

Two Problematic Foundations of Neuroethics and Pragmatist Reconstructions

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Abstract: Common understandings of neuroethics, that is, of its distinctive nature, are premised on two distinct sets of claims: (1) neuroscience can change views about the nature of ethics itself and neuroethics is dedicated to reaping such an understanding of ethics, and (2) neuroscience poses challenges distinct from other areas of medicine and science and neuroethics tackles those issues. Critiques have rightfully challenged both claims, stressing how the first may lead to problematic forms of reductionism whereas the second relies on debatable assumptions about the nature of bioethics specialization and development. Informed by philosophical pragmatism and our experience in neuroethics, we argue that these claims are ill founded and should give way to pragmatist reconstructions; namely, that neuroscience, much like other areas of empirical research on morality, can provide useful information about the nature of morally problematic situations, but does not need to promise radical and sweeping changes to ethics based on neuroscientism. Furthermore, the rationale for the development of neuroethics as a specialized field need not to be premised on the distinctive nature of the issues it tackles or of neurotechnologies. Rather, it can espouse an understanding of neuroethics as both a scholarly and a practical endeavor dedicated to resolving a series of problematic situations raised by neurological and psychiatric conditions.

Keywords: neuroethics; pragmatism; methods; theory; practice

Introduction

Common understandings of neuroethics, both of its distinctive nature and of its academic and social legitimacy, are premised on two distinct families of foundational claims. A first (“claim 1”) holds that neuroscience can serve as a foundational discipline for ethics itself, and that neuroethics is dedicated to reaping such an understanding of ethics. For example, some have proposed to develop a “brain-based ethics”¹ in which the guiding principles of ethics would be somehow derived from neuroscience research, whereas others have argued that different lines of work in the “neuroscience of morality”² together provide a new “metaphysical mirror.”³ This first claim is supported by previous programmatic calls for a neuroscience of morality^{4,5,6,7} and a flurry of impactful studies investigating the neurological basis of moral reasoning and behavior.⁸ A second foundational claim (“claim 2”) is that neuroscience poses challenges distinct from other areas of medicine and science, and that neuroethics tackles those issues in the form of an “ethics of neuroscience.” This second claim is supported by the putatively novel ethical challenges raised by different neurotechnologies such as advanced imaging and different forms of neurostimulation.⁹ Taken together, foundational claims 1 and 2 constitute, alone or jointly, pillars of what we will describe here as the “standard account” of neuroethics. They are also sometimes considered to be synergistic,

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such that knowledge about the neurological bases of morality would feed into strategies to tackle morally problematic situations in the neurosciences, thus further supporting the uniqueness of neuroethics.¹⁰

In this article, we argue, inspired by pragmatist theory, that the first foundational claim is attractive because of its call for empirically informed ethics, but problematic given its corollary neuroscientism and lack of integration with other empirical studies of morality such as psychological or anthropological explorations of morality. We argue further that the second claim is right to call for more attention to ethical challenges in neuroscience, including in related clinical and health policy matters, but that it typically fails to focus on stakeholders at the root of morally problematic situations, their everyday experience, and the kinds of solutions that would be useful to them.^{11,12} In contrast, a pragmatist account of neuroethics (a “pragmatic neuroethics”) offers much-needed reconstructions of the foundational claims and the research they support. It considers neuroethics not as a full-blown stand-alone discipline¹³ but as an interdisciplinary field¹⁴ that strives to employ a diverse range of empirical perspectives (neuroscientific and beyond), providing a way to ground our ethical concepts and enrich inquiry within the humanities.¹⁵ The pragmatist account, along these lines, also argues for greater epistemological reflection^{16,17} and a careful selection of areas of interest in neuroethics to ensure that the problems dealt with are meaningful to citizens, patients, and other stakeholders outside of academia.^{18,19,20} This account of neuroethics has now served for more than 10 years as the theoretical and methodological backbone for a research program in Montreal (Institut de recherches cliniques de Montréal) dedicated to pragmatism and bioethics in the context of basic and clinical neuroscience and we pull from this experience to illustrate our analysis and some of its epistemological and practical implications.

