BLACKWELL READINGS IN PHILOSOPHY

CONSCIOUSNESS

Edited by

Josh Weisberg

and

David Rosenthal

WILEY Blackwell

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Consciousness

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This edition first published 2022

Registered Office
John Wiley & Sons, Inc., 111 River Street, Hoboken, NJ 07030, USA

Editorial Office
9600 Garsington Road, Oxford, OX4 2DQ, UK

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Library of Congress Cataloging-in-Publication Data

Names: Weisberg, Josh, editor. | Rosenthal, David M. editor.
Title: Consciousness / edited by Josh Weisberg and David Rosenthal.
Other titles: Consciousness (John Wiley & Sons)
Description: Hoboken, NJ : John Wiley & Sons, 2022. | Series: Wiley Blackwell

readings in philosophy | Includes bibliographical references and index. |
Contents: Introduction / Josh Weisberg and David Rosenthal – What is it like to be a bat? / Thomas Nagel – What is it like to be boring and myopic? / Kathleen Akins – Consciousness and its place in nature / David Chalmers – The explanatory gap / Joseph Levine – A third-person approach to consciousness / Daniel Dennett – What Mary didn't know / Frank Jackson – In defense of the phenomenal concepts strategy / Katalin Balog – What experience teaches / David Lewis – On a confusion about a function of consciousness / Ned Block – The intrinsic quality of experience / Gilbert Harman – How to think about mental qualities / David Rosenthal – Conscious experience / Fred Dretske – The same-order monitoring theory of consciousness / Uriah Kriegel – What kind of awareness is awareness of awareness / Michelle Montague – Higher-order theories of consciousness / Josh Weisberg – Perceptual consciousness as a mental activity / Susanna Schellenberg – The nature of agentive awareness / Myrto Mylopoulos – Realistic monism / Galen Strawson – Property dualism and the merits of solutions to the mind-body problem / Fiona Macpherson.
Identifiers: LCCN 2021037024 (print) | LCCN 2021037025 (ebook) | ISBN 9781119669326 (paperback) | ISBN 9781119669296 (pdf) | ISBN 9781119669340 (epub)
Subjects: LCSH: Consciousness.
Classification: LCC B808.9 .C6664 2022 (print) | LCC B808.9 (ebook) | DDC 126–dc23
LC record available at https://lccn.loc.gov/2021037024
LC ebook record available at https://lccn.loc.gov/2021037025

Cover Design and Image: Wiley

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Introduction

Josh Weisberg and David Rosenthal

Right now, you are undergoing the conscious experience of reading this text, combined with a shifting background of sensory, emotional, and cognitive coloring. The conscious experience of the reading, together with the accompanying background feel of sensation, emotion, and thought, make up how things subjectively seem to you, how things appear, as best you can tell, from your own unique point of view. Consciousness is at once acutely familiar—it makes up the experienced moments of your waking (and perhaps your dreaming) life. But consciousness also raises deep and interesting philosophical questions, questions about how any mere physical subject could produce such a wonder, and questions about how there could be a seemingly private and isolated spot of personal subjectivity in an objective, impersonal world. Perhaps the challenge of developing a satisfying theoretical understanding of consciousness is beyond us—we have reached the limits of what we can comprehend. Or maybe today's shortcomings are only temporary barriers to an illuminating theory of consciousness, one properly embedding it in our scientific worldview. And possibly we already have the resources for a satisfactory theory from the way we think about things in commonsense terms.

This reader provides an entry point for considering these and related theoretical questions surrounding consciousness. This introductory section begins with a brief background survey of contemporary debates on consciousness. It then provides a characterization of the notion of consciousness at issue and considers why

consciousness understood this way might be theoretically problematic. It follows with a survey of some of the major theoretical positions on consciousness and it closes with a synopsis of the sections of the book.

