The distinction between "strong" and "weak" sustainability has grown out of the discourse and thinking around "natural capital" and specifically in relation to the substitutability between "human" and "natural" capital and how much "critical natural capital" we need for sustainability. Proponents of weak sustainability maintain that human-made and natural capital can be substituted for one another, while those who support strong sustainability believe they cannot, arguing instead that human and natural capital should be seen as complementary, not interchangeable and substitutable. The debate between weak and strong sustainability raises profound ethical questions about the intrinsic value of the nonhuman world and the limits of "economic" ways to conceptualize the natural world and our relationship to it. And the debate foregrounds the extremely important ethical question of what do we wish to preserve and pass on to future generations? The world as it is now with its current stock of natural capital, landscapes, ecosystems, and biodiversity? Or a changed world in which "losses" of natural capital, biodiversity, and species can be compensated for by passing onto future generations a higher level of human capital?

Weak Sustainability

The essence of weak sustainability is that it conceptualizes the nonhuman world not in biophysical terms but in terms of its economic value. That is, unlike strong sustainability...
Strong and Weak Sustainability

Karst remains, which are left behind after phosphate mining, in the center of Nauru Island in 2004. The devastation of Nauru, which affected about 80 percent of the 21 sq. km. island nation, is an example of weak sustainability.

Source: U.S. Department of Energy, Atmospheric Radiation Measurement Climate Research Facility

An example of dangers of weak sustainability is the small Pacific island nation of Nauru. In 1900, one of the world’s richest phosphate deposits was discovered on Nauru and today, as a result of intensive phosphate mining, about 80 percent of the island is devastated. At the same time, the people of Nauru have enjoyed, over the past decades, a high per capita income. Income from phosphate mining enabled the Nauruans to establish a trust fund. Interest from this trust fund should have ensured a substantial and steady income and thus the economic sustainability of the island. Unfortunately, the Asian financial crisis of 1989, among other factors, wiped out most of the trust fund. The people of Nauru now face a bleak future. Their island is biologically impoverished and the money for which Nauruans traded their island home has vanished. The development model of Nauru followed the logic of weak sustainability and shows clearly that weak sustainability may be consistent with a situation of near-complete environmental devastation. This case illustrates a telling argument against weak sustainability.

Another serious problem with weak sustainability is the way in which it seeks to establish an economic valuation or “price” for the nonhuman world. For some, such as the environmental philosopher Alan Holland, the very notion of natural capital is a dangerous ethical oxymoron. “[C]onstrued as a commitment to nature, the commitment to natural capital is therefore hollow,” he wrote in 1999, in the sense that viewing nature as “capital” is to express a commitment and relationship to it that is instrumental, that is, what it can contribute to human welfare. His argument, and one shared by most environmentalists and greens, is that to prescribe the use of an economic language and economic way to understand the nonhuman world is to commit a category mistake. Such forms of economic valuation (contingent valuation and cost-benefit analysis techniques) “crowd out” noneconomic forms of valuation and therefore misrepresent people’s environmental values, according to Barry (1999). Forcing people to put a price on nature in this way is to replace the economist with the cynic in Oscar Wilde’s well-known phrase “to know the price of everything and the value of nothing.” In other words, there are both normative-theoretical as well as empirical arguments and evidence that weak sustainability relies on the systemic
corruption and misrepresentation of peoples' values, beliefs, and preferences about the value and relationship they have with nature. Simply put, weak sustainability relies on the nonhuman world's only having economic or instrumental value. Yet, we have both normative arguments and empirical evidence of both the noneconomic and the intrinsic value people place on nature. People have aesthetic, spiritual, and other noneconomic relations to and therefore valuations of the natural world. We also have evidence that people express these noneconomic values when they participate in such economic valuation exercises. The widespread experience of people expressing "protest bids," that is, astronomically high monetary valuations on landscapes, species, or other aspects of nature, does indicate the existence of these noneconomic valuations of the environment.

