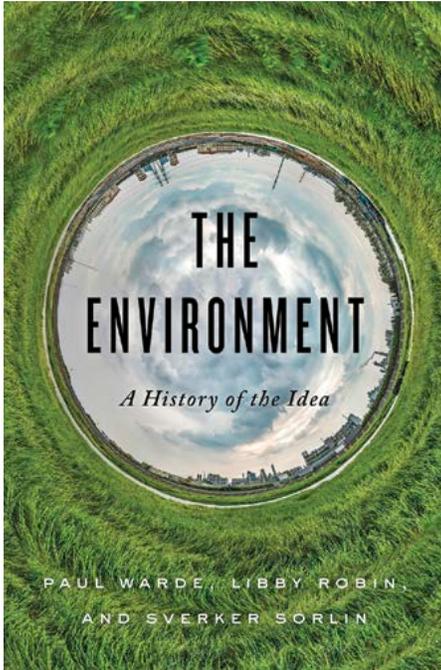


“A Planet-Changing Idea”

DEBORAH POSKANZER



The Environment: A History of the Idea opens with a seemingly facetious query: “The environment is all around us.... Where did it come from?” In fact, the authors have deeper things on their collective mind: Why is it that our current, ubiquitous use of “the environment”—a singular noun denoting the global web of life-forms and processes—cannot be found before the mid-twentieth century? And how did that change?

For two centuries prior, the word “environment” meant the context, circumstances, or immediate surroundings of a being or beings, usually by way of explaining its development and attributes. Hence the Victorian-era philosopher Herbert Spencer’s mid-nineteenth century belief that different “environments” produced stronger or weaker societies. Architects designed a “built environment” to improve the quality of urban life, and juvenile delinquency stemmed from a troubled “home environment.”

**The Environment:
A History of the Idea**
by Paul Warde, Libby Robin,
and Sverker Sörlin. Baltimore,
MD: Johns Hopkins
University Press, 2018, 256 pp.

According to *The Environment’s* authors Paul Warde, Libby Robin, and Sverker Sörlin, the sudden mid-century shift to speaking of *the* environment signified the emergence of “a planet-changing idea ... because it made the planet visible in a wholly new way.” This is the authors’ central claim, and their goal is to describe how that paradigm shift took place.

This is a “thick” intellectual history that drills down through the explanatory strata. “The history of a concept,” the authors write, “is closely related to the development of expertise, of institutional power and dominant imaginaries, and political influence.” Linguistic shifts reflect conceptual ones, while conceptual shifts flow from changes to the infrastructure of knowledge production—in this case, the post-World War II boom in science funding; the growth of large, integrative research institutions; and the proliferation of international agencies and conferences. The mode of knowledge production in turn reflected the postwar zeitgeist, with its faith in the republic of science as the antidote to future wars. And finally—much as in the historian of science Deborah Coen’s recent treatment of the conceptualization of climate—the whole is situated in the broad political history of nations and empires.

The book opens with the 1962 publication of Rachel Carson’s influential *Silent Spring*, whose tale of pervasive toxins impressed upon a worldwide audience the degradation of “our

environment” or “man’s environment.” This meant, in the first instance, localized cases of pollution, but also a worldwide problem. As convenient shorthand for her subject, Carson spoke frequently of “the environment,” thereby forever changing the way the public spoke (and thought) of the vulnerable global web of life.

But how did Carson come to create an identity between local environments and a singular global environment? The authors dial back to 1948 as the moment when the paradigm began to shift. That bleak, shortage-plagued year saw two critical developments. The first was a pair of parallel conferences on resource conservation by the United Nations and UNESCO. Both the United Nations Scientific Conference on the Conservation and Utilization of Resources and the International Technical Conference on the Protection of Nature were attended by hundreds of economists and ecologists from around the world, concerned about the survival of mankind on the planet. These conferences signaled that in the new postwar order, international collaboration would be the preferred means for resolving not just monetary or security issues but also for preserving the future of the planet. They set the tone for the future alphabet soup of national agencies and international collaborations, down through the present-day Intergovernmental Panel on Climate Change.

The second move toward the idea of a singular global environment was the publication in 1948 of several seminal ecological works that stressed the necessity of recognizing the interconnection of local and global environments if humans were to survive on the planet: William Vogt’s book *Road to Survival*, Fairfield Osborn’s book *Our Plundered Planet*, and Evelyn Hutchinson’s article “On Living in the Biosphere,” published in *Scientific Monthly*. For Warde, Robin, and Sörlin, each of these integrated a broad array of formerly disparate ecological subjects,

“what might be called the ‘modern environmental problem catalogue’ ... population growth, water scarcity, soil erosion, overconsumption, overfishing, pests, industrial wastes, the retarding productivity of soils, and species loss.”

