

## A Small Bioethical World?

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**Abstract** This essay discusses four challenges posed to a global bioethics by articles on: divergent national policies on compensation of egg donors for IVF, efforts to advance the development of international guidelines for the management of neonates on the edge of viability, bioethics training workshops in Uganda, a bioethicist’s reflection on a visit to Pakistan. The article then discusses several approaches to developing a global bioethics and how these approaches might meet the four challenges. The essay concludes with discussion of the author’s development of a “navigational approach” to policymaking for “fractious” bioethical policy problems and how this compares to other approaches to developing a global bioethics.

**Keywords** Global bioethics · Fractious problems · Navigational approach

*It’s a small world, but I wouldn’t want to have to paint it—Steven Wright*

### Four Studies and Four Challenges to the Possibility of a Global Bioethics

In this number of *HEC Forum*, we present four provocative studies in bioethics spanning four continents and nine nations, each opening a window to bioethical issues in cross-cultural context and inviting our gaze and contemplation. This symposium issue was borne out of an ongoing collaborative effort between partners at Emory University and the Georgia Institute of Technology, the “Emory-Georgia

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Tech Global Bioethics Initiative,” and contributors are drawn from these and other institutions in the U.S. and in Uganda.

Aaron Levine’s essay leads us through the historical development of regulatory policy regarding *in vitro* fertilization (IVF) in the U.K, U.S., and Canada. The essay notes the ethical issues associated with IVF, traces the divergent policy pathways undertaken, and assesses the implications for IVF practices in the three nations—focusing on the implications of policies regarding compensating egg donors on the use of donated eggs in IVF. As the author notes, the results of this study suggest many more avenues for exploration of the implications of ethical considerations, policy choices, and other factors for IVF practices in nations around the world.

Levine’s data and analysis suggest one of the challenges posed to the theoretical and practical possibility of a global bioethics. These three resource-rich nations have much in common, including the availability of IVF services and extensive and growing use of these services. If nations so similar in culture, resources, and practices diverge in their policy responses to a novel biotechnology, what are the theoretical prospects for a global bioethics?

A second challenge is suggested by the essay of co-authors William Sexson, Deborah Cruze, Marilyn Escobedo, and A.W. Brann Jr., which begins with an account of a successful partnership to develop a perinatal center to improve reproductive outcomes in the Moscow Oblast, a region of Russia surrounding Moscow. Relationships forged through this partnership generated engagement on difficult medical and ethical issues surrounding management of the neonate on the edge of viability and led to the organization of a conference among neonatologists from Russia, the Czech Republic, Norway, Sweden, and the U.S. Variability in medical and ethical approaches within and across nations, despite the availability of similar technologies, emerged from conference discussions—as did a desire to arrive at consensus medical and ethical guidelines.

Emerging from the co-authors’ discussion is a sense of the complex interactions of medicine, law, professional guidelines, and local practices in yielding variability in approaches. Even if a global bioethics is theoretically possible, what are the practical prospects for articulating and applying it around the globe?

The third study explains the need for bioethics training in resource-poor countries such as Uganda: local capacity is needed to protect local values and interests in connection with the growing number of foreign research protocols and to address the ethical issues associated with implementing treatment protocols for newly available treatments. Co-authors Cynthia Griggins, Christian Simon, Frederick Nakwagala, and Rebecca Pentz explain the careful attention to design and execution of a bioethics training program aimed at effective and efficient capacity building to address these needs. Noteworthy was the exclusion of training on issues, such as those surrounding assisted reproductive technology (ART) or futility at the beginning of life, irrelevant to the experience of health care professionals in a resource-poor nation. Also noteworthy was the effort to acknowledge local ethical principles and cultural norms that differed from those that predominate in Western bioethical discourse and culture while still presenting and modeling Western principles and norms.

