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Innovation – The European Journal of Social Science Research

ISSN: 1351-1610 (Print) 1469-8412 (Online) Journal homepage: https://www.tandfonline.com/loi/ciej20

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To cite this article: Adam Briggle (2009) The US President's Council on Bioethics: modeling a thicker knowledge politics, Innovation – The European Journal of Social Science Research, 22:1, 35-51, DOI: 10.1080/13511610902770578

To link to this article: https://doi.org/10.1080/13511610902770578

Innovation – The European Journal of Social Science Research
Vol. 22, No. 1, March 2009, 35–51

Routledge
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RESEARCH ARTICLE

The US President's Council on Bioethics: modeling a thicker knowledge politics

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(Received 15 July 2008; final version received 18 November 2008)

This article argues that the "thicker" moral inquiry modeled by the US President's Council on Bioethics is a significant and valuable innovation in knowledge politics. It first distinguishes two kinds of knowledge politics – active deciding vs. thinking and talking. The focus here is on the latter. The article then introduces some relevant historical background. Next, it indicates how prior bioethics committees in the US practised a "thin" version of knowledge politics that both reflected and consolidated typical ways of thinking and talking about biomedical technology. The article then argues that, because of the non-neutrality of technology, a thin knowledge politics is neither sufficient nor necessary for liberal democratic governments concerned to understand and manage emerging technologies. The last section uses a Council report to illustrate the benefits of a thicker knowledge politics.

Keywords: bioethics; US Council; biomedical technology; knowledge politics

Introduction

On 9 August 2001, in his first nationally televised address, President George W. Bush announced his decision regarding US federal funding for embryonic stem cell research. This was knowledge politics at its most iconic. It determined, in Harold Lasswell's terms, "who gets what, when, and how" (1936). The policy sent US scientists searching for funding through alternative strategies that included private enterprises, state initiatives and emigration to nations with fewer restrictions on embryo research. This moment is termed iconic because it is an instance of the kind of straightforward governmental action that most readily comes to mind when we think of the phrase "knowledge politics". Indeed, knowledge politics often boils down to knowledge *budget* politics in such a way that the "who" in Lasswell's formula refers to scientists and engineers and the "what" refers to money (Greenberg 2001, Sarewitz 2003): the Superconducting Super Collider had its budget cut, the National Institutes of Health had their budgets doubled, wind energy received an extension on the production tax credit, and a national laboratory was granted a windfall through earmarks.

Such distinct executive and legislative actions are indeed important elements of knowledge politics. They shape the kinds of knowledge, usually science and technology, that are created and, thus, the kind of world we live in. However, let us springboard from Bush's televised performance to focus our attention on the wider dimensions of both components of our central concept, namely, "knowledge" and "politics". In particular,

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ISSN 1351-1610 print/ISSN 1469-8412 online

DOI: 10.1080/13511610902770578
http://www.informaworld.com

reflections should be made on the role of the humanities, or at least ethics, as a type of knowledge within knowledge politics. Politics will also be considered less as Lasswell's bargaining or contracts between cemented interests than as the activity of ordering our lives together.

Here the interest lies in knowledge politics not as discreet decisions, such as stem cell funding policy, but as a question of *how we think and talk together*, that is, of the conceptual lenses and moral vocabularies that we bring to bear on the more specific regulatory and promotional decisions regarding science and technology. Let us reflect on knowledge politics in terms of "frames" or discursive practices that form – to use Kant's term – the "common sense" of a culture or that fit us into a community and allow us to communicate with one another. The ways in which we go about thinking and talking with one another determine what we see and how we act. The danger in the politics surrounding biomedical and converging technologies is that citizens and decision-makers of the modern world will apply the predominant "thin" way of thinking and talking, which will prevent us from understanding the full ramifications of turning our technological powers inward upon human nature. We will be like the proverbial drunk looking for his keys under the streetlamp – not because they are there, but because that is where it is easiest to see.

For this wider angle on knowledge politics, a different decision announced by Bush during that televised address is more relevant. After stating his stem cell policy, Bush proclaimed the formation of the President's Council on Bioethics, which would "consider all of the medical and ethical ramifications of biomedical innovation". This was a decision, in effect, to continue thinking and talking about science and technology. As stated in its executive order, the Council was to "advise the President", "to undertake fundamental inquiry into the human and moral significance of developments in biomedical and behavioral science and technology", and "to provide a forum for a national discussion of bioethical issues". The Council would be chaired by Dr Leon Kass, a long-time contributor to and critic of professional bioethics.[1]

In this article, the aim is to convince the reader that the "thicker" mode of thinking and talking modeled by the Council is a significant and valuable innovation in knowledge politics. It extends our vision, allowing us to think and talk together about the full moral dimensions of science and technology. The focus here is on knowledge politics as governmental activity in the form of advisory bodies, but their role in informing specific decisions will be downplayed in order to focus on what is arguably a far more important role of such committees: in adopting a frame or a way of approaching bioethical issues, bioethics committees both reflect and shape the broader knowledge politics of civil society as it takes place in the media, in classrooms and around the dinner table.

First, some historical context will be provided and the "thin" knowledge politics of all US bioethics commissions prior to the Council described – a thinness that both reflected and consolidated a predominant cultural common sense. Then it will be argued that, due to the non-neutrality of technology, a thin knowledge politics, despite its proponents' claims, is neither sufficient nor necessary for liberal democratic governments concerned to understand and manage biomedical and converging technologies. In conclusion, a Council report will be employed to exemplify more concretely the ways in which a thicker way of thinking and talking makes, as Walter Lippmann might say, the pictures in our heads truer to the complex realities of emerging technologies.

Before proceeding, a note on the target group of this article is in order. The analysis is clearly rounded in the US context, but this discussion is relevant to those working in various European contexts as well. Many nations in Europe – and worldwide – sponsor national ethics advisory committees, which often play a similar role in modeling ways of thinking and

talking that inform public understanding and debate (Fuchs 2005, Ahvenharju 2006). Thus, those who create and participate in such committees face choices about the kind of frame they adopt. Although the present author has been researching in The Netherlands for the past two years, he is still most familiar with US knowledge politics. However, in presenting an earlier version of this article in Brussels, the social epistemologist Steve Fuller drew from his considerable experience with knowledge politics in Europe to argue that there is a strong tendency toward "thinness" in many European bioethical discourses. To the extent that this is true, it only provides further incentive for those involved in knowledge politics outside of the United States to consider the arguments presented here.

What is pertinent knowledge?