**Strong Sustainability**

Under the strong sustainability criteria, minimum amounts of a number of different types of capital (economic, ecological, and social) should be independently maintained, in real physical/biological terms. The major motivation for this insistence is derived from the recognition that natural resources are essential inputs in economic production, consumption, or welfare that cannot be substituted for by physical or human capital. Another reason is the acknowledgment of the environmental integrity and intrinsic value of and even "rights" of nature. But perhaps the strongest motivation for strong sustainability and its insistence on the preservation of some natural capital from being "developed," that is, liquidated/depleted, is that some critical/minimum level of natural assets is required for human (and nonhuman) life support. There are some natural processes, entities, and services for which there is no technological or other human-created substitute. Think of the hydrological cycle or the carbon cycle, or soil fertility or the pollination work that bees do, or any other number and variety of ecosystem services the nonhuman world provides and for which there is no human substitute. The biggest one of all here is, of course, the maintenance of a stable and life-supporting climate; outside of technofantasies of "terraforming" and "earth management," humanity does not (and perhaps never will or ought to try) have the capacity to manage the Earth's climate system in a life-supporting manner.

The United Nations project called The Economics of Ecosystems and Biodiversity (TEEB), which is a global effort to develop more accurate economic valuations of the nonhuman world, can be characterized as a strong sustainability initiative. This project is based on the notion of the nonsubstitutability of ecosystem and biodiversity natural capital and the importance of taking ethical (and not just economic) considerations into account when making decisions. One specific example of strong sustainability—moving us in the direction of avoiding any net reduction in overall natural capital—would be compensatory afforestation schemes, especially if such schemes replace "like with like" (in terms of the type of trees and quantity).

The reality is that substituting financial or other forms of human-made capital for natural resources is incompatible with maintaining a suitable physical environment for the flourishing of the human species (or other nonhuman species). Therefore strong sustainability implies that we must step outside the conventional (but sadly dominant) economistic framework in order to establish the conditions for maintaining human and nonhuman survival, well-being, and flourishing. In short, it implies that sustainability requires preserving actual nature, the "stuff" of biophysical entities and not the "economic value" of the nonhuman world. In short, the preference for strong over weak sustainability comes down to preferring that scientists, not economists, manage and measure what we need to preserve in nature.

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**Further Readings**


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**Sustainability**

Business ethics are areas that often lead businesses to the report their actions to the public. The development was a careful path to develop. To answer the questions, such as pest the need for work to address the...
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Summarizing, one can see that "strong" and "weak" sustainability represent a continuum of how we should use (or not use) and think about the nonhuman world (or rather our relationship—both material/metabolic and moral—with the nonhuman world). The choice between which of them to choose is a mixture of scientific, ethical, prudential, and political choices. The continuum of weak and strong sustainability demonstrates that there is no "objective" or "value-free" way to understand and implement sustainability.

See Also: Cost-Benefit Analysis; Environmental Justice; Human Values and Sustainability; Instrumental Value; Intrinsic Value; "Should Trees Have Standing?"

Further Readings


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SUSTAINABILITY, BUSINESS ETHICS AND

Business ethics are a fundamental concept of sustainability, and sustainability considerations often lead businesses toward more ethical actions. The modern sustainability movement traces its roots back to the United Nations (UN) World Commission on Economic Development. Defining concepts of sustainability, and its application in the business world, were further developed by John Elkington. Today, investors are increasingly demanding that businesses not only act in an ethical and sustainable manner, but that they disclose their actions to the public. Many large companies today are producing sustainability reports in an effort to be unceasingly transparent and accountable to the public.

At the end of the 20th century, the UN became increasingly aware of global pollution issues, such as pesticide bioaccumulation and ozone depletion. The international community was also facing increasing industrialization among developing nations of the world. It was generally acknowledged that the path many nations had taken in their industrial development was not the best for the health of humans or the environment, and a more careful path to development would be prudent.

To answer the global communities’ questions on how to best guide development, the UN convened the World Commission on Environment and Development (WCED) in 1983, chaired by Gro Harlem Brundtland, the prime minister of Norway. Due to her pioneering work to address the issues surrounding continuing global development, the WCED came to be known as the Brundtland Commission. The Brundtland Commission was created to address the growing concern “about the accelerating deterioration of the human