

A materialist examination of human consciousness

Nancy Russell reviews *Consciousness Explained* by Daniel C. Dennett

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Daniel C. Dennett's book *Consciousness Explained*, published in 1991, has been at the center of a large body of debate. Aimed at both the lay person and the scientist, the book became a bestseller and was described by the *New York Times* as one of the 10 best books of that year.

Dennett is the director of the Center for Cognitive Studies at Tufts University and has authored several books, including *Brainstorms* and *The Mind's I*. He has helped popularize a cross-disciplinary inquiry into the study of mind, incorporating contributions from philosophy, biology, psychology and neurology. In assessing the issues under debate, this reviewer has consulted the compendium volume, *The Nature of Consciousness, Philosophical Debates*.

Major scientific discoveries in the natural sciences and the relatively new field of artificial intelligence have created a swirl of interest in the study of consciousness. A number of scientists have developed a polemic against the encroachments of the religious right on the scientific method and its premise, philosophical materialism. These controversies, not surprisingly, revolve largely around the most basic of questions: the relationship between matter and thought. Does the world consist only of matter in motion and its reflection in thought? Or is there special brain stuff, thought, which is not able to be scientifically explained? Is consciousness a property of matter, or is it another substance? Is the human brain capable of understanding the world?

Dennett's ambitious goal in *Consciousness Explained* is to demystify consciousness and provide a consistently materialist explanation of mind, or at least the basic framework within which science can complete this project. He presents fascinating material from many sciences in an accessible and often witty form. His emphasis is to oppose those scientists and others, the "mysterians," who claim that science cannot fully explain the secrets of the mind. His passionate attacks on dualism as "giving up" are refreshing.

He begins, as does modern philosophy, with Rene Descartes' "mind-body problem." Descartes developed the classic dualist belief: the world is comprised of two substances, one material and one spiritual. He postulated that the pineal gland served as the gateway to the conscious mind. He believed the sense organs transmitted information to the mind through the pineal gland, the mind thought it over, and then directed the body. Modern thinkers may discard this role for the pineal gland, but, Dennett points out, they have not overcome the conception that there is a central "interpreter" within the brain.

Dennett calls this habit of thought Cartesian materialism, by which he means the traditional view that only those thoughts and sensations that are transmitted to a central brain-location "become conscious." He writes: "Theorists tend to think of perceptual systems as providing 'input' to some central thinking area, which in turn provides 'control' or 'direction' to some

relatively peripheral systems governing bodily motion" (*Consciousness Explained*, page 37).

Dennett's opposition to what he calls the "Cartesian Theater" is at the center of his notion of consciousness. By debunking a "central interpreter," Dennett clears the way to understand the various functions of the brain from an evolutionary perspective. He approaches the brain, not as unique organ, but as a product of nature and history.

Dennett replaces the "Cartesian Theater" with a "Multiple Drafts" model of consciousness. Sensations and thought take place, he theorizes, by parallel, multi-track processes of interpretation. Information enters the brain in different locations, and various parts of the mind "edit" these sensations and thoughts.

These "editions" are like fragmentary drafts playing short-lived roles in directing our activity--such as the rather mindless activity of monotonous highway driving. An example of this brain "editing" is the sense that our vision is continuous, when actually our eyes dart about in rapid saccades, about five quick fixations a second. This motion, like the motion of our heads, is edited out early in the processing from eyeball to consciousness. Likewise, Dennett asserts, there are multiple "drafts" of consciousness at various stages of editing in the brain. Drafts can be written and then withdrawn from circulation, as subsequent events confirm or refute them.

Dennett then provides biological examples of parallel processing in the brain and traces the origin of various functions within the development of the animal world. Natural selection, he points out, favors the development of nervous systems because they enable biological organisms to track or even anticipate important features of the environment. Brains are, in essence, anticipation machines. Simple nervous systems are capable only of proximal anticipation, behavior that is appropriate to what is in the immediate future.

Better brains are those that can extract more information, faster, and use it to avoid problems in the first place. Examples are the "ducking response", pattern-recognition, and eventually the plasticity or learning capacity of the brain. The ability to learn is first of all a product of genetic evolution, but it gives the organisms that have it an edge over their "hard-wired" cousins who cannot redesign themselves. It also reflects back on the process of evolution and speeds it up, Dennett explains.

The author contends that the great physical growth of the brain began about two and a half million years ago and was completed about 150,000 years ago--prior to the development of language, cooking and agriculture. So, he concludes, the great advances of civilization of the last 10,000 years must all be due to harnessing the plasticity of that brain in radically new ways--by creating something like software to enhance its underlying powers. Dennett describes man as incorporating both elements into his consciousness, the "hard-wired" responses such as pattern-recognition,

and the culturally-transmitted learning of recent civilization, concluding that our processing of sensations and thoughts are taking place simultaneously on many different levels.

