PROLEGOMENON TO A FUTURE HUMANITIES POLICY

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> It would be folly to set up a program under which research in the natural sciences and medicine was expanded at the cost of the social sciences, humanities, and other studies so essential to national well-being.
>
> Vannevar Bush,
> *Science—The Endless Frontier* (1945)

The relationship between science and society today is a troubled one. The first, more academic part of the trouble occurs in the literature of policy journals, while the second has engaged a wider audience including scientists, decision makers, and the general public. The first concerns science policy research, the second concerns science policy writ large. In the first case, a contextual movement has taken root that increasingly competes with a process-oriented type of research. In the second case, the federally funded research community has come under increased societal pressure to show the relevance of the $132 billion slice of the federal budget devoted to research and development. Daniel Sarewitz, for example, argues that the question to be asked in science policy is not "How much money should we spend on R&D?" but rather "What ends is this money supposed to serve?" (Sarewitz, 2003). Similarly, Daniel Callahan believes that current scientific practice is motivated more and more by the imperative to do research, and less and less by the quest for meaningful, life-enhancing knowledge and products (Callahan, 2003).

The common problem playing out in both cases is the breakdown of the belief that science can provide unambiguous answers for public decision-making. In cases such as the global warming gridlock discussed by Sarewitz and Pielke, decision-making remains stymied despite gigabytes of scientific information (Sarewitz and Pielke, 2000). Evoking the image of pushing a rope, the surfeit of information about the climate serves to highlight the gap between what science offers and what decision makers need.

Our claim is that bridging the gap between knowledge and action is not (primarily) a matter of promoting further scientific research. Nor will it be bridged only through the type of approach found in the various schools of science policy research, which take political ends and outcomes as given and seek the most efficient way to reach them. Also needed to bridge the gulf between science and its effective use is a bringing of the normative and acculturating perspectives of the humanities to bear on policy debates, complementing the research of both physical scientists and science policy researchers while helping to reach out to the public. Put differently: our understanding of science policy stands to gain considerably if it is complemented by the development of the field of humanities policy (Frodeman et al., 2003). A *humanistic* science policy can help fulfill Vannevar Bush's original vision of knowledge that contributes to the common good.

Philosophy, Science, and Policy Research

Within the policy movement, science policy plays a minor role compared to economic, health, and foreign policy. This is striking, given the growing importance of science and technology as drivers of economic growth and globalization, and as the source of both opportunities and dangers. A science policy influenced by the humanities can help address this relative inattention.

The overall policy movement takes a variety of approaches to its subjects, for example, that of economics ("policy analysis"), political science ("policy studies"), and the tradition of the policy sciences. The policy sciences created by Harold Lasswell and developed by Myres McDougal, Abraham Kaplan, and many others in the post-WWII era have never been scientific in the same way that the natural and social sciences are scientific. It is true that in both cases, "science" means a rational, rigorous, and systematic approach to problems presented to us by thought or experience. But the policy sciences, building from their pragmatist roots, have also stressed the need for taking a contextual and explicitly normative approach to problems (Lasswell, 1970; Lasswell and McDougal, 1992). The policy scientist seeks ethical as well as empirical

knowledge, and recognizes that the knowledge claims produced are not universalizable.

The pragmatism of the policy sciences gives the term "science" a more robust meaning. As Peter deLeon and Sam Overman (1997) note, "Science . . . is to be judged on the basis of its contributions toward improving the human condition. This instrumental notion of the role of knowledge in society is the basic premise of the policy sciences" (470). It is derived directly from John Dewey, who was highly sensitive to "the . . . dread dilemma of a choice between an objective science or moral values" (Levi, 1959, 286). As Dewey (1930) remarked:

> I became more and more troubled by the intellectual scandal that seemed to me involved in the . . . dualism in logical standpoint and method between something called "science" on the one hand and something called "morals" on the other. I have long felt that the construction of . . . a method of effective inquiry, which would apply without abrupt breach of continuity to the fields designated by both of these words, is at once our needed theoretical solvent and the supply of our greatest practical want. (23)

This early pragmatist tenet of "effective inquiry" formed a basis for the development of policy sciences.