I General Background

The contemporary philosophical problem of consciousness has its roots in the traditional mind-body problem, the problem of fitting mentality into the mechanistic, mathematical worldview that emerged with the scientific revolution. Galileo, reflecting on the underpinnings of the new scientific thought, wrote that

> The book [of Nature] is written in mathematical language, and the symbols are triangles, circles and other geometrical figures, without whose help it is impossible to comprehend a single word of it; without which one wanders in vain through a dark labyrinth.
>
> (Galilei 1623/1957, 237–238)

The great breakthroughs of Galileo and his scientific successors turned in part on the "mathematization" of scientific theorizing. The key to knowing nature, according to modern science, is to capture it in mathematical language, language leading to clear, precise hypotheses to be checked by experiment. Mathematical thinking therefore sits squarely at the heart of modern science. Because of this, anything failing to fit into mathematical terms was in danger of being left out of the scientific story of nature altogether. This was especially pressing when it came to the qualities of conscious experience, like experienced color, sound, and taste. How does one capture basic sensory qualities in language compatible with the Galilean mathematical Book of Nature? Indeed, Galileo himself concluded there were no colors out there in the

world at all; rather, color experiences were a reaction we have to the presence of certain mathematically characterizable features in the world, like the reflective surfaces of certain objects. Color and color experience seemed to be cut off from physical reality at the beginning of modern science.

Further, the emerging new science saw nature in mechanical terms. The human body and natural phenomena in general, like the motion of cannonballs and the orbits of the planets, were seen as actions of a great clockwork machine. But if the human body is just a machine governed by physical principles capturable in mathematical terms, as the new science suggests, how are we to account for the mind with its sensory qualities and rational capacities? It is unclear how mechanical theorizing can capture the distinctive qualities of conscious experience and the flexible, creative reasoning of the rational human mind. There seems to be no place for the mind in the theoretical picture of the new science.

René Descartes, often called the father of modern philosophy, developed an influential response to these worries: his famous mind-body dualism. A pressing worry facing the new science was that if our bodies are just machines embedded in a clockwork universe, there seemed to be no room for ideas that are central to the way we think about psychological functioning in commonsense terms, such as the soul and free will. Descartes tried to show that the new science was compatible with our commonsense conception of the mind. He argued that mind and body are fundamentally different substances. Body is extended, nonthinking matter, fully explicable in the terms of the new mechanistic science. But mind is an unextended, thinking substance, one that is not caught in the causal web of mathematical physics. Mechanistic science explains the realm of physical body, but the realm of mentality sits

outside this framework, leaving open the possibility of a free and rational mind, able to survive the death of the body. Thus, science and common sense can coexist, on Descartes's theory.

But this leaves the mind outside the physical world. How is it able to connect with the physical body at all? This is known as the "interaction problem" for dualism. Descartes successfully carves off the mind from the clockwork machine, but it is unclear how to reconnect it in everyday life. When a piano drops on my foot, I will likely consciously experience a sharp pain. How does the damage in my physical foot impact my mind, particularly if my mind is unextended, and so takes up no space at all? This worry was pressed on Descartes by Princess Elizabeth of Bohemia. Descartes's answer was straightforward enough: occurrences in the unextended mind causally interact with occurrences in physical reality.

Fair enough; but a problem remains. Over the next few centuries, advances in physics, chemistry, engineering, and other sciences seemed to show that all causation eventually reduces to causation in physics. Chemical interactions can be explained by physics and biological functioning by chemistry. And over the eighteenth and nineteenth centuries, physiology, and eventually the new scientific disciplines of psychology and neuroscience, began to make similar inroads on the realm of the mind, hoping to develop a proper science of the mind. The explanatory successes of the physical sciences led to new attempts to integrate mind into the physical world.

Initial progress in the science of psychology involved the systematic correlation of changes in physical stimuli with changes in psychological reaction. This approach, known as "psychophysics," helped bridge the gap between mind and world, and it is a flourishing branch of psychology to this

day. But as psychology moved to investigate more complex "higher" mental phenomena, methodological problems began to appear. Central to the approach of early psychology was the use to detailed introspective reports, reports about what was happening in the minds of subjects as they underwent psychological experiment. But disagreements between subjects about the nature and presence of what was being reported led to intractable problems. If one set of subjects claimed something was present in their experience during an experiment and another set of subjects claimed nothing was, how are we to decide who is correct? There seems to be no public, external check on experiment, a key component of scientific inquiry. The new discipline of psychology was in danger of failing to meet the rigorous standards of science.