This study suggests a third challenge. There is no denying the fact of a global clinical research and practice community. Clinical research travels abroad at an accelerating pace and the discovery and development of treatments in the developed world increasingly introduces problems of implementation in the developing world. While practical engagement of some kind is inevitable, is it credible that a theoretical global bioethics could span the gulf between the developed and developing nations to provide practical guidance?

In the concluding article in this symposium issue, Paul Lombardo writes of his experience in returning for a third time to a bioethics center in Karachi, Pakistan. Reflecting on the development of bioethics he has observed in the U.S., Pakistan, and other nations, he observes that ethical considerations and cultural values differ. But, in each encounter with difference in Pakistan, further reflection reveals similarity as well.

Another challenge is suggested by Lombardo's essay. While opportunities for mutual learning across cultural divides are increasingly available on a shrinking globe, is it credible that a theoretical global bioethics could transcend the cultural embeddedness of those who devise it to reach across cultural divides and provide practical guidance?

Any effort to devise a theoretical or practical global bioethics must confront these and other challenges posed by the fact of global pluralism. How should we characterize this variability: as evidence for the subjectivity or relativism of ethics, as expected variability along the path to greater uniformity as we become more proficient in ethics around the globe, or something else? How should we respond to it: by accepting and respecting it, seeking to remediate it, or in some other way?

These are not casual or armchair-philosopher concerns for bioethicists, health care professionals, or educators. Across secular and religious worldviews, the subject matter of bioethical variability and disagreement—about procreation and the beginning of life, illness and suffering, death and dying—are of deep significance. Because we are social beings, and, increasingly, globally connected social beings, we cannot escape the implications of one another's beliefs and practices: our governments act to restrict some practices and promote others at home and abroad; our pharmaceutical companies engage in research abroad and bring the fruits of the research home; our social communities—families, religions, ethnic affinity groups—span geopolitical borders; we are concerned in any event with the welfare of our fellow beings whatever their coordinates. So we are roused from our armchairs to address these concerns, motivated perhaps by a desire to preserve that which is inviolable or sacred to us, or avoid complicity with evil, or enlighten ourselves or others so we or they might act differently, or help others.

We may share concerns about how to characterize and respond to variability, and our motivations to address these concerns may overlap, but harmony ends here. Our characterizations and prescriptions vary. We disagree about the content of the inviolable, the sacred, complicity, evil, enlightenment, and helping. Scholarly debate about the possibility of a global bioethics replicates the disharmony that prompts it. In this essay, I join the fray by discussing the four challenges suggested by the essays constituting the balance of this symposium issue, surveying approaches to global bioethics in light of these challenges, and proposing a

“navigational approach” as a limited conception of a global bioethics addressing a subset of particularly challenging bioethical issues.

### Discussion of Four Challenges

The first two challenges, as I have framed them, question the theoretical and practical possibilities of a global bioethics given divergence in policies even among nations with strong historical ties and cultural commonalities and given the daunting practical hurdles to articulating and applying bioethical guidelines even when convergence among biomedical professionals seems theoretically possible. The essay by Levine concretizes the ways in which national bioethical policies develop and diverge and the implications of divergent policies for ART practices and the lives of individuals. The essay by Sexson et al., concretizes another set of issues that arise in efforts by professionals with transnational scientific expertise and technologies to engage one another in pursuit of transnational practice guidelines, both medical and ethical. Medicine, law, professional guidelines, and local practices are intertwined in ways that challenge our practical capacity to untangle.

The fact of divergence in national policies does not require us to rule out the theoretical possibility of a global bioethics or to conclude that ethical judgments are only subjective or, even if they are objective, that they are always relative to culture. For example, if the development of ethical theory is akin to the development of scientific theory, we might conclude that variation across time and place will eventually yield to convergence on one theoretical approach that best displays consistency with universal moral norms and judgments, internal coherence, fruitfulness in yielding solutions to ethical problems, and so on. And while the practical challenges of articulating and applying ethical guidelines may be daunting, so are the practical challenges of applying scientific theory to yield new scientific knowledge and technologies. In the same way, we might yet succeed in advancing our capacity to apply a global bioethics to address bioethical issues. Still, even if the possibility of a global ethics can survive the fact of global pluralism, it must account for it and instruct us how to address it.

