
PERSPECTIVES

ROBERT FRODEMAN
CARL MITCHAM
ROGER PIELKE, JR.

Humanities for Policy—and a Policy for the Humanities

Since World War II, policymakers have increasingly viewed investments in knowledge as central to achieving societal goals—unless that knowledge is in the humanities. In 2003, less than 1 percent of the \$100-billion investment of public resources in knowledge is being devoted to the fields making up the humanities. If the federal budget is an accurate reflection of priorities, then policymakers view the humanities as having at best a marginal role in meeting the challenges facing our nation.

By contrast, many policymakers believe, in President Bush's words, that "science and technology are critically important to keeping our nation's economy competitive and for addressing challenges we face in health care, defense, energy production and use, and the

Scientists have been asked to demonstrate their value to policymakers; now humanists must show what they have to offer.

environment." This explains the overall trend in funding: Whereas federal appropriations for the National Institutes of Health (NIH) have doubled over the past six years, with a similar doubling now planned for the National Science Foundation (NSF), funding for the National Endowment for the Humanities (NEH) and the National Endowment for the Arts (NEA) have in real terms been cut by almost half since 1994. According to James Herbert of the NEH, the ratio of NSF to NEH funding has during the past two decades gone from 5:1 in 1979 to 33:1 in 1997.

This apparent consensus concerning the humanities (a tacit consensus, for few have raised the question of whether the humanities can contribute to policy in areas such as health care, defense, or the environment) is contrary to the fundamental purposes for which Congress created the NEH and NEA in 1965. The founding legislation for these agencies notes that "an advanced civilization must not limit its efforts to science and technology alone, but must give full value and support to the other great branches of scholarly and cultural activity in order to achieve a better understanding of the past, a better analysis of the present, and a better view of the future." Remarkably, little sustained effort has been given to examining the claim that the humanities can make significant contributions to policy outcomes.

We do find modest counter-trends. Several areas of policy, such as the regulation of biotechnology, are notable for the role played by the humanities in identifying alternative courses of action and their consequences. The Human Genome Project has for more than a decade devoted between 3 and 5 percent of its fund-

Robert Frodeman (frodeman@colorado.edu) is a research scientist at the Center for Science and Technology Policy Research at the University of Colorado. Carl Mitcham (cmitcham@mines.edu) is professor of philosophy at the Colorado School of Mines. Roger Pielke, Jr. (pielke@cires.colorado.edu) is the director of the Center for Science and Technology Policy Research at the University of Colorado.

ing to a research program on the ethical, legal, and social implications of its work. And in 2001, President Bush created a Council on Bioethics to “articulate fully the complex and often competing moral positions on any given issue” related to topics such as embryo and stem cell research, assisted reproduction, cloning, and end-of-life issues. Chairman Leon Kass began the council’s work by reflecting on a work of literature, Nathaniel Hawthorne’s “The Birthmark,” which explores the unintended consequences of aspirations to physical perfection.

The potential currently seen for the humanities to contribute to policy development in biotechnology is indicative of their broader potential to contribute to the development of useful knowledge in areas such as nanotechnology, homeland security, or any area where science and technology intersect with broader societal interests. We suggest that humanists interested in improving the connection of their fields with the needs of policymakers—in contrast to those who support the humanities for their intrinsic value alone—can learn from the experiences of science in the political process over the past century, as well as from those who have studied the interconnections of science and policy. These lessons indicate a need for change within the humanities, via a systematic focus on “humanities policy.” We recommend beginning with a “humanities for policy” that will lead to a new “policy for the humanities.”

Science policy trajectory

A hundred years ago science, like

the humanities today, was thought to be largely irrelevant to practical affairs, at least in terms of the public resources devoted to science. The U.S. Congress only grudgingly accepted James Smithson’s gift to establish a public institution for science; and in the decades before World War II, physicists were as unemployable as philosophers. In a remarkable turnaround, by 1965 United Nations Ambassador Adlai Stevenson could suggest that science and technology were more important to policy than anything else because they “are making the problems of today irrelevant in the long run.”

