Journal of Economic Literature, Vol. LV (September 2017), 1146-48

Endangered Economies: How the Neglect of Nature Threatens Our Prosperity. By Geoffrey Heal. New York and Chichester: Columbia University Press, 2017. Pp. x, 227. $35.00, cloth; $34.99, e-book. ISBN 978–0–231–18084–9, cloth; 978–0–231–54328–6, e-book.

In *Endangered Economies*, Geoffrey Heal writes beautifully about environmental economics, summarizing the field in precise and primarily nontechnical language. As he says, "The central idea is simple: *it is to ensure that people and firms both see and pay the full costs of their choices, and that their incentives are aligned with the social good*" (p. 3, italics in original).

His account is filled with wonderful anecdotes about specific environmental problems, with greatest depth in water pollution, fisheries, and forestry. He offers a four-point framework of issues that must be addressed to create an environmentally friendly, sustainable economy: "external costs and the need to make polluters pay, common property and its overuse, natural capital as an input to our prosperity, and measuring what really matters" (p. 10).

External costs and policy responses receive the most attention, with four chapters, two of them on climate change. The Pigouvian agenda of pricing and internalizing externalities is essential, according to Heal: one of the chapters is titled, in part, "How Unpaid-for External Effects Are Killing Us."

The chapter on common property is about the tragedy of the commons, with theory followed by colorful examples: the tragedy of the buffalo (and other once-common species), the tragedy of water overuse, and an in-depth description of the tragedy of fisheries and overfishing, based in part on Heal's own work.

Regarding natural capital, Heal incorporates key insights from the often-separate discourse of ecological economics. Nature is not just the recipient of insults, in the form of externalities; it is a provider of unacknowledged but essential capital stocks. Watersheds, wetlands, natural pollinators, forests, and biodiversity are crucial to modern economic activity, in ways that are not normally valued. A chapter on valuing natural capital suggests that the process is as much art as science—and that Heal is an impressive artist in this genre.

On measuring what matters, Heal is clear about what's wrong, but not fully persuasive on what's needed. He makes the familiar case against GDP per capita as a measure of welfare, with the less familiar corollary that the Human Development Index does only slightly better (it is an average of GDP per capita and two other measures that are strongly correlated with GDP per capita).

Heal's preferred alternative is adjusted net savings (ANS), the net change in all of a country's capital stocks, combining manufactured capital, human capital, and natural capital. However, as he notes, the data to construct ANS are not routinely published and are hard to collect. He cites one estimate of ANS per capita that reaches the charming conclusion that China and India do better than Germany and the United States, while Botswana outdoes us all.

This book could be assigned to economics, environmental studies, or public policy classes, at either undergraduate or first-year graduate levels. It could also be given to anyone who is curious about what economics has to say about the environment. Yet despite the book's strengths, a few limitations are also worth noting.

When comparing policy options to address externalities, Heal scores old-style regulations as "bad" on both cost and transparency. But the original Clean Air Act and Clean Water Act achieved a lot at comparatively low cost: the Environmental Protection Agency's retrospective cost–benefit analysis of the first twenty years of

the Clean Air Act found benefits worth more than forty times the costs.[1] And outright prohibition of unequivocally bad activities can be more transparent than complex market incentives. The complete absence of mom-and-pop nuclear-waste disposal firms is a success, not a failure, of command-and-control regulations.

More broadly, is monetary valuation of nonmarket values always possible? There are practical obstacles in the high cost of studying individual valuations, and philosophical issues about the reduction of every value to monetary terms. When the artistry of revealed-preference valuations reaches its limits, stated-preference studies are needed to value externalities or natural assets.

This is a slow, expensive process— in contrast to actual markets, which provide regularly updated, nearly free information on prices. Deducing stated preferences for a single nonmarket value requires hiring an army of graduate students, or a survey research firm, to conduct carefully structured interviews, providing the raw data for a detailed statistical analysis. If the value in question is proposed for use in actual policy making, legal challenges from opposing interests can last for years. At this rate, the Pigouvian agenda of internalizing externalities will take centuries to complete. Meanwhile, the bespoke process of pricing each unpriced value is so ornately technical that it excludes most stakeholders from the discussion—another reason why it can be more transparent to simply adopt regulations telling bad actors to stop doing bad stuff.

The biggest question is whether everything of value has a meaningful price. Consider the value of the existence of whales, one of Heal's examples. Contrary to his passing suggestion, this is not well measured by voluntary contributions to "save the whales" campaigns. A survey some years ago found that US households valued the existence of humpback whales at $18 billion.[2] But this number is not a real price; it does not mean that most people would welcome a purchaser's offer of $18 billion or more to hunt the humpbacks to extinction. Rather, an offer to "buy" and privately appropriate the existence of the species would produce moral outrage. Multi-billion-dollar valuation of the existence of whales is a very inarticulate way of saying that people care very much about whales; no useful numerical information is conveyed in such a number.

Similar issues arise in the "value of a statistical life," which is key to many valuations of air pollution and other externalities. Recent American valuations of around $9 million per life do not mean that you can buy or kill a person for nine million or more, as might be the case if this were a real price.[3] Immanuel Kant argued long ago that some things have a price, and others have a dignity. Human life, like the existence of whales, has a dignity, and thus requires a rights-based approach to policy making, rather than a market-based valuation.[4] Even a market corrected as thoroughly and benignly as Heal envisions might not do justice to these nonmarket, non-monetizable values.

Endangered Economies reads, in places, like a retrospective on a (well-spent) career. But I hope Heal isn't done yet. Perhaps his next

[1] See Environmental Protection Agency (1997), "The benefits and costs of the Clean Air Act, 1970 to 1990" at http://yosemite.epa.gov/ee/epa/eerm.nsf/vwRepNumLookup/EE-0295.

[2] The number could be updated, and the rest of the world's valuations could be included, but the point would be the same.

[3] See the more detailed discussion in Ackerman, Frank, and Lisa Heinzerling. 2004. *Priceless: On Knowing the Price of Everything and the Value of Nothing*. New York: The New Press.

[4] Heal briefly discusses (and endorses) a rights-based approach to the existence of animal species on pp. 176–77. In my opinion, the need for a rights-based approach is more pervasive, applying to much of the valuation process.

book will tackle some of the questions that were omitted this time.

Frank Ackerman
Synapse Energy Economics