



Scientific Practice and the Moral Task of Neurophilosophy

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for this purpose, existing institutional embryonic stem cell research oversight committees and stem cell research oversight committees could be given this additional function.

A group of ethicists and brain scientist has counseled that “to ensure the success and social acceptance of this research long term, an ethical framework must be forged now, while brain surrogates remain in the early stages of development” (Farahany et al. 2018, 432). I agree with this assessment. ■

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Scientific Practice and the Moral Task of Neurophilosophy

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Often, neuroethics, or neuroethical analysis, is espoused for its capacity to engage with the outcomes of near-limitless neuroscientific endeavor in some morally adjudicative way. In their article, “Neuroethics at 15: The Current and Future Environment for Neuroethics,” Kellmeyer and colleagues (2019) for the International Neuroethics Society’s Emerging Issues Taskforce do well covering in quite general terms the areas within which such normative analyses will be needed in the future. However, the work does not address a future for neuroethics to both help articulate and understand how neuroscientific advances can influence our phenomenal self-apprehension as minded beings, or the moral import of practicing good science when conceptualizing scientific endeavor itself as both a moral and a cognitive task.

REDUCTIVE NEUROSCIENCE AND PHENOMENAL SELF-APPREHENSION

Behavioral neuroscience is in the business of advancing our understanding of human thought and action via the empirical investigation of microphysical structures and their anatomical functions. The seemingly isolated

neuroscientific discovery that, for example, the anatomy of the anterior cingulate cortex is composed of a distinctive class of neuron, comparatively large and spindle-shaped, may be of less interest to a moral philosopher than the further functional claim that this particular limbic structure appears associated with cognitive phenomena such as emotional regulation, conflict resolution, and error detection (Tancredi 2005). Here, already, lie quite a few points of interest not only to the moral philosopher, but to the philosopher of mind, the philosopher of science, and even the metaethicist. Each must grapple in different ways with the claim of “neurological emotional regulation” and the array of interconnected categories such a claim deploys. In our example, the claim of “emotional regulation” appears to suggest that the brain occupies itself in distinguishing what an agent might phenomenally differentiate as propositional attitudes regarding the appropriateness of an emotional state, perhaps when embedded in a particular social context or made subject to a relational perspective. Given a morally qualified context or perspective, this social distinction might be further understood as neuroscientifically grounding a dichotomous notion of “good” and “bad,” and thusly “right” and “wrong,” in an adjudicative

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sense. Such reductive interpretations, specifically when made sensational in part by way of the language and concepts employed in presenting a neuroscientific claim (Carrozzo 2015), are often composed with justifiable disinterest in such issues as, for example, categorical incoherence or the hard problem of consciousness, as mitigating factors to what consequences we can logically derive about moral phenomena from descriptive accounts (Carrozzo 2017). And so, in their unmitigated exposition, they have the power to lend significant eliminative effect to our subjective sense of authenticity, or the legitimacy of what our folk psychology often calls the “self,” understood as the “center of (our) narrative gravity” (Dennett 2013, 333).

In a normative sense, such claims are not systematically evaluated for their possible eliminative effect. Here lies an opportunity for the neuroethicist to assist in the clarification and articulation of the concepts being studied, the interconnection of categories, the verifiability of premises and validity of the conclusion of a study, and therefore the soundness of its associated claim. This role extends well beyond a “neuroscience of ethics” that takes a scientific claim about moral experience for what it is and then attends to an “ethics of neuroscience” examination of its ethical, social, and political implications. This is a neuroethics that analyzes the soundness of the science itself when the risks involved in presenting certain evidence in a reductive claim could be argued to constitute an eliminative threat to our subjective sense of genuine moral agency, authenticity, and even our sense of rationality. (Indeed, if one is compelled by the Kantian assertion that we must assume a willful existence in order to retain credence in what results epistemically from any attempted rational process, then conditionally at risk is also our sense of rational being, which, since Aristotle, remains a self-defining feature of how we understand our common human condition.)

What I suggest is a neuroethical analysis not with the purpose of dissolving claims involving such moral risks, but in agreement with the notion that such risks also demand meeting an epistemic standard to philosophically examine the science behind them, and that we be equipped to do so on science’s own progressive terms. If future neuroscientific breakthroughs call for the elimination of phenomenal moral categories, and, as an anchor to those categories, the folk psychological concepts and language used to articulate their understanding, they likely won’t eliminate our experience of them as beliefs and desires, nor their subjective meaning in a world wherein such concepts and language are not just pervasive, but remain socially grounding.