The policy sciences, then, were designed to be scientific without being positivistic—"scientific" in the larger sense of being empirically grounded, systematic knowledge, in keeping with the original meaning of *logos*. By contrast, the natural and social sciences themselves are historically firmly rooted in the epistemological presumptions of positivism—the belief that valid knowledge claims are value neutral, repeatable, and context independent. Even though the Vienna Circle brand of positivism is long gone and positivism has been roundly criticized for decades, its presuppositions still find regular expression within both the scientific and policy research communities. The question is whether or to what degree science policy (as a *topic* of policy research) and the policy sciences (as a *school* of policy research) approximate Dewey's understanding of science.

The recent boomlet of post-positivist literature in the policy sciences suggests that Dewey's normative and contextual "effective inquiry" is often replaced with more positivist presumptions. According to this literature, the term "policy" is too often flattened into proceduralist jargon. William Ascher (1986) makes this observation, arguing that personal temptations and institutional pressures "push many practitioners away from solid public policy studies, back toward disciplinary specialization and irrelevance" (365). In short, even contextualized policy research often passes over the task of evaluating the worthiness of competing outcomes to focus on evaluating the relative effectiveness of different means to achieve given, unexamined goals. One may thus question whether the policy sciences have truly escaped the illicit attractions of our long, modernist love affair with objectivity and certainty.

The tendency of policy to be "scientific" in this constricted sense can be counteracted by a more conscious balancing between the empirical and the philosophical. For it is worth asking, in what ways are policies different than philosophic principles? Could it be said, for instance, that philosophers such as Plato or Machiavelli had policies? One way of understanding the relation between philosophy and policy is to see policy as the bridge between general moral and philosophic principles and particular decisions. An isolated decision does not constitute a policy; the latter properly implies a systematized, organized and methodical application of a philosophic principle or worldview. Policy making (and research into the same) involves the artful balance of general philosophic and axiological perspectives and empirical, verifiable facts, as well as an appreciation of the way that these two perspectives influence one another. It is through neglecting the philosophic pole of this process that (science) policy research can slip toward positivism.

The standard and still dominant account of values in the twentieth century has seen them as deficient by comparison with the exemplary rationality and objectivity of science. The temptation, then, has been to turn values into societal facts—into the objects of social science—or to ignore them altogether. This is an understandable reaction to the contemporary state of values debates. For not only do values resist quantification and evaluation under controlled conditions; practically speaking, values discussions regularly degenerate into interminable conflict.

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Nonetheless, the gulf between scientific and values debates is neither as great nor as distinct as might be assumed. On the side of science, one need not embrace the extremes of post-modern thought to recognize that complete objectivity of science is a chimera. Today it is generally acknowledged that the scientific enterprise is and must be built upon various sets of values—those that determine which scientific facts are to be sought, as well as the standards used for evaluating scientific claims (e.g., Proctor, 1991).

This point is of course consistent with the observation that science has been successful by any number of measures. Nonetheless, "objective" truths must be seen as constructs, insofar as they are created by abstracting from the ongoing flow of life in order to build a neatly packaged artificial world—the experiment, and more recently, the computer model—where every variable can be controlled. While these results surely count as truth, such truths reside in a highly formulized or Platonic realm whose relationship to our personal and public lives requires an act of interpretation. Within the real world of lived experience we cannot bracket things off a piece at a time; neither can we control more than a small number of the variables to which events are subject. Nor can we reestablish initial conditions again and again. Outside the lab we are caught in the non-repeatable flow of history. Heraclitus' dictum that you can never step into the same river twice implies that we are always reasoning by analogy—comparing a law of nature with a specific natural phenomenon, or lab results with what happens in the field, or our own time with bygone eras. Insufficient as it may be, generals tend to fight the last war because a weak analogy is often better than none at all.

The siren song of scientific objectivity has been seductive in large part because our understanding of science has been based in the laboratory. Viewing science from the perspective of field sciences such as geology or ecology highlights how debates over science are oftentimes not so different from value debates (Frodeman, 2003). Both require a congenial discursive environment where appeals to reason are possible, and where the parties to the discussion show intellectual sympathy for each other's points of view. As in scientific debates, participants in ethical and political discussions must embody "the desire for reasonable agreement, not the pursuit of mutual

advantage" (Scanlon, 1982, x). In both cases, people give reasons for their opinions in order to see if these opinions can find justification in the mind of another, and commit themselves to changing their mind in the face of superior evidence or reasoning. It is a curiosity of modern culture that these (humanistic) qualities of mind have been much more assiduously cultivated in the sciences than in our ethical and political debates.

