

Patricia S. Churchland: *Touching a Nerve. The Self as Brain*  
New York – London: W. W. Norton and Company 2013, 304 pages

Two recent books by prominent authors try to mix autobiographical reflections with explorations of brain function and its implications for psychological categories: Chris Frith's *Making Up the Mind* (Wiley-Blackwell 2007) and Christof Koch's *Consciousness: Confessions of a Romantic Reductionist* (The MIT Press 2012). P. S. Churchland's new book is a valuable addition to this peculiar genre. Churchland decided to write an account of how she came to believe that her brain is identical to her very self – that she literally *is* her brain. She managed to mingle the autobiographical elements quite seamlessly with the details of scientific and philosophical theories of human and animal thought, emotion, will and consciousness. She draws on personal stories, mainly from her childhood in rough conditions of a farm in an isolated mountain valley in British Columbia. These stories help her to buttress the theoretical points with real life examples, giving her book a distinctively down to earth and humane touch.

In spite of the dazzling progress of neuroscience in recent decades, the thesis that the self equals the brain is still met with a strong resistance in some quarters. There are philosophers who welcome this progress and even try to contribute to it in their various ways, and there are philosophers who, in the words of Churchland's unnamed colleague, "hate the brain". Churchland has no time for the latter, the sufferers of what a distinguished neuroscientist Semir Zeki dubbed "neurophobia". Hating the brain is not a very good idea. Understanding its functions and trying to use this knowledge in inquiries into philosophical matters sounds much more promising. Hence the growing field of "neurophilosophy", of which Churchland is generally regarded as today's leading figure. Her fresh, evidence-based approach and her unfailing enthusiasm for science is infectious and continues to inspire new generations of philosophers interested in neuroscience and other empirical fields.

Churchland's take on all things that make us human is thoroughly neurobiological. She starts with debunking the ideas of nonphysical souls, heaven and afterlife. But she is not wholly opposed to terms such as "spiritual", provided they are used in a sane, materially grounded way, simply as labels for

some of the extraordinary phenomena our brains are capable of producing. Next on the list is the account of the origins of basic moral categories and of empathy, altruism and fairness undergirding them. Churchland's analysis draws partly on her previous book, *Brain Trust* (see Churchland 2011), and centers on the role of assorted hormones, neurotransmitters and neuromodulators. The various real life examples offered illustrate the important contribution of culture and environment to the emergence of a specific moral code: for instance, some things taken to be immoral in Western societies are not immoral in the least for the Inuits. Churchland next tackles the topics of sex, aggression and warfare. She is not afraid to discuss controversial issues, such as the differences between male and female brains, and she discusses them with predictably level-headed, extremes-abhorring way. The chapter on warfare focuses specifically on the question whether there is such a thing as a single gene for a particular behaviour. In accordance with contemporary research into the interplay between genes, environment and behaviour, she answers the question with a resounding "no".

Starting with chapter 7 we leave the provinces of affective neuroscience, genetics and evolutionary biology and move into the domain of cognitive neuroscience. Churchland starts with a vexed question: do we have a free will? She then reframes the debate, focusing instead on the question whether we are capable of exercising *self-control*. She believes that we are, and defends this position vigorously. The chapter also contains a short discussion of the implications of modern neuroscientific findings for the current penal system. In contrast to many other authors, she finds the present system well constructed and in no need of a substantial reform. The fact that the notion of free agency, heavily criticised by contemporary neuroscientists, is at the very heart of this system, does not seem to disconcert her. The eighth chapter deals with "hidden cognition", i.e., non-conscious prerequisites for conscious cognitive activities, such as reading. These prerequisites are shown to be quite substantial. Importance of habits for cognition, and more generally for navigating the social world, is stressed along the way. Finally, a separate chapter is devoted to consciousness and the attempts to explain it in neurobiological terms. Churchland shows that a lot has been discovered about consciousness in recent times. Research on sleep, anaesthesia and various brain dysfunctions opened important vistas on neural mechanisms underlying conscious processes. The scientists are not quite there yet, but the development so far is very promising. The book closes with a short epilogue touching on the topics of explanatory reductionism and the value of science.

It would be pointless to go into more technical details in this short review. I will confine myself to remarking that, as far as I can tell, Churchland's accessible and well-written account of neuroscientific, psychological and biological theories is accurate and up-to-date. But the book is not just scientifically astute. The humour and warmth of Churchland's well-balanced personality shines through the pages, and I for one felt somewhat disappointed when the autobiographical streak almost completely disappeared in the second half of the book.