First Claim: Neuroethics Is Unique Because It Will Provide Foundational Knowledge About Human Morality

Many authors conclude that the field of neuroethics is distinctive because it could offer a new scientific or rational ethics, drawing on the neuroscience of morality.^{21,22} Starting in the 1980s and then later in the early 2000s, a number of authors proposed that neuroscience could have such transformative implications for ethics. Jean-Pierre Changeux argued that neuroscience would provide a new “foundation” for ethics and support a form of universal humanism.^{23,24,25} Patricia Churchland developed a neurophilosophical approach²⁶ that was explored by Paul Churchland in the context of human morality²⁷ and later by Patricia Churchland herself.^{28,29} Their work is premised on the ability of neuroscience to deliver a new meta-ethical framework that will replace philosophy with a neurophilosophy; that is, a foundational perspective from which ordinary concepts must be informed by neuroscience or face “elimination” (eliminative materialism).³⁰

In the years that came after, a number of subsequent notable discoveries made these precursor visions all the more plausible. Focused lesion studies,^{31,32,33} notably landmark observations on empathy and on patients with problematic moral behavior such as cases reported by Paul Eslinger and Antonio Damasio (e.g., patient EVR),^{34,35} helped establish an active program for the neuroscience of morality. Damasio proposed that emotions needed to be reincorporated in ethics and philosophy because they are integral to sound moral reasoning.³⁶ Functional neuroimaging

studies of moral reasoning and emotions^{37,38} as well as new models about the role of intuitive and implicit processes in human moral reasoning and behavior³⁹ based partly on neuroscience research were another impactful development. Joshua Greene, for example, established tight bridges between ethical theories and this line of work in neuroscience, advancing a dual process theory.⁴⁰ Michael Gazzaniga has gone as far as proposing that neuroethics be tasked with offering “more than just bioethics for the brain...It is—or should be—an effort to come up with a brain-based philosophy of life.”⁴¹

Although not always explicitly, these scientific reports and their programmatic interpretations project a radical identity for the field of neuroethics. For example, Fernando Vidal and Michelle Piperberg, based on a critical analysis of the writings of many influential authors, describe the foundational claim as follows: “Neuroethics...presupposes that the neural aspects of human nature are most directly relevant to many of the questions raised in the Western philosophical and ethical traditions, including issues of personhood and personal identity.”⁴² Thus, one pillar of the “standard account” of neuroethics relies on the provocative idea that a neuroscience of morality will provide penetrant knowledge about human nature, leading (depending on the authors)⁴³ to the refinement or replacement of ethical constructs. Although we cannot directly address the many arguments that support this idea (“claim 1”), we present three general reasons to think twice before accepting it.

Neuroscience is No More Foundational Than Other Empirical Studies of Morality

Making neuroscience knowledge foundational in the empirical understanding of morality and therefore for the field of ethics is a questionable move, for several reasons. First, there is an obvious conflation between empirical studies of morality and ethics itself; whatever is learned about human morality could be useful to ethics, but it cannot replace the open-ended process of ethics inquiry that finds solutions to vexing moral problems (see note 2 for a more detailed explanation). Second, even within efforts to simply understand human morality, we see no clear reason why knowledge generated about the human brain through certain kinds of experimental designs—often with limited ecological validity—and with the help of certain techniques with significant limitations^{44,45} would be anymore foundational than the knowledge generated by other fields of research such as psychology or anthropology.^{46,47,48} In fact, one could argue that research in fields like social and moral psychology (e.g., on the role of empathy in decisionmaking) could be much more amenable to practical ethics interventions (e.g., incorporation of findings to design ethics teaching materials and strategies promoting empathy).⁴⁹ We recognize the positive contribution of neuroscience research and evidence to the understanding of morality, but, as we will propose subsequently, this recognition takes a reconstructive path and does not attribute foundational status to scientific knowledge.⁵⁰

Neuroscientism, Implicit Political Values, and Uncritical Epistemologies

Related to the first point made previously, the belief that neuroscience provides foundational insight is partly explainable by a commitment to scientism and a lack of critical reflection on related epistemological commitments. Neuroscientism, in the context of this article, designates a belief in the capacity of neuroscience to

reveal the socle of moral decisionmaking, because neuroscience reveals the true nature of things; that is, their essences,^{51,52,53} perhaps because of the materiality it brings to the understanding of the mind.^{54,55} As an academic phenomenon, neuroscientism is analogous to the broader quest for certainty in philosophical ethics and the hope of finding knowledge or principles immune to criticism and uncertainty.⁵⁶ This foundationalism has been heavily criticized by pragmatism and feminism for its lack of plausibility, practical utility, and disregard for context.^{57,58,59} However, neuroscientism and the lens of human “brainhood” remains ever popular within academia and, not coincidentally, in broader spheres of social activity and discourse.^{60,61,62} An adequate understanding of these expert-public dynamics requires us to pay due attention to historical episodes of neuroscientism, which can highlight implicit epistemological commitments and their roots in various social and political contexts.⁶³