It is only by focusing on the polarities—science in the sense of Newtonian mechanics, and values in difficult cases such as euthanasia and abortion—that we have been able to sustain the ultimately counterproductive language of subjective versus objective knowledge. In the real world, decision makers find that problems lie between these poles. Our greatest obstacle to better discussions about values may be the prejudice that the qualities of open-mindedness and evidential reasoning apply to only a narrow range of human experience defined as "science." Researchers in the policy sciences, if they remain true to their pragmatist past, can broaden this range of open-mindedness and social reasoning to include debates about the good life. In this prolegomenon to a future humanities policy, we suggest that the humanities can play an important role in this widening of reasonable debate.

Re-envisioning Values in Policy Debates

What is at stake here is of course something more than just the future of a given policy school (scientific or otherwise) or scientific research program. The real problem is our society's over-reliance upon technical solutions to our problems—fixes involving a new tax policy, economic mechanism, or scientific or technological breakthrough that allow us to overcome a policy impasse without making a change in ourselves. Of course some problems are amenable to technical solutions, but most live in a gray area that requires a mix of science, technology, and values analysis. For example, wildfire policy has scientific (fire ecology), technical (fire retardant), and axiological (the meaning of a healthy forest) aspects. Stephen Pyne (1999, x) remarks that in wildfire management, "humanistic scholarship" is necessary, because the "technology could enable but not advise, [the] science could advise but not choose," and that ultimately the world of political economy needs "the vitality and rigor

of philosophy, literature, and history if it were to choose wisely." In the end, complex problems like those presented in wildfire management present a bewildering mix of facts and values, and we are forced to examine, and perhaps alter, our beliefs about the right course of action. This requires public forums capable of fostering greater openness to self-improvement, better-tempered conversation, and deeper reflection upon the meaning of the good life within a technoscientific world. These goals have traditionally belonged to the humanities; progress in our public debates requires that they become part of our policy processes.

Informed by the concepts, tools, and methodologies found in the humanities—e.g., the wider perspective offered by history, the empathic understanding generated by literature, poetry, and art, and the logical clarity offered by philosophy—the humanities aids policy context analysis and enhance reflective dialogue among stakeholders in the policy process. It supplements the values mapping efforts of the social sciences by providing new categories of description and alternative methods of evaluating policy making. As a means of policy resolution, humanities policy generates opportunities for values education, clarification, enhancement, and transformation.

Granted, the humanities are not widely celebrated for their practical utility. For over a century now they have been justified largely on romanticist grounds, their worth a matter beyond basic necessities, consisting in the distinctive pleasures of the life of the mind. This worthy point should not blind us to the fact that since ancient times what we today call humanistic reflection was considered essential to a good life.

Narrow and Wide Humanities Policy

Critiques of current science policy—or more simply, the dawning recognition that the simple application of the natural sciences alone is unlikely to solve the societal problems in whose name they are justified—have led public funding agencies to make modest investments in social science. For example, research into the social and political aspects of climate change—known as "human contributions and responses to global change"—receives around two percent of the US Global Climate Change Research budget, totaling $50

million. Even here, however, the overwhelming majority of this investment goes toward quantitative (often economic) research. The investment in the humanistic aspects of issues such as climate change has remained quite small. The Human Genome project co-sponsors, the National Institutes of Health (NIH) and the Department of Energy (DOE), have devoted five and three percent of their respective budgets to societal impacts research.

There is of course some overlap between the fields, but to draw out the differences: the social sciences describe values, while the humanities seek to improve them. Drawing from fields such as philosophy, literature, art, history, and religion, humanities policy applies humanistic knowledge and perspectives to problems in order to clarify, explore, challenge, and redefine patterns of thought among stakeholders in the policy process. This integration of the humanities into policy deliberations can take different (and complementary) paths, which may be summarized in terms of narrow and wide humanities policy.