Seen from an institutional perspective, the Council was a continuation of, not a break with, history. When it held its first meeting early in 2002, the Council became just the latest bud on the so-called "fifth branch" of government (Jasanoff 1990). To adapt Harvey Brooks's rough distinction, where the stem cell decision was an instance of "politics for knowledge", the Council became an instantiation of "knowledge for politics". Like hundreds of other bodies in the United States dating back to early expeditionary services, it was tasked with providing expert knowledge to direct and justify public action.

Indeed, the use of knowledge for politics is not only instrumentally valuable for public policy, but also intrinsic to modern liberal democratic notions of authority, accountability, and order (Ezrahi 1990). The early moderns divorced politics from a theological superstructure and conceptualized it as a human enterprise exposed to the disruption of *fortuna*, or contingent forces. The political order was understood as a human construction designed to secure pleasure and minimize pain. The principle constraint on realizing such goals was not a supernatural will, but rather nature, particularly our limited capacity for understanding, predicting and controlling nature, including the nature of individual humans and societies. In his *Discourses* Machiavelli argued that esteem should be accorded to "those who would know how to govern states, rather than [to] those who have the right to govern, but lack the knowledge".

This raises the central question: *what is pertinent knowledge (for politics or public policy)?* Until roughly the 1960s – when several crises, including environmental pollution, burst the bubble of techno-optimism – the answer to this question was almost exclusively "more science and technology". The nineteenth century witnessed the rise of utopian visions of science rationalizing democracy and carrying politics on its wings, above scarcity, conflict and chance. Scientific discourses would replace myths, ideology or authority with knowledge as the basis of social action. The zenith of the replacement of politics with technical rationality came in the early twentieth century. The "scientific management" of Frederick Winslow Taylor spread from corporate to public policy, for example, in the notion that forestry science could provide the "one best way" to manage federal forests. Policy-making is simply the identification and application of the most effective means to achieve given ends. As one example of the fevered pitch this rationalist dream could reach, in the 1920s the geneticist J.B.S. Haldane argued that the application of science to human problems would conquer not only nature, but even the "dark and evil elements" in the human soul. Not just human society, but also the human soul consists of a bundle of problems (e.g. fear, anxiety, guilt, aggression, sadness, boredom) to be solved through the application of technical knowledge.

However, numerous failures effectively to rationalize politics made it clear that we cannot skirt the irreducibly moral – and even theological, metaphysical and aesthetic –

dimensions of politics, especially the moral dimensions of science and technology (see Lindblom 1959, Wildavsky 1964). The rationalization of politics can actually exacerbate rather than solve problems (Sarewitz 2000, 2004). As Roger Pielke (2007) noted, "getting the science right" only compels action in contexts where uncertainty and values disputes are minimal. Where there is uncertainty and disagreement – which is true of most knowledge politics – science can actually further muddle the situation.

In short, science and technology raise questions that are themselves not simply scientific or technical in nature. This means that the answer to our question – what is pertinent knowledge – must expand to include social, ethical, and broadly philosophical inquiry. Developed nations have enacted a variety of governmental and non-governmental responses to this awareness, ranging from consensus conferences and extended peer reviews to ethical, legal and social implications (ELSI) research to broader impacts criteria as part of science and engineering research funding. In the area of biomedicine, dozens of nations have turned to various forms of bioethics committees to provide enhanced foresight, legitimacy (by subjecting science and technology to external supervision) and ethical knowledge (Poland 1998, Fuchs 2005).

Some of these committees, such as Institutional Review Boards (IRBs) and Hospital Ethics Committees (HECs), essentially serve as policy implementation bodies in overseeing and deciding on the ethics of specific activities. The interest here, however, is in more general, federal-level bioethics committees that are far away from the implementation of regulations in specific cases. In the United States, the Council was the sixth such institution of "public bioethics", formally defined as an "ethical inquiry conducted by a publicly constituted body, which is created and supported by government" (Fletcher and Miller 1996, p. 155).[2]

Worldwide, public bioethics committees have always had a dual mandate, even when it is not explicitly stated. They are, of course, established to provide advice on the ethics of science and technology. Yet in conducting their advisory work, bioethics committees also inevitably model certain ways of conceiving of and evaluating biomedical science and technology. Thus, they also enact knowledge politics as thinking and talking. Indeed, their most important contributions are often the intangible efforts to "enhance the debate between science, the world of politics and the public" (Fuchs 2005, p. 92). Furthermore, "there are institutions such as the Danish Council that are internationally regarded as successful although they have not manifestly influenced actual political decisions" (Fuchs 2005, p. 91). We turn to bioethics commissions not just for advice on what to do, but also on how to think – how to make sense of and articulate the complex realities at the intersections of science, technology, and the world of human life.

Then, these institutions can be investigated in an effort to understand how we do and how we might think and talk about science and technology. In other words, these institutions offer specific answers to our central question about pertinent knowledge. To say that we often need "ethics" is too general a response to our question about the knowledge needed for understanding and governing science and technology. What specific kinds of moral inquiry do we need – what kind of ethics does biomedical technology require? In the United States, the public bioethics committees preceding the Council all gave a "thin" answer to this central question. By contrast, the Council was unique in offering a "thick" answer.

Thin knowledge politics in US public bioethics

In July, 1974, the US Congress passed the National Research Act. Part of this law mandated the creation of the temporary National Commission for the Protection of

Human Subjects of Biomedical and Behavioral Research (National Commission). Chaired by physician Kenneth J. Ryan, it was the first US bioethics commission. Congress charged it with identifying "basic ethical principles" to guide biomedical research involving human subjects. The National Commission responded with the Belmont report, which outlined three principles for guiding research on human subjects.

The three principles are: "respect for persons", "justice" and "beneficence". The principle of "respect for persons" is defined as "the requirement to acknowledge autonomy and the requirement to protect those with diminished autonomy". The principle of "beneficence" is an obligation to secure a patient's well-being, or "(1) do not harm and (2) maximize possible benefits and minimize possible harms". The principle of justice pertains primarily to fairness in distributing the burdens and benefits of medical research.

The principles, in short, require us to think and talk in terms of respecting individual rights, minimizing risks, and promoting social justice. This approach, known as "principlism", became hugely influential in professional bioethics and dominated public bioethics until the Council (Jonsen 1998). In one sense, it is the very thinness of principlism that strongly recommended it to the members of the National Commission. The abstract principles, for example, made it possible to forge consensus even where disagreement persisted on the theoretical justification of the principles (Beauchamp and Childress 1979).