Now consider the third and fourth challenges: Could a theoretical global bioethics extend across the developed and developing worlds to provide practical guidance in contexts so different in resources and culture—and could it transcend the ancestry of its authors to do so? The study by Griggins et al., illustrates the complexity but also the possibility of a productive exchange across a vast resource divide and across a bioethical terrain punctuated by similarities, differences, and conflicts in norms and values. Lombardo’s essay illustrates how understanding another culture seems always a work in progress: aided by repeated immersion and reflection, making sense of what is foreign by reference to what is familiar, finding commonalities amidst diversity; our broadened bioethical horizons always extend from somewhere.

The account of the design and execution of bioethics training workshops in Uganda suggests that well-informed, culturally sensitive, mutually respectful engagement to provide bioethics training for health care providers in a resource-

poor nation may well yield what all participants view as success from within their cultural perspectives. But this seems to be different from devising and applying a theoretical global bioethics to be developed and then deployed across cultures. On the other hand, perhaps the success of this collaborative effort demonstrates how a theoretical global bioethics might be built: brick-by-brick, by a series of local engagements whose cumulative effects yield the contours of a universal global bioethics over time.

Reflection on Pakistani bioethics, especially related to the pervasive and nuanced role of religion, suggests how difficult is the task of crafting a transcendent bioethics that could succeed in guiding practical action—practical bioethics is “thick” bioethics, deeply embedded in culture. Whereas the burgeoning scientific and technological enterprise that gives rise to many bioethical issues flows with ease across geopolitical boundaries, with little lost in translation, the bioethical enterprise is far less fluid. Perhaps there is a theoretical global bioethics that can escape its parochial origins and succeed in supplying action guidance around the globe. If so, its nature and relationship to the plural bioethics practiced around the globe will require explanation.

### Meeting the Four Challenges

The scholarly literature includes very different takes on the prospects of a global bioethics: whether it might succeed and, if so, in what form. Proponents of general ethical theories, such as utilitarianism or deontology, expect these to supply the basis for a universal bioethics. But disagreement across theories and among proponents of the same theories when applied to bioethical issues prompts a critique and an alternative approach by Tom Beauchamp and James Childress. They argue that the starting point for a global bioethics that can succeed in supplying action guidance is a set of moral norms they claim constitute a universal “common morality”:

Advocates of systematic theory may have aspirations of decisively settling applied questions, but they are no better positioned to do so than pluralistic accounts. Proponents of the same type of general theory commonly disagree about its commitments, how to apply it, and how to address specific issues.... The general norms and schemes of justification found in philosophical ethical theories are invariably more contestable than the norms in the common morality. We cannot reasonably expect that an inherently contestable moral theory will be better for practical decision making and policy development than the morality that serves as our common heritage (Beauchamp and Childress 2009, pp. 388–389).

On Beauchamp and Childress’s view, the common morality includes rules of obligation, such as “(1) Do not kill, (2) Do not cause pain or suffering to others, (3) Prevent evil or harm from occurring ... and (10) Obey the law” (Beauchamp and Childress 2009, p. 3). The common morality also includes basic biomedical ethical norms, consisting of the well-known set of four principles: respect for autonomy,

nonmaleficence, beneficence, and justice (Beauchamp and Childress 2009, pp. 12–13).

While the moral norms of the universal common morality are “abstract, universal, and content-thin,” there are plural “particular moralities,” which include both these general norms and “concrete, nonuniversal, and content-rich norms” (Beauchamp and Childress 2009, p. 5). Particular moralities add specific, action-guiding content to the norms of the common morality (Beauchamp and Childress 2009, p. 17).<sup>1</sup> The specified content of particular moralities, on their view, may legitimately vary (Beauchamp and Childress 2009, p. 25). However, particular moralities are subject to coherence constraints through application of the method of “reflective equilibrium,” drawn from the work of John Rawls (Beauchamp and Childress 2009, pp. 25, 381). In judging particular moralities, “we can demand no more than that agents faithfully specify their considered judgments with an attentive eye to overall coherence. However, proponents of particular moralities can and should continue to ask whether the system is more or less coherent when compared to other particular moralities” (Beauchamp and Childress 2009, p. 384).

