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## Ethics and the economist: What climate change demands of us

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#### ABSTRACT

Climate change is changing not only our physical world, but also our intellectual, social, and moral worlds. We are realizing that our situation is profoundly unsafe, interdependent, and uncertain. What, then, does climate change demand of economists, as human beings and as professionals? A discipline of economics based on Enlightenment notions of mechanism and disembodied rationality is not suited to present problems. This essay suggests three major requirements: first, that we take action; second, that we work together; and third, that we focus on avoiding the worst, rather than obtaining the optimal. The essay concludes with suggestions of specific steps that economists should take as researchers, teachers, and in our other roles.

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Climate change is changing our world. Not only is it changing our physical world, but also our intellectual, social, and moral worlds, in ways that we could not have imagined a generation or two ago. The science of climate change, and the political impasses associated with dealing with climate change, demonstrate that we are in a profoundly unsafe, interdependent, and uncertain world. We are already experiencing levels of greenhouse gasses, the likes of which have not been seen on earth for at least 800,000 years (Weitzman, 2011, 3). We are facing a need for globally coordinated action that humans, having evolved in smaller groups of kin and nation, have never before attempted. We are-contrary to our usual processes of learning or transformation—facing a problem of having to act largely in advance, instead of after, actually experiencing the consequence of our actions (Stern, 2011, 2). We are, if we are honest about it, facing the possibility that all the skills and knowledge we've gained through our physical and social evolution and scientific investigations to date may not be adequate, or of the right kind, to save the human race (and the rest of the life on the planet) from catastrophic, dislocating changes.

While having these facts right in front of us does not necessarily mean that we all see them—denial being one habitual human response to difficulties—this essay leaves the task of describing and defending climate science to others. Likewise, many cogent critiques of the application of standard economic benefit—cost approaches to climate

change, and many convincing arguments about the impossibility of ignoring the ethical dimensions of climate change economics, have already been written. Rather than repeat these arguments, this essay is forward-looking and practical. What does climate change demand of economists? That is, what should professional economists (such as myself and some readers of this journal) be doing—and what should non-economist scholars, activists, policymakers, officers of funding organizations, and members of the general public (such as other readers of this journal) legitimately be insisting that economists do? Given that economists need to grapple with ethical issues, how can we best do so? Given that economists do research and/or teach, how should what we now know—and, perhaps even more importantly, what we should now know that we do *not* know—affect our practices in these areas?

#### 1. Enlightenment: Beyond the Beta Version<sup>2</sup>

Nicholas Stern has said that we need a "new industrial revolution" to address climate change (Stern, 2011, 6). He also suggests that economists must consult other fields—including "science, technology, philosophy, economic history, [and] international relations"—as we develop our economic analysis (Stern, 2011, 19). An even more basic

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<sup>&</sup>lt;sup>1</sup> See, for example, DeCanio (2003), Howarth and Norgaard (1992), Howarth (2003), Dietz and Stern (2008), and Ackerman (2009).

<sup>&</sup>lt;sup>2</sup> In computer-speak, a potentially buggy version of a software package released for testing by prospective users is called a "beta version." Later releases considered error-free and stable enough for general use (though they will usually be further revised) are often referred to by version numbers.

revolution is, however, needed as well: An overhaul of the ideas of the Enlightenment, Beta Version, of the 18th century. This first version, based on a mechanical metaphor for nature along with notions of ideal Reason and individualism, got off the drawing-boards of philosophers and was put to use in scientific, economic, and political practices worldwide. But it seems that a great many of the assumptions underlying Enlightenment Beta and early scientific thought were wrong, or at best very incomplete. The continued advance of science has, in fact, revealed serious flaws in the earlier version—and in the economics based on it.

It has long been a central tenet of economic analysis, for example, that the best decision-making comes from having as much information as possible about the options at hand, and then-setting emotions aside-coolly performing a thoroughly rational (in the sense of following rules of logic) comparison and ranking of various outcomes. More recent work on decision-making, in contrast, demonstrates that less information and deliberation can sometimes lead to more satisfactory outcomes. Faced with too many choices, too much information, and/or too much emphasis on weighing and comparing, psychologists have found, people may make worse choices on decisions ranging from purchases of jams to comparisons of houses (Dijksterhuis et al., 2006; Iyengar and Lepper, 2000). Use of intuition, rules of thumb, and unconscious processes may lead, in some cases, to better outcomes with less regret (Gigerenzer, 2007). Emotions have been found to be essential to rational (in the broad sense of reasonable and goal-serving) decision-making (Damasio, 1994). A newer view of reason that is rapidly gaining ground (outside of economics) emphasizes the embodied nature of our consciousness. As put by George Lakoff and Mark Johnson,

...[R]eason is not...a transcendent feature of the universe of or disembodied mind. Instead, it is shaped crucially by the peculiarities of our human bodies, by the remarkable details of the neural structure of our brains, and by the specifics of our everyday functioning in the world...Reason is evolutionary...Reason is not completely conscious, but mostly unconscious. Reason is not purely literal, but largely metaphorical and imaginative. Reason is not dispassionate, but emotionally engaged. (Lakoff and Johnson, 1999, 4)

Nor is reason something that is possessed by a lone agent in isolation: "The full understanding of mental phenomena should be sought in the context of an organism that is interacting with an environment" (Damasio, 1997, 170).

