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Reviews

Natural Capitalism: Creating the Next Industrial Revolution
Paul Hawken, Amory Lovins, and L. Hunter Lovins
New York: Little, Brown and Company, 1999, 396 pp.

Hard Green: Saving the Environment from the Environmentalists (A Conservative Manifesto)
Peter Huber
New York: Basic Books in association with the Manhattan Institute, 2000, 288 pp.

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> "[M]any people engaged in various economic activities do realize it is important to learn from nature and apply the knowledge to what they do…. [A]ll kinds of people now understand that their success depends on working knowledgeably along with natural processes and principles … [which is] diametrically different from supposing that human beings are exempt from nature's dictates or that they are masters of nature."
> Jane Jacobs, *The Nature of Economies*

Here is the good news: There is growing agreement among commentators that economic prosperity and environmental quality are complementary aspects of progress. Two recent books advocate this argument from quite different perspectives. The bad news, however, is that conservatives and free-market advocates continue to debase environmentalists. This trend is especially unfortunate because it alienates many citizens during a rising tide of environmental sensitivity: Polls show that four out of every five Americans are self-confessed environmentalists, which is predictable, since environmental

concern increases with prosperity. If prosperity continues, we expect that demand for environmental quality will grow disproportionately because it exemplifies a superior good.

In a well-educated society, increased wealth means greener politics. The political economy of environmental quality includes three key features: (1) technology that links economic efficiency with ecological health; (2) respect for entrepreneurial innovations; and (3) an appreciation of the interdependence between ecosystems and economies. These themes provide the infrastructure for *Natural Capitalism* (NC) and *Hard Green* (HG). *Natural Capitalism* was co-authored by Paul Hawken (who has proposed similar ideas in *The Ecology of Commerce* and *Growing a Business*) and Amory and L. Hunter Lovins, cofounders of the Rocky Mountain Institute, a nonprofit resource policy center and consulting firm. *Hard Green* is the work of Peter Huber, a *Forbes* columnist and senior fellow at the Manhattan Institute. On the surface, both of these books encourage technological progress, innovation, and dematerialization. In fact, both share the vision of a world growing rich while preserving or enhancing environmental quality.

There is a wide gulf, however, between Hawken *et al.* and Huber in the realization of this vision. The authors of *Natural Capitalism* present their message with an open invitation to the general public. Its subtitle is, *Creating the Next Industrial Revolution*, and the book has been praised by both entrepreneurs and environmentalists alike. *Hard Green*, on the other hand, seems calculated to alienate and offend traditional greens with the subtitle of *Saving the Environment from the Environmentalists*. "Give us another few decades … and our species' mastery of the rest of nature will be complete" (HG, 80). Though the book was written for a conservative audience, it has been roundly criticized among libertarian and conservative intellectuals for being too ideological.

Huber proclaims himself to be "hard green" as opposed to "soft green." He defines Soft proponents as supporters of micro-management and future forecasting by computer-based models. His taxonomy derives from a division of fuel types conceived by Amory Lovins (who promoted Soft ideas) in the 1970s. Hard resources, such as coal and oil, represent cheap but nonrenewable energy sources, while Soft refers to such expensive, alternative, and renewable energy sources as wind and solar power. Despite many differences, *Natural Capitalism* and *Hard Green* share an adulation of innovative economic solutions and implicitly acknowledge environmental quality to be a superior good.

Natural Capitalism offers a positive vision of a future based on the "idea that the economy [is] shifting from an emphasis on human productivity to a

radical increase in resource productivity" (NC, ix). The book contends that, while industry has made great advances in its creation and accumulation of human-made capital, it has grossly depleted "natural capital," e.g., water, minerals, and soil. Ecological systems, including wetlands, riparian areas, grasslands, and layers of the atmosphere, are jeopardized by today's economy. The good news is that the fractured relationship between ecology and economy can be reconciled. "[T]he conventional wisdom is mistaken in seeing priorities in economic, environmental, and social policy as competing" (NC, xi).

Hawken *et al.* endorse the outcome of market processes and credit the Industrial Revolution with increasing real wages, raising standards of living, and expanding the productivity of labor two hundred fold (NC, 6–7, 11). Ultimately, dematerialization and prosperity have prevailed over the early negative effects of industrialization. In wealthy, highly modernized nations, pollution and waste have been significantly decreased, with some types even eliminated. The criticism of Hawken *et al.* concerning the market process (one that free-market environmentalists are willing to concede) is that for-profit ventures only account for what is on the ledger, with the end result being a loss of capital. Thus, *Natural Capitalism* offers strategies and examples of success that empower people to behave "as if all forms of capital were valued" (10).

