CURRENT BOOKS

# *Evolution's Hidden Purpose*

*NONZERO:*
***The Logic of Human Destiny.***
By Robert Wright.
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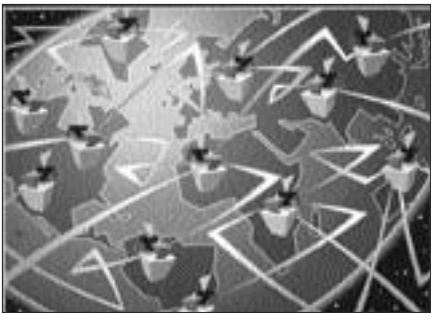
***by Francis Fukuyama***

Robert Wright's previous book, *The Moral Animal* (1994), presented a highly readable overview of evolutionary psychology, the controversial attempt to apply the principles of evolutionary biology to the study of the human mind. In *Nonzero: The Logic of Human Destiny*, Wright attempts something far more ambitious: he extends the evolutionary story both backward and forward in time, arguing that human cultural evolution can be understood as an outgrowth of biological evolution, and that it should eventually lead humankind to higher levels of cooperation on a planetary scale. If this sounds like a tall order, it is—but Wright does an astonishingly effective job of finding directionality in history, not just over the past few thousand years but over the almost four billion years since the beginning of life on earth.



The "nonzero" of the book's title comes from game theory, in which games either have zero-sum outcomes, where one player's loss is another's gain, or non-zero-sum outcomes, where both players can gain (or both can lose). Wright argues that what he calls the "logic of nonzero-sumness"—that is, the gains that result when individuals solve problems through cooperation—is the driving force in history. History, in other words, can be understood as the gradual widening of non-zero-sum outcomes. This applies not just to human cooperation, but to all forms of life from the first emergence of organisms out of stranded DNA. But that is getting ahead of the story.

Fans of *The Moral Animal* will particularly appreciate the first half of *Nonzero*, in which Wright does for contemporary anthropology what the earlier book did for evolutionary psychology. As he explains, cultural anthropology for much of the 20th century has been subject to a high degree of political correctness, a trend that began with the seminal figure of Franz Boas. Reacting against the rampant social Darwinism of the early 20th century, Boas, an anthropologist at Columbia University, argued that there was no such thing as cultural evolution in which "primitive" peoples were gradually replaced by more highly civilized ones. Boas thus attacked the assumption, common in his time, that white northern Europeans stood at the top of a cultural hierarchy. With his students Ruth Benedict and Margaret Mead, he launched an ultimately successful campaign to purge "ethnocentrism" from the social sciences.

While the motives of these early cultural relativists were understandable, and indeed laudable, the view that there is no way to distinguish between, say, the Inuit and the Babylonians is, on the face of it, absurd. Human societies can be differentiated, Wright argues, not so much by their level of technology as by their degree of non-zero-sumness—that is, their degree of social com-

plexity and the types of collective-action problems they have been able to solve. Thus, there are huge differences even among hunter-gatherer societies. The Shoshone of the Great Plains scarcely achieved a level of social organization higher than the family, while the Indians of the northwestern Pacific Coast (famous for the potlatch) developed something close to a government. The differences in social structure might be attributed to the much richer environment of the Pacific Coast, but Wright takes some pains to argue that human evolution, both biological and cultural, is not necessarily driven by exogenous shocks or stimuli from the outside environment. Human beings are intelligent and creative to the extent that competition among them will produce innovation and change. There is no such thing as an "equilibrium" social order to which humans will revert if left undisturbed by their environment. Human beings would eventually have tired of arcadia and changed it into something else.

Wright goes on to show how the complexity of human societies grew through the sequential solving of non-zero-sum cooperative problems, first in the extraction of resources from the environment (for example, through big-game hunting and later through trade), and then as a result of external pressures from zero-sum competitions with other human societies. Modern anthropological data support the truth of Kant's insight into humankind's "asocial sociability": human cooperation is driven in many instances by the need to compete with and often fight other human groups. Or as Hegel argued, in the remorseless logic of history, war is an essential component of human progress because it stimulates the development of modern institutions. This process, if not inevitable, seems highly probable: Wright shows that many of the great milestones in cultural evolution, such as the invention of agriculture, actually occurred several times in widely separated parts of the globe.