One can ask, is Dennett being too mechanistic? Is not social consciousness more than "software"? How can such models account for the active role of consciousness? After all, the brain does do more than "anticipate" events. It is this "active" side of cognition that mechanical materialists have never been able to explain. This critical side was developed by the dialectical philosophers. Notwithstanding such legitimate questions, many of Dennett's metaphors and biological examples ring true and provide a fascinating glimpse into the rapidly developing study of the mind.

Among the most controversial of Dennett's arguments is his attack on "qualia," a term that has come into vogue among philosophers of the postmodernist trend. Qualia is defined as the "introspectively accessible, phenomenal aspects of our mental lives." Qualia are private, subjective and ineffable. For example, your experience of purple (your qualia) and mine are subjective and different. Only I can only know what it is like for me to experience purple, toothache, sandpaper, etc. It is held that an "explanatory gap" exists which prevents man from understanding how the physical structure of neurons and chemical transactions generate the feelings that they do. Many take the position that human beings are cognitively closed to understanding the structure of their own minds.

While the uses of "qualia" may vary, this concept is highly suspect. Arguments on these positions revolve around things like hysterical blindness, people prevented from seeing color their whole lives, the possibility of zombies, and questions along the lines of Thomas Nagel's famous 1974 article, "What Is It Like to Be a Bat?" Dennett calls this the most widely cited and influential thought experiment about consciousness and the qualia problem, so let us briefly review Nagel's idea.

Nagel's basic claim is that no amount of third-person knowledge could tell us what it is like to be a bat. He provides the following example: while sonar is clearly a form of perception, it is not similar to any sense that humans have, therefore there is no reason to suppose we can subjectively imagine what it is like to be a bat. In other words, we just cannot bridge the gap from objective to subjective.

He states, "My realism about the subjective domain in all its forms implies a belief in the existence of facts beyond the reach of human concepts ... one might also believe that there are facts which could not ever be represented or comprehended by human beings, even if the species lasted forever--simply because our structure does not permit us to operate with concepts of the requisite type" (*The Nature of Consciousness*, page 522). He then defends the immutable subjective character of experience, its "qualia," and states, "It is difficult to understand what could be meant by the objective character of an experience, apart from the particular point of view from which its subject apprehends it" (*ibid.*, page 523).

Such formulations harken back to the skeptical dualism of Immanuel Kant, who postulated a priori mental categories which, he believed, conditioned and molded man's perceptions of the world. Kant gave to dualism a classic expression: there was the world of nature and the world of cognition, but the "laws of nature" were not objective. They were, rather, useful mental constructs.

In other words, man has his perceptions, but he is incapable of knowing the essential nature of reality, which Kant called "the thing in itself." Materialists, and most specifically Marxists, opposed Kant's dualism and asserted that sensation is the direct connection between man and the external world. The concept of qualia, denoting something which is by definition "ineffable," erects a barrier, a la Kant, between perception and the world perceived. Marxists have always asserted that the ultimate refutation of this skeptical position toward knowledge is the fact of man's social practice. In his activity, man demonstrates his ability to apprehend

and transform nature for his own purposes. (As a matter of fact, man has developed the art of echolocation--in police speed traps and in space exploration--to a higher level than bats! Is this not a big step toward understanding what it is like to be a bat?)

Dennett's approach to refuting "qualia" draws on the role of evolution in the development of the human mind. Color has been a favorite among the qualia-ites, since the simple idea that each color can be associated with a unique wavelength of light has been disproven. Surfaces with different fundamental reflective properties can be seen as the same color, and it has been determined that wavelength is only indirectly related to the colors we see objects to be.

Dennett's rejoinder is that colors and color vision were "made for each other." Certain things in nature "needed to be seen." Animals evolved color vision as a response to nature. Insects co-evolved color vision with the colors of the plants they pollinated. Different systems of color vision have evolved independently. While there were various reflective properties of surfaces, animals were able to develop a color-coding system that assisted their struggle for survival. The categories of color and smell evolved as a response to natural selection.

