Aristotelian neurophilosophy for big children

Patricia S. Churchland
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At the beginning of the twentieth century, Max Weber (1958 [1919], p. 143) did not exaggerate much when he claimed that, 'aside from certain big children who are indeed found in the natural sciences', few people still believed that science could serve as a key to moral action. David Hume's eighteenth-century dictum that *ought* sentences could not be deduced from *is* sentences had just been cemented by G.E. Moore's ruling against the 'naturalistic fallacy' (Shapin, 2008, p. 10f). The conviction that empirical findings had no moral philosophical implications was closely associated with philosophers' emergent opposition to the philosophical significance of scientific knowledge *tout court*. By forcing empirically oriented researchers out of philosophy departments, philosophy was temporarily constituted as the domain of purely conceptual thought (Kusch, 1995). In the 1960s, at about the same time as French structuralists and poststructuralists began to do away again with the separation of philosophy and the human sciences, American philosophers such as Wilfrid Sellars and W.V.O. Quine also called into question the opposition of the empirical and the conceptual in analytic philosophy. In this vein, Patricia Churchland and her husband Paul Churchland reconnected philosophy and brain research in what they called neurophilosophy (Churchland, 1986). After the bulk of their work had focused on the philosophy of mind and the philosophy of science, Patricia Churchland's new book *Braintrust* provides an account of what neuroscience tells us about morality. Pace Weber, Moore and company, Churchland self-consciously regresses to being one of those 'big children' who maintain the ethical significance of brain research. But maybe it is time to pause before lapsing into Weber's infantilization of ethical naturalists.

Anticipating that her neurophilosophical approach to morality will be dismissed as a naturalistic fallacy, Churchland opens the book with her own reading of Hume as a thinker who not only denied that one could logically derive an *ought* statement from statements about what *is*, but also advocated naturalism in moral philosophy grounding moral behavior in human nature, especially in the passions, rather than in the supernatural or in reason. She agrees with Hume that, in terms of deductive logic, *ought* never follows from *is*. But Churchland also points out that most practical and social problems, including moral ones, do not require logical deduction, but probabilistic inference and circumstantial deliberation. 'Our brains', she argues, usually have to 'figure out' what are better or worse choices (without there being a uniquely right one) by drawing on knowledge, perceptions, emotions and an understanding of a given situation, balancing a multitude of considerations against each other (pp. 4–7).

Neuroscience helps us to understand the physiological mechanisms involved in such moral decision making. Churchland provides a well-informed overview of the current state of research in a broad range of relevant fields, from behavioral genetics to neuroeconomics and from primatology to biological psychiatry. She is particularly interested in the role of the hormone and neuromodulator oxytocin as one of the endocrinological foundations of 'brain-based values'. What human brains care about, Churchland argues, is the organism's own well-being, but also the welfare of kith and kin – which can lead to inner conflicts to be resolved by cultural practices, conventions and institutions (p. 12f). In the evolution of mammalian sociality, oxytocin has come to play a central role in caring for others by mediating attachment as the 'neural platform for morality' (p. 16). Churchland dismisses the doctrine of the naturalistic fallacy because she believes that our values – at least, in their most basic form – are in the

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world, more specifically in the brain. Thus, morality is rooted in our animal nature.

With this assumption, *Braintrust* follows the neo-Rousseauean turn prefigured by primatologists (for example, de Waal, Tomasello) and social neuroscientists (for example, Gallese, Rizzolatti). In contrast to late nineteenth-century Darwinians such as T. H. Huxley or their present-day heir Richard Dawkins, they conceive of morality as part of our (at least partially good) animal nature rather than a cultural institution keeping our (depraved) animal nature in check. According to these moral naturalists, altruism, empathy, cooperation and care for others are not a thin cultural veneer hiding an otherwise selfish and brutish life form, but are key to our biological makeup and survival as a species.

However, Churchland's claim that morality is deeply rooted in the brain does not entail that the brain alone determines moral behavior. Drawing from a range of neuroscientific studies, she demonstrates that oxytocin, for example, is not simply the 'cuddle hormone', as the popular press has presented it. In fact, oxytocin was shown to increase hostility and aggression toward individuals not belonging to one's group while facilitating trust, cooperation and tenderness within the group (pp. 50, 75). Consequently, one and the same neuroendocrinological agent can have diametrical effects in different social contexts. However, as anthropologist Allan Young has recently pointed out, the discovery of this bivalent nature of oxytocin sheds a critical light on some of the other studies used by Churchland, which construct the effects of the neuropeptide in univocal terms without paying attention to their modulation by social relations of test subjects in experimental settings.