Just as important as this integrative aspect was the scaling up from local to global issues. As Vogt wrote, “An eroding hillside in Mexico or Yugoslavia affects the living standard and ... survival of the American people.” The common point of these newly global ecologists, say the authors, was that “there was an environment outside your door, and it was the same environment as the one outside any door on Earth.”

Notable as well was the ubiquity of the word “survival” in both ecological writing and international conferences. “*The environment*” originated as a crisis concept, born of a moment when the trauma of global war, followed by the fear of nuclear annihilation, left many people doubting whether humans had a future. Perhaps the mid-century crisis was a necessary catalyst to push the small-scale, largely apolitical work of (most) prewar ecology toward a more political and global orientation.

Moving forward from the postwar period, *The Environment* enters the more familiar territory of the 1960s, as computerization boosted the ability to integrate large amounts of environmental data and cybernetics influenced the study of feedback loops and modeling. Popular environmentalism flourished in the 1970s, but this was a double-edged sword: popularization meant a broader acceptance of basic precepts of environmental thought, but it also increased attacks on expertise. The book covers the development of Earth systems science in the 1980s and the turn to sustainability—“our common future”—and the addition of climate change to the “environmental problem catalog” in the 1990s. At each of these steps, the authors look both backward and forward, delineating the historical pathways by which new knowledge derived, and the legacy for subsequent developments.

One of the strongest aspects of *The Environment* is its analysis of the different types of expertise that were necessary to the creation of environmental science and its heirs. In somewhat the same way that twentieth-century physics evolved from a “bench” science to a large, team-driven “big” science, the prewar ecology of field expertise grew into a new field that was by definition broad, multidisciplinary, and collaborative. Thus in addition to small-scale expertise on specific biomes or organisms, the establishment of environmental science required interactional or communicative expertise (skill at bridging the gaps and disputes between contesting experts in different disciplines); institutional or political expertise (skill at building and funding new programs); and above all, integrative, synthesizing, and data-processing expertise.

Jay Forrester, the MIT computer engineer and systems scientist who created the earliest limits-to-growth models that used computers to project the effects of economic and population growth on natural resources, knew very little about ecology. But he was an expert in feedback loops from his work in missile technology and industrial organization. In this way, according to *The Environment*’s authors, he “exemplified the emergence of a new kind of expertise that promised to provide more integrated tools of analysis and joined-up understandings for policy-makers.” Well aware that new forms of expertise do not grow in a vacuum, the authors pay careful attention to the practice of expertise within the broader context of conferences, research institutions, and external technological developments, such as computing.

A book of this scope is bound to have a few flaws. The emergence of environmental thought seems artificially smooth and inevitable. There is no mention of the struggle over the boundaries and priorities of the new field between ecologists on one hand and urban planners and futurists on the

other; nor of the schism between environmental and ecological economists; nor of the strain of Luddism in some sectors that led to the fateful exclusion of nuclear energy from the proposed policy portfolio. Discussion of any of these might have given the reader a more realistic appreciation of the contingency and conflict involved in the formation of new knowledge fields.

The book also neglects the moral turn of the 1960s, when the political philosopher John Rawls and other philosophers extended the temporal framing of justice and fairness. Their articulation of intergenerational fairness was critical to both environmentalism and sustainability. The choice of 1948 as the turning point toward “a planet-changing idea” seems too early, judging by the authors’ stated criterion that linguistic shifts signal epistemic shifts. Close reading of Vogt and other early ecology texts shows “environment” still used in its qualified, limited sense up through the 1950s. “*The environment*,” as a singular globe-encompassing noun, cannot be found before about 1960, when it began to appear in studies of nuclear fallout and in Carson’s articles.

More importantly, proto-environmental work before the mid-1960s was still colored by Malthusianism—the idea that population increase would doom human well-being—and was too concerned with the specter of scarcity to see nature as having standing in its own right. As the authors correctly acknowledge, true environmental thought must see the planet as worthy of protection in its own right, beyond its function as the repository of goods and services for humankind. The Green Revolution of the 1960s was critical in pushing the Malthusian paradigm far enough into the background to allow post-scarcity environmental thought to emerge, and yet it is not mentioned at all.