However, here another – albeit related – way should be emphasized in which principlism is thin: it is restricted to matters of the right, leaving questions of the good to personal preference. This obviously has significant ties to modern liberal political theory. According to one prominent interpretation, modern liberalism envisions political association not as the common quest for higher goods, but as rules and procedures for adjudicating different demands within a framework of rights that is supposedly neutral on substantive questions of the good. Principlism simply recapitulates this thesis for knowledge politics: the ethics of science and technology is not a matter of rationally evaluating different visions of the good, but of ensuring that the rights and safety of autonomous individuals are protected. Until the Council, public bioethics adopted only the thin ethics of rights, risks and justice. This is what T.M. Scanlon (1998) called a "rump morality", or morality understood as principles for what we owe one other. This is distinct from a thick morality, which includes "convictions about which kinds of lives are good or bad for a person to lead" (Dworkin 2000, p. 485).

The thinning of US public bioethics was rigorously documented by John Evans the same year that the Council began its work (2002). In his opening remarks at the first Council meeting (17 January 2002) Kass made a similar analysis, and indeed he would later (Kass 2005) characterize his Council in Evans' terms, i.e, as a "thicker" approach to public bioethics in response to its previous "thinning".

Evans argued that, since the National Commission fundamental questions as to the human condition were set off-limits in favor of matters of individual rights and social equity, "the structure of the debate among professionals has been eviscerated – a deeper, more fundamental, or 'thicker' debate has been replaced by a smaller, shallower, more superficial, or 'thinner' one" (Evans 2002, p. 4). He traced the replacement of a "substantively rational" discourse about bioethical issues to a "formally rational" discourse. A person engaged in substantive rationality asks whether the means are consistent with the ultimate ends or values – "ends and means are debated as a piece" (p. 13). A person engaged in formal rationality, by contrast, asks whether the means employed are being maximized to achieve predetermined, tacit, and universal or abstract ends. Those assumed ends are the principles of safety, justice and autonomy.

Evans identified several causes behind the thinness of public bioethics. The central justification for a thin approach, however, is simply that in a pluralist liberal society, government can and should treat substantive matters of the good as personal decisions made in the private sphere. Thus, the justification for a thin public bioethics is quite similar to the justification – first made by Thomas Hobbes and John Locke – for removing government from the business of perfecting souls.

Tristram Engelhardt, Jr (1990) suggests that only a thin public bioethics is compatible with a liberal society and justifiable as a government activity. He divides the pluralism of modern society into two types: moral friends and moral strangers. Moral friends belong to a *community*, which is "a body of men and women bound together by common moral traditions and/or practices around a shared vision of the good life" (p. 7).[3] They share a "content-full morality", which provides "sufficient moral premises or rules of evidence and inference to resolve moral controversies by sound rational argument" and/or "a common commitment to individuals or institutions in authority to resolve moral controversies" (p. 7). Moral strangers, by contrast, belong to *society*, which is "an association that compasses individuals who find themselves in diverse moral communities" (p. 7). They do not share a content-full morality and are left with a "purely procedural morality in which persons convey to common endeavors the moral authority of their consent" (p. 7). Within a community moral friends can rationally work out the right decision with a view toward how it advances their shared understanding of the good life. Within a society this type of rationality is not available – the good life consists only of a "how", not a "what" (Strauss 1953).

In short: "There is no content-full bioethics outside of a particular moral perspective" (Engelhardt, 1996, p. 9). In contemporary pluralist societies, we all have our personal or cultural biases about what is better and worse, higher and lower, noble and base, etc., but these are mere perspectives and thus often incommensurable: there are no transcendent standards of rationality by which to judge the claims of different communities and persons. Engelhardt admits that: "Blind to final purposes, we turn to ourselves for meaning. As moral strangers, within the fabric of secular morality, we confront godlike choices with impoverished human vision, and without ultimate guideposts" (p. 411).[4] Preference satisfaction is the only standard of right action: "*what people want* is the ultimate measure of right and wrong" (Maclean 1993, p. 10). Thus, all that we can reasonably do together is work to ensure that individuals are free to choose whatever it may be that they prefer, thus giving birth to principlism.

Though he is not satisfied with his own answer (due to his Christian beliefs), Engelhardt concludes that a thin knowledge politics is the only possible framework a secular pluralist society can support: "[B]ecause there are no decisive secular arguments to establish that one concrete view of the moral life is better morally than its rivals, and since all have not converted to a single moral viewpoint, secular moral authority is the authority of consent" (Engelhardt, 1996, p. 68). Given the plurality and incommensurability of visions of the good life, "all one can say is that one should be sure that the means ... will produce the desired goals without significant, undesired side-effects" (p. 417).

Why a thin knowledge politics is impossible

The justification for a thin knowledge politics rests on a privatization thesis: matters of the good are private, thus government can and should abstain from interfering when it comes to substantive decisions about how to live (unless, of course, it is to protect the rights of others who may be harmed by such decisions). It will be argued that this thesis does not

hold, which means not just that thin knowledge politics is insufficient, but also that it is impossible. We cannot scrub away the substance to arrive at pure procedure, whether tallying costs and benefits or ensuring informed consent. We can only confront these issues in a more or less reasonable and explicit fashion. Our future will be decided one way or another. And government cannot stay neutral on this count. Indeed, given the profound and wide-ranging ramifications of biomedical science and technology, it is not possible to confine questions of the good to individual choices in the private sphere. In short, the practice of thin knowledge politics does not actually avoid thick morality. It only hides it behind the hidden assumptions underlying the principles of autonomy, risks and justice. The case for a thicker knowledge politics is simply that it is better to handle these inevitable issues explicitly and with a more robust ethical vocabulary.

Thin knowledge politics relies on an implicit instrumentalist theory of technology as value-neutral. It is the inadequacy of this theory that makes the privatization of the good impossible. Instrumentalism understands technologies in means–ends fashion – they are tools that perform set functions. A microwave warms food, a birth-control pill prevents pregnancy and an automobile transports people. According to this view, technologies only embed values of effectiveness with respect to a given function. They are otherwise neutral with respect to the wider practices and contexts in which they are employed. They can be put to good or bad uses by good or bad people. This instrumentalist view of technology is a necessary condition for the privatization thesis. If objects only fulfill narrowly-defined functions, then personal, corporate and public decisions about their development and use will not have any broader impacts on society and the world of human life (i.e. Engelhardt's "undesired side-effects"). These decisions, then, can be treated as isolated contractual agreements. The sole task for governments, including public bioethics, is to ensure that these contracts are respectful of the rights of the parties involved.