Churchland also questions the simulation theory of mirror neurons, which postulates that we understand the intentions and feelings of others with the help of a set of neurons automatically activated by both the performance and the perception of a certain action or facial expression. She objects to this account, which has recently gained much currency in neuroscience, but also in some neuro-enthusiastic corners of the humanities such as neuro-art history: 'Observing that someone is angry may not produce anger in the observer, but fear or embarrassment or, depending on the situation, possibly even laughter' (p. 152). Even though social and moral behavior has a biological foundation, it is neither innate nor universal, but contingent on local conditions and contextual interpretation, argues Churchland (p. 139f). Understanding it, an anthropologist might add, requires what Clifford Geertz (1973) called 'thick description'.

Churchland's emphasis on social and cultural context throughout the book might come as a surprise to many social scientists and humanities scholars who have so far identified Churchland with reductionism and eliminative materialism. Unlike the still fervent attacks on monotheistic religions in general and the Catholic Church in particular, her radical rhetoric announcing another scientific revolution displacing folk psychology by a neuroscientifically enlightened image of humankind has been toned down. In *Braintrust*, the decidedly modern iconoclastic zeal characteristic of her earlier publications takes a new form by being rearticulated with the philosophy of Aristotle, as if to remind readers that revolutions are also instances of a revolving motion. Aristotle has always played a role in Churchland's writings as a philosopher who made a serious effort to understand the nature of things in empirical ways more than two millennia before the specialization of academic disciplines separated philosophy from the natural sciences. As a post-disciplinary enterprise, Churchland's neurophilosophy turned back to this pre-disciplinary philosophical engagement with the natural world. In *Braintrust*, however, Churchland also comes out as an Aristotelian virtue ethicist following the revival of neo-Aristotelian context-sensitive but naturalistic approaches in moral philosophy and bioethics – a development that began in the 1950s and gained momentum in the 1980s. Thus, her new book takes the literary form of a contemporary assemblage combining the latest neuroscience with philosophemes both ancient and modern.

Even though the term is never used, eliminativism returns through the backdoor in the form of a dismissal of rule-based moral philosophies, which are to be replaced by a casuistic approach. Case-based reasoning is, Churchland claims, what the brain relies on when facing the messiness of real-world moral conundrums rather than the thin, detail-stripped school-masterly dilemmas presented to test subjects in neuroethical experiments (p. 182f). At least in the eyes of Patricia's husband Paul Churchland (about whom she says that she is 'never very clear about whether an idea is his or mine and we agree it does not matter', p. 260), rule-based moral philosophies à la Kant or Rawls are based on an empirically false background theory of human cognition – 'our dear beloved "folk psychology" '. The assumption that moral behavior was guided by rules understood as 'just hidden, silent versions

of external statements' as they appear in our overt speech is about to be displaced by a non-linguistic, 'neuronally based and mathematically embodied alternative, specifically the vector-coding, matrix-processing, prototype-activating synapse-adjusting account' supported by computational neuroscience (Churchland, 2007, p. 63f). Such an account will eliminate from our moral vocabulary all terms that map poorly on brain processes such as 'strength of will', Patricia Churchland predicts (p. 126f). Both the Churchlands take moral behavior as primarily shaped by cerebrally incorporated and actively cultivated social skills or virtues. Interestingly, this turn to virtue ethics aligns them with Francisco Varela's (1999) neurophenomenology and Andy Clark's (2000) extended mind theory, which are often presented as antipodes to the Churchlands' neurophilosophy in the field of empirically oriented philosophies of mind. Although Patricia Churchland's account of morality is partly reductionist and eliminativist, its Aristotelian twist reconciles it with the kind of contextualism emphasized by Varela and Clark, but also by social scientists and humanities scholars. After all, Aristotle was not only a naturalist regarding the good life as the consummation of human nature, but also a 'nurturist' who took the realization of the virtues as an achievement of pedagogy and practice. The same is true for the author of *Braintrust*.

In anthropology, sociology and history of science, Churchland's reductionism and eliminative materialism have never received a particularly warm reception. In her presidential address at the 1999 Spring Meetings of the American Ethnological Society, Emily Martin (2000), for example, articulated a sense of alarm, even panic, that cultural anthropologists might experience ('like a deer in the headlights of a Mack truck') in the face of the steamrollering eradication of the social and the cultural by neuroreductionists like Churchland. Sociologist and philosopher Martin Kusch (1997) argued that the replacement of folk psychology by neuroscience advocated by the Churchlands would amount to the elimination of the social institution that is the basis of all others – with all due consequences. Rival philosophies of mind, on the other hand, have been taken up more favorably. References to extended mind theorists and neurophenomenologists backed up ethnographic critiques of neuroimaging (Roepstorff, 2001; Cohn, 2008). In addition, arguments against the confusion of brain and person (which would also apply to *Braintrust*), as developed in ordinary language philosophy, inspired a critique of the identity politics of 'cerebral subjects' in the neurodiversity movement (Ortega, 2010). In large part, the aversion to Churchland's neurophilosophy and the embrace of competing philosophical camps might be explained by an epistemic form dominating the social sciences and humanities that values relationalities and engagements,[1] and is therefore ill-disposed to the reduction of the human mind to a brain so isolated from its surroundings that it is occasionally imagined in a vat. But the emphasis that *Braintrust* places on social context might take the edge off this combat of forms.