Despite these occasional lapses, this meticulous and nuanced book is of value not just to students of intellectual or environmental history, but to any

reader concerned with current issues. *The Environment* ends with the emergent concept of the Anthropocene Era, in which the impact of human behavior is on the scale of a geological force wreaking permanent change on Earth's systems. While drawing parallels between the formation of "the environment" and "the Anthropocene," the authors note that in the case of the former, nearly quarter of a century (1948-1972) elapsed from the earliest academic stirrings of "the environment" to widespread popular acceptance of the concept.

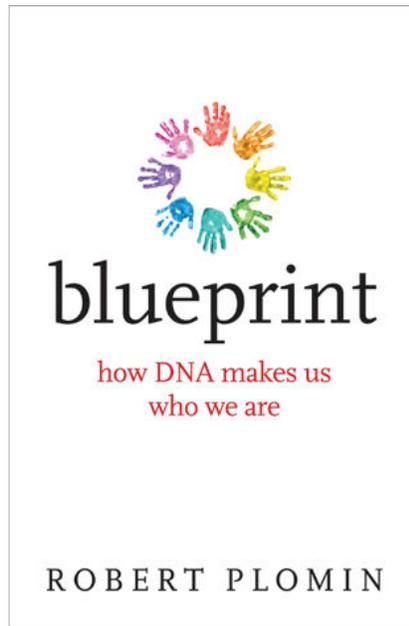
We don't have the luxury of that time now, the authors write in their closing entreaty. We must use all means at our disposal to accelerate the process of learning and understanding. One hopes that we hear their plea.

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Hardwired

LISABETH FISHER DILALLA

Adding to a prolific career of scientific writing, the psychologist and geneticist Robert Plomin has produced an extremely readable and interesting book about the role of genetics in our lives. *Blueprint: How DNA Makes Us Who We Are* is part scientific memoir, part summary of the current state of the art of behavior genetics, and part introduction of the field to the layperson. In it, Plomin uses highly accessible terminology to explain complicated concepts of inheritance and genetic influences on various human behaviors, as well as the ostensible role of environmental influences. "The main message of *Blueprint*," Plomin writes, "is that genes are the major systematic force in children's development." In other words, the part of behavior that is predictable is primarily a function of DNA rather than environmental influences that are shared by members of a family.



Blueprint: How DNA Makes Us Who We Are
by Robert Plomin. Cambridge, MA: MIT Press, 2018, 280 pp..

Plomin introduces this important idea in the book's prologue, which delivers an overview of the topic of inheritance and DNA. The rest of the book provides his evidence to support this strong—and controversial—statement of the primary importance of genotype for explaining most of human behavior. Plomin uses data from his own famous twin studies as well as from the newest big data sources of genome-wide association studies (GWAS), which examine the whole genome across many people to discover small genetic variations that are associated with particular behaviors or diseases, to demonstrate the predictability of behavior from compilations of genes.

There are two primary lessons to be learned from *Blueprint*. The first is that, according to Plomin, "genetic research has told us as much about the environment as it has about genetics." Initially, psychologists believed that most of the environmental measures they assessed, such as the home situation, parenting behaviors, and cultural differences, were causally related to behaviors. However, exploring relations between environment and behaviors in

genetically informative ways, such as using twin and adoption studies, has led scientists to realize that most of these "predictions" are in fact correlations. That is, although parenting may be related to children's problem behaviors, this relationship is primarily a function of parents' and children's shared genes, not shared environment. This is a critical point that Plomin makes throughout the book.

As Plomin notes, because of our genetic differences, we each have different life experiences. Thus, parenting styles can have different effects on siblings because they may have genetically different temperaments. This is called gene-environment interaction, and it is an essential aspect of how both genes and environment lead to individual differences in behaviors.

Relatedly, correlations between our genes and our environment occur for several different reasons. One of these is that we evoke reactions from those around us based in part on our genetic makeup (this is called evocative gene-environment correlation). Another is "niche-picking," which refers to choosing to put ourselves in environments that fit us, in part as a function of our own genetic makeup (this is called active gene-environment correlation). For these reasons, we actually express our genetic potential more and more as we age, an important point that, Plomin says, makes us appear to become more like our parents as we grow older. Becoming more like our parents is primarily a function of shared genes, although it also reflects being more in environments that reflect or amplify our genetic potential over time.

The second important lesson in *Blueprint* is that scientists now have access to an exciting new methodology that allows much more successful prediction of behaviors from genetic information. This new tool is the creation of polygenic risk scores, which has become possible because of the increasing number of genetic studies being performed around the world. Scientists have amassed huge data sets of DNA, along with measures of specific behaviors. These huge data sets are essential