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Patricia S. Churchland. *Touching a Nerve: The Self as Brain*. W.W. Norton & Co., 2013. 304 pp. $26.95 USD (Hardcover ISBN 9780393058321).

In *Touching a Nerve*, Churchland outlines recent neuroscientific findings and explains how they bear on philosophical issues such as morality, free will, and consciousness. Writing in an accessible style, Churchland wants to convince us that philosophy should embrace neuroscience. Although as yet neuroscience cannot give us definite answers regarding for example the interdependence of conscious and unconscious processing, Churchland is optimistic about the future. In the end, she claims, neuroscience will tell us the truth about mentality and the mechanisms of aggression, sex, war, free will, morality, and consciousness.

When reading *Touching a Nerve*, the question that comes to mind immediately is what Churchland's goals are. Is this a popular science book, or does she aim to make a contribution to philosophical debates? Churchland's discussion of brain mechanisms makes for an interesting introduction to recent findings in neuroscience. She subsequently tries to interweave the neuroscientific and philosophical discussions to show that neuroscience can give answers to the questions that philosophers ask, or can tell them that what they are looking for does not exist. With *Touching a Nerve*, Churchland provides an accessible overview of a range of topics connecting philosophy and neuroscience, but it falls short of shining new light on philosophical problems.

In *Touching a Nerve*, Churchland presents herself as a common-sense philosopher. One way of showing that she is grounded in reality is to include autobiographical elements of her youth on a farm. These stories introduce the topics, as well as illustrate her arguments. Life on the farm showed Churchland that finding out how things work can be valuable. Similarly, finding the mechanisms behind a disease, rather than explaining it through the 'magic' of having a soul can be very consoling. This she illustrates with the case of her brother, who was relieved to find out he could explain his oddities with Klinefelter's syndrome.

Not only this autobiographical strategy, but also her positions within the debates show that common-sense is what Churchland strives for. In her chapter on free will, she sketches two options in the debate. The first option is a contra-causal account of free will, which entails that really free causes are not caused by anything. This position was advocated by Kant and some of his contemporary followers. It is unsatisfying according to Churchland, because it is unlike anything we usually mean when we say that someone exhibits free will. Her alternative is the common-sense account: 'If you are intending your action, knowing what you are doing, and of sound mind, and if the decision is not coerced (no gun is pointed at your head), then you are exhibiting free will' (180). Rather than worrying about a fuzzy notion such as free will, Churchland wants to focus on 'self-control', a concept of which much neuroscientific evidence can be found.

Who is Churchland arguing against with this common-sense view? Churchland's opponents are people who are critical of the idea that neuroscience can answer philosophical questions. According to her, they are essentially irrational, and the common-sense views 'touch a nerve' for them. They are either philosophers that are afraid of losing their jobs, or Christians with a 'let’s pretend' strategy (15), similar to those that stood in the way of Galileo’s theories. Both groups are afraid to face the truth and adhere to 'truthiness' (65). Instead, Churchland's position is that we should welcome realism and progress in science. Truth, according to Churchland is a feature of reality, and our attitude towards it is a psychological state. If we get accustomed to our brain, and

accept the truth, we can get on with life and achieve peace of mind. This way of conceiving her readers and opponents almost seems to make *Touching a Nerve* into a combination of a popular science book and self-help guide.

The arguments that her opponents bring to the fore when they say that neuroscience cannot bear on philosophical issues, Churchland reduces to: 'we cannot imagine what a satisfying neurobiological explanation would look like, so there won't be any.' Churchland describes this argumentation as a fallacy of ignorance, since it took us a long time to understand many natural phenomena. This reduction is obviously problematic, because it does not do justice to the variety of arguments that have been proposed in the history of philosophy. For example, she disregards the idea that philosophy can discover a-priori truths, and also dismisses the position that scientific findings are never conceptually neutral.

This is not the only instance where Churchland chooses not to engage with relevant philosophical debates. One example is the free will debate, mentioned earlier. Kant's conception of free will is only advocated by a minority in the philosophical debates; many more focus on whether we can combine free will with causal determinism–the idea that the future is determined by the conjunction of the past and the laws of nature—or not. Another position that she attacks is substance dualism. Famously proposed by Descartes, substance dualists are of the opinion that we have a soul that is ontologically distinct from and will outlive our body. While this position might be a backbone of many religions, hardly any modern philosophers advocate substance dualism, and Churchland's vigorous attacks therefore mostly hit a straw man from the past.

We can see a third instance where Churchland does not engage with the key debates when she expounds her moral theory. She explains that moral values, like self-care values are 'in the brain' (86). Self-care values are there for evolutionary reasons: 'animals who have genes that build brains that have self-oriented values do better than those with genes that build self-neglecting brains' (86). Additionally, 'other-care' can be largely explained by looking at the workings of oxytocin and vasopressin—two simple peptides produced by the hypothalamus. By adopting this position, Churchland opposes moral realism and places herself in the camp of those debunking morality through evolutionary arguments. Unfortunately Churchland stops short of the various philosophical arguments raised against evolutionary debunking arguments. Here, it becomes clear that Churchland's real target is religious morality rather than any philosophical theory: 'My main point is that moral behaviour and moral norms do not require religions' (278) It turns out that religion remains the main target for the whole of *Touching a Nerve*: Churchland expounds neurobiological mechanisms to argue against religious beliefs and superstition, rather than against philosophical positions.

How does *Touching a Nerve* connect with Churchland's earlier work? We can see clear traces of the version of eliminative materialism that she developed together with Paul Churchland. Eliminative materialists generally hold that our theoretical conceptions of mental states are falsifiable by experimental results, and that as science progresses, these common-sense conceptions will turn out to be empty and can be superseded by a more accurate physiological account. These eliminative materialist elements become clear for example in her discussion of free will: 'the concept [of free will] is like most everyday concepts that we use efficiently without fussing too much. Moreover, like gene or protein, it may become a little more precise as a result of developments in science' (181). This ties in with Churchland's optimism about neuroscience; although as of yet, neuroscience cannot

explain everything, —which is why psychological concepts still prevail throughout the book—as it progresses, allegedly it will be able to tell us everything about mental life that we want to know.

A prevailing confusion in the debate on eliminative materialism is whether its proponents hold that mental terms are simply empty—i.e. that they do not have a reference—or that mental terms can be reduced to brain states—i.e. that their reference turns out to be a brain state. Churchland seems to oscillate between the two. Purportedly, it is science that will tell us whether mental terms are real. If they have a neuroscientific explanation, they are, if they do not, they will turn out to be empty concepts like phlogiston and leprechauns.

Is Churchland a reductionist? Yes—but she claims to be an explanatory reductionist, not a 'go-away' reductionist: 'when we learn that fire really is rapid oxidation—that is the real underlying nature of fire—we do not conclude that fire does not exist. Rather, we understand a macro-level thing in terms of micro level parts and their organization' (263). According to Churchland, it is not that the mind does not exist, but that we need the brain to explain it, thereby changing our conception of what the mind really is. Though this seems to point to explanatory reductionism, Churchland further complicates the matter when she discusses unconscious processes. She holds that these processes are mental, but at the same time states of the brain: 'the mental is neurobiological' (201).

All in all, the message that Churchland wants to give us in *Touching a Nerve* is that although the truths that science presents might be unnerving, any path that does not follow neuroscientific findings merely leads to 'truthiness'. Churchland's book describes neuroscience accessibly, but because of its style and content, it is no less dogmatic than the beliefs she is arguing against. The book does not elaborate on Churchland's earlier work on eliminative materialism, and can be summarized with her heartfelt cry: 'yay brain!' (21).

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