In addition, their approach requires “balancing,” in particular cases, the application of a priori biomedical ethical principles when they appear to yield conflicting obligations. Balancing involves “finding reasons to support beliefs about which moral norms should prevail” (Beauchamp and Childress 2009, p. 20).

Returning to the first two challenges that I identify and discuss above, how might a common morality approach meet them? It might well accept that nations will differ in their bioethical policies regarding ART and that professional groups will find themselves divided by variable practice guidelines regarding management of the neonate on the edge of viability due to cultural differences. The universal common morality might call for standardization, though, if some of the policies or practices were not grounded in the four principles, or their specifications displayed less coherence than others, or they did not provide good reasons for preferring one moral norm, such as autonomy, over another, such as beneficence in particular cases.

With respect to the third challenge, the common morality claims universality that would extend across resource and cultural divides. In particular cases affecting resource-poor nations, however, there might be reasons, in balancing principles, to favor justice over autonomy, for example. And the approach would respond to the fourth challenge by asserting its cultural transcendence in virtue of its grounding in moral norms observable across cultures, even if specified differently. To the extent cultural differences yield particular moralities that vary, the approach can accommodate these, assuming that they draw on the common morality and abide by the coherence constraints.

Critiques of the common morality approach include the complaint that it is not plausible theoretically or practically. The principles and their application are contested too deeply without prospect of resolution and, consequently, they cannot hope to provide meaningful action guidance (Turner 2003; Emanuel 2008). Others

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<sup>1</sup> Beauchamp notes that his is one of several diverse theories of the common morality (Beauchamp 2003, p. 272, note 1).

develop and extend the critique to the entire range of ethical theories that aspire to universalism and call for a different approach to addressing the fact of pluralism.

H. Tristram Engelhardt, Jr. notes that all of the central moral questions about human life—from reproduction to death and dying and the allocation of scarce resources—are disputed at home and around the globe (Engelhardt 2006a, p. 1). The disagreements are not limited to particular sets of issues nor are they transient; they are persistent and anchored in diverse and inconsistent worldviews (Engelhardt 2006a, p. 2). And there is no imminent prospect that we will persuade others to change their views to our own because we disagree not only about the content of our beliefs but about what might constitute a persuasive argument for changing our beliefs; our premises and rules of evidence differ (Engelhardt 2006a, p. 2).

On Engelhardt's account, plural conceptions of morality may well share common concerns with "liberty, equality, prosperity, and security" and they may also agree, for example, that, generally, it is wrong to kill and lie. But, they disagree about how these concerns are ordered and expressed and about the circumstances under which it would be wrong to kill and lie (Engelhardt 2006b, pp. 24–25).

While these facts do not support conclusions of relativism or subjectivity, Engelhardt concludes, they do support a revised approach to global bioethics, one that looks to limit the imposition of the views of a majority on those who disagree and that establishes a procedural approach to enabling peaceful coexistence in the face of persistent, intractable disagreement (Engelhardt 2006a, pp. 6–7). Global bioethics, at best, can consist of the terms of peaceful collaboration among individuals through market mechanisms and contracts and the liberty to pursue diverse "thick" conceptions of the good with consenting others (Engelhardt 2006b, pp. 41–42).