We can reflect quite clearly, for example, on the political and epistemic values of the mid-nineteenth century, when Theodor Meynert envisioned that neuroscience could “improve culture and man as a whole.”⁶⁴ Followers of Meynert such as Auguste Forel, Paul Flechsig, and Oscar Vogt migrated to social hygiene thinking about the neuroscience of morality. And in 1912, the leading neuroscientist Oscar Vogt wrote that: “Man will increasingly become a brain animal. In our further development, the brain will play an increasingly important role. But this development will bring ever increasing health dangers with it. Thus, a fortuitous future of our species depends significantly on the expansion of brain hygiene.”⁶⁵ This feverish “radicalization” of Meynert was made coherent by a reconceptualization of democracy as a scientific state and a gradual rejection of individual human agency.⁶⁶ The overarching vision shows how knowledge practices and their applications are “co-produced” with commitments to particular forms of collective life.⁶⁷ We expect that today’s “neuroscientific” epistemologies (including those sustaining “claim 1”) will be no exception,⁶⁸ and suggest that neuroscientism is entangled with unexamined social and political commitments.

Neuroscience as a Threat to Ethics

Lastly, “claim 1” is problematic from an ethical standpoint; it jeopardizes all-important goals of respecting persons holistically (See Cascio A, Racine E. Person-oriented research ethics: revisiting the focus of human subjects research ethics. *American Journal of Bioethics*, under review).⁶⁹ Indeed, the very nature of ethics in modern science and medicine has long been⁷⁰ a constant struggle to reinstate the person (e.g., the patient as a person in healthcare settings, the research subject as a person and a participant in biomedical research, the individual as a citizen in public health programs and health policies).⁷¹ In contrast, neuroscience, with its commitment to methodological reductionism (and sometimes stronger forms of ontological reductionism),⁷² as was noted by early critiques of the neuroscience of morality, could jeopardize the perspective of ethics itself (e.g., human values, the patient as a person).^{73,74,75} This threat to ethics is certainly a possibility but not a necessity,⁷⁶ as it all depends on the framework used to interpret the contribution of neuroscience to ethics. We also note that these critics were often themselves committed to other foundational perspectives (e.g., phenomenology) which were not examined critically, and led them to disregard what an empirical discipline such as neuroscience could contribute to the field of ethics.⁷⁷ From a pragmatist standpoint, it would be

worrisome if the empirical examination of morality would not be a strong part of ethics, because ethics could risk uncritically using, (i.e., without the perspective of empirical disciplines) a host of concepts and principles without checking their empirical plausibility and suitability for solving real world problems. There are now several proposals for various forms of empirical ethics,^{78,79} however, none to our knowledge would grant an exceptional status to neuroscience that would give this body of work the power to eliminate ontological entities because they do not fit with the epistemological framework of neuroscience.

Pragmatist Reconstructions As an Alternative

It can be tempting to interpret neuroscience as the holy grail of self-knowledge so precious to ethics. Perhaps because of the intellectual need to distance ourselves from our values and those of our time, assessing their worth seems to demand an objective perspective or a type of knowledge that is somehow external to questions of value. But in the eyes of the pragmatist, the promising and often profound insights from neuroscientific studies of morality are no more foundational than knowledge generated by other disciplines such as psychology, sociology, or anthropology. We submit, nevertheless, that neuroscience can bring greater understanding of morality by offering knowledge about the biological and psychological processes involved in moral behavior, reasoning, and other key ethical concepts. This is where pragmatism and “reconstruction” are most useful. John Dewey put forth that all that could be learned about human morality could be useful for moral inquiry (read ethics).⁸⁰ In our reconstruction, an empirically informed ethics is not one that simply reproduces the authority bestowed to common morality through scientific discourse, but rather is inquisitive and open to deliberation in an effort to offer an ever more comprehensive outlook.

Accepting this paradigm shift entails that we set aside the grandiose idea of reforming human morality based on neuroscience knowledge in any kind of straightforward fashion, and requires more nuanced integration of empirical neuroscience perspectives of morality into thinking about ethical matters. The attribution of a privileged status to neuroscience could actually thwart an interdisciplinary empirically informed development of ethical responses to real world needs, because each discipline brings its own blind spots and methodological limitations.⁸¹ Ethics, then, takes on a nuanced role; it can be understood as a meta-discipline, one that is concerned with wisdom; that is, “the knowledge of how to use knowledge.”⁸² This form of ethics entails an openness to the empirical study of morality, enriching our best work in conceptual ethics and the humanities in order to develop new norms and ethical approaches. Reflecting critically on and integrating empirical perspectives on morality means that we choose not to sleepwalk through extant “neuroscientific” discourse, but engage in the development of a broader and more inclusive view of the empirical study of morality, notably based on the insights of theoretical and conceptual scholarship. However, waking up, to continue the metaphor, may be much more a reconstructive, complex, political, and interdisciplinary task than is often conceived. Dewey, cognizant of the challenges of reconstructive purposes of empirically informed ethics and philosophy acknowledged that (in contrast to fields like physics in which technical language and symbols prevail), “To expel traditional meanings and replace them by ideas that are products of controlled inquiries is a slow and painful process.”⁸³