In reaction, some psychologists proposed strongly restricting their methodology, developing a "behaviorist" psychology. For these behaviorists, only directly observable phenomena can be studied scientifically. Since we cannot directly observe inner mental states, they cannot be studied in a scientific psychology. However, behavior can be directly observed. So we can base a scientific psychology on observable behavior. In this way, we could avoid the intractable debates which plagued "introspectionist" psychology. Behaviorism of this sort became the dominant view in psychology for much of the first half of the twentieth century.

A parallel move occurred in philosophy around the same time. In the late nineteenth and early twentieth centuries, many in philosophy came to be suspicious of the appeals to our inner life that dominated much of post-Kantian, nineteenth-century philosophical thinking. But our inner psychological lives can be expressed in speech, and that observation led to what is now known, in Richard Rorty's useful term, as the "linguistic turn" in philosophy, a

primary focus on the way philosophical issues emerge in the use of language.

Accompanying this shift was a restrictive claim about how much of language worked. Philosophers known as logical empiricists held that only terms have meaning and only if the sentences that they occur in can be verified. If there was no way to verify the sentences that a term occurs in, that term does not mean anything and does not pick anything out. And it was thought that applying this test for meaningfulness, echoing the methodology of David Hume several centuries earlier, could show that a range of philosophical problems are simply meaningless, due to mere confusions of language rather than genuine problems about reality. This approach had an impact on the mind-body problem. If mental terms pick out something private and subjective, we cannot verify if mental terms apply. But it seems that Descartes's view of the mind suffers from this very problem: for him, mental-state terms picked out private, subjective states. So, if Descartes is right about the mind, mental-state terms, like 'pain' or 'belief' ought to be meaningless. But they are not meaningless—we speak meaningfully to each other all the time about pains and beliefs. So Descartes's view of the mind must be wrong. How, then, do our mental-state terms properly function, according to the logical empiricists? The sentences those terms occur in must be subject to verification and, hence, by something observable. And the most likely observable occurrences for that job are type of behavior. That is, the way that words like 'pain' and 'belief' function rests on types of potential behavior that we might observe. Thus, we arrive at an argument for a form of behaviorism from the perspective of language-driven philosophy.

But behaviorism turned out to be overly restrictive in its approach. It suggested that we cannot directly study inner mental episodes scientifically or perhaps even meaningfully

talk about them. We might have simply to give up any serious understanding of the very events so central to our mental lives—conscious experiences of sensations, emotions, thoughts, and desires. This prompted a reaction, both in psychology and philosophy, to find a way to speak about and study the mind in a rigorous way, one that both allowed for reference to inner mental states but avoided the epistemological problems of earlier, more unconstrained approaches. The solution was to recognize that in both ordinary talk and scientific theory, we often refer to unobservable *posits*, picked out by terms we introduce theoretically to explain the things we can observe. A prime example is the term ‘electron’, which picks out a posited subatomic particle. We cannot directly observe electrons, but they allow us to successfully predict and explain what happens in a wide range of observable situations. This gives us good reason to believe electrons exist. Further, ordinary language functions just fine when employing this sort of device. The antidote to behaviorism’s narrow vision is to allow that mental states are *posits* in a theory, states posited to explain observable behavior. But what sorts of states?

In parallel to these developments in philosophy, results in psychology showed that behaviorism failed to explain certain sorts of mental functioning. Animals possess inner structures allowing them to navigate the world beyond the simple stimulus-response connections allowed in behaviorism. These “cognitive maps” are rich inner structures underwriting an animal’s ability to negotiate complex environments. Further, the mental resources needed to acquire language seemed beyond the reach of simple behaviorist theorizing. To fill the gap in theorizing, advances in computer science were introduced into psychological and linguistic theorizing. Alan Turing and others developed the foundations of what would become

known as the “computational theory of mind,” the idea that mental states are posited inner states computationally mediating between perceptual inputs and behavioral outputs. They play their role by computing what the organism should do next given its current input and goals and activating those responses. On this theory, mental states are computational states. The approach had wide application in what would become known as “cognitive science,” the scientific successor to behaviorism. Further, it fit well with the view of using theoretical posits to expand the conditions for acceptable scientific theorizing and everyday language use. Mental states, on this view, are posits of a theory, and they are theorized to be computational states. Computational states, in turn, are defined by their connections to observable perceptual input and behavioral output—to observable phenomena. So they are not essentially hidden and private.