How might this approach meet the four challenges to a global bioethics recited above? Engelhardt's approach does not seek to align the content of policies or practices with any contentful conception of the good. Instead, the metric is permission and the opportunity to engage in peaceable market-based and contractual relationships with others while pursuing one's own conception of the good. So, on this approach, the market-based policies of the U.S. with respect to ART would be preferred to the more restrictive policies of the U.K. and Canada. And practice guidelines might allow for variation based on the beliefs of communities of parents and physicians as to the appropriate response to management of the newborn on the edge of viability. The terms of engagement across the resource and cultural divide of global communities, as with local communities, would be those terms agreed upon by participants.

Yet another critique questions whether any of the above approaches can overcome the deep problem of pluralism. David Solomon surveys the pervasiveness of local and global disagreement. Contemporary applied ethics, he argues, has not demonstrated the capacity to resolve bioethical disputes at home, let alone abroad (Solomon 2006, pp. 351–352, 356–357). He proposes that we reconceive the task of moral philosophy along the lines recommended by Alasdair MacIntyre: participants should speak from within their moral traditions without aspiring to transcend them. This, Solomon concludes, might allow for more meaningful communication, an advance over our current circumstances (Solomon 2006, pp. 353–354).

But what would be the political terms of engagement from within traditions? Solomon questions whether, for example, we could forbear from efforts to restrict certain practices of other communities that we find abhorrent from within our own. And, he notes, the points of disagreement across plural worldviews include not only the content of our bioethical beliefs, but also the terms of our engagement about them (Solomon 2006, pp. 354–355). On a somewhat more sanguine note, Solomon concludes that “None of the arguments in this paper, of course should be taken to demonstrate that the aspiration for a global bioethics is misguided. Perhaps, just as the Peircean notion of truth might guide scientific inquiry, the ideal of a global bioethics might guide bioethical inquiry” (Solomon 2006, p. 357).

So, scholarly pursuit of the possibility of a global bioethics replicates the pluralism and disagreement that motivate the effort. My contribution, set forth below, pursues an approach that embraces some of the elements of the approaches described above—in the spirit of Solomon’s final suggestion. Might we proceed experimentally, under terms of engagement grounded in our shared problem-solving capacity, speaking to one another from within our traditions, seeking understanding of and incremental resolutions to problems that arise at the intersection of our conflicting worldviews and advances in science and technology?

## A Navigational Approach

I have addressed elsewhere the challenges of local pluralism with respect to a particularly challenging set of bioethical issues that stimulate protracted, acrimonious, and unproductive debate, often accompanied by policy gridlock. Examples include whether human embryonic stem cell research should be permitted, promoted, or prohibited and the circumstances under which life-support technologies should be withdrawn. Emerging problems include issues surrounding the application of neuroimaging technologies to determine truthfulness, the application of genetic technologies to reveal or predict capacities or behavior, the creation of human-nonhuman chimeras, and the application of transgenic techniques to engineer human beings (Stoller and Wolpe 2007; Robinson and Berry 2002; Karpowicz et al. 2005; Berry 2007).

In my book, *The Ethics of Genetic Engineering*, I observe that these policy problems, which I call ‘fractious problems,’ share certain characteristics that render them particularly challenging to understand and resolve. They are (1) novel, (2) complex, (3) ethically fraught, (4) divisive, and (5) unavoidably of public concern (Berry 2007).

First, they are novel in that we have not encountered their like before nor arrived at a broadly shared social understanding of them or stable policy resolutions for them. Second, they are complex. They are scientifically and technically complex because they concern the most complex of scientific subjects, life and interventions in life. They are psychologically complex because they implicate our self-understanding as psychological individuals—beings with beliefs and desires who exercise free will or are ensouled or have moral agency. And they are socially complex because they implicate our self-understanding as social beings, members of



families, ethnicities, religions, disability or difference groups, a species. Third, they are ethically fraught because they concern profound human experiences—procreation and the beginning of life, illness and suffering, death and dying. Fourth, they are unavoidably public because these ethically fraught experiences are typically matters of policy concern—although the dividing line between the private and public is contested across worldviews. And, fifth, the foregoing characteristics render these problems divisive: we will struggle to understand and address their novel and complex features across diverse and sometimes conflicting worldviews, united by our concern about their ethical implications but divided in our beliefs about appropriate policy responses.