Wright extends this evolutionary picture to the present, where human societies are organized into nation-states and have filled the planet with webs of interdependence. He argues that writers (such as journalist Robert Kaplan) who see incipient chaos lurking in every ethnic or religious conflict have missed the larger picture of growing human cooperation. The logical outcome of this process is ultimately some form of global governance, as human beings try to solve non-zero-sum cooperative problems on the largest possible scale—problems such as environmental destruction, disease, and terrorism. While some conservatives may take offense at what seems like soft-headed one-worldism, Wright does not build this elaborate theoretical structure in order to argue for world government. Rather, he points out that global governance can take many forms, including ones already in existence, such as the World Trade Organization or the International Monetary Fund, that seek to increase gains from international cooperation.

The most speculative (and therefore the most interesting) part of *Nonzero* is the final third, in which Wright argues for the continuity between biological and cultural evolution. What we understand today as an individual organism is in fact a cooperative interaction among cells, one that was itself the result of countless game-theoretic confrontations between single-cell creatures over the eons of evolutionary time. Indeed, this happened below the cellular level: outside the nucleus of every human cell are mitochondria that, biologists theorize, were at one time freestanding bacteria; like human beings assimilating into a foreign society, they eventually found it in their self-interest to join forces with the host cell. No one would deny that there is a fundamental difference between biological and cultural evolution, but the latter can be seen from this perspective as nature's discovery of the most effective way of achieving the end of adaptation.

The fact that evolution, both biological and cultural, so relentlessly seeks ever-higher levels of complexity leads inevitably to the question of whether this process is purposive and teleological. The fact of directionality does not prove, as the deists argued, that an anthropomorphic God must have built this

elaborate machine and set it in motion. But, as Wright argues, it is at least not crazy to wonder whether a process apparently so at odds with the increasing entropy predicted by the Second Law of Thermodynamics might be more than a random accident. And he argues that modern science, by explicating this process, has not eliminated its mysteriousness. The origin of consciousness in particular is a weak point in the evolutionary account of human life: "What's interesting—and underappreciated—is that you could reach the [conclusion that science can't illuminate all the dimensions of existence] if you *accept* the hard-core scientific view that consciousness is an epiphenomenon lacking real influence. After all, if consciousness doesn't *do* anything, then its existence becomes quite the unfathomable mystery."

And this mysterious consciousness is the seat of the emotions and everything that makes life worth living. Wright is not arguing for the necessity of religious explanations for this mystery, and I suspect he would be unhappy if creationists pounced upon his conclusions to justify their views. He argues instead that the hard-science account of evolution should increase our level of wonder at the process rather than demystify our understanding of it.

It is hard to know where to begin in critiquing an argument of such sweep and complexity. As someone who himself has argued that history is both directional and teleological, I am in broad sympathy with Wright's aims, however much I might quibble with particular aspects of the argument. I will make just one point about the way in which Wright's views are and are not relevant to any near-term issue in politics and economics.

Wright sometimes implies that game theory gives us a unique non-zero-sum solution to any problem of social cooperation. This is not true: most games are fraught with so-called multiple equilibria, with any number of stable outcomes possible. The outcome that the players ultimately arrive at is often arbitrary and less than socially optimal. This is true even in the simplest prisoner's dilemma game, where the equilibrium solution for a one-shot game dictates cheating your partner. The number of possible solutions multiplies rapidly when the players are ones with complex "utility functions"—that is, multiple and often incommensurate goals, such as wanting both economic efficiency and egalitarian wealth distribution. A dictatorship and a constitutional democracy can equally solve the cooperative problem of supplying necessary public goods, yet the difference between the two types of regime holds enormous consequences for people.

From the perspective of any sufficiently long time scale—the four billion years of evolutionary history or the millennial scale of cultural history—there is clear directionality and progress toward non-zero-sumness. But on any time scale that matters to human beings, such as a decade or a generation, societies can get stuck in all sorts of socially suboptimal situations. Indeed, economists have argued that China was caught in a "low-level equilibrium trap" for the better part of a millennium, one that kept Chinese society from advancing much past Malthusian conditions.

What politics is all about is not generic non-zero-sum solutions to cooperative problems, but rather *what kind* of non-zero-sum outcome we want to live under. This means, among other things, that Wright's broad theory gives no support to his short-run policy preferences for particular forms of global cooperation. We may get to planetary governance eventually, but only as the result of nuclear war, environmental collapse, and devastating global epidemics—and then it may take the form of a giant police state.

None of this should detract from a final judgment that Wright has written an extraordinarily insightful and thought-provoking book. The idea that there is directionality and purpose to history is one that has come and gone, and now may be coming again thanks to the elegant synthesis he has produced.

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