Students of science policy commonly point to World War II as a major cause of this sea change. Investments in scientific research and technological development (producing such innovations as radar and the atomic bomb) were decisive in winning the war. Before the war, and despite their claims to Congress, scientists spoke lovingly of their pursuit of “pure” science: pure because the research was conducted without consideration of use and was motivated by curiosity alone, which is not so far from an attitude shared by many humanities scholars today. After the war, in a display of both their newfound relevance and emerging political astuteness, scientists requested support for “basic” research, a term that could simultaneously be interpreted by scientists as preserving their “pure” desire to know and by policymakers as the essential first step toward practical applications.

This shift was real enough, and it is easy to demonstrate that science has played a central role

in any number of societal advances over the past half century. Science also clearly contributes to decisionmaking by helping to identify problems that otherwise could not be seen. To pick one example, global climate change would not even be a policy issue without science. Humans experience weather, the vagaries of local day-to-day meteorological conditions, but have little capacity to perceive climate over the decades and centuries across wide regions of the planet. We need the synoptic scope and methodological power of science if we are to make sense of events beyond localized human perceptions.

But the same science that has delivered climate change to policymakers as an issue to be resolved has been frustratingly limited in its ability to motivate effective progress with respect to the climate issue, even though policymakers have devoted considerable resources to scientific research. Could this be because the issue of human influence on the Earth system is, at its core, not simply a matter of science and technology but also of politics and ethics, not to mention aesthetics, metaphysics, and theology? If this seems even minimally plausible—for instance, if our concern with climate change is not only a matter of self-interest, but is also an expression of the intrinsic value of species and ecosystems—then responses to climate change focusing exclusively on natural and social scientific research may be missing out on precisely those complementary types of knowledge that would help the nation make good use of its \$25-billion

investment in climate research and expand the policy alternatives available to decisionmakers.

The vast majority of our investment in knowledge related to the climate issue has focused on developing better models of climate change to reduce uncertainties about the long-term future. But for all the assistance that science can offer, our reliance on the results of computer predictions for the fashioning of policy rests on a fundamental misreading of the meaning of scientific facts. Trying to produce more and more precise facts can become an excuse for not making good use of the facts we already have. Rather than calling for more research, which even if successful would leave us with the option of responding to a predicted future state of affairs, we could launch a public conversation about what future conditions are in best accord with our values and then use science to help us monitor our attempts to achieve these goals. The future, after all, is not something that simply happens to us; being human means that we exercise a significant degree of influence over what will happen through the choices we make. Rather than basing action primarily on predictions of the future, as if it is something outside of us and beyond our control, we might also engage in an explicit debate about the kind of future we want to have.

Make no mistake; science and technology are essential to providing knowledge about the consequences of alternative courses of action. But humanities-assisted discussions about what constitutes the good life in a global technological society are crucial to identifying de-

sirable policy actions. Given the transformative power of science and technology, now more than ever we need humanities for policy.

Toward a policy for the humanities

Claims about the importance of the humanities are not new. Indeed, and ironically enough, the historical trajectory of the humanities has been precisely the opposite of that of the sciences. Two centuries ago, it was the liberal arts and humanities that were thought necessary for informed public debates. The most brilliant political document of modernity, the U.S. Constitution, was composed by thinkers thoroughly steeped in history, philosophy, religion, and literature. The eclipse of a public role for the humanities since the mid-20th century has been prompted by a continuing current of positivism within our culture, which has simultaneously defined quantity as the measure of reality and devalued traditional notions of the public relevance of a liberal education. The positivist tenor of our culture has also reinforced the humanities' own drive toward hyperprofessionalization and specialization (itself evocative of the sciences) and has encouraged a deconstructive scholasticism that has managed to be at once irritating and irrelevant.

Yet in the midst of a marginalization that has been in part self-inflicted, one can find within the humanities signs of a revival of more traditional relevance. One notable example is the applied ethics movement. During the final quarter of the 20th century, a combination of scientists and philosophers brought ethics down from

the clouds of meta-ethical abstraction to dwell among the scientific clinics, research laboratories, industrial applications, and technological communications networks. The rise of biomedical ethics, research ethics, environmental ethics, and computer ethics is an attempt by the humanities to help us live with the expanding powers of science and technology.