One such example, according to Hawken *et al.*, is that natural capitalism promotes four innovative processes, namely, the increase of resource productivity, biomimicry, service and flow, and natural resource investment. Resource productivity endeavors to increase efficiency on a scale as grand as the Industrial Revolution. The authors expect such changes to transcend marginal gains in industry through design innovations and the use of sophisticated technology. The authors cite the example of refrigerators that "can now save about 87 percent—and with the best available technology could save 98–99 percent—of the normal 1972 amount of refrigerator energy. Yet they keep food just as cold, fresher for longer, look the same, make less noise, can be more reliable, and in mass production cost about the same or less" (NC, 106).

Biomimicry encourages the development of products and production methods learned from nature, specifically embracing the interdependence of ecosystems and economies. It strives to eliminate the concepts of "free goods" and "waste" from the vocabulary of industry. Based on this premise, America's largest maker of office furniture, Steelcase, with the help of Ciba-Geigy, a chemical company, conceived and created a compostable upholstery fabric at a reduced production cost, using only thirty-eight chemicals (compared to the standard 8,000) (NC, 72).

Service and flow utilizes the market process to redefine the consumer-

producer relationship, where "the product is a means, not an end" (NC, 18). An economy based on this strategy leases rather than sells its products and services. Doing this leads companies to shorten the loop of wasted and unrecoverable materials, encourages employee innovation, and creates the possibility of a niche market for its redesigned or recycled products. Interface, an Atlanta-based company, now leases floor-covering services rather than specializes in carpet sales. New materials and manufacturing processes "produce 99.7 percent less waste than making normal carpet, and the other 0.3 percent gets reused" (NC, 139–40).

The final strategy, natural capital investment, endeavors to take stock of our ecological resources and account for them as one would traditional capital. Myopically, it asserts that major conflicts over resources are driven by limited access to these resources. With a utopianism resembling Edward Bellamy's *Looking Backward* (1887), the authors of *Natural Capitalism* and *Hard Green* suggest that equitable access to and use of resources will be achieved through "the vigorous emergence of the community development finance movement … [which] provides credit in innovative ways at the community level." Such projects focus on natural capital and entail "a fundamental reevaluation of business's roles and responsibilities" (NC, 319–20). This proposal, while rooted in an intriguing vision of the way things could be, fails to separate hope from realistic expectation.

Overall, Hawken *et al.* advocate a radical change in our economic culture and values. "What if our economy were organized not around the lifeless abstractions of neoclassical economics and accountancy but around the biological realities of nature?" (NC, 9). Through utilizing technologies, moving toward dematerialization, and developing a genuine understanding of the parallel between markets and the environment, companies can achieve increased profits without neglecting social and environmental responsibility. In order to develop fully the production innovations in *Natural Capitalism*, a significant investment of financial capital is initially required. Once again, it is important to discern the relationship between wealth and environmental quality.

The strategies of *Natural Capitalism* suggest large savings in financial and natural capital, and consistently emphasize the symbiotic relationship between economies and ecosystems. Of course, if the authors are correct, the market process will reward individuals and firms that innovate. While *Natural Capitalism* is replete with examples of innovative successes, *Hard Green*, by contrast, cites only twenty-seven examples over the course of 204 pages. Huber has written a manifesto, not a research monograph, which reads like political propaganda projecting a *Lord of the Flies*-style mantra: "Expose the Soft Green fallacy.

Reverse Soft Green policy. Rediscover T. R. Reaffirm the conservationist ethic" (HG, xxxi).

Huber clearly prefers solutions from technology and market processes to the models and micro-management of the Soft, which he considers to be wasteful and misleading. Huber invokes and rejects the Soft's emblem of the sand pile that continuously threatens the world with momentary collapse. "To Hard Green minds, green does not emerge from big computer models or from large government agencies. Green objectives are effectively advanced only by dispersed control, free markets, and traditional ethics" (HG, xxix). Above all, *Hard Green* promotes wealth as the cure of environmental insensitivity and physical damage. "And when the rich man reaches the private limits of consumption, he puts his wealth into other things…. Green is what people become when they feel personally secure, when their own appetites have been satisfied…. It is wealth itself that gives most ordinary men the confidence to be generous to the world beyond" (150–51). Huber believes that technology and market coordination will foster prosperity, dematerialization, and enhanced environmental awareness, but he dismisses alternative approaches.

The foundation of Huber's environmentalism is the belief that environmental quality is a superior good, i.e., its importance to people grows in step with their wealth. However, his argument lacks credibility, which he endeavors to correct by pointing to the public's general support for federally protected wilderness areas and its opposition to hydraulic mining as an environmentally detrimental drilling process. Furthermore, the presentation of these ideas in *Hard Green* often gets lost amid textual inconsistencies, superficial descriptions of the relationship between ecosystems and economies, and sharp polarization of the Soft versus Hard approaches.

