THE POLICY SCIENCES, SCIENCE POLICY, AND THE DEVELOPMENT OF HUMANITIES POLICY

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The relationship between science and society today is troubled. The first, more academic part of these troubles has played itself out in the literature of policy journals, while the second has engaged a wider audience including scientists, decision makers, and the general public. The first crisis is one of the policy sciences; the second is one of science policy.

The term ‘crisis,’ although dramatic, is nonetheless justified. In the first case, policy scientists are concerned over the very future of their trade (Pielke, 2004). Doubts regularly surface in the policy literature about the viability and utility of Lasswell’s original conception of a problem oriented, multidisciplinary, context sensitive, and explicitly normative science of democracy (Lasswell, 1970). In the second case, federally funded scientists are under increased societal pressure to show the relevance of the $132 billion slice of the federal budget devoted to research and development. Sarewitz summarizes this growing concern when he 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) In other words, there is a substantial demand to transform our current science budget policy into a true science policy.

In truth, however, these phenomena form a common gap rather than two separate crises. The common problem playing out in both developments is the breakdown of public decision making in complex and ambiguous situations. In these cases — increasingly the norm rather than the exception — decision making is stymied despite gigabytes of scientific information. Evoking the image of pushing a rope, this surfeit of information only serves to highlight the gap between what science offers and what decision makers need (see Sarewitz et al., 2000).

Our claim is that bridging this gap is not (primarily) a matter of promoting further scientific research. Nor will it be bridged through the type of "scientific" approach assumed by the policy sciences, whether this approach is applied to facts or values. Our best hope for bridging this gulf lies in bringing the normative and acculturating perspectives of the humanities to bear on our policy debates in a way that complements the research of both physical scientists and policy scientists, thereby making their work more relevant to society. The policy movement needs to supplement its ongoing work within science policy with the development of the field of humanities policy (Frodeman et al., 2003).

1. Positivism's lure in the policy sciences

The policy sciences created by Lasswell and developed by McDougal, 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 the problems presented to us by experience. However, the policy sciences have also stressed the need for taking a contextual and explicitly normative approach to problems (Lasswell and McDougal, 1992). The policy scientist produces ethical as well as empirico-analytic knowledge, and recognizes that the knowledge claims produced are not universalizable. The synthesis of normative and factual beliefs that is the central task of the policy sciences hearkens back to Dewey’s philosophy of knowledge in society (Dewey, 1960).

The policy sciences, then, are designed to be scientific without being positivistic — “scientific” in the larger sense of being empirically grounded, systematic knowledge. But the natural and social sciences themselves are firmly rooted in the epistemological presumptions of positivism — the belief that valid knowledge claims are value neutral, repeatable, and context independent. One may thus question whether the policy sciences have truly escaped the gravitational pull of such assumptions. Moreover, it is worth asking whether the very term “policy” itself slants the issue. In what ways are policies different than philosophic principles? Could it be said, for instance, that philosophers such as Plato or

Machiavelli had policies? Or does policy-speak flatten our thinking by marginalizing debate about the characteristics of the good life, reducing such questions to debates over means and procedures?

One indication that the influence of positivism remains strong is the recent boomlet of post-positivist critiques of the policy movement (e.g. deLeon, 1998). A second indication is that despite the central role that values play in policy debates and decision making, the policy sciences have not developed an organized approach toward values education. This is true also of the more broadly conceived policy movement. A tour through theories of the policy process reveals that only the Advocacy Coalition Framework takes values education ("policy learning") seriously, and even then only to a limited extent (Sabatier, 1999). The policy sciences lack a body of thinking dedicated to identifying means of improving community and institutional values through a process of dialogue and (self) criticism. Such an approach has been set aside as impossible, because of our supposed inability to provide an account that one set of values is any better than another. Of course, this occurs at the same time that values such as fairness, open-mindedness, and respect for evidential reasoning are heralded by everyone, and are applied to questions ranging from the local to the global.

The standard account of values in the 20th 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.

Nonetheless, the gulf between scientific and values debates is neither as great nor as distinct as has been assumed. On the side of science, one need not embrace the extremes of post-modern thought to recognize that the 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.

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, created by abstracting from the ongoing flow of life in order to build a neatly constructed 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 an ideal or Platonic realm whose relationship to our personal and public lives requires an act of interpretation. Within the real world we cannot bracket experience 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 because our understanding of science has been based in the laboratory. Viewing science from the perspective of field sciences such as geology or ecology, where facts are more clearly well-constrained interpretations, highlights the fact that our debates over science are not so different from value debates (Cf. 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 point 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). 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 encompassed by science.