Second Claim: Neuroscience Poses Challenges Distinct from Other Areas of Medicine and Science, and Neuroethics Tackles Those Issues

A second line of argument has premised neuroethics' specificity and distinctiveness on a very different basis; namely, the idea that neuroethics deals with novel issues and that the novelty or specificity of these issues warrants the development of a new field, sometimes even described as a new discipline^{84,85} As with "claim 1," there are many ways to make this argument, with a variety of examples of what constitutes neuroethics's novel subject matter. Many times, authors simply refer to technological advances in neuroscience (e.g., neuropharmacology, neurostimulation, neuroimaging), and argue that these "emerging technologies" present new ethical questions. These new questions, in turn, are presented as justification for the development of a dedicated field of inquiry. For example, Paul Wolpe has defined neuroethics as a "content field;" that is, one that is defined by the technologies it tackles rather than any specific method of approach.⁸⁶ Adina Roskies,⁸⁷ similarly, identifies the "ethics of neuroscience" in general as one of the two synergistic wings of neuroethics. At other times, protagonists have tried to single out the idiosyncratic issues (e.g., cognitive enhancement, cognitive liberty) that would be at the core of the new field's investigations.⁸⁸ As before, we cannot directly address all arguments for "claim 2," but offer instead some general reasons to be very cautious about such arguments.

New Issues And Technologies Are Insufficient For A New Field

First, in our eyes, no compelling argument has been made with respect to why emerging technologies necessitate new disciplines. To argue from the novelty of a technology to its ethical importance appears at first glance to be question begging, because the technologies would merit further interest if and only if they present distinct ethical issues. A similar problem applies to novel issues, such as cognitive enhancement,⁸⁹ or newly identified technological dilemmas, such as functional MRI (fMRI) and privacy of the mind.⁹⁰ Even if a cluster of original topics could be singled out, it remains a weak basis for the establishment of a new field. Why would we think that new questions could not be answered using old tools? Erik Parens and Josephine Johnston have rightfully pointed out that many, if not all issues raised by neuroscience and neurotechnology find some precedent in other areas of ethics.⁹¹ Along these lines, a review of the first years of scholarship in neuroethics found that common bioethics issues such as "consent, autonomy, and decisionmaking capacity" (featured in 45% of peer reviewed literature) and "privacy and confidentiality" (featured in 39% of peer reviewed literature) trumped at the top of the list an issue such as "enhancement and medicalization" (featured in 35% of peer reviewed literature).⁹² This would not represent a problem if neuroethics were not premised on the novelty of the issues it deals with, but rather on how it offers a novel lens and interesting empirically informed resolutions to these issues.

A Focus on Neurotechnologies Risks Promoting Technoscience Over the Public Good

A more generous understanding of field building could be granted here; perhaps we need to understand the contextual features of ethics in neuroscience such that

the contribution of several fields would be required to provide a rich understanding of these contexts. Neuroethics could, in this sense, parallel “genethics”⁹³ in its attempt to develop collaborations with scientists and understand contextually the issues that they face. This account certainly has precedents but it also faces an important objection; other subfields of bioethics oriented by technologies and areas of science such as “genethics” have been criticized for having adopted narrow approaches guided by the ultimate goal of scientific and technological development rather than in-depth critical analyses with the public good in sight.^{94,95,96,97,98} There would be a risk that the neuroscience agenda could actually colonize neuroethics’s agenda,^{99,100,101} manufacturing the very novelty that justifies neuroethics research in the first place.¹⁰² And, in return, the development of subfields of bioethics guided by science and technology could shape the future of bioethics in ways that, again according to some, would undermine bioethics’s commitments to the open public debate that is necessary for a democracy.¹⁰³ It is therefore important for the field of neuroethics to reflect on and clarify its commitment to analyzing neuroscience and the reasons why it does so.

