⁱI do not mean to suggest in any way at all that these are independent capacities.

<FN>^{iv}This is just an initial assumption, of course. For just about anything that one can name, it is not hard to find at least one philosopher who is willing to argue against its existence.

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