2. Re-envisioning Values in Policy Debates: Narrow and Wide Humanities Policy

> 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)

What is at stake here is more than just the future of a given policy school or scientific research program. The real problem highlighted by these dual crises is

our over-reliance upon technical solutions to our problems — fixes involving a new tax policy, economic mechanism, or scientific or technological breakthrough that allows us to overcome a policy impasse without making a change in ourselves. While useful, such technical fixes need to be counter-balanced by decision processes that focus on ways to foster 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 been part of spiritual literature; progress in our public debates requires that they become part of our policy processes.

To promote these qualities we turn to the humanities as a source of knowledge capable of mobilizing society towards valued outcomes in the absence of certainty. This is in part a return to the original Lasswellian principle of explicit normative considerations. From this perspective, our argument can be located in the stream of recent post-positivist literature in the policy sciences. Our brand of post-positivism, however, is distinctive in its embrace of humanities insights as a source of policy knowledge.

While making explicit the “values” and “myths” (see Clark, 2002) of stakeholders in the policy process, Lasswellian frameworks tend towards accommodating existing values, stopping short of directly engaging them. Admittedly, values can include survival requirements and other positions that

simply are not negotiable. Nevertheless, a fundamental schism in the policy movement has encouraged its slide toward positivism. For policy has had a bias toward manipulating society or the world “out there” rather than engaging and transforming the inner worlds of human wants, needs, and desires.

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 — we suggest that humanities policy can aid policy context analysis and enhance reflective dialogue among stakeholders in the policy process. Such an approach supplements the 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 can generate opportunities for value clarification, enhancement, and transformation.

The humanities are not usually celebrated for their practical utility. For over a century now they have been justified largely on romanticist grounds, their worth a matter beyond utility, consisting in the distinctive pleasures of the life of the mind. This is a worthy point; but it should not blind us to the fact that since ancient times what we today call humanistic reflection was considered essential to a good life. Even as recently as a hundred years ago humanistic education was considered the necessary training ground for creating the preconditions of democracy. It thus

behooves us to consider the potentially useful applications of a liberally educated intellect when applied to practical affairs (see Moulakis, 1994).

Critiques of science policy — or more simply, the dawning recognition that the natural sciences alone are unlikely to solve our problems — 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 a great deal of 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 contexts, such as ethical, legal, and societal implications (ELSI) programs within the Human Genome Project and 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. Proceeding from modernist assumptions that largely bracket 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 loom 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 should 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, in the language of the policy sciences, the stated (“formal”) goals of an agency with its actual (“effective”) goals. By drawing out logical implications and, in some cases, contradictions, we seek to uncover philosophic values and assumptions that underlie more visible actions and decisions. In this respect, humanities policy reveals the existing, if otherwise invisible, humanities policy within an agency or science policy. While such policies, once revealed, may then become open to public or private critique, the specific context will determine whether the underlying values 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.

By wide humanities policy we mean to highlight two additional factors to those covered by narrow humanities policy: drawing upon a wider set of humanities perspectives and emphasizing values education and modification. Wide humanities policy is not only concerned with actions being consistent with

values; it is equally concerned with determining, 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 choosing and shaping this landscape. In contrast with map-making, it attempts to reshape the fundamental landscape of policy discussions: it is an attempt at world 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 second salient example of what humanities have to contribute to policy making. While aesthetics has long existed under the romanticist presumption that art is predominantly about self-expression, Heidegger argued that the aesthetic moment occurs when the reality of a situation is forcefully brought home to people (Heidegger, 1971). Aesthetics, then, consists in *realizing* (i.e., made real) something, whether it be a scientific fact or the situation that another group finds itself in.

Buddhism provides yet another perspective on humanities 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 a Buddhist element lying at the heart of science.

This point has potent implications for humanities policy. For at its root Buddhism is concerned with the management of desire. As a worldview it offers 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.

This point has generally been taken as a matter of personal philosophy. But a Buddhist-influenced public policy could complement our predominantly technological approach to problems by recognizing the folly of dogmatic devotion to technological fixes (see Sivaraksa, 1992). Humanities policy can thus help educate us to be more judicious in the pursuit of our own desires within policy debates.

