

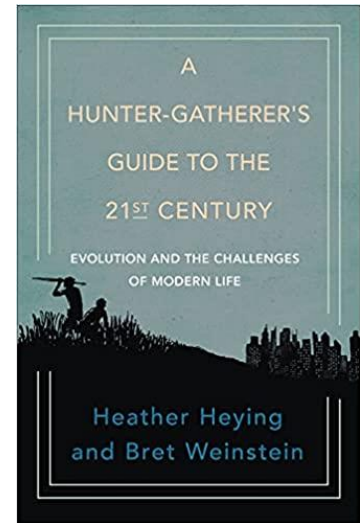
**“Hyper-Novelty is Killing Us: Evolution
Explains Why”**

a review by Dick Burkhardt of

**A Hunter-Gatherer’s Guide
to the 21st Century:**

Evolution and the Challenges of Modern Life

By Heather Heying and Bret Weinstein (2021)



There is no better way to figure out what is going on in the world than to start with the science. In this case it’s the evolution of humanity itself – both the biological and the cultural evolution. The “Omega Principle” of the biologist couple, Heying & Weinstein, is that persistent cultural changes are also biologically adaptive over the long haul. That is, they “serve the genome” in some way and we need to try to understand how and why.

The context is that we evolved in response to a long series of crises – ice ages, desertification, sea level rises, shifting sources of food, and more. Today similar crises are imminent but vastly accelerated. Heying & Weinstein call this “hyper-novelty”, and as a species we’re ill-prepared, both biologically and culturally. Still the secret of human success is not our individual, but collective genius: “When so many people with distinct talents and insights come together around a campfire to discuss a shared problem, the spark of innovation and spread quickly” (p 4).

As with all species, we are defined by our environmental niche. Except that “the human niche is niche switching” (p 10). To put it another way, instead of mastering particular niches (specialists), or being jacks of all trades (generalists), “here we are, jacks of nearly every trade imaginable, and simultaneously the masters of nearly every habitat on Earth” (p 6), called “division of labor” by economists.

One key, of course, has been our ability to use our cognitive and linguistic skills to organize this unparalleled “plasticity” to expand to global dominance. The other key has been our technological ability to tap into our planet’s phenomenal resources, except that fossil fuels have now propelled our species far beyond the

earth's "carrying capacity". That is, our "collective consciousness" has not kept up – cultural evolution is failing us - with unprecedented global crises looming ahead.

One lesson of history is that "when times are good, people should be reluctant to challenge ancestral wisdom" (be more conservative) but when things aren't going so well they should become more willing "to endure the risks that come with change" (be more liberal). But this rule-of-thumb may fail due to what the authors call "Sucker's Folly": the tendency "to rest on our cultural laurels" – to focus on short-term benefits, not long term costs and risks (p 10).

The authors emphasize that "fitness", as in "the survival of the fittest", is often about *reproduction* but always about *persistence* of a *lineage* (= all descendants) and that cultural contributes to this every bit as much as genetics. Moreover, their three part "Test of Adaptation" is good guide: An adaptive cultural trait (1) is complex, (2) has energetic or material costs which vary across social settings, and (3) is persistent over evolutionary time (p 45).

All this leads Heying & Weinstein to promote the Precautionary Principle – carefully assessing the risks of changes to products and practices, exercising caution when those risks are high, and monitoring the results. This would include time-tested aphorisms such as "don't throw out the baby with the bath water", in addition to new chemicals and gadgets. An example of the adaptive test is that the human appendix must have some adaptive function, even though doctors saw it as useless and removed it whenever possible to avoid appendicitis. Not surprisingly, it has since been found to be very helpful to people who experience frequent diarrhea, which had been masked by the sanitation of modern societies.

In particular the adaptive test means that controversial beliefs and practices like "religion" must have adaptive features. Note: Heying & Weinstein host the "darkhorse" podcast which is distinguished by a fearless "follow the science" ethic, even if it means taking on powerful authorities or ideologies. For example, they reject doctrines of Critical Race and Gender Theories that are contradicted by extensive scientific investigations. And during the COVID-19 pandemic they have carefully tracked the science, even when it has meant bucking powerful political or economic interests or authorities.

The authors emphasize that a key to understanding evolution, both biological and cultural, is to analyze trade-offs. The "Law of Diminishing Returns" is a prime example of how investing in a new technology or resource may yield large returns at the beginning but less over time. This is a trade-off: Do we keep investing in the

old, despite diminishing returns, or look for something new with higher returns, or just rebalance our existing investments to better meet our needs, bearing in mind the “opportunity costs” of misallocation of our energy and resources?

“Cornucopians” often ignore such trade-offs, assuming that new resources or new technologies will always be found to replace those that are failing or outdated, citing recent history or neo-classical economic theory. There are also other kinds of trade-offs, such as between the efficiency and the resilience of how a complex system is designed to function. In fact, nature is all about the evolution of complex systems, especially the trade-offs embodied in feedback loops that tend to keep them in balance and feedforward loops that open the way to transformative change. The authors illustrate such trade-offs by examining many age-old ways humans have found to preserve food, both the biological basis of these practices and their evolutionary purposes.

Other chapters look at medicine, sleep, sex and gender, parenthood, childhood, school, adulthood, and more, disentangling cultural from biological evolution and digging deeper into fads and ideologies. Surprisingly, they find beliefs that are “literally false but metaphorically true” (p 218). For example, if some people believe that they will go to heaven if they live a virtuous life, society will be more likely to both survive and thrive even if there is no heaven in the physical universe. Of course, in the modern world virtuous behavior may also be grounded in philosophy, ethics, civics, etc., but understanding the roles of taboo and spirits in the ancient world is certainly far superior to the old way of branding them as the superstitions of the ignorant.

Each chapter summarizes the “lessons learned” by the authors through their decades of teaching and research. They call these their “Corrective Lens”. Their suggestions for medicine, for example, include “listen to your body”, “spend time in nature”, “resist pharmaceutical solutions” and look for alternatives grounded in evolutionary biology. For sex and gender, they reinforce classical advice like “avoid sex without commitment” and “keep children away from pornography” but also advise “do not interfere with children’s [natural] development” such as authorizing premature sex change operations and “recognize that our [sex/gender] differences contribute to our collective strength” rather than attempting to homogenize men and women or regard them as interchangeable.

For school, the suggestions include “honor good rules but question bad ones”, help students to “get out of their comfort zone and explore new ideas”, interact in multiple ways with the “physical world” and “complex systems”. for older

students, take “social risks – intellectual, psychological, and emotional” and don’t bow to “authority”.

There is also a “fourth frontier” (after geographical, technological, and resource frontiers): An “Evolutionarily Stable Strategy” - to develop a collective consciousness that will feel like perpetual growth but will “abide by the laws of physics and game theory”. Here Heying & Weinstein advise to keep marketing and profit at arms-length from both yourself and your family, rely less on static rules and metrics and more on understanding from first principles, dispense with any “utopian vision that focuses on a single value” and learn to deal with complexity. As a society, we should “invest in public works” and “prototype” new concepts while abiding by the precautionary principle and addressing negative externalities. That is, “just because you can doesn’t mean you should”.

Finally, Heying & Weinstein lay it on the line: “We are headed for collapse”. Many lineages die out, so could ours if we don’t get our act together.

Comment: These authors represent an expanding breed of natural scientists – those who have left the halls of academia to become public intellectuals, who in the past have come mostly from the humanities and social sciences, often more grounded in ideology than the science method. We need public intellectuals like Heying & Weinstein who understand good science from the inside, while being more independent from the corruptions of traditional institutions, hence more skeptical – as pioneered by Socrates.