ANALYSIS OF COGNITIVE VALUES IN NEUROSCIENCE AS A MORAL TASK

If conceptual matters such as the phenomenal authenticity and ascription of moral agency are indeed at stake

via, for instance, reductive explanations regarding the moral quality of mental states, then an ethics of neuroscience ought to include engagement with epistemic values and norms, not merely those of moral significance. This position can be supported in different ways.

W. K. Clifford famously argued for a strict evidentialism about what we can responsibly believe. Clifford asserted moral obligations to pursue a high standard of evidence in acquiring a belief by concluding that “it is *wrong* always, anywhere, and for anyone, to believe anything on insufficient evidence” (1999, 77, emphasis added). Less emphasis is placed on his view of the manner by which an agent can be said to obtain “sufficient” evidence. Here, Clifford appears much more reasonable; his more generalized claim can be said to principally require something like a good will when in the process of collecting evidence (indeed, for Clifford, one who acts on insufficient evidence is intuitively wrong, despite whether associated beliefs result in morally objectionable consequences). The strict evidentialism softens when qualified by the presence of a good-willed investigator whose responsibility it is to determine for him- or herself what sufficient means. Clifford defines this in the negative: One who does not have the right to hold a certain belief is one who “acquired his belief not by honestly earning it in patient investigation, but by stifling his doubts” (1999, 70). Thus, a present-day neuroscientist operating within Clifford’s evidentialist standard would not be required to exhaustively uncover all plausible evidence toward her theoretical aims, but rather would assume the moral viewpoint (or good will) in her collecting of evidence and theory selection. This viewpoint assists the investigator in the determination of what might be considered evidentially sufficient, by engaging the imagination about possible moral outcomes just in case it is not. The position stated at the beginning of this section is also consistent with arguments for the dissolution of a fact/value dichotomy (Putnam, 2002), wherein questions involving neuroscientific practice can be seen as not just morally implicated, but constituting themselves an inquiry into a moral realm.

In developing a value topography, H. E. Douglas distinguishes not only the epistemic from the ethical but also the cognitive values, defined as “those aspects of scientific work that help one think through the evidential and inferential aspects of one’s theories and data” (2009, 93). Indeed, value analyses about the ways in which we conduct scientific investigation are not restricted to whether personal ethics ought to directly influence scientific procedure, nor merely the epistemic points generally discussed involving the logic of concepts, but also the cognitive processes that we employ in conducting scientific work we consider to be a social good. Margolis’s *Patterns, Thinking, and Cognition* (1987) and *Paradigms and Barriers* (1993) are themselves a two-book progressive study devoted to the argument that “habits of mind” provide not only a full explanation of cognition, but an account of Kuhnian paradigm shifts in

science. Of particular import here are analyses that attend to policy-driven science, wherein the social aspects of stated risks are emphasized. The future of neuroethics is thus not limited to the ethical mitigation of what neuroscience can yield, but how it is practiced and can be supported as a venture that aspires with its own moral aims toward such things as careful theoretical consideration and rigorous objectivity via intersubjective agreement (i.e., objectivity that is socially dependent and pragmatic). Such analyses are normatively supported by the notion that having good scientific outcomes, measured by such qualities as explanatory power, falsifiability, categorical coherence, demarcation (is it science or science fiction?), and so on, isn't just good science, but good *for* science when understood itself as a human, moral endeavor.

In light of the work of the International Neuroethics Society, I suggest a neuroethics for the future that transcends the mere mitigation of technological advances and neuroscientific outcome, and takes care to better emphasize the conceptual challenges and moral risks involved in reductive investigations of subjective moral phenomena—and, as a philosophy of neuroscience, occupies itself with the moral and cognitive task of scientific practice itself, resulting in a field that is vastly more responsible to society than when framed as operating mostly upon claims, rather than on how neuroscience is done. ■

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Social Impact Under Severe Uncertainty: The Role of Neuroethicists at the Intersection of Neuroscience, AI, Ethics, and Policymaking

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The article “Neuroethics at 15: The Current and Future Environment for Neuroethics” by Kellmeyer and colleagues for the Emerging Issues Task Force, International Neuroethics Society (2019), addresses central challenges for neuroscience in the years to come. The authors provide examples of pressing ethical, legal, and political issues that arise from neuroscience and neurotechnology, including artificial intelligence (AI). The article nicely illustrates how neuroscience and neurotechnology involve complex issues pertaining to epistemic uncertainty and conflicting values (e.g., between economic growth and

commercial values and risks to users of the technology and to the environment). It also expresses an ambition that neuroethics should have a positive societal impact. The article does not, however, reflect much on the proper relationship between neuroethics as academic research and the application of research and technology in real-world settings, that is, how the translation between theory and practice should be conducted in this field of ethics (Bærøe 2014). How can, and should, neuroethicists have an impact, be policy relevant, and inform the public? Moreover, the hope of further professionalization of

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