However, technological products, knowledge, and systems are far more than intended functions. The material culture that we are born into conditions who we are and how we conceive of ourselves and our world. Technology patterns our existence, shaping our identities and our plans in life. Langdon Winner (2004), for example, proposes thinking of technologies as "forms of life". As technological products become enrolled into social and personal processes, they come to life as morally significant actors shaping practical identities, the social order, personal relationships, our goals, hopes and fears – in short, delimiting and structuring the channels available to pursue a good life, even influencing our conceptions of what a good life is. This patterning of society is not a side-effect of innovation, but is intrinsic to technology. Remove or change the web of products and technical systems and we would no longer be the same people. Our material culture deeply influences who we are and the lives we lead.

According to the value-neutral view of technology, the good is privatized and presumed to be freely chosen by individuals wholly in ownership and control of their own person. Yet the impacts of science and technology cannot be so easily privatized and controlled. Indeed, the technological patterning of life occurs in such a way that no autonomous self freely chooses, thereby obviating the notion that matters of the good life can be cordoned off to personal decisions.

Society and its technological products are constitutive of the self; they are not freely chosen through contracts arranged by a pre-existing "self". We are rarely free to decide on our own terms how technology will shape our lives. You cannot be the only person without voice mail or email, at least not without severe consequences; the experience of wilderness is attenuated by others' cell phones, even if you do not have one; and we all feel the impacts of global climate change regardless of what car we do or do not drive. In addition, major

technological systems from water treatment plants to interstate highways to electricity grids structure our life in determinate ways, making possible certain activities, whilst precluding others. Though not thoroughly deterministic, as a broad range of choices remains open, such technologies are certainly not neutral in terms of promoting and discouraging certain kinds of lives in ways that no individual can control or direct.

Biomedical enhancements present a textbook case of a supposedly private decision with substantive consequences for others. Proponents of liberal eugenics argue that parents ought to be free to enhance their children genetically in any way they see fit. Yet, in his own defence of liberal eugenics, Nicholas Agar (2004) notes that parents who choose not to enhance their offspring will be putting their children at a disadvantage, as enhanced children "ratchet up" the prerequisites for being capable of fully participating and succeeding in society. Indeed, they will probably not just ratchet up the former requirements, but change them as well. Thus, what is advocated as a freedom or permission instead becomes an obligation that burdens others' "procreative liberties". My decision not to improve my child genetically may leave her unable to get into Harvard because of the enhanced competition.

This is not science fiction. Consider the increasing off-label use of "smart pills" such as Adderall by college students to boost mental capacity and memory. Left unregulated, there will soon be no choice but to pop smart pills just to stay competitive. In a widely-reported story of June, 2006, 11 cousins had their seemingly healthy stomachs removed because they all shared a gene that signalled an increased risk for stomach cancer. Genetic information such as this not only allows for preventative surgery, but also enables the practice of genetically screening embryos for problem genes prior to implantation. It may be that in the near future it will be considered irresponsible (or even unlawful) to procreate without first screening gametes or embryos. Similarly, as regenerative medicine matures – including the ability to grow tissues and organs in the laboratory from patient cells – it will herald changing attitudes toward the human body and societal demand for tailor-made replacement parts. Thus, as technologies expand what we can do, they tend to expand in turn both our obligations and our rights claims.

Indeed, as Robert McGinn (1994) argues, issues of rights and quality of life (the good) inevitably become entangled as we seek better lives through technological innovation. As increasing numbers of people are engaging in increasingly technological ways of life, to which everyone supposedly has a right, societal quality of life is put at risk. One example is the environmental degradation that ensues from collective actions (e.g. climate change resulting from fossil fuel combustion), for which no individual is responsible and which no individual can prevent. This repeated pattern means that our traditional notion of individual rights based on the harm principle is anachronistic in technological societies. Individual acts justified by rights claims often create far-reaching and diffuse harms that affect the quality of our collective world.

In sum, the expansion of the private sphere implicitly licensed by a thin focus on individuals' rights to make their own "private" decisions creates public quality of life issues. In a profound self-contradiction the modern image of the self as a rights-holder preceding community has been made radically problematic by the very workings of modern technology in an individualistic, consumerist, and market-oriented society. Since both personal and collective decisions about technology have public consequences with regard to how we live, it behooves us to evaluate these issues explicitly and critically. This is far preferable to a thin strategy essentially pretending that none of this is going on.

Why a thicker knowledge politics is legitimate

Albert Borgmann (1984) argued that, despite the philosophical foundations of liberal democracy in the idea that the state should refrain from supporting any particular idea of the human good, in practice, "liberal democracy is enacted as technology. It does not leave the question of the good life open but answers it along technological lines" (p. 92). Implicit in Borgmann's formulation is a monistic assumption – as if there were one single "technological answer" to the question of the good life. A more realistic appraisal of modern society would need to acknowledge the diversity of ways of living that can thrive in modern technological cultures.

There are still several answers that individuals can give as responses to the material and social conditions in which they find themselves. However, the important aspect of Borgmann's remark is that these answers respond to conditions that are partially created by liberal democratic governments. Such governments unavoidably shape the human world, particularly in regulating and promoting technologies. Their laws (or absence of laws in the case of *laissez faire* economic or technological innovation policies) structure and delimit the range and type of answers that individuals can give to the question of the good life. Governments unavoidably promote some ways of being and discourage others (see Barry 1965, pp. 74–97).

Yet, following Engelhardt, some may feel uneasy about any association between government and the good. They may concede that we ought to think and talk about matters of the good as an aspect of our cultural common sense, but that we should not do so within a government-constituted body. Critics may want to hold fast to the notion that political liberalism requires the state to be neutral between competing conceptions of the good life, but it is important here to distinguish two formulations of this "principle of neutrality" (Wall and Klosko 2003). The first is "neutrality of effect", which holds that the state should not do anything that has the effect of promoting any particular conception of the good, but this rendition of the principle of neutrality has already been dismissed. Insofar as governments are in the business of regulating and promoting science and technology, they inevitably affect the world of life in such a way that bears on matters of the good. It is precisely because there is no neutrality of effect – especially when it comes to the governance of technology – that makes it important for governments to consider arguments for and against possible substantive outcomes of their actions.

The standard response given by defenders of state neutralism is to distinguish this stronger version of the principle from a weaker one (Kymlicka 1989). Following Bruce Ackerman (1980), Charles Larmore (1987) and others, this weaker version of the principle is widely regarded as the most viable and important. It interprets the principle as "neutrality of justification". This wording holds that the state should not justify political decisions with reasons stemming from the intrinsic superiority of one conception of the good. This weaker version is meant to prevent government that destroys moral pluralism by coercively imposing a controversial way of life from the substantive principles of a single comprehensive doctrine, and this is certainly not what is being advocated here with a thicker knowledge politics.