To give an example relevant to the case at hand, suppose you are taking a walk in a forest at dusk. You suddenly see something long, thin, and curving before you on the path and instinctively jump back. On second glance, it turns out that this object is just a piece of discarded rope. Was it rational for you to have recoiled? Defining rationality in the narrow sense of referring to only logic and deliberation, it was not rational. Because a piece of discarded rope is not dangerous, your recoil was neither reflective nor rationally justified by "the facts." Considering rationality in a broader and evolutionary sense, however, jumping backwards was a perfectly reasonable and, on average over such cases, likely survival-enhancing response. Instinctual recoil comes from a part of the brain that acts before the analytical processes have a chance to kick in. Had the rope been a snake, you could have been bitten while standing still waiting for your slower neural processes to inspect the object, weigh the evidence, and come to a decision. Holding out for the thoroughly informed and justified response is a sort of rationality that may be serviceable in simple, safe, and slow environments, but quite unserviceable outside

It has also long been believed that individuals' preferences are stable, and immediately accessible for use in our rational deliberations. Our social and physical environments, however, have been shown to affect how we act in ways that are quite inaccessible to our conscious mind. Psychological studies of framing effects show repeatedly that exposure to movies that are funny or sad, drinks that are cold or hot, or smells that are good or bad, as well as minor changes to the wording of questions, can change our expressed opinions, stated reasons, and decisions.<sup>3</sup> The conscious preferences thought to be sacrosanct in the rational choice view may in fact often not exist until they are unconsciously, externally, and perhaps somewhat capriciously created.

Likewise, while individual freedom has long been taken as the *summum bonum* to be aimed for, especially in regards to economic systems, new science is pointing to our deep ties to one another, though processes such as mirror neurons which make us feel and repeat in our own bodies the motions we see others enacting (lacoboni, 2008). The point is not that individual freedom is unimportant, but that a monomaniacal focus on this "good" above all others leads to a serious neglect of—and even a blindness to—the interdependencies of family and community.

And, perhaps even more importantly, it has been assumed that the world we live in is such that it is amendable to cool, detached investigation and deliberation, and analytical models based on the mathematics of physics and engineering. In Enlightenment Beta the central metaphor used to think of natural processes is that of clockwork: Nature, by analogy to complex machinery, is imagined to be intricate but also thoroughly knowable and controllable. If the world was made by (Divine) Reason, and our species was uniquely (it was assumed) endowed with reason in order to know it and control it, then our technology and our philosophy makes us into demi-gods. But, as mentioned above, new generation science demonstrates that our human abilities of perception and cogitation are, in fact, evolved and embodied rather than being ethereally transmitted from a transcendent source. Even if we are convinced that there is a fundamental mathematical structure to the universe, new science suggests that a comparison of the complexity of this structure, vis a vis the limitations of our human wet-ware (brains), should be humbling. Epistemologically speaking, our knowledge is unavoidably limited and incomplete.

In Enlightenment Beta, the Divine Clockmaker set the world into ticking for our benefit. Such a helpful world, under our dominion, would provide for us and be safe. It would wait while we make our investigations and thoughtfully consider our next, progress-making interventions, quite free from worry about our own survival or subsistence. Yet as early as the 1890 s, and exactly in the center of the newly forming Neoclassical school of economics, such an image was already being questioned. Writing in 1898 Alfred Marshall, the original great systematizer of Neoclassical economics, warned us about taking this image too seriously. Marshall recognized that Neoclassical economic models were based-not on revealed truthbut on metaphor: "There is a fairly close analogy between the earlier stages of economic reasoning and the devices of physical statics," he wrote, whereby by treating certain phenomena in isolation from each other can give some "exact and firm handling of a narrow issue" (Marshall, 1898, 40, emphasis added). In particular, he noted, Western Europe was, at the time in which he was writing, in a unique window of time and space uniquely free of the "black shadow" (1898, 41) of ecological limits. Consistent with what had been historically experienced up to his time, he conceived of these limits in terms of constraints imposed by agricultural fertility on population growth. Even with no knowledge of climate change, however, Marshall perceived that within some generations this unique window would close and ecological limits would again become important. To

<sup>&</sup>lt;sup>3</sup> See, as one examples of this now vast literature, Williams and Bargh (2008). Some of these phenomena have been incorporated into behavioral economics (Kahneman, 2003).

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