Also in *The Ethics of Genetic Engineering*, I conclude with a sketch of what I call a ‘navigational approach’ to understanding and addressing fractious problems. This approach aims to address these characteristics of fractious problems—their novelty, complexity, ethically fraught nature, public nature, and divisiveness—so that we might gain an epistemological grip on them and make headway in addressing them by applying consensus policy-level principles developed in a collaborative, problem-solving process. In sketching the outlines of a navigational approach, I note some of the virtues of common law decision making and the “fit” between these virtues and the characteristics of fractious problems.

Common law decision making renders the novel more familiar by reference to past precedent. Forceful presentation of multiple perspectives helps illuminate the multiple dimensions of complex issues. The principles invoked by common law courts typically are uncontroversial, even across diverse worldviews, although their application to resolve particular cases in controversy may be hotly contested. The resolutions tend to be modest in their reach, sufficient unto the day, and casting a prospective shadow that extends only to similar cases arising in similar circumstances. Changed circumstances, including those resulting from the consequences of this decision, may give rise to future decisions that correct course as part of an ongoing, iterative process of collective problem solving over time. A navigational approach aims to import analogous virtues into the realm of proactive policymaking for fractious problems.

This approach bears a kinship to the procedural approach of Engelhardt, but is less ambitious in its scope, prescribing only the terms of engagement in addressing fractious problems as they arise. It is also similar in seeking a kind of contractual agreement—an agreement to a policy-level resolution that does not necessarily draw conclusions regarding the underlying contentful questions that divide us. It is different from the approach of Engelhardt, however, in that it expects participants to both speak from their traditions, rather than as strangers, and to form another kind of community—a problem-solving community that builds its own procedural norms and commitments. It also differs in that the understandings and resolutions, in some cases, may impose the views of a majority of problem solvers on a minority. The approach anticipates, however, that when consensus is not achieved, the members of majorities and minorities will be drawn from different “thick” communities.

In asking participants to speak from within their traditions, it follows the suggestion of Solomon that this seems more likely to yield gains. This seems especially so with respect to the policy dimensions of fractious problems since they

typically include issues posed by the fact of our diverse commitments. We cannot hope to address these problems if we do not appreciate them by hearing contentful explications of them. And, in some cases, the problems will pose issues that challenge the capacity to understand them from within any tradition. In those cases, we may find help from efforts to engage them from multiple perspectives.

This approach assumes a set of common norms, in the manner of the common morality approach of Beauchamp and Childress. The norms, though, are community problem-solving norms, which, I claim, are shared across both time and culture. If they were not, we would not have survived to this point.

The navigational approach is motivated in part by what I see as the serial failures of our current approaches to fractious problems. Arguments fail to engage one another and instead are directed primarily to the choir. Efforts to resolve the problems focus on rallying sufficient strength to “win” in legislative, administrative, or judicial fora. Policies have very short half-lives, dissolving when one side succeeds, replaced by another, ensuring that all sides remain perpetually aggrieved by their losses and frustrated by the intransigence of opponents who continue to press their position. If, as I suggest, we are possessed of problem-solving capacity, our current approaches do not appear competent to engage it.

But perhaps this picture is mistaken for failure to take the long view. Acrimonious and apparently fruitless debate, in fact, may be the necessary precursor to resolving ethically contentious policy problems. Perhaps these apparently intractable debates, punctuated by cycles of temporary victories and reversals, are the way in which deeply contentious policy problems ultimately are resolved.

On this view, resolution can come only after debaters are persuaded that persuasion will not succeed. Then, swords are crossed, social understanding eventually is recast in the form pressed by the victorious side, and an enduring policy resolution emerges. The antebellum slavery debate for many years appeared fruitless. In this case, the resolution required combat followed by persistent enforcement that eventually eliminated support for slavery. Another example might be adoption of the 14th Amendment to the U.S. Constitution followed by a series of legislative victories that secured the civil liberties and employment opportunities of many previously marginalized members of the political community, and also, by their “expressive” function, contributed to an enduring understanding of where the circle around those included is drawn.