After all, coercion is only one way in which the state may promote the good, and bioethics committees are particularly interesting because they are discursive, not coercive, institutions.[5] As Joseph Raz (1986), Thomas Hurka (1993) and Goerge Sher (1997) point out, liberal democracies regularly avail themselves of non-coercive strategies for promoting flourishing lives for their citizens. Raz especially notes the difference between state neutrality and moral pluralism – the latter can flourish in the absence of the former.

Political actions can promote the good without imposing a single way of life on citizens. In other words, the procedural or thin interpretation is only one way of conceiving of liberal political life. Perfectionists and others advance thicker conceptions of political liberalism that emphasize substantive deliberation as a part of politics. Once seen from this perspective, the idea of a thicker government ethics committee becomes a valuable component of liberal political life, rather than a threat to it.

State support for liberal education is a non-coercive way in which the state can use its resources to help citizens choose valuable options and avoid inferior alternatives. A liberal education is not only compatible with moral pluralism; the virtues it fosters – open-mindedness and critical thinking – are required to sustain moral pluralism. Furthermore, since any account of autonomy must include action with understanding, education is essential for enhanced autonomy through improved judgment and reasoning. Sher presses this point to argue that any truly neutral state would needlessly deprive citizens of important goods by not fostering the development of their character, including their capacity to make sound judgments.

Public bioethics institutions such as the Kass Council are similar to liberal education. They are strategic places explicitly to explore a diversity of visions of the good. Like liberal education institutions, bioethics committees should openly and critically assess substantive goods. This is a perfectionist strategy of promoting the good, but only in the very modest sense that it is better for citizens to be more fully informed and deeply reflective about the human and moral significance of biomedical science and technology. As public bioethics institutions have no regulatory power, citizens and their elected representatives retain authority to make decisions, including the decision as to whether to listen to the discussions held by such institutions in the first place. This is a far cry indeed from fears that thicker public bioethics invites state coercion antagonistic to moral pluralism. It is, rather, a mechanism for the adherents of different moral traditions to refine their positions and expand their imagination through conversing with those holding opposing views.

The Council's version of thicker knowledge politics

It has been argued that a thin knowledge politics is undesirable because it is a way of thinking and talking that is inadequate to the full moral dimensions of the decisions we face regarding science and technology. It does not succeed in avoiding or privatizing matters of the good – it only succeeds in leaving us relatively blind and mute in the face of unavoidably substantive questions about meaning and flourishing. Thin knowledge politics restricts thought to a schema of humans as atomistic individuals entering into contracts, and it limits our moral vocabulary to risks, rights and justice. This mode of thinking and talking is not intrinsically wrong – indeed it captures much of importance, but it is limited in ways that become apparent, once we move beyond issues of human subjects research.

Both the importance and legitimacy (via liberal perfectionism) of a thicker kind of thinking and talking have been established as part of governmental knowledge politics as regards biomedical science and technology. In general, this will entail complementing – *not replacing* – a thin focus on obligations to others with a thicker inquiry into human flourishing. The case for a thicker kind of moral inquiry for knowledge politics thus mirrors G.E.M. Anscombe's famous criticism of modern ethics (1958). She argued that Kant and, via the Utilitarians, Hobbes gave us a flattened image of humanity and an impoverished language of duties, rights, pleasures and pains. These predominant ethical systems omit or distort much of importance about the human condition, including wisdom, friendship and love, a deep concept of happiness, the meaning of human

excellence, procreation, suffering, memory, mortality and other aspects of our finite embodiment, and the fundamental question of how we ought to live.

These are the kinds of issues so often raised by biomedical and converging technologies. Analyzing human cloning-to-produce-children through the lens of the atomistic self and the language of risks and rights implies, for example, missing its fundamental moral significance. It is a technique that alters the procreative and familial relations that are constitutive of the self, underlie our attitudes and understandings of one another and constitute the basis of society. Any adequate ethical appraisal, regardless of its conclusions, needs to take into account these defining moral dimensions of cloning. Yet it is this very analysis that a thin knowledge politics avoids, as is apparent in the cloning report offered by President Clinton's National Bioethics Advisory Commission (NBAC). By contrast, the Council's report on cloning (The President's Council on Bioethics 2002) explicitly and systematically evaluated the thicker moral dimensions of cloning.

Uses of biomedical technologies for the purposes of human enhancement provide even more persuasive examples of the need for a thickened type of thinking and talking. Thus, this conclusion will employ the Council's report *Beyond therapy* (The President's Council on Bioethics 2003) to demonstrate thicker knowledge politics at work. A close look will be taken at a specific instance of thicker moral inquiry because it is the only way to prove that it is not only a legitimate governmental activity, but also that it is a legitimate epistemic activity as well. That is, a proponent of thin moral inquiry may argue that our decisions about substantive goods amount simply to statements of personal preference and are not amenable to improvement via reasoned analyses. It is to be hoped that an exegesis of the Council's work will demonstrate that, even if one disagrees with the arguments, thicker moral inquiry is reasonable. The point in using this case study, then, is not to discuss the legality of enhancement technologies. Rather, the interest is in the moral reasons why we might find doping and other forms of enhancement morally objectionable. We will see that the thin approach to moral inquiry does not adequately articulate these moral reasons.

A quick caveat is in order. In this and other instances, the Council espouses a critical stance on the value of emerging technologies. This does not imply that all forms of thicker knowledge politics must be skeptical of change. Indeed, transhumanists, who openly embrace many enhancement technologies, have much to contribute to a thick discussion of ultimate human ends. Thus, thicker knowledge politics denotes a style of moral inquiry and discussion – one that explicitly evaluates goods. It is not a commitment to any particular worldview or conclusions.

Enhancement as a case study

We aspire to perform better in the activities of life and we admire those who demonstrate an excellence that surpasses our own abilities. In our pursuit of excellence, we have long sought advantages from training, equipment, and nutrition. Now, and in the future increasingly, we can also "find help in new technological capacities for directly improving our bodies and minds – both their native powers and their activities – capacities provided by drugs, genetic modifications, and surgical procedures (including the implantation of mechanical devices)" (The President's Council on Bioethics 2003). In this chapter of *Beyond therapy*, the Council asks: "What should we think about obtaining superior performance through the use of such biotechnologies?"

