

## **Economics, Climate, and Values: An Integrated Approach**

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### **Abstract**

How can we integrate the role of values and ethics in economic analysis of climate change without sacrificing the positive aspirations of that science? Given the urgency of the measures required by climate change, economic analysis has never been as important as it is today. And given the necessity of value judgments in economic analyses of policy options, the tension between fact and value has never been more conspicuous. But while significant strides have recently been made in the understanding of both the inadequacy and impracticality of a fact/value dichotomy in scientific research, many in economics seem to continue to adhere to outmoded (and now clearly inappropriate) images of science. The net effect has been to undermine the usefulness of economic advice to policy makers.

The ideal of objectivity to which economists aspire needs to be reframed and broadened in ways that take advantage of new resources from the philosophy of science, environmental philosophy, and other social sciences. Ultimately, changes in the education of young economists, as well as in patterns of support for practicing economists will be necessary to effect a shift to an ideal of objectivity in which the role of values can be properly integrated.

## 1. The Need for a New Understanding of the Role of Values in Climate Economics

How can we integrate the role of values and ethics in economic analysis of climate change without sacrificing the positive aspirations of that science?

It is not hyperbole to say that this generation's major challenge is climate change. What we do about it will have larger consequences for future human well-being—or future human suffering—than our actions on any other issue. As the findings of climate science gather increasing scientific support, attention shifts to the question of how we can effect the transformations in our economies required by the expected changes in climate. For this, economic analysis is indispensable.

Unfortunately, however, the economics profession in the United States is in large part failing to meet its responsibilities in this area. Trapped in an outmoded view of science as an enterprise that must eschew discussion of values in order to preserve detachment, the analyses of our most prominent economists lend themselves to a critical undermining of responsible policy responses. This was acutely apparent in the response of economists such as William Nordhaus and Gary Yohe to the British Treasury's *Stern Review on the Economics of Climate Change*. The Stern Review's choice of a near-zero discount rate, was, they claimed, evidence of unjustified moralizing. By contrast, claiming the high status of science and rationality for their own work, they ignore the morally preposterous implications of its results. (One might ask re the contrast between Europe and the US?)

Significant strides have recently been made in the understanding of both the inadequacy and impracticality of a fact/value dichotomy in scientific research, but many in economics seem to continue to adhere to outmoded (and now clearly inappropriate) images of science. The belief that mathematical formalization combined with rigorous empirics automatically provides value-free results remains a foundational assumption of the contemporary mainstream discipline. But as many have pointed out, such techniques give one only, the assurance that someone else starting from the same assumptions and data will reach the same conclusions. Nordhaus's rationale for using a market rate of interest as a discount rate, for example, is based on the intuition that such a rate might in principle be observable by anyone.<sup>1</sup> Yet this way of attempting to achieve unbiased research actually leads to a pronounced bias—a bias in favor of the status quo: evaluation of most meaningful changes requires the sort of explicit ethical reflection that is being avoided.

It is often supposed that any alternative to such methodology-based objectivity implies a rejection of science and a slide into relativism and unfounded emotion-based claims. Indeed, views such as Nordhaus's have given ammunition to those who argue that economic analysis is worse than useless, and should be entirely abandoned in favor of exercises in, for example, visioning and participatory methods. Both sides of that debate, however, remain entrapped by the same fact-value dichotomy.

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<sup>1</sup> The fact that there actually is no such single market rate on which economists agree, however, obviously weakens Nordhaus's argument.

There is, however, another solution, which involves recognizing the inescapable intertwining of fact and value, while continuing the systematic search for reliable knowledge. Amartya Sen has called this "transpositional" objectivity. This (in fact more exacting) standard of objectivity requires that the viewpoints and values underlying the analysis be brought out into the open and subjected to scrutiny. Because viewpoints may be shaped by factors such as nationality, class, race, gender, status, generation, and habits peculiar to particular professions, this requires being able and willing to articulate the reasoning behind one's research in ways that can be understood by a larger community than the one composed of one's closest peers, and an openness to dialog with such larger communities. In the case of climate economics, the perspective of future generations, while it cannot be actually brought to the table, cannot be neglected. Adherence to methodological strictures alone cannot assure this.

## **2. How to Advance**

Re-evaluating the role of ethics in economics challenges assumptions that are deep-seated in the mainstream of U.S. economics. Accordingly, improving economic analysis of climate change will require a multi-pronged effort.

The rising generation, given their energy and larger stake in the outcomes of climate change policy, should be a key part of this transformation. One prong should therefore seek to transform and revitalize economics education, from the undergraduate (or even K-12) level and on upwards. Both environmental concerns and questions of ethics are currently largely neglected in the core curriculum: Students are generally taught that resource-blind growth models, that assume complete substitutability among different kinds of capital, reflect simply "the way the world works." Building the capacity for graduate students to think competently about the relation of ethical questions to their work would require special interventions such as summer institutes and innovative teaching materials, since in many cases current faculty are largely unprepared to take this on. A more ethically grounded approach may also appeal to some groups who currently may be disproportionately disaffected with economics, including women and minorities.