The narrow approach to humanities policy is already present today in a variety of federal contexts, such as Ethical, Legal, and Societal Implications (ELSI) program within the Human Genome Project, the National Nanotechnology Initiative, and Ethics and Values Studies (EVS) within the National Science Foundation's Social Science Directorate. This approach is characterized by a predominant focus upon questions of ethics and epistemology. Bracketing areas of philosophic concern such as metaphysics and aesthetics, this approach focuses on questions of logic and knowledge within issues such as the reliability of genetic testing for susceptibilities to various medical conditions, and issues such as privacy, autonomy, and prior and informed consent. Similarly, issues such as patient and research volunteer safety and fairness in the use of genetic information by insurers, employers, and the courts have loomed large.

Narrow humanities policy can also be defined in terms of its focus upon process rather than product. It takes a proceduralist approach to questions of values, emphasizing that the right result is the one that comes from following the proper procedures: open deliberation, prior and informed consent, and opportunity for dialogue. This perspective urges decision-makers and participants to overtly pronounce and defend their value interests, rather than

treat them as personal preferences or purely given. Practitioners are urged to be open and honest about their value commitments and make values an explicit part of their rationale for decision making, just as scientific facts are.

In seeking to uncover and clarify motivations, humanities policy can proceed by means of analysis or by shared dialogue. In the former case, humanities policy compares the stated ("formal") goals of an agency with its actual ("effective") goals, and incorporates some tenets of the policy sciences. Among the policy research community, the policy sciences may come closest to the value-critical analysis promoted by humanities policy. By drawing out logical implications and, in some cases, contradictions, we can uncover philosophic values and assumptions that underlie more visible actions and decisions. In this respect, humanities policy reveals the existing, if otherwise invisible, motivating values within an agency or science policy. While such values, once revealed, may then become open to public or private critique, the specific context will determine whether they are then submitted to evaluation and possible refinement, or whether the analysis will simply be meant to lead to greater transparency and more efficiently focused energies.

In contrast, wide humanities policy highlights two additional factors to those covered by narrow humanities policy: drawing upon a wider set of humanities perspectives and emphasizing values education, evaluation, and modification. Humanities policy should not only be concerned with seeing that actions are consistent with values; it should also determine, as far as possible, which values are the best ones. Humanities policy in this stronger form seeks not just an accounting of values, but an active role in shaping this landscape.

Wide humanities policy attempts to reshape the fundamental landscape of policy discussions: it is an attempt at world making, not just map-making. Of course, the new landscape envisioned by wide humanities policy is not pre-formed; its shape and nuance will result from active dialogue on the values and goals of participants and decision-makers. Humanities policy rejoins the battle to identify and promulgate values that improve society and create good policy. It is a rejection of the view that sees values as inevitably subjective.

Moreover, wide humanities policy takes up traditional areas of philosophical reflection that have fallen into disfavor, investigating questions such as what it means to be human. It believes that many of the issues being brought up by science and technology today return us to traditional aesthetic, metaphysical, and theological questions. For instance, possible future advances in biotechnology do more than simply raise issues of safety and prior consent; they also go to the heart of what it means to be human. What would be the consequences for our sense of ourselves if we can consciously design children? How would our sense of accomplishment be affected if our skills and achievements were picked by someone else? (see McKibben, 2003; Sandel, 2004)

Aesthetics provides a prominent example of the possible contribution that the humanities can add to policy making. While the analysis of beauty has long been ruled by romanticist assumptions that see art as predominantly a means of self-expression, aesthetics has also been understood as tasked with forcefully bringing the reality of a situation home to people (Heidegger, 1971). On this view, aesthetics consists in *realization*, making something real and relevant to people's lives, whether it is a scientific fact or a perplexity that a community finds itself in. Pictures, paintings, and fictional narrative become bridges between bare fact and poignant meaning, places where people "get it," fully grasping the importance of, say, scientific insights to their daily lives.

Aesthetics already plays a constitutive (if usually unacknowledged) role in the framing of public policy. Take the example of acid mine drainage. Acid mine drainage (AMD) is a water quality problem common to rivers and lakes affected by water draining from mine sites. It is a critical water quality issue around the world, affecting nations from the Far East to Europe and the Americas. Estimates of the costs of cleanup within the US alone are in the tens of billion of dollars. As a matter of ongoing public policy, the beauty and popularity of a damaged area is factored into the decision process (along with other criteria such as cost, proximity to population areas, and degree of damage). Humanities policy can help improve such deliberations by making them more honest, systematic, and self-aware, as well as help them appreciate the ways in which aesthetic judgment are susceptible to reasonable discussion (Frodeman, 2003).