As for the shortcomings of the book, the biggest is an almost total lack of Churchland's own philosophical contribution. Churchland is a first-rate philosopher with distinguished views of her own. Yet in this book (and also in her previous one), she is largely content with summarizing the work of others, primarily the work of cognitive and affective neuroscientists. The result is more of a high-end work in popular neuroscience than an essay in neurophilosophy. This seems to be the price of the allure of neuroscience. The findings are so interesting that one easily succumbs to the penchant to expose endlessly, forgetting to contribute to the debate with her or his own thoughts. Also, some of her former philosophical views are completely absent in the book. To give an example of an idea for which she is notorious, the book does not contain a single word on "eliminativism", a rejection of the posits of folk psychology such as beliefs, desires or intentions. To be sure, this, in itself, is no crime. And yet, how should one square eliminativism about propositional attitudes with the book's insistence that beliefs and desires are helpful instruments of daily social interactions (see the account on p. 170)? I confess I have no idea. Did Churchland drop eliminativism altogether? This does not seem likely. In her recent interview with Julian Baggini she confirms being an eliminativist, though she explains that she favours *revision* rather than all-out elimination of folk-psychological notions (see Churchland – Baggini 2012). Many readers of Churchland's *Neurophilosophy* were surely wondering how the rapid progress in neuroscience since the publication of the book in 1986 shed light on the fascinating topic of eliminativism: Is it even safer, nowadays, to bet on the gradual disappearance of good old beliefs and desires in favour of some more scientifically grounded concepts? Or was the eliminativist programme, which Patricia Churchland shared with her husband and fellow philosopher Paul, a failure? To such readers, *Touching a Nerve* will not be helpful one iota.

Regarding the quality of the arguments offered, there are a couple of places that raise an eyebrow. Churchland is not entirely free of the tendency to attack inflated strawmen. For example, I do not know of anybody seriously claiming that since the feeling of free will is probably illusory, and so no-one is literally

an author of her/his own deeds, we should “empty the prisons” – yet this is a view that Churchland ascribes to her opponents (p. 193). This is most certainly not the point of the critics of the current penal system and of its reliance on freedom of the will and on the tightly intertwined notion of personal responsibility for an act. Of course, some people will always need to be locked up, because they are a danger to society. The point is rather to re-conceptualize the whole system around different central concepts and to draw some practical implications from the denial of free agency.<sup>1</sup> Similarly, “scientism” is something different than what the author presents it to be. There are important differences in how the position is stated, and none of its statements consists simply of the claim that “nothing but science matters” (p. 264).<sup>2</sup> At the risk of overgeneralizing, I conclude that Churchland is impatient and all too quick when dealing with her opponents.

A philosopher drawing heavily on neuroscience in her work should, perhaps, have not just a solid knowledge of neuroscientific findings, past and present, but also some clear idea of where the science is heading and what is the right form of neuroscientific explanation. Towards the very end of the book, Churchland remarks (in an endnote on page 291) that “some people continue to assume that neuroscience is only about the level of molecules and to criticize that straw man vision of neuroscience”. And yet, to some people, this vision of neuroscience is not made of straw at all. Take John Bickle, a leading philosopher of neuroscience. For years, he has been arguing that proper neuroscientific explanations of cognitive explananda are to be arrived at the molecular and cellular level, with memory processes being perhaps the most extensively discussed paradigm case (see, for example, Bickle 2008). His basic reason is straightforward: this is actually the dominant approach of the neuroscientists themselves. On the other hand, neurophilosophers tend to focus on the macro-level phenomena studied by cognitive neuroscience: various brain areas and their interconnected networks, the activations of which can be tracked with the help of fMRI and other scanners. This work is invaluable, but the question is whether we can rest content with this macro-level type of explanation, or whether we should push explanations further down, to the micro-level. To suggest that people striving for the latter option are misguided does a disservice to the reader, who might come to the conclusion that these folks are outliers, and it

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<sup>1</sup> For an attempt along these lines, see Cashmore (2010).

<sup>2</sup> For two of these different ways, see Rosenberg (2011) and Pinker (2013).

skips a whole lot of thorny philosophical issues that need to be thought through.

As Anthony Landreth perceptively remarked in his review of Churchland's 2002 book *Brain-Wise* (The MIT Press), "Churchland's strengths lie primarily in her synoptic view of the behavioral sciences" (see Landreth 2003). This is true of the present volume as well. Churchland promotes the attractive vision of the neurophilosopher as akin to a theoretical physicist. Though not conducting empirical experiments themselves, neurophilosophers draw on a wealth of empirical data coming incessantly from the labs, and try to formulate comprehensive accounts of cognitive or affective phenomena. Yet judging from *Touching a Nerve*, this task can be dispensed without much of an input from the neurophilosopher herself. All it takes is to weave it cleverly together. Isn't there more work to do? The answer to this question depends on how neurophilosophy would like to define itself, and there is as yet no consensus on this matter.

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