



The Details Are Being Worked Out

A Review of

Touching a Nerve: The Self as Brain

by Patricia S. Churchland

New York, NY: W.W. Norton, 2013. 304 pp. ISBN

978-0-393-05832-1. \$26.95

<http://dx.doi.org/10.1037/a0035376>

Reviewed by

Peter J. Marshall 

How are developments in neuroscience shaping our understanding of the concepts of self, morality, free will, and consciousness? Much has been written on how and whether findings from brain science challenge deeply held, everyday views about who we are and why we do what we do. In her newest book *Touching a Nerve: The Self as Brain*, the philosopher Patricia Churchland sets out to reassure the concerned reader that despite the sensationalism of media reports and the apparent nihilism of certain academic perspectives, all is well in the world of neuroscience. For her, unraveling the biological threads that make up the fabric of our existence provides a reassuring, not a threatening, form of explanation. Although she admits that there are still many pieces that are not yet in place, according to Churchland the puzzles of brain and mind will be solved, and the answers—in the form of neurobiological mechanisms—will be deeply enlightening rather than depressing.

Despite the fact that the fundamental questions in psychology are founded in philosophical questions, the two disciplines remain mostly estranged, and communication between them is virtually nonexistent in most institutions. The empirical mind-set of most psychologists leads them to see much of the philosophy of mind as consisting of armchair thought experiments that are irrelevant to the task of knowledge generation. Although there are of course exceptions to these generalizations, psychologists who engage with mainstream analytic philosophy can easily become frustrated by the tangled, seemingly circular arguments about the physical and the mental, as well as the abundance of disparate and seemingly irreconcilable perspectives. However, the particular brand of philosophy espoused by Churchland is not of the armchair variety. Instead, it is a roll-your-sleeves-up embrace of biology.

In looking within her own discipline, Churchland has little time for fellow philosophers who don't wish to engage with neuroscience or who feel overly threatened by developments in the study of the brain. Churchland has strong feelings about these issues, but they are also relevant within psychology. Indeed, for much of the history of the discipline, large parts of psychology have proceeded without sharing much territory with neuroscience. It has been

argued that developments arising from the “cognitive revolution” led to this neglect of neuroscience and precluded the emergence of an integrative dialogue (Edelman, 1992).

The blame for this neglect can be assigned to various related factors, including misguided directions in artificial intelligence, intransigent philosophical arguments such as multiple realization, or simply the difficulties presented by the vast complexity of the brain. However, technical and theoretical advances in neuroscience coupled with wider developments in biology have made the isolation of traditional psychology look increasingly fragile.

Given the seemingly intractable complexity of relating neuroscience, cognition, and behavior, how can an integrative picture emerge? In psychology, a common response appeals to the value of “different levels of analysis,” but this masks various difficult issues (Marshall, 2009, 2013). For Churchland, the answer to the integration problem comes through *neurophilosophy*, a term that has become closely associated with her name through an earlier book of the same title (Churchland, 1986). Although it could be said that *Touching a Nerve* is somewhat lighter on the philosophy and heavier on the neuroscience, Churchland makes no secret of her views on colleagues who don’t share her vision for the neuro-future of the big questions of brain and mind.

One such question over which philosophers have spilled a great deal of ink concerns the qualitative aspects of consciousness. One influential viewpoint in the philosophy of mind has been that of Chalmers (1995), who suggested that qualitative experience should be seen as fundamentally unexplainable in terms of anything simpler. Rejecting the “hard problem” of Chalmers as misplaced, Dennett (1996) claimed that a functional analysis of consciousness leaves nothing to be examined. In effect, Dennett wished to eliminate the notion of qualitative experience. Churchland also has no patience with Chalmers’s view, but she takes a very different approach to Dennett: She wants to reduce conscious experience to neural processes, and she describes new developments in neuroscience, such as the work of Baars (1997), that she believes are going to lead to important answers. From her perspective, although the details are being worked out, these endeavors in neuroscience will bring us to a new, more satisfying place.

In Churchland’s optimistic view of the future, neuroscience is not only going to provide answers to questions about consciousness, but along the way it will yield insights into other previously intransigent dilemmas in the study of the self, morality, and free will. But what of the specter of reductionism, which necessarily appears in any discussion of such matters? Being labeled as a reductionist is hardly seen as a good thing within the humanities, but it is a label that Churchland does not shy away from. Instead, her puzzlement is apparent about people who have painted her as someone who wishes to see descriptions of human experience replaced by the movement of ions across cell membranes or the patterns of action potentials in the brain. For Churchland, giving a neuroscientific explanation of a phenomenon does not make that phenomenon disappear: On the contrary, it simply allows a more complete understanding.