In the 1960s, the technoscientific optimism of the 1950s began to be tempered by concern about science and technology resulting in environment degradation, cultural change, and even the prospect of global annihilation. Concerned scientists and humanists, as well as a substantial number of citizens, expressed their concern in the emerging environmental movement, nuclear weapons protests, and interest in the development of "appropriate technology." Thus, in the 1970s, NSF itself introduced the Ethics and Values in Science and Technology (EVIST) program, later renamed Ethics and Values Studies (EVS), to investigate the moral context and social implications of science and technology. And this trend continues: The proposed Nanotechnology Research and Development Act (Senate bill 2945) includes support for a new center for ethical, societal, educational, legal, and workforce issues related to nanotechnology.

But the humanities are about more than ethics, as indicated by the recent expansions of applied ethics to include other humanistic disciplines. In the teaching of biomedical ethics, for instance, works of literature are used to help future physicians appreciate the human experiences of sickness and

pain. In engineering ethics, narrative case studies and the autobiographical testimonies of moral heroes have become a staple of the classroom. Recent work in environmental philosophy increasingly relies on literature, poetry, history, art, and theology as a complement to ethical analysis. And these innovations only scratch the surface of what the humanities can bring to the interface of science, technology, and society.

In his plenary talk at the 2002 Sigma Xi conference on Science and the Humanities, George Bugliarello, chancellor of Polytechnic University in New York, argued that there is an urgent need for a broader engagement with the humanities. "The crucial questions for our culture are, what is it, indeed, to be human, and how can we maintain and enhance our humanity as we develop ever more revolutionary scientific advances?" Taking on such questions can significantly add to the contributions that science might make to the betterment of society, as well as help us to recognize those questions that science cannot address.

The development of a humanities policy, complementing science policy, economic policy, health care policy, and more, should begin with a vision of an interdisciplinary humanities deeply involved with public life and especially with questions associated with science and technology. More specifically, humanities policy could:

- Expand existing science/humanities collaborations in applied

and professional ethics to include the humanities more broadly, bringing in fields such as history, literature, and philosophy as a whole. The Woodrow Wilson National Fellowship Foundation is pioneering this approach in its Humanities at Work initiative.

- Develop practical alliances between scientists, engineers, and humanities scholars in support of public and private funding to work on topics that span the sciences and the humanities. At the University of Colorado, we are using this strategy in our New Directions in the Earth Sciences and the Humanities project (<http://sciencepolicy.colorado.edu/newdirections>).

- Create a program of research into humanities indicators to complement existing indicators in the sciences and engineering (such a project is currently being pursued by the American Academy of Arts and Sciences).

In our own work, we have found that public science offers a rich initial opportunity for testing the hypothesis that the humanities have the potential to make greater contributions to policy development and societal outcomes. Public science agencies offer a unique point of entry for humanities policy because of their nature as boundary institutions. Organizations such as the National Aeronautics and Space Administration, the U.S. Geological Survey, NSF, and NIH are supported because of our recognition that science can and should contribute to the public good, and conversely, that some types of knowledge are too fragile or im-

portant to be held in private hands. The humanities can serve as a bridge between public science and society, articulating the ethics and values dimension of societal challenges and integrating these dimensions with scientific information and perspectives.

Once we recognize that the humanities and the humanistic-oriented social sciences have an important role to play in our public life and policy development, we are also faced with the question of what would be a proper policy for the humanities to encourage this development. But in developing a policy for humanities, we should strive to avoid the pathologies of a linear model that begins with basic research and ends with societal benefit. For the humanities, to develop a field more relevant to policy will require more than just "basic humanities." A new humanities needs to be integrated with not only prospective users of knowledge but also with other disciplines that seek to contribute useful knowledge to decisionmakers. As part of our nation's collective policies for the acquisition and use of knowledge, an explicit policy for the humanities would recognize that the hyperspecialization and esotericism of contemporary humanities education must make room for a humanities focused on contributing knowledge to those grappling with the complex issues of modern society. Such is the promise of a policy for the humanities that would make these fields once again an essential part of the fabric of public life.