Three years after the publication of *Beyond therapy*, baseball star Barry Bonds hit his 715th career home run, putting him above Babe Ruth for second place all-time. Far from being heralded as a legendary feat of excellence, however, Bonds' achievement was widely

despised and condemned. Some fans held up placards with giant asterisks, signifying that Bonds' home-run total should be discounted or not recorded at all due to his alleged use of performance-enhancing drugs. Those placards convey an intuition that some aids to performance legitimately support achievement, whereas others degrade or deform it. What is the nature of the public indignation in this case? (One could also think of the Tour de France scandals or any other number of examples.) One way to demonstrate the superiority of a thicker approach to knowledge politics is to show that it does a better job than a thin approach in articulating and evaluating such intuitions.

As the Council notes, the "familiar sources of concern" comprising thin analyses illuminate some important issues. Fairness and equality, coercion and social pressure, and health risks and safety are all relevant ethical considerations. Enhancement technologies, for example, may create radically new types of class division. The technological assemblage of material culture always works to provide some with greater advantages than others. The French term for assemblage, *agencement*, gets this point across by signifying that human agency is determined by position within and access to technological systems. Insofar as technology is an extension of the human body, the rich have different – bigger and better-equipped – bodies than the poor. Enhancements threaten to cast these differences quite literally into human bodies, perhaps splitting haves and have-nots into, not different classes, but different species.[6]

As important as such considerations are, they do not touch on the most profound implications of human enhancements. After all, the outrage was not that Babe Ruth did not have the same chance to use steroids, and the fans with their asterisk signs were not protesting against the risks involved or concerned that Bonds was coerced or duped. The problem is not simply inequality, because our natural endowments are unequal to begin with and we could always change the rules to allow equal access to enhancements. So, this concern points to something deeper about the significance of the rules themselves and the nature and meaning of the activity. Furthermore, the problem cannot simply be coercive pressure, because pressure is inherent to the pursuit of any excellence, and the problem is not simply health hazards, because the pursuit of excellence, especially in sports, necessarily seeks something more than mere safety. The Council concludes that each concern "has indicated something important; but none gets us to the core issue".

To get to the core of our intuitions, we need to consider the question of whether the excellence of an activity is affected by the *way* it is pursued. We need especially to ask how biotechnical enhancement – though clearly overlapping with training and nutrition in many respects – is different in a relevant sense as a means of achieving excellence. After all, what is meaningful and important about superior performances such as home run records or spelling-bee champions is not the result or the deed considered in isolation, but who performs the deed, in what manner, and how the doer and the deed are related. (Think, for example, of the difference between today's spelling-bee contestants and those in the future with Oxford English Dictionary chip implants.) The Council argues that "we should not separate the score from the purpose of keeping score in the first place: to honor and promote a given type of human excellence, whose meaning is in the *doing*, not simply in the scored result" (The President's Council on Bioethics 2003, p. 143). Thus, we need to consider the character of human agency (as an intrinsic feature of human nature, not as a social construction) and what the Council calls "the dignity of human activity".

Pitching machines can "outperform" humans, but we do not admire them, because they do not perform as humans. In the human case, "active performance" includes not only the autonomic activity of an organism functioning without conscious choice or direction: "It also includes the self-directed performance of various *chosen* human

activities''. It further includes our anxieties, aspirations and other emotions. The agent performing and how the agent is related to the activity is so central to the performance. The purpose of competitive running, for example, is not to cover a given distance as quickly as possible. Though we have cars and airplanes, we do not for that reason stop running competitively. We still run or play chess, even though cars can go faster and computers can ''execute'' (not ''play'') a better game, because these activities retain a dignity unique to themselves as *human* performances.

The home-run slugger on steroids is still, naturally, a human being, but he is ''less obviously *himself* and less obviously *human* than his unaltered counterpart''. He has become more like an animal bred or a machine built for competition than a self-willing, self-directing human agent. He does the deed (hitting home runs) and he may break the record, but ''he is also (or increasingly) the passive recipient of outside agents that are at least partly responsible for his achievements''. The performance and achievements are less *his*, and for that reason they are less excellent. He has not cheated his competitors so much as himself and the dignity of the game or the activity itself. The fans with the asterisk signs are saying that Bonds reached his achievement ''on the cheap''. He was ''performing'' in the other sense of that term as an illusion or separation of what one does from who one is: ''performance as the make-believe acting of actors rather than the self-revealing doings of genuine doers''. So, what makes an act truly human and truly one's own, and how does biotechnology relate to this?

As noted above, human acts entail conscious planning, will and choice. The thin approach, focused on autonomy and informed consent, will argue that there can be nothing more human than a deliberate decision to enhance our performances through drugs or genetic interventions. This would be precisely the expression of our rational will and our human ability ''to transcend nature's and our personal limitations in a way no animal can''.

The report responds by showing our integral nature as mind–body whole. It first notes the difference between perfecting a skill by using it knowingly and repeatedly and perfecting a skill by means that bear no relation to its use:

> *on the plane of human experience and understanding*, there is a difference between changes in our bodies that proceed through self-direction and those that do not, and between changes that result from our putting our bodies to work and those that result from having our bodies ''worked on'' by others or altered directly. (The President's Council on Bioethics 2003, p. 129)

In training, ''The capacity to be improved is improved by using it; the deed to be perfected is perfected by doing it''. The active cultivation of our natural gifts is intelligible: ''We can understand the connection between effort and improvement, between activity and experience, between work and result''.

With biotechnological enhancements, by contrast, we ''make improvements to our performance less intelligible, in the sense of being less connected to our own self-conscious activity and exertion''. Of course, Bonds still trained hard and fought hard for the record. But ''the changes in his body are decisively (albeit not solely) owed to the pills he has popped or the shots he has taken, interventions whose relation to the changes he undergoes are utterly opaque to his direct human experience''. He is partly alienated from his own doings. He becomes ''better'' by no longer fully being himself.