However, behind this seemingly benign framing lies a further key question that Churchland chooses not to directly address. Is neuroscientific explanation a causally privileged form of explanation? Addressing this question requires an awareness of different kinds of causes, not all of which involve mechanisms in the sense that they are conceived in contemporary psychological science. Uncovering and amassing data about neurobiological mechanisms cannot suffice as a foundational form of causal explanation because every mechanism

cannot be seen as the product of another mechanism. Neglecting this issue would generate a problem of infinite regress unless one wishes to posit an “unmoved mover” from which all mechanisms begin.

By contrast, mechanisms can be understood only in the context of a different but complementary level of structure or organization, which in turn cannot be seen as simply being an epiphenomenon of the activity of lower level mechanisms (Witherington, 2011). Understanding the status of such structure in terms of its reciprocal causal relations with a level of mechanisms is—despite its neglect in contemporary psychology—the most central issue in the discipline. This is not to advocate a return to structuralism in the sense of psychology’s origins, but instead it suggests a new, relational approach to structure and mechanism that is founded in a biology of meaning (Thompson, 2007). In turn, this approach necessitates a developmental perspective, without which the reciprocal causation between levels cannot be understood (Marshall, in press).

Books about the supposed challenges posed by neuroscience for the big questions of mental life have proliferated in recent years. So what makes *Touching a Nerve* different from other popular expositions at the interface of neuroscience, philosophy, and psychology? One aspect is that Churchland infuses the text with anecdotes from her childhood years growing up in a farming community in rural British Columbia, where learning how things worked was not an intellectual exercise but a necessary part of participation in the practicalities of daily life. A childhood of watching things being fashioned, repaired, and maintained instilled a curiosity about mechanisms that Churchland eventually directed toward the questions of brain and mind. The family narratives and Churchland’s tales from her community add an endearing personal element to the text, combining a view from the heady heights of a high-profile academic life with a lifelong appreciation of the pleasures and hardships of being close to nature.

In summary, Churchland gives us a thorough and entertaining view centered on neurobiological mechanisms, and there is much to commend in her account. The reader may come to appreciate and share her optimism about the promise of neuroscience to deliver more discoveries, more details, and fuller explanations. Neuroscience has turned from a ripple into a tidal wave, and it is exactly this wave that Churchland seeks to ride (most likely in a kayak) to a scientific understanding of human life and experience. At the same time, we should also keep in mind that the coming years also provide us with the opportunity to understand how different types of explanation become tied together in a relational fashion (Overton, 2013). This is the grand challenge of the science of the mind, and we should relish it.

References

- Baars, B. J. (1997). *In the theater of consciousness*. New York, NY: Oxford University Press.
<http://dx.doi.org/10.1093/acprof:oso/9780195102659.001.1> PsycINFO →
- Chalmers, D. J. (1995). Facing up to the problem of consciousness. *Journal of Consciousness Studies*, 2, 200–219.
- Churchland, P. (1986). *Neurophilosophy: Toward a unified science of the mind–brain*. Cambridge, MA: MIT Press.

- Dennett, D. C. (1996). Facing backwards on the problem of consciousness. *Journal of Consciousness Studies*, 3, 4–6.
- Edelman, G. M. (1992). *Bright air, brilliant fire: On the matter of the mind*. New York, NY: Basic Books. [PsycINFO →](#)
- Marshall, P. J. (2009). Relating psychology and neuroscience: Taking up the challenges. *Perspectives on Psychological Science*, 4, 113–125. <http://dx.doi.org/10.1111/j.1745-6924.2009.01111.x> [PsycINFO →](#)
- Marshall, P. J. (2013). Coping with complexity: Developmental systems and multilevel analyses in developmental psychopathology. *Development and Psychopathology*, 25, 1311–1324. <http://dx.doi.org/10.1017/S0954579413000631>
- Marshall, P. J. (in press). Neuroscience, embodiment, and development. In W. F. Overton, P. C. M. Molenaar, & R. M. Lerner (Eds.), *Handbook of child psychology and developmental science* (7th ed., Vol. 1). Hoboken, NJ: Wiley.
- Overton, W. F. (2013). Relationism and relational developmental systems: A paradigm for developmental science in the post-Cartesian era. *Advances in Child Development and Behavior*, 44, 21–64. <http://dx.doi.org/10.1016/B978-0-12-397947-6.00002-7>
- Thompson, E. (2007). *Mind in life: Biology, phenomenology, and the sciences of mind*. Cambridge, MA: Belknap Press/Harvard University Press. [PsycINFO →](#)
- Witherington, D. C. (2011). Taking emergence seriously: The centrality of circular causality for dynamic systems approaches to development. *Human Development*, 54, 66–92. <http://dx.doi.org/10.1159/000326814> [PsycINFO →](#)