The Pragmatist Emphasis on Practice and (Everyday) Experiential Context as an Alternative

Arguments for the establishment of academic disciplines and fields, such as those witnessed in the discourse of protagonists of neuroethics but also in critiques of their opponents, are too often confined to solely intellectual or academic standards. In the case of neuroethics, such discussions have focused on what neuroethics is or is not and about who owns certain problems (usefully understood as “boundary work”).¹⁰⁴ Meanwhile, the mobilization of individuals in this community may have been the result of some amount of well and not-so-well justified academic opportunism and of some short-sightedness about the issues we promote. A pragmatist reconstruction of this debate over novelty does not reject field building and “boundary work” outright, but instead suggests we redefine novelty and discipline with clear reference to problems that we share and want to solve. This means that some issues may be significant, without necessarily being academically compelling.^{105,106}

This pragmatist reorientation can only happen if there is corresponding urgency to discuss the goals pursued by neuroethics to inspire scholars, practitioners, and stakeholders to collaborate and generate solutions. There are important humanistic goals to be identified, deliberated on, and acted upon that were neglected or not addressed squarely by the mainstream bioethics agenda prior to neuroethics, and this may still be the case. There are colossal issues waiting to be addressed (in our opinion): work discrimination against people with mental health conditions,¹⁰⁷ the stigma against neurological and psychiatric illnesses,^{108,109} the limited access to healthcare services by patients with chronic disabilities caused by neurological or mental health conditions,¹¹⁰ and the belittlement experienced by patients who cannot speak for themselves (e.g., because of neurological motor conditions).^{111,112} This is in fact what Anneliese Pontius captured in 1973 when she first described (to our knowledge) neuroethics as a “new and neglected area of ethical concern.”¹¹³

From a pragmatist standpoint, neuroethics need not designate a special content area but rather an international community of scholars with a wide array of goals and interests; they could be tied together by a common “problematic situation:”

the state of suffering from neurological or mental health conditions and the role of values therein.^{114,115,116} The community could be propelled by the desire to do better for patients with neurological and psychiatric illnesses. It could develop knowledge that will help address the issues faced by healthcare practitioners and patients, by researchers who want to develop ethical research, and by policymakers who seek an inclusive vision of the public good in which those with neurological and psychiatric conditions are full participants. Their plight should invite us to seek the better in our own work and align our academic interests to worthwhile social and humanistic goals.

Conclusion

The “standard account” of neuroethics is insufficient; however, there is a possibility of pragmatist reconstruction. As we understand it, this reconstruction is not merely intellectual or simply a call to think differently; personal and institutional changes will be necessary to move beyond the foundational claims. First, as an interdisciplinary field of scholarship, neuroethics should avoid commitments to the epistemic foundationalism of the neuroscience of morality (“claim 1”), and instead welcome a range of empirically informed understandings of morality that can be of help in reconstructing ethical goals and approaches. This means moving away from neuroscientism and espousing interdisciplinary frameworks for empirical ethics. Second, as a practical field, neuroethics should eschew narrowly defined technological foci (“claim 2”) and embrace a vision in which there is room for the perspectives of those most concerned by the issues discussed (e.g., patients, citizens, and clinicians, to name a few). Neuroethics should be known and recognizable by its fruits. Accordingly, existing and not-yet-created tools are needed to integrate stakeholder perspectives into the research process and to evaluate the field’s success in making life better.¹¹⁷ The scholarship we offer and the real world solutions we implement should be, in the end, the criteria through which to evaluate the distinctive nature of neuroethics as well as its academic and social legitimacy.

Notes

1. Gazzaniga MS. *The Ethical Brain*. New York/Washington, D.C.: Dana Press; 2005
2. In this article, we have used the expression “neuroscience of morality” to refer to what many authors describe as a “neuroscience of ethics” (Roskies A. Neuroethics for the new millennium. *Neuron* 2002;35:21–23), including some of our previous writing. The reason is that the term “ethics” more appropriately designates an academic field or discipline, and the “neuroscience of ethics” is sometimes misinterpreted as taking this discipline as its object (Racine E, Dubljevic V, Jox RJ, Baertschi B, Christensen JF, Farisco M, et al. Can neuroscience contribute to practical ethics? A critical review and discussion of the methodological and translational challenges of ethics. *Bioethics* 2017;31(5):328–37). However, it is more accurate to understand the neuroscience of ethics as referring to a “neuroscience of morality,” because the neuroscience of ethics does not investigate ethics per se but rather the domain of morality such as moral judgments, moral emotions, moral intuitions, and moral behavior. This distinction also helps to state that, from a pragmatist standpoint, the empirical or scientific understanding of morality (with the help of neuroscience, psychology, anthropology, or sociology) is crucial for the task of ethics, but it does not replace the projective and deliberative nature of ethics as an empirically informed effort to resolve morally problematic situations and seek resolution in action.
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Two Problematic Foundations of Neuroethics and Pragmatist Reconstructions

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Two Problematic Foundations of Neuroethics and Pragmatist Reconstructions

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