



Future

All cultures are infused with myths and prophecies that express humankind's expectations and fears for the future. By the latter decades of the twentieth century, however, realization spread that without sustainable practices the human enterprise more and more compromised the ecosphere's capacity to support future life.

The advent of sustainability as a development ideal opens a new chapter in the relationship between culture and the future. The growing awareness that shortsighted collective behavior today imperils human well-being tomorrow brings unprecedented urgency to the challenge of understanding and shaping the future. At the core of the notion of sustainability lies a riveting moral imperative: the responsibility of the living to bequeath an undiminished world to the unborn. This obligation requires present generations to adopt an integrated perspective that weighs the long-term implications of contemporary practices and adjusts them accordingly. By highlighting the interdependence of society and planet, this systemic framework extends the ambit of ethical concern to other people distant in space, generations distant in time, and creatures distant in kinship.

We live, however, in the eternal now, poised at the moving boundary between completed and uncompleted time. From the vantage point of today, we cast a double-faced Janus gaze both back toward yesterday and ahead toward tomorrow, reflecting on where we have been and imagining where we are heading. Past permeates present, leaving its imprint on the tangible world of nature and society and, also, on the world of ideas through our varying interpretations of the content and meaning of history. The future does not directly affect the flow of events, for, according to a basic tenet of modern science, the direction of causality points only forward in time.

Imagining the Future, Affecting the Present

But images of the future do affect the present through their influence on human values and action, thus introducing a teleological element into the dynamic of social evolution. All cultures are infused with myths, prophecies, dreams, and nightmares that express collective expectations, hopes, and fears; they circumscribe the limits of the possible, the desirable, and the horrific. Prevailing images of the future reinforce existing norms and societal structures in times of political quietism and cultural hegemony; dissident visions of the future energize and legitimize oppositional groups in times of social and cultural change.

In premodern cultures with a fatalistic mind-set, individual and collective destinies were linked to the higher dictates of suprahuman forces. Oracles, seers, and priests divined the workings and providence of the universe and offered guidance on how to propitiate the gods but proposed little hope for worldly salvation. Then, the great cultural shift that began with the Renaissance and reached an apotheosis in the Enlightenment brought heightened faith in human reason, science, and progress. By ascribing agency to human actors, anointing them as authors of their own historical narrative, theological formulations of collective destiny began giving way to pragmatic and ethical formulations for guiding social evolution.

Alongside this philosophical upheaval, modernity released a powerful set of world-changing forces—rapid technological innovation, market economies, democracy, and law-governed institutions—that set population, production, and consumption on exponential growth curves. With human impacts on nature growing apace, unbounded demographic and economic expansion set a collision course with the limits of a finite planet. By the latter decades of the

twentieth century, concern spread that the human enterprise more and more compromised the ecosystem's capacity to support life, thereby threatening the long-term prospects for human development. The age of sustainability had arrived.

Sustainability invites us to collectively and self-consciously construct the future: to generate plausible images of the world decades from now, establish collective goals, and adapt current choices and behaviors for the journey. Envisioning global futures poses new challenges to both science and the popular imagination. Of the immense web of possibilities opening into the future, only one strand will crystallize into history through the interplay of unfolding patterns, chance, serendipity, and human choice. The most sophisticated computer models remain far too imperfect to simulate accurately the breathtaking intricacy of the nested social and ecological systems that comprise the integral Earth. Better models can reduce epistemological uncertainty, but not the inherent uncertainty of complex systems—bifurcations at critical thresholds and emergent properties. Most profoundly, human systems carry the additional uncertainty of volition: the global future depends on human choices that have not yet been made. Coming full circle, those choices will be influenced by the ways we think about the future.

Scenarios for a Sustainable Future

In light of this indeterminacy, sustainability analysts are developing new approaches to explore the future and inform current decisions. The evolving field of scenario analysis is employed widely to develop a range of coherent stories consistent with historical conditions, driving forces, scientific knowledge, and historical insight. State-of-the-art scenarios of the global future combine quantitative simulation and qualitative analysis to track current trends as they branch into an array of possible outcomes. The aim is to stimulate the imagination, better grasp forthcoming risks and opportunities, provoke discussion, and guide decision making.

Broadly, scenarios fall into three archetypal categories: evolutionary, degenerative, and transformative. Evolutionary futures unfold gradually from incremental changes in

technology, environment, and society. The evolutionary approach to sustainability relies on government-led policies to promote environmentally friendly technology and poverty alleviation, but it faces the practical and political challenge of mounting a sustained campaign sufficient to counter the effects of an expanding world economy. If the evolutionary strategy fails, global development could degenerate, veering toward a more fragmented, authoritarian, or chaotic world. Environmental controls might eventually be imposed, but not without great conflict and misery.

Transformative futures envision fundamental institutional and cultural changes to redirect development from catastrophe to sustainability. These scenarios are rooted in a shift in human consciousness and aspirations away from consumerism and individualism and toward qualitative aspects of human well-being: personal relationships, community engagement, creative endeavors, and appreciation of nature. An inclusive sense of solidarity would become the foundation for more effective and just governance from local to global levels. In calling attention to such visions, the sustainability project rekindles age-old hopes for an organic and interdependent global civilization, no longer as abstract hope, but as necessity for a resilient and livable future.

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