In comparison with her *Neurophilosophy*, this book appears less radical and more 'brainwise' (to use another book title by Churchland). Three decades have gone by since eliminative materialism began to haunt the sciences of the social, and, if the institutional foundations of Euro-American societies have been eroded in the meantime, even the most materialist of philosophers are not to blame (despite their frequent denunciation as ideologues of neo-liberalism in social scientific scholarship). When, on rare occasions, a particular concept is indeed eliminated from a scientific vocabulary or from everyday language, no epochal break ensues. Scientific revolutions are an invention of twentieth-century historical epistemology. Churchland's turn to Aristotle is less insurgent than conservative: it aims at providing a biological foundation to explain, not to change moral behavior.

Of course, much historical and social scientific scholarship published in recent years has argued that, under the spell of the brain, Euro-Americans have come to conduct their lives differently. Through such looping effects, a seemingly value-neutral scientific or philosophical account can factually inform moral behavior. In this sense, Churchland's neurophilosophical colleague Thomas Metzinger (2009) warned against an 'ethical vacuum' following on the heels of the neuroscientific destruction of the Judeo-Christian image of humankind – a destruction that both he and Churchland promote. The reason why *Braintrust* is free of such gloomy diagnoses of the present is that, unlike Metzinger and many in the social sciences and

1 See Emily Martin's lecture 'Identity, Identification, and the Brain' at mediathek.mpiwg-berlin.mpg.de/mediathekPublic/versionEins/Conferences-Workshops/Neurocultures/Emily-Martin.html and the work of the Detachment Collaboratory at www.detachmentcollaboratory.org.

humanities, its author trusts the brain to guarantee social cohesion. Trust between parents and children, mates, partners, colleagues or in institutions, Churchland argues, is what maintains human sociality. But, as this-worldly forms of moral wisdom such as Confucianism or Taoism demonstrate, it does not require the belief in the transcendent God of Judaism or Christianity. More important than a supernatural moral authority, Churchland (p. 198, 202) argues, is the excretion of oxytocin enabling human beings to create and rely on stable institutions, which allow people who hardly know each other to mutually enhance their well-being. This only partially reductionist account nurtures a human self-conception that takes ethical behavior as a preexisting natural capacity that can be cultivated more or less, but is too deeply ingrained in our species to be eradicated by the comings and goings of contingent discourses.

The book concludes with the acknowledgment that the most pressing ethical problems of our time raise questions of how best to regulate certain practices, organizations and institutions (for example, the regulations of drugs, stem cell research or religious freedom), but leaves these issues to social scientists and journalists, government administrators and citizens (p. 204). Especially on the institutional level, these more substantive engagements might well counter the thrust of Churchland's argument by bringing the importance of rule-based forms of moral reasoning back into view. Although *Braintrust* describes, with very broad strokes, some brain-based values (basically self-welfare and the welfare of relatives, friends and acquaintances), the inquiry largely remains on a metaethical level arguing for a biological foundation of morality in general rather than for or against particular ethical evaluations or virtues.

What (if any) use *BioSocieties* readers can make of Churchland's very readable book might depend in no small part on how they assess Churchland's dismissal of the naturalistic fallacy. Those convinced by the arguments of Moore and Weber cannot but reject her ethical naturalism and, thus, the entire project. Less modernist minds, impressed either by the reemergence of Aristotelian virtue ethics or by Latour and Haraway's critiques of the opposition of nature and culture or facts and values will find a scientifically well-informed philosophical reading of the neuroscience of moral behavior. It tends toward the Rousseauean side in the ongoing debate over whether human beings are born cooperative and helpful (and society later corrupts them) or, as contemporary Hobbesians claim, whether they are born selfish and unhelpful (and society teaches them better). But, whatever side one is on in these controversies, after the heated interdisciplinary disagreements over the elimination of folk psychology, *Braintrust* provides an opportunity to rediscover the philosophy of Patricia Churchland – and, alongside, perhaps one's inner big child?

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