This approach to mental states and the mind is correct. The strange hypotheses of Dennett's detractors--worlds without color, people (zombies) without consciousness, etc.--do not draw their arguments from nature and do not see the answers to the problems of consciousness as arising historically out of man's struggle with nature. Engels makes a relevant point against the dualist Herr DÄ¼hring in his 1878 volume *Anti-DÄ¼hring*. Engels states that if consciousness and thought are taken as something opposed from the outset to nature, "it must seem extremely strange that consciousness and nature, thinking and being, the laws of thought and the laws of nature, should correspond so closely. But if the further question is raised what thought and consciousness really are and where they come from, it becomes apparent that they are products of the human brain and that man himself is a product of nature, which has developed in and along with its environment; hence it is self-evident that the products of the human brain, being in the last analysis also products of nature, do not contradict the rest of nature's interconnections but are in correspondence with them" (*Anti-DÄ¼hring*, Progress Publishers, page 48).

Lastly, Dennett takes up the "reality of selves." He calls this biological conception of "self" not a concrete thing, but an abstraction, a principle of organization. Biologically, he points to porous boundaries in the animal world, such as the microscopic mites that live throughout our bodies or bacteria upon which we depend, or the termite or ant colony which depends upon a complex division of labor. He concludes that "selves," like consciousness, are not continuous, but discontinuous, and that selves are "not independently existing soul-pearls, but artifacts of the social processes that create us."

This is a very profound point. But truth to tell, it was first Hegel and then more scientifically the great Marxists who fought for these social concepts, and demonstrated their connection to the struggle for objective truth. Consciousness is a product of man's social being. There are subjective sides to consciousness--thought is man's partial, limited approximation of reality. But even this relative, conditional thought is not divorced from nature, but is part of it.

V.I. Lenin develops this point: "The process of cognition leads to truth because Nature is both concrete and abstract, both phenomenon and essence, both moment and relation. Human concepts are subjective in their abstractness, separateness, but objective as a whole, in the process, in the sum-total, in the tendency, in the source" (*Philosophical Notebooks*, page 208). In other words, absolute knowledge is realized in a series of relative errors, through the unending history of man's social practice. These points are just as powerful today against dualists of the postmodern type as they were against the subjectivists and relativists of Lenin's day.

As materialists, as Marxists, we assert that there may be unanswered questions about consciousness, but there is no unanswerable question. Consciousness is a highly evolved reflection of matter in motion. Man is a part of nature, its highest product. "Life gives rise to the brain, " Lenin writes. "Nature is reflected in the human brain. By checking and applying the correctness of these reflections in his practice and technique, man arrives at objective truth" (*Philosophical Notebooks*, page 201).

Engels elaborates this in another way in *Anti-DÄ¼hring* by pointing to the adaptation of plants to light and describing consciousness as a more developed form of adaptation. He writes, "Since this process goes on in an organic cellular structure and assumes the form of stimulation and response, which occurs here just as it does in transmission by nerves in the human brain, the identical expression, adaptation, fits in both cases. And if adaptation is to be accomplished absolutely through the medium of consciousness, where do consciousness and adaptation begin and where do they end? With the moneron, with the insect-eating plant, with the sponge, with the coral, with the first nerve? DÄ¼hring would do a very great favor to the natural scientists of the old stripe if he should draw this boundary line. Protoplasm stimulation and protoplasm response are to be found wherever there is living protoplasm. And since the influence of slowly changing stimuli calls forth change in the protoplasm too, otherwise it would perish, the same expression, adaptation, must be applied to all organic bodies" (*Anti-DÄ¼hring*, page 204).

Marxism has always held the position that consciousness is a property of matter, follows the laws of nature and, therefore, can be understood scientifically. To the extent that dialectical materialism has been ignored or rejected by modern scientists and philosophers, largely due to the prevailing political climate, they are highly handicapped in approaching these complex issues. It is striking how present-day detractors of materialism merely echo the arguments long ago refuted: in fact, the relativism of the postmodernist trend has provided fertile ground for a revival of obscurantism. One can only work for the situation where this will change and the superiority of dialectical materialism, man's highest philosophical expression to date of the basic laws of nature and thought, will again be demonstrated in all of natural investigation and will be utilized to resolve man's social and scientific problems.

Consciousness Explained is a passionate defense of science and materialism against the prevailing bias. While Dennett's examples from the fields of artificial intelligence, neurobiology and psychology may not all be completely on the mark--this reviewer is not equipped to judge--his claim is not to have finalized man's cognition of thought. He aims to assert man's ability to know the world, including consciousness, and to construct certain plausible schema for furthering our understanding. In this, he has struck a blow for science against postmodernism. I look forward to reviewing his next book, *Darwin's Dangerous Idea: Evolution and the Meanings of Life*, which continues his polemic against dualism.

Consciousness Explained, by Daniel C. Dennett, published by Little Brown and Company, 1991; *The Nature of Consciousness*, Philosophical Debates, edited by Ned Block, Owen Flanagan, and Guven Guzeldere, MIT Press, 1997.



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