The computational theory of mind defines mental states in terms of what they do, in terms of the *functional role* they play. The theory has proven successful at providing at least a preliminary explanation of a range of complex mental behavior, including rational inference, learning, memory, and other processes. This “functionalist” approach stands as the received view in theorizing about the mind in contemporary philosophy and psychology, though there are many unsettled issues. And it is here that the major contemporary debates about consciousness, those addressed in this reader, begin. With the functionalist computational theory of mind, we have the outlines of a promising explanatory story about how much of mentality can fit into the picture of modern science. But when we focus on consciousness, there still seems to be something missing. A number of philosophers argue that although progress has been made with the mind in general, consciousness still remains outside of our scientific

understanding. It is a residual element of the mind-body problem, the last bit seemingly resisting explanation. But consciousness is central to who we are subjectively, so we are left with a philosophical puzzle. But can we be more specific about what we mean by ‘consciousness’? And why think that consciousness remains left out from our scientific worldview?

II The Study of Consciousness

We use the term ‘consciousness’ in a number of ways in ordinary speech. One way is to distinguish conscious from unconscious creatures. If a creature is active and responsive to its environment, we consider it to be conscious in this sense. If it is incapacitated and unresponsive to its environment, we consider it to be unconscious. We can call this idea “creature consciousness,” as it pertains to the condition of a person or other creature. This is not the notion of consciousness leading to the philosophical worries here. Creature consciousness is plausibly a phenomenon explicable in biological terms, in terms of the proper biological functioning of the organism in question. While there is certainly a great amount of biological and physiological complexity at issue here, it is not especially mysterious how a creature could be conscious in this sense, given the explanatory resources of biological science.

However, we also sometimes use the term ‘consciousness’ to apply to mental states. We speak of consciously seeing a friend in a crowd, or consciously hearing the key change in a piece of music. Or we may become conscious of our lingering guilt over eating the last cookie in the jar. In such cases, a mental state—a state of seeing, hearing, or feeling an emotion—is conscious, as opposed to being nonconscious. There is a special sort of difference when our

lingering guilt goes from an underlying nonconscious state to a conscious state. We are now aware of our guilt in way we were not just before. Likewise, I may be conscious of seeing the crowd but not conscious of seeing my friend. Then I consciously see her—I become aware of her in a conscious way. Common sense and psychological science both accept that mental states can occur consciously or nonconsciously. The kind of consciousness at issue here we can call "state consciousness." Often, our mental states occur nonconsciously, but sometimes, they occur consciously. When they do, there is something it is like for us as subjects to be in those states—there is something it is like to be us, *for* us, in Thomas Nagel's terms (see Chapter 1). State consciousness is the phenomenon raising the philosophical questions that this reader is most concerned with.

What, then, is state consciousness? The best way to get a handle on any term is to see what it contrasts with. So we can zero in on the idea by focusing on the contrast between conscious and nonconscious mental states. Sometimes, we have the feeling of knowing the name of a person but cannot bring it to mind. The information remains outside of our conscious awareness. But then the name comes to us. And then the specific knowledge becomes conscious—our state of knowing that friend's name becomes a conscious state. More dramatically, you may have had the experience of walking across campus deep in thought, only to look up and realize you have arrived at your classroom or the library. But you may have no recollection of what you saw on the walk. Those states of seeing were plausibly nonconscious, as your mental focus was elsewhere. Still, you did not crash into anything, nor did you trip and fall. Further, you arrived at the right place, all indicating that nonconscious visual states guided your actions. But if a fox had suddenly leaped into your path, your visual state would

have become conscious—you would have consciously seen the fox. This transition, from not present to us to being present to us—*for* us—is the transition from a state being nonconscious to a state being conscious. Further, consider how your elbow (or big toe or belly button) feels right now. You likely were not conscious of those feelings prior to this prompt, but now you are. This, again, reasonably marks the transition from nonconscious to conscious state. These examples are familiar and everyday. Theorists differ over how to best cash out this commonsense distinction between conscious and nonconscious states, as the following chapters will make clear. But it gives us a good starting for thinking about consciousness.