The climate change questions are of such urgency, however, that we cannot wait for the the outflow from such a new pipeline of training. Creating an environment in which presently practicing economists could receive support, rather than censure, for ethically-sophisticated and sustainability-promoting work hence must be another priority. To the extent that review boards that make decisions about funding and promotion remain dominated by those who confuse adherence to methodological conventions with objectivity, projects that hide important value judgments under a veneer of technical sophistication will continue to receive funding, while explicit discussions of values will be considered "soft" and "not economics." This is further amplified by systems of peer-review in economics journals, when the group of peers is constrained to an overly small group of like-minded scholars.

The NSF could intervene in an important way in these professional systems by examining its own funding priorities. Funding individuals and institutes whose work exemplifies a healthy consideration of both facts and values, and promises productive

work on transformative economic change, could help shift the mainstream from its current course. Actual dollar awards would help persuade economists through extrinsic incentives, and the *imprimatur* of NSF approval of "strongly objective" research would reinforce investigators intrinsic motivation to act in accord with our important values.

### 3. Relevant Research

Fortunately, there are rich resources that can be inform a better understanding of the relationship of ethics and knowledge. And, while less prominent than some of the other voices in U.S. debate, there are also climate economists who are not afraid to make explicit their valuing of the future.

The fact/value dichotomy has been well explored—and exploded—by economist Amartya Sen and a number of those who work in his wake. Philosophers of science Evelyn Fox Keller (author) and Phillip Kitcher, as well as philosophers Martha Nussbaum and Hilary Putnam (2003), give rich and convincing arguments on the subject. A number of critical or heterodox groups within economics, including Institutional, socio-, ecological, feminist, and evolutionary economists, have also developed analyses which challenge the fact/value distinction and pioneer innovative methodologies.

Recent research in behavioral economics, cognitive psychology, and social psychology have also greatly advanced our understandings of topics including human motivation toward ethical action. Oddly, much of economics still retains the assumption that economic investigators are ourselves untouched by emotional motivation, cognitive bias, or social mores. So, along with discussions from the philosophy of science, some of the results from these disciplines could be drawn on to enrich the discussion.

Within climate economics, a number of economists are pursuing economic analysis with an explicit goal of valuing human well-being. These include Frank Ackerman (2009), Paul Baer, Stephen DeCanio, Richard Howarth, Julie Nelson (author, 2008), Kristen Sheeran, and Elizabeth Stanton. Baer's work, for example, includes a proposal for "greenhouse development rights" which looks at equity issues affecting more-and less-affluent groups around the globe. As another example, one of Stanton's essays examines how regionally disaggregated Integrated Assessment Models are slanted to preserve rich world privilege, under the cover of merely-technical-seeming "Negishi weights."

Also worth mention, for their potential contribution to better economics, are the works of environmental philosophers including Stephen Gardiner, and Dale Jamieson, and Karen Warren.

It is important to recognize that critiques of mainstream economics are widespread, and discrimination must be exercised. Not every contribution by critical, heterodox, philosophical or other thinkers outside the economics mainstream is, in our judgment, helpful. Some critics of mainstream economics seem merely to exchange an obsession with detachment, quantification, and technological progress for an equally one-sided emphasis on, for example, relationships, qualitative work, and pristine wild

environments. To be clear: This is not what we are advocating; we are urging improvements upon rather than rejection of existing modes of analysis. We believe the NSF is well-positioned to help economists and other social scientists address the question we raise in this essay: How can we integrate the role of values and ethics in economic analysis of climate change *without* sacrificing the positive aspirations of that science?

#### **4. Other Questions**

Given the singular importance of climate change as an issue that must be faced by our generation, and the damage that is being done by ethically irresponsible research, we hope that the SBE program will keep two questions in mind when evaluating the results of this request for white papers.

First, do the suggestions deal with issues of importance for the well-being of humans (and other species)? While a great many projects may be intellectually fascinating, and some scholars may argue for a concentration on "basic" (meaning the most highly generalizable) science, it is a fundamental economic insight that devoting resources to any one project generally involves the opportunity cost of forgoing others. Choices have to be made. The issue of values is therefore at the very center of what science in society is about. We believe that consideration of the well-being of future generations, and the urgency of the need for effective climate policy, demands that the projects that hold hope for the mitigation of climate change be given priority.

Second, do the suggestions deal adequately with the issue of ethics and knowledge? Neither projects that pretend that ethical issues are irrelevant to research, nor projects that propose ethical reflection detached from theory, empirics, and policy, are likely to be helpful.

We applaud the SBE for launching this request for input on "grand challenge questions that are both foundational and transformative." The need to transform climate economics is a "next-generation research" challenge in more ways than one: It requires the creation of a new generation of economic analysis, to try, to the extent still possible, to create a livable environment for the generations to come.

#### **References**

Ackerman, Frank. 2009. *Can We Afford the Future?: The Economics of a Warming World*. NY: Zed Books.

Nelson, Julie A. 2008. "Economists, Value Judgments, and Climate Change." *Ecological Economics* 65(3):441-447.

Putnam, Hilary. 2003. "For Ethics and Economics Without the Dichotomies." *Review of Political Economy* 15(3): 395-412.

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