On this view, debates about deeply contentious problems eventually require winner-takes-all, once-and-for-all resolution (hereafter “winner resolution”) in some forum or combination of fora: battlefield, or legislative, administrative, or judicial. Cathartic combat eventually succeeds in reframing our social understanding on the winner’s terms so only the winner’s commitments need be honored, stable, peaceful resolutions are achieved, and the victorious culture can proceed to further problem solving. Many of the debaters on all sides of current fractious problems appear to expect the problem-solving process to proceed in this way with eventual entrenchment of their understanding of and resolutions for the problems.

I think this view is mistaken, however. For one, the characteristics of fractious problems render them different in kind from problems about the extension of

political rights, which, once resolved, can be sustained by the new majorities possessed of political power. Fractious problems transpire on battlegrounds in which all parties are possessed of enough political power and commitment to contest the issues if they choose, shifting from one venue to another in pursuit of winner resolution.

Second, efforts to attain winner resolution erode the commitment, widely shared in many pluralistic political communities, to honoring the deep and conflicting commitments of their diverse constituencies. It is not clear what the terms of our engagement in contemporary pluralistic communities might be if this norm is sufficiently eroded. While a regime of liberty and tolerance generally succeeds in advancing this norm, contemporary political communities do not observe the bounds of “pure” libertarian constraints. The publicly funded scientific and technological enterprise is an example of this circumstance. The benefits of the enterprise are widely desired, the enterprise, accordingly, is handsomely funded, and the results include both benefits—and fractious problems that strain our capacity to find resolutions that preserve this norm.

Third, the scientific and technological enterprise challenges us not only across diverse traditions but within traditions. Consider, for example, the prospect of cloning and bringing to life a Neanderthal, a problem considered by graduate and professional students enrolled in an experimental, interdisciplinary and inter-institutional, problem-based-learning course—part of an effort to test the merit of the navigational approach I sketch here. Should we permit, promote, or prohibit the cloning of a Neanderthal using a human ovum and a human surrogate to bring the Neanderthal to life? Does it matter how much we might learn from experiments conducted on a Neanderthal—about, say, *Homo sapien* disease processes or the development of human speech? Does it matter whether the effort might yield numerous Neanderthal fetuses or newborns who are disabled or die? Does it matter whether *Homo sapiens* caused the extinction of Neanderthals—or whether *Homo sapiens* interbred with Neanderthals or whether Neanderthals buried their dead? Should the Neanderthal be raised in a zoo, a lab, or the home of its surrogate mother? Should it be welcomed into the place of worship of its surrogate parents? Should it be entitled to vote or run for elective office? Should a Neanderthal be cloned only as part of a colony of Neanderthals? Questions like these challenge assumptions that are common to many of our traditions; it would be helpful to draw on many of them in our effort to address them.

In experimental pursuit of the prospects of a navigational approach for helping us understand and cope with fractious problems, I serve as principal investigator for a three-year research project funded by the National Science Foundation under its Ethics Education in Science and Engineering program.<sup>2</sup> The project strives to cultivate in a diverse, interdisciplinary, and inter-institutional set of learners, the six skills, analogous to the virtues of the common law method, that we hypothesize “fit” the characteristics of fractious problems (see [Appendix](#)).

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<sup>2</sup> National Science Foundation, Ethics Education in Science and Engineering (NSF EESE), Solicitation 08-530, Program Synopsis, (2010). Available online: [http://www.nsf.gov/funding/pgm\\_summ.jsp?pims\\_id=13338&org=SES&from=home](http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=13338&org=SES&from=home).