His decision to take steroids is, in one sense, a rational and autonomous choice, however:

> it is a choice to alter oneself by submitting oneself to means that are unintelligible to one's own self-understanding and entirely beyond one's control. In contrast, with the choice to adopt a

> better training regimen, it is a calculating act of will to bypass one's own will and intelligibility altogether. (The President's Council on Bioethics 2003, p. 147)

Our given embodiment – a feature of our moral lives wholly absent from thin approaches – establishes meaningful parameters within which will can emerge. We can choose to work with or against these limits, but "choosing" to bypass them entirely is not being a willful human agent any more, but more like an artifact – a product rather than an experiencing and self-directed person. Removing the limits is not liberating the self. It is erasing our specific identity that makes the self and self-directedness possible and achievement human and meaningful.[7]

When we watch a human runner in a race, we are not witnessing "a rational agent riding or whipping a separate animal body". We behold a mind–body gracefully and harmoniously at work, driven by discipline and focus. Furthermore, the activity is not generically embodied, but is the work of a particular individual. We all have unique identities displayed in our unique bodies and abilities. In pursuing excellence, we are all cultivating our *own* possibilities. In taking biotechnological enhancements, we are giving ourselves foreign gifts that are not our own. Thus, although it is human to strive to be less imperfect, "It is doubtful ... that biotechnical transformations of our bodies – or minds – will contribute to our realizing this goal *for ourselves*" (p. 149). In other words, we will be someone and something else, neither in full command of our rational will, nor in native oneness with our bodies.

The irony is that in freely choosing biotechnological enhancements, "we are choosing to become less than normally the source or the shapers of our own identity". We also flaunt the excellence of our own individual physical gifts that superior performances are meant to complete and display. Finally, "by using these technological means to transcend the limits of our natures, we are deforming also the character of human desire and aspiration, settling for externally gauged achievements that are less and less the fruits of our own individual striving and cultivated finite gifts" (The President's Council on Bioethics 2003, p. 150). The Council summarizes the argument as follows:

> Biotechnology seems to promise the triumph of the will with less willing effort and bodily excellence in bodies not quite ours: we can become what we desire without being the responsible and embodied agents of our own becoming. A more human course, however, might be accepting that we cannot will ourselves into anything we like, but we can still live with the dignity of being willing, self-directed, embodied, and aspiring persons, not biological artifacts, not thoroughbreds or pitching machines. Better, in other words, to be great human runners with permanent limitations than (non)human artifacts bred to break records. (The President's Council on Bioethics 2003, pp. 150–151)

The report does not offer answers about which biomedical interventions for the sake of superior performance are or are not consistent with our flourishing as self-directed agents, but it does, far more than the thin approach, clarify what is at stake and develop a moral vocabulary and set of standards for evaluating particular techniques in particular contexts. In other words, it offers a better model for thinking and talking.

Conclusion

Citizens of modern liberal societies tend to think and talk in terms of rights, risks and justice. The substantive questions raised by biotechnology stir our intuitions, but we are often befuddled and confounded in our attempts to articulate our ideas, because we are not accustomed to thinking and talking openly about the good. The Council was relatively

unique as a government entity designed to promote a thicker inquiry so that our thinking and talking could be adequate to the questions raised by science and technology.

The kind of thicker moral inquiry practised by the Council offers a way to debate questions that we routinely face but that, with our thinned mindsets and moral vocabularies, we have largely forgotten how to ask. Carl Elliott (1999) explained that the price of not retrieving a thicker way of thinking about the human condition

> is that by talking exclusively in the language of secular liberalism, we may start to think that way as well; by agreeing that we cannot impose on others our assumptions about meaning and ultimate purpose, we run the risk of failing to think about them at all. The result, if we are not careful, is a moral vocabulary that is altogether flatter: more pragmatic but more mundane, functional but incapable of conveying a sense of deep significance (pp. xxxii–xxxiii)

The Council did not seek consensus and often did not produce tidy recommendations at the end of its reports. This may be seen as a weakness of thicker moral inquiry, i.e. that it fails to produce clear policy guidance. Though this is often the case, it is important to keep in mind that ethics committees do much more than advise policy-makers on particular problems. Indeed, such advice is routinely ignored or simply unable to keep up with the pace of political cycles. The benefits of thicker inquiry will often come on longer timelines and deeper personal and cultural levels. Like the benefits of liberal education, these outcomes are hard to measure, but they are important. We must avoid thinking that the only things that count are what can be counted.

Yet how can we conceive of the fruits of thicker knowledge politics? One way to understand the benefits is in terms of a theory of "informed desire satisfaction". By listening in on the substantive conversation of the Council, one will get a better sense of what is truly desirable by becoming aware of "the consequences of all the different lines of conduct open to them" as they become "adequately realized in imagination" (Sidgwick 1922, pp. 111–112). One may come, for example, to doubt the value of a life that includes the use of pharmacological enhancements – a life that at first glance seemed attractive. This way, we may come to reconsider and revise our values and plans in life in response to an expanded imagination. The transformation of bare to informed preferences is a reasonable way to consider the value of thicker conversation, and it is compatible with the perfectionist ideal of "positive liberty", or the idea that in certain ways humans require help from the state to achieve their better selves. We owe it to one another, as Mill argued, to help distinguish the better from the worse.

Yet even if we have a reasonable definition of what it would mean to possess "adequately informed" desires, it is not best to conceive of the fruits of thicker knowledge politics in terms of subjective preferences. This is because subjectivism, as a stand-alone theory, is a severely flawed account of human flourishing, and its flaws are not removed by substituting informed for bare preferences. The subjectivist desire–satisfaction theory holds that something is valuable just in case, and because, it would contribute to the satisfaction of desires. However, as David Brink (1989) notes, "this seems to get things just about the opposite way around in many cases; we desire certain sorts of things *because we think these things valuable*" (p. 225). Indeed, many of the activities, traits and relationships we intuitively consider part of a meaningful and worthy life (e.g. autonomy, knowledge, excellence, friendship and virtue) often do not satisfy the desires of their possessors.

The question that a thicker conversation helps us face is not which alternative we *do* most want (if we had informed desires), but rather which alternative is most *worth* wanting: "to find out, we try to look *past* our current desires and preferences to the value or disvalue of the objects" (Sher 1997, p. 186). This is commonplace in our decisions, as we regularly

presuppose that we are responding to values that existed prior to our desires or choices and thus that some things are more worthy of choice than others. What thicker knowledge politics provides is a better perspective on our situation as we engage in these decisions.