Some readers notice inconsistency in Huber's defense of governmental intervention for wilderness conservation. He contends that "at some point … the sheer scope and scale of the ambitious conservation objectives require a reach [of governmental involvement] to match" (HG, 202). On this point, we agree with Huber. The key to his argument lies in recognizing the "free rider" problem. Given our current institutional arrangements, it is simply too difficult for private parties to assimilate the preferences of huge numbers of people with only a small interest in preservation, as can be seen, for example, in the million-acre Bob Marshall Wilderness in Montana. For projects of this scale, governmental action is sometimes the only workable solution.

This position has generated criticism from free-market environmentalists such as Ronald Bailey, science correspondent for *Reason* magazine, and Joseph Bast, president of the Heartland Institute. According to Bailey, "Huber treads

perilous ground when he argues that government can be used to advance conservative environmental goals, particularly the preservation of wilderness." Bast concurs: "While free marketers such as myself may agree that 'nothing is the one thing that big government is capable of doing quite well,' that does not justify Huber's 'wilderness exception.'" In fact, Huber wants to solve the problem of scarce wilderness with "wilderness itself" (HG, 175). Despite his preference for hard green ideas, Huber's solution to the problem of scarce wilderness reads like a page out of an Earth First publication. It is no surprise that Bailey and Bast attacked him for advocating a pro-government position on wilderness preservation.

In his response to Bast in the March 2000 *PERC Report*, Huber cites the following text from *Hard Green*: "All in all, private conservation is, by a wide margin, the most important form of conservation we have.... Hard Greens will never call for federal management where private, local, or state initiative will do" (91). Apparently, Huber only advocates governmental management when large tracts of land are involved, despite the fact that government has failed miserably in such arenas. In fact, the federal government has a horrible record of managing such commodities as timber, forage, and minerals, but it is able to do "nothing" quite well, which is precisely what wilderness management is generally thought to be.

The wilderness designation under the 1964 Wilderness Act precludes governmental agencies from working their mischief with economically costly, ecologically destructive practices. Chaining federally owned pinyon-juniper timber lands to increase forage for domestic livestock at a fraction of the cost, along with clear-cutting National Forests, are examples of averted mischief.

Huber seems to have a love/hate relationship with the concept of efficiency. According to him, efficiency should not be thought of as environmentally friendly because it is possible to develop more efficient machines that have a higher degree of energy output. To support this idea, he cites the increasing popularity of sport utility vehicles and large refrigerators, which offset overall gains in engineering efficiency by increasing fuel emissions and energy output (HG, 58). This, if true, would undermine the central tenet of natural capitalism, which is to conserve environmental amenities by increasing resource productivity as, for example, in high-performance showerheads and super-light alternative fuel vehicles. Huber claims these innovations may offer energy savings but spur people's appetite for still larger items, thus offsetting the implicit energy reductions in such technological innovations. Huber, who holds a Ph.D. in engineering from MIT, does not object to all concepts of efficiency: "Efficiency expands resources.... The right kind of efficiency, the kind discovered

by markets rather than by Soft Green bureaucrats, makes us richer" (HG, 70, 73–74).

Hawken *et al.* are also critical of certain concepts of efficiency. They insist that measures to regulate environmental resources should be based on technology (engineering and mathematics) rather than money (economics), at least until our economic system evolves to value all forms of capital (NC, 12–13). Economists agree that only when prices capture full opportunity costs will the market process be truly efficient.

Private entrepreneurs, not governmental bureaucrats, have produced a growing number of projects to increase productivity and reduce waste. The authors cite the $1 billion environmental investment program launched by Dow Chemical Company, which was far more than a mere publicity campaign to market itself as a socially responsible "green" company. Dow's environmental investment program has yielded processes that reduce waste and energy output in aluminum can production, while simultaneously preserving natural capital and increasing profit margins. Dow expects a 30 to 40 percent annual return on its investment program (NC, 76, 79), but it is the environmental effect of reduced consumption that ultimately matters most.

The most troubling question in *Hard Green* involves the relationship between nature and markets. Early in the book, Huber recognizes the reciprocal relationship that exists between ecology and economy: "In markets and in government [regulation of the environment] alike, things don't get better, they get worse, when costs are palmed off surreptitiously on others…" (36). He continually speaks of humanity as trumping nature, and economics as trumping ecology. His attitude fails to convey the view that market processes are superior mechanisms for environmental management. It is this attitude that, unfortunately, alienates Huber from potential allies and fails to bridge the conservatism/conservation debate.

Environmental policy is especially contentious because of the complexity and emotional intensity of the issues. For many in the environmental debate, facts and logic are insufficient weapons in the war of ideas. Peter Huber may be annoyed—but others should not be surprised—that most people find the Soft far more alluring.