The students in our experimental courses are divided into problem-solving teams facilitated by members of the research team. Each team is assigned one short and two long fractious problems. At the conclusion of each problem under study, the teams submit reports and make formal presentations of their results to audiences that include policymakers, stakeholders, and experts. Fractious problems studied include the problem described above regarding cloning a Neanderthal; whether and, if so, for what purpose we should use neuroimaging to predict predisposition to violence; whether human genes should be patentable; and whether we should create a universal data base of human DNA for use in forensic identification.

This experiment is a pilot project that, at best, might provide suggestive evidence of the effectiveness of this pedagogical approach in fostering the skills that we propose fit the characteristics of fractious problems. If so, the work product of the students might provide suggestive evidence of the effectiveness of a navigational approach. If this approach shows merit in addressing fractious problems posed in a national community, a follow-on effort might explore its merits in an international setting.

How might a navigational approach respond to the four challenges posed to a global bioethics? The outcomes could not be known in advance, but the approach would be helpfully advanced by the results of the studies that follow.

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## Appendix

The six skills we strive to foster to develop the students' capacity to address the five characteristics of fractious problems include:

### (1) Perspectives

Consider *multiple and diverse perspectives*—disciplinary, worldview, life experience—to advance understanding of and potential resolutions addressing:

- *novelty* (multiple and diverse efforts to understand and address)
- *complexity* (scientific, psychological, social)
- *ethically fraught nature* (across worldviews, concerning sensitive and profound)
- *public nature* (contested dividing lines between public and private dimensions)
- *divisiveness* (understand and address incorporating diverse perspectives)

### (2) Precedent

Consider *historical analogies to similar or related problems*, including past and current policy resolutions and their rationales, to advance understanding of and potential resolutions addressing:

- *novelty* (we have encountered, understood, and resolved similar or related)
- *complexity* (scientific, psychological, social understood and addressed previously)
- *ethically fraught nature* (we have addressed ethical concerns previously)
- *public nature* (we have defined the public and private dimensions previously)
- *divisiveness* (we have achieved principled consensus resolutions previously)

### (3) Prediction

Consider the *predicted future impacts of possible understandings and policy resolutions on all stakeholders*, to advance understanding of and potential resolutions addressing:

- *novelty* (what are the predicted impacts of possible policy resolutions)
- *complexity* (what are the scientific, psychological, social dimensions of these)
- *ethically fraught nature* (what are the ethical implications across worldviews)
- *public nature* (what are the implications for the line between public and private)
- *divisiveness* (what are the implications for the divisiveness of the problem)

### (4) Possibilities

Employ imagination and flexibility to expand the range of possible understandings and policy resolutions, by brainstorming, reflection, role-playing, reference to literature, film, or other devices, to advance understanding of and potential resolutions addressing:

- *novelty* (what are the predicted impacts of possible policy resolutions)
- *complexity* (what are the scientific, psychological, social dimensions of these)
- *ethically fraught nature* (what are the ethical implications across worldviews)
- *public nature* (what are the implications for the line between public and private)
- *divisiveness* (what are the implications for the divisiveness of the problem)

### (5) Persistence

Consider social understanding and policy resolutions as part of a dynamic, incremental, iterative, ongoing process requiring persistence in response to changed conditions and to feedback from previous choices, to advance understanding of and potential resolutions addressing:

- *novelty* (some novel dimensions may be addressed later with more understanding)
- *complexity* (more dimensions may emerge and be addressed later)
- *ethically fraught nature* (worldviews may shift with impacts & understanding)
- *public nature* (the line between public and private may also shift)
- *divisiveness* (divisiveness may change as other characteristics change)

### (6) Principles

Strive to identify limited, noncomprehensive consensus principles that capture shared understanding and policy resolutions adequate to a persistent process, to advance understanding of and potential resolutions addressing:

- *novelty* (principles for coping with novelty and uncertainty)
- *complexity* (principles for coping with complexity)
- *ethically fraught nature* (principles that are shared across worldviews)
- *public nature* (principles for defining the line between public and private)
- *divisiveness* (principles for addressing divisiveness)

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