Notes

1. Kass stepped down as chair just prior to the second executive order renewal on 9 September 2005. Dr Edmund Pellegrino took over as chair and Kass remained on the Council as a regular member.
2. The phrase "public bioethics" was coined by John Fletcher (1994) to denote "inquiry supported by government to identify the major ethical considerations and public policy implications of controversial issues in biomedicine" (p. 84).
3. Examples of communities provided by Engelhardt include Orthodox Jews, Eastern Orthodox Christians, Roman Catholics and Maoist communists.
4. This is the case because "in secular philosophical reasoning, ultimate questions cannot be answered" (p. 11). Secularization (like historicism) is the temporalization of the eternal or the understanding that the eternal is no longer eternal.
5. True, the creation of ethics advisory bodies requires tax dollars, so in this minimal sense it is a coercive act to use taxpayer money to support a kind of inquiry not everyone likes. However, this is utterly trivial when compared with other controversial uses of taxpayer dollars, including those that go to the conduct of war.
6. There is an interesting ontological distinction here between the Council's Aristotelian analysis and this point about equity and autonomy. The Council primarily focuses on human nature as defined by intrinsic qualities and capacities. The point about assemblages views humans as socially defined by extrinsic circumstances. Both ways of looking provide important insights. Unfortunately, many proponents of the social-constructivist approach dismiss human nature as mere myth.
7. This insight is developed in profound detail in Jonas's ontological investigation of life and the living organism (1966). Far from being the achievement of a disembodied will, identity is made possible as a self only through the metabolic workings of the body. The metabolic process signals not just new patterns of material exchange. It is also already and always the essence of identity and interiority that comprise consciousness or selfhood.

References

Ackerman, B., 1980. *Social justice in the liberal state*. New Haven, CT: Yale University Press.
Agar, N., 2004. *Liberal eugenics: in defence of human enhancement*. Malden, MA: Blackwell.
Ahvenharju, S., 2006. *Comparative analysis of opinions produced by national ethics councils*. Helsinki: Gaia Group Ltd.
Anscombe, G.E.M., 1958. Modern moral philosophy. *Philosophy*, 33 (124), 1–19.
Barry, B., 1965. *Political argument*. New York: Humanities.
Beauchamp, T. and Childress, J., 1979. *Principles of biomedical ethics*. Oxford: Oxford University Press.
Borgmann, A., 1984. *Technology and the character of contemporary life*. Chicago, IL: University of Chicago Press.
Brink, D., 1989. *Moral realism and the foundations of ethics*. Cambridge: Cambridge University Press.
Dworkin, R., 2000. *Sovereign virtue: the theory and practice of equality*. Cambridge, MA: Harvard University Press.
Elliott, C., 1999. *A philosophical disease: bioethics, culture, and identity*. New York: Routledge.
Engelhardt, T. Jr., 1996. *The foundations of bioethics*. 2nd ed. New York: Oxford University Press.
Evans, J., 2002. *Playing God? Human genetic engineering and the rationalization of public bioethical debate*. Chicago, IL: University of Chicago Press.
Ezrahi, Y., 1990. *The descent of Icarus: science and the transformation of contemporary democracy*. London: Harvard University Press.
Fletcher, J., 1994. On restoring public bioethics. *Politics and the life sciences*, 13, 84–86.
Fletcher, J. and Miller, F., 1996. The promise and perils of public bioethics. *In*: H. Vanderpool, ed. *The ethics of research involving human subjects: facing the 21st century*. Frederick, MD: University Publishing Group, 155–184.

Fuchs, M., 2005. *National ethics councils: their backgrounds, functions, and modes of operation compared*. Berlin: Nationaler Ethikrat. Available at: http://www.ethikrat.org/_english/publications/Fuchs_International_Ethics_Councils.pdf.

Greenberg, D., 2001. *Science, money, and politics: political triumph and ethical erosion*. Chicago, IL: Chicago University Press.

Hurka, T., 1993. *Perfectionism*. Oxford: Oxford University Press.

Jasanoff, S., 1990. *The fifth branch: science advisors as policymakers*. Cambridge, MA: Harvard University Press.

Jonas, H., 1966. *The phenomenon of life*. New York: Harper and Row.

Jonsen, A., 1998. *The birth of bioethics*. New York: Oxford University Press.

Kass, L., 2005. Reflections on public bioethics: a view from the trenches. *Kennedy Institute of Ethics journal*, 15 (3), 221–250.

Kymlicka, W., 1989. *Liberalism, community, and culture*. Oxford: Clarendon.

Larmore, C., 1987. *Patterns of moral complexity*. Cambridge: Cambridge University Press.

Lasswell, H., 1936. *Politics: who gets what, when, how*. New York: Whittlesey House.

Lindblom, C., 1959. The science of muddling through. *Public administration review*, 19 (2), 79–88.

Maclean, A., 1993. *The elimination of morality: reflections on utilitarianism and bioethics*. New York: Routledge.

McGinn, R., 1994. Technology, democracy, and the anachronism of traditional rights. *Journal of applied philosophy*, 11 (1), 57–70.

Pielke, R. Jr., 2007. *The honest broker: making sense of science in policy and politics*. Cambridge: Cambridge University Press.

Poland, S.C., 1998. Bioethics commissions: town meetings with a "blue, blue ribbon". *Kennedy Institute of Ethics journal*, 8 (1), 91–109.

Raz, J., 1986. *The morality of freedom*. Oxford: Oxford University Press.

Sarewitz, D., 2000. Science and environmental policy: an excess of objectivity. *In*: R. Frodeman, ed. *Earth matters: the earth sciences, philosophy, and the claims of community*. Upper Saddle River, NJ: Prentice Hall.

Sarewitz, D. 2003. *Does science policy exist? And if so does it matter? Some observations on the US R&D budget*. Available at: http://www.cspo.org/products/papers/budget_seminar.pdf

Sarewitz, D., 2004. How science makes environmental controversies worse. *Environmental science and policy*, 7 (5), 385–403.

Scanlon, T.M., 1998. *What we owe to each other*. Cambridge, MA: Belknap.

Sher, G., 1997. *Beyond neutrality: perfectionism and politics*. Cambridge: Cambridge University Press.

Sidgwick, H., 1922. *Methods of ethics*. 7th ed. London: Macmillan.

Strauss, L., 1953. *Natural right and history*. Chicago, IL: University of Chicago Press.

The President's Council on Bioethics, 2002. *Human cloning and human dignity: an ethical inquiry*. Washington, DC: US Government Printing Office.

The President's Council on Bioethics, 2003. *Beyond therapy: biotechnology and the pursuit of happiness*. Washington, DC: Government Printing Office. [Another 2003 edition printed in New York: Harper Collins.]

Wall, S. and Klosko, G., 2003. *Perfectionism and neutrality: essays in liberal theory*. Lanham, MD: Rowman and Littlefield.

Wildavsky, A., 1964. *The politics of the budgetary process*. Boston, MA: Little, Brown.

Winner, L., 2004. Technology as forms of life. *In*: D. Kaplan, ed. *Readings in the philosophy of technology*. Oxford: Rowman and Littlefield, 103–113.