Somewhat ironically, the most effective way to do this 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. For if an education in personal values is possible within scientific 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 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 wide 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, can be seen as 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, a quite unusual occurrence for a governmental publication. 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).

Conclusion

This essay constitutes only a prolegomena 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 an extended exploration of issues such as climate change, biotechnology, and nanotechnology will we be able to identify what the likely benefits of humanities policy might be.

Nonetheless, this essay does serve a modest purpose. For the mere introduction of the idea that the humanities have significant contributions to make to policy debates and formulations opens a new field for reflection for all of us. It will only be through a thousand incremental thoughts and actions in as many situations that we can initiate the process of developing a rich humanities policy.

References

Brainard, Jeffrey. (2004) “A New Kind of Bioethics,” *The Chronicle of Higher Education* (May 21), p. A22.

Bush, Vannevar. (1945) “Science — The Endless Frontier.” Washington, D.C.: *United States Government Printing Office*. Available from http://www.nsf.gov/od/lpa/nsf50/vbush1945.htm

Clark, T. (2002) *The Policy Process: A Practical Guide to Natural Resource Professionals*. London: Yale University Press.

deLeon, Peter. (1998) “Introduction: The Evidentiary Base for Policy Analysis: Empiricist Versus Postpositivist Positions,” *Policy Studies Journal*, vol. 26, no. 1, pp. 109-113.

Dewey, John. (1960) *The Quest for Certainty: A Study of the Relation of Knowledge and Action.* New York: G.P. Putnam’s Sons.

Frodeman, Robert. (2003) *Geo-Logic: Breaking Ground between Philosophy and the Earth Sciences*. Albany, NY: SUNY Press.

Frodeman, Robert, Carl Mitcham, and Roger Pielke, Jr., (2003) “Humanities Policy — and a Policy for the Humanities,” *Issues in Science and Technology*, (Fall), pp. 29-32.

Heidegger, Martin. (1971) “The Origin of the Work of Art,” in Albert Hofstadter trans., *Poetry*, *Language*, *Thought* (New York: Harper and Row), pp. 17-87.

Lasswell, Harold D. (1970) “The Emerging Conception of the Policy Sciences,” *Policy Sciences*, vol. 1, pp. 3-14.

Lasswell, Harold, and Myres McDougal. (1992) *Jurisprudence for a Free Society: Studies in Law, Science and Policy*. (2 vols.) West Haven, CT: University of New Haven Press.

McKibben, Bill. (2003) *Enough: Staying Human in an Engineered Age*. New York: Times Books.

Moulakis, Athanasios. (1994) *Beyond Utility: Liberal Education for a Technological Age*. Columbia, MO: University of Missouri Press.

Pielke, Jr., Roger. A. (2004) “A Third Generation Perspective on the Policy Sciences,” *Policy Sciences*, (in press).

Sabatier, Paul ed. (1999) *Theories of the Policy Process*. Boulder: Westview Press.

Sabatier, Paul, and Hank C. Jenkins-Smith. (1999) “The Advocacy Coalition Framework: An Assessment,” in Paul Sabatier ed., *Theories of the Policy Process* (Boulder: Westview Press), pp. 117-166.

Sandel, Michael. (2004) “The Case Against Perfection,” *The Atlantic Monthly*, vol. 293, no. 3, pp. 50-60.

Sarewitz, Daniel, Roger Pielke, Jr., and Radford Byerly, Jr. (2000) *Prediction: Science, Decision Making, and the Future of Nature*. Washington D.C.: Island Press.

Sarewitz, Daniel. (2003) “Does Science Policy Exist, and If So, Does it Matter?: Some Observations on the U.S. R&D Budget,” Discussion Paper for Earth Institute Science, Technology, and Global Development Seminar, April 8.

Scanlon, Thomas. (1982) “Contractualism and Utilitarianism,” in Amartya Sen and Bernard Williams, eds., *Utilitarianism and Beyond* (Cambridge: Cambridge University Press), p. 115.

Schaub, Diana. (2004) “Methuselah and Us,” *The New Atlantis*, vol. 2, no. 4. Available from http://www.thenewatlantis.com/archive/4/schaub.htm.

Sivaraksa, Sulak. (1992) *Seeds of Peace: A Buddhist Vision for Renewing Society*. Berkeley: Parallax.

The President’s Council on Bioethics. (2003) *Being Human: Readings from the President's Council on Bioethics.* Washington, D.C. (December). Available from http://www.bioethics.gov/bookshelf/