What is more, the difference between conscious and nonconscious mental states has been widely studied in psychology and neuroscience. In “priming” studies, stimuli are flashed at subjects so quickly that subjects report not seeing anything. But there is reliable evidence that the flashed “prime” influences subsequent behavior, despite the fact that it remains nonconscious. Subjects can nonconsciously process the meaning of words, complex pictorial scenes, and even the emotional impact of a stimulus. All this occurs without the subject consciously seeing what is influencing them. But if the same stimuli are presented slowly, subjects consciously see them and can report doing so. The difference in the fast and slow cases, from the subject’s point of view, marks the boundary between conscious and nonconscious states.

We see the same sorts of things in more unusual neurological cases. Subjects with brain injury sometimes lose the ability to consciously see things on one side of their visual field. But information presented in the “neglected” area can still influence their behavior in complex ways. And some subjects with damage to the visual areas of their brains have large “blind fields” in their

visual perception. Still, they can, employing what is known as “blindsight,” guess correctly at a high rate about what is present in the locations they cannot consciously see, indicating that complex visual information is being processed and registered. These cases from psychology and neuroscience highlight that mental states, including states of visual perception, can occur nonconsciously as well as consciously. Ordinary and scientific understanding both mark this difference. The central challenge of consciousness is to explain the nature of this difference, to capture and illuminate what is special about this transition from the unnoticed darkness of nonconscious mentality to the present, lived reality of conscious experience.

But why think this explanatory challenge poses any special type of problem? One worry, stressed by Descartes, has to do with the presence of a first-person subject in consciousness: our conscious states are experienced as fundamentally our own. Indeed, there is a sense in which we subjectively just are our stream of consciousness—we may seem to ourselves just to be this particular procession of conscious states. It is the unique perspective we have on the world, our very own subjective point of view. But scientific explanation aims for an objective picture of the world, a “view from nowhere,” as Thomas Nagel puts it. How can an objective scientific worldview capture the subjectivity of conscious points of view? How does this sort of subjective perspective emerge from objectively characterized matter? Some contend that this is merely a special, but tractable, engineering problem, a puzzle of biology and neuroscience, but not one requiring great speculative leaps (see Akins, Chapter 2). But others, following Nagel, worry that the gap between objective and subjective is too broad to bridge by ordinary scientific means. We may be in the presence of something unique and different, and something fundamental to who we are.

Subjectivity is one of the key problems prompted by considering consciousness.

Another central worry about consciousness involves the distinctive qualities of conscious sensory experience. This is the worry brought on by the Galilean mathematical approach of modern science discussed above. When we consciously see a sunset or consciously hear a jazz trio, we have experiences marked by distinctive sensory qualities—the way things consciously look or sound to us. The reds, yellows, oranges, and grays of a deepening sunset or the subtle timbre of piano chords, plucked bass notes, and plinking cymbals are present to us in conscious experience. They make up "what it is like for us" in such moments. But sensory qualities have long marked off a problematic break in thinking about the natural world. To reiterate, Galileo's mathematical theorizing works well for many features of reality and has led to the great scientific breakthroughs. But it leaves the sensory qualities in a difficult position. How can they be captured in such mathematical-geometric language? Further, sensory qualities as we consciously access them seem simple and lacking in structure. They appear to be the basic building blocks of experience, not decomposable into anything more basic. Red, orange, sweet, sour, loud, soft—there seems to be little one can say to explain the "conscious feel" of such things if another has not experienced them. We have reached the explanatory bedrock of the mind, it seems. It may be, however, that there are ways to decompose and integrate sensory qualities into our scientific worldview without radical revision. Or perhaps we have reached the limits of our ordinary understanding and radical measures are called for. Controversies over sensory quality are central to the philosophical issues surrounding consciousness.

Yet another issue raised by consciousness is its apparent *unity*. We seem to ourselves to be seamless and complete,