Religious thought provides another notable example of the possible contribution of hu-

manities policy. Part of the reason that values education has been passed over within the policy movement lies in our lack of appreciation of the spiritual dimension of scientific practice, whether it be natural, social, or policy science. The point here has nothing to do with sectarian religion. Becoming a scientist requires much more than technical skill at memorizing congeries of facts or manipulating formulas, equipment, or methodology. It also requires more than the mysterious spark of creativity that seizes upon a problem in an original way. Becoming a scientist requires disciplining the soul as well as the intellect. The patient sifting of facts, the willingness to set aside personal desires to follow evidence wherever it leads, the fair-mindedness that helps an opponent improve his or her own argument to the detriment of one's own, the ability to live with uncertainty as a permanent fact of life: these qualities constitute what can be identified as the spiritual element lying at the heart of science.

This point has real implications for humanities policy. Consider, for instance, a Buddhist perspective on policy. At its root Buddhism is concerned with the management of desire, offering a psychological and philosophical reading of our troubles as being less based in the lack of possessions, and more rooted in our unwillingness to place limits on our wants. Buddhist practice—for Buddhism is primarily a set of practices rather than a system of beliefs—focuses on loosening our attachment to our own wants. Suffering results from the attachment to what we want; lessen this, and we lessen our heartache.

Such points have generally been taken as a matter of personal philosophy. But as an example of a humanities policy, a Buddhist-influenced science policy could complement our predominantly scientistic approach to problems by recognizing the folly of dogmatic devotion to technological fixes (see Sivaraksa, 1992). This approach toward humanities policy could thus help educate us to be more judicious in the pursuit of our own desires within policy debates.

As suggested earlier—and not without a touch of irony—the most effective way to promote such practices may be to extract and generalize the set of skills found within scientific practice, adapting them for the world of policy-making and political debate. But if an education in personal values is possible within sci-

entific practice, why not within the practice of policy-making and political debate? This would not, of course, mean an education in what is the "right" opinion about, e.g., welfare payments or the size of government, but rather an increased attention to improving the process and demeanor of political debate through personal transformation. This transformation also hearkens back to the idea of *Bildung*, a German term that defines education as largely consisting in the development of a self that is more self-aware, empathetic, and self-controlled.

The outstanding current example of a wide approach to humanities policy is the President's Council on Bioethics, which uses a wide range of humanities materials (philosophy, literature, religion, etc.) to inform its deliberations on issues such as stem cell research, cloning, genetic enhancement, and aging. The field of bioethics, with its origins in the 1960s, is an exemplary case of narrow humanities policy, focusing on various questions of ethics and epistemology such as the autonomy and rights of patients, and devising more nuanced definitions such as that of brain death. In contrast, the President's Council has been distinctive in expanding the range of topics to include the full range of the humanities. Its recent compilation of readings, *Being Human*, draws from a wide variety of poetry, sacred books, history, philosophy, science, and personal essays (President's Council on Bioethics, 2003).

The reactions that the Council's deliberations have elicited have been telling. On the one hand, the Council's attempt to bring an expanded sense of the humanities to bear in policy formulation has been criticized for its technological pessimism and perceived politically conservative agenda, and for its lack of explicit policy recommendations: "there are times for getting to the damn point" (Brainard, 2004). But on the other, *Being Human* has sold out its initial printing of 5000 copies, and its work has been praised in a number of publications as a groundbreaking effort in alerting the public to the opportunities and dangers of biotechnology (e.g, Schaub, 2004). The Council's goal of informing rather than directing public conversation exemplifies the possible contributions of humanities policy.

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Conclusion

This essay constitutes only a prolegomenon to a future humanities policy. The only real way to tell whether the claims made here are cogent will be to test them through a series of case studies (e.g., Frodeman, 2003). Only through a sustained exploration of issues such as climate change, biotechnology, and nanotechnology will we be able to identify the consequences of a serious commitment to humanities policy.

Nonetheless, this essay does serve a modest purpose. For even the bare introduction of the idea that the humanities have significant contributions to make to policy debates serves as an invitation to keep an eye out for neglected dimensions of societal issues. The development of a more humanistic approach to science policy research will best occur through a thousand inquiring thoughts and incremental actions in as many situations.

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