

Book Review

Ralf Brand

Synchronizing Science and Technology with Human Behaviour

London: Earthscan, 2005

Reviewed by Howard A. Doughty

Co-evolution is the theme of this book. The term, at least according to *Webster's* is barely forty years old. It has already had quite a history.

Narrowly defined in biological terms, it refers to the mutual evolutionary influence among two or more species. It implies close ecological interactions that, in one way or another, cause reciprocal changes. Typically, co-evolution takes one of four forms: predator and prey; parasite and host; competition for scarce resources; and co-operation or "mutualism." Classically, one can think of the latter in terms of flowers that require the assistance of insects or birds for pollination and birds and insects that feed off floral nectar. Honey bees and hummingbirds evolve in a way that facilitates their feeding and plants evolve in a way that attracts the birds and the bees. It can be that simple.

It can also be complicated. Since about 1984, the concept of co-evolution has been used in the field of molecular biology to describe, for example, the relationship between hormones and receptors within species. Of particular interest here is the work of Gabriel Dover, who believes in an evolutionary force distinct from natural selection which he calls "molecular drive." It comprises, he says, a collection of co-evolutionary mechanisms that keep identical copies of genes in DNA. Indeed, at the cellular level, the existence of mitochondria, which have different DNA sequences than their host cells, is said to be the result of antique co-evolutionary relationships between primitive cells and invading bacteria.

Extending outward and distancing itself from biology itself, co-evolutionary algorithms are currently playing an increasingly important role in such experimental adventures as artificial intelligence and machine-based "virtual" brains. Not to be outdone, astronomers and cosmologists have gotten into the game, using co-evolution to explain the evolution of galaxies, black holes and (according to Erich Jantsch's book, *The Self-Organizing Universe*) the universe itself. Not for nothing were the early advocates of co-evolution dedicated followers of that generation of cyberneticians who emerged after World War II and stuck their imaginative fingers into every nook, cranny and concept of human understanding from psychiatry to computer games, and who were epitomized by no one more than Gregory Bateson.

What co-evolution means now is largely a matter of "Branding".

The first time a substantial number of North Americans came upon the term was a consequence of the work of Stewart Brand. US Army parachutist and photographer, innovative rock music and light show impresario, acid-head and "Merry Prankster,"

futuristic mystic, quester after Native American wisdom and ex-advisor to California Governor Jerry Brown, he started the *Co-evolution Quarterly* in 1974, morphed it into several subsequent variations, and is now busy with the Global Business Network, featuring a crew as diverse as Mary Catherine Bateson, Freeman Dyson, Francis Fukuyama and Sherry Terkle. GBN is currently located in Emeryville, California, but plans to move to San Francisco (where else?) in May, 2006. He has also been a visiting scientist at MIT and a consultant with Shell Oil, Volvo and AT&T.

Go figure.

The *Co-evolution Quarterly* exemplified the post-60s counter-culture in all its brilliance, dementia, commitment and internal contradictions. Stewart Brand was a perfect focal point. Ralf Brand is different.

Stewart Brand is a sixty-eight years old American. Ralf Brand (no discernable relation) is just thirty-five and of dual Swiss-German citizenship. Any notion that he has smoked, sniffed or snorted anything remotely illicit is absent from his on-line Curriculum Vitae. He lists his competencies in languages: in German, English, Dutch, French and Spanish and cites nine years of study in Latin and three in ancient Greek. He lists his twenty-two competencies in computer software. He provides the interested reader with his grade point average in high school and a catalog of all the applications he has made for funding: successful, unsuccessful and “pending.” Ralf Brand is no “Merry Prankster.”

Ralf Brand (hereafter, “Brand”) correctly understands that the globe is in a state of ecological, economic and cultural difficulty. He latches on to phrases that have sustained people with a concern for the social and natural environment for some time, chief among them being “sustainable development.” He does not admit that in every green scheme, it is “development” that will be “sustained.”

Brand focuses on two ways to amend our behaviour in order to ameliorate our conditions, postpone and preferably overcome our problems. He is not innocent. He is aware of the major threats to our species and of the threat our species poses to the Earth. He is not alone. Anyone not totally disjoined from the pressing issues of the day will understand that the quality of human life and, indeed, the future of human life are by no means guaranteed.

About forty years ago, I listened to “conservative futurist,” James Dator address the Hawaii State Legislature. Within half an hour, his Jeremiad had identified biochemical and nuclear weapons, economic and social inequities, famine, global warming (then called thermal pollution), overpopulation, pandemics, toxic waste and a number of other potential sources of disaster. Even before the personal computer, much less the Internet, these problems were well known, if cheerfully ignored by private and public bureaucracies as well as the attentive public. Brand is aware of them.

His challenge? To figure out how we can begin to define, describe and ultimately deal with the dangers that confront us. His method? To examine the main methods for conceptualizing the problems and developing strategies for their solution.

Brand quite sensibly notes that there are two separate ways to address “sustainable development.” Neither is adequate, but both claim precedence. First, there are technical solutions (disparagingly if not inaccurately called “quick-fixes”); second, there are behavioural solutions (called, following Kenneth Boulding, “heroic choices,” by which he means such life-altering behavioural changes as significantly reduced resource consumption, not paths chosen by some valiant “Überumweltschützer”).

One places reliance on technology, which bears much responsibility for getting us into trouble, but also holds out the promise of establishing a new “natural balance.” If the internal combustion engine and the general overuse of fossil fuels have created air pollution, clean and renewable resources can be developed to maintain our current level of energy use without further despoliation of the planet. Wind? Solar? Tidal? Geothermal? Biomass? Hydrogen? ... Nuclear fusion?

The other insists that such innovations may be important, but are either unavailable or uneconomical for the present. So, changes in our behaviour are required until the arrival of alternative means of survival. We must conserve. We must make do with less. We must reduce, reuse and recycle. This is no matter of a modest adjustment in “lifestyle.” Serious, “hard” choices must be made. If an ethic of conservation and sharing is not adopted, it must be imposed either by “market” discipline or the authority of the state.

Brand’s principal thesis is not just that both scientific and technological innovation on the one hand and a vast ideological-behavioural shake-up on the other are required if anything of substance is to be done. It is also that these two approaches must be understood to be more than vaguely compatible; they must complement, inform and influence the other. They must be co-evolutionary, for neither can do the job alone.

Brand offers interesting graphics to represent his views. He illustrates the “core elements” in the theory of co-evolution he wishes to present. He employs Dawkins’ neo-Darwinian language of “memes” to articulate precisely how the “deliberate symbiosis” of technology and culture would address problems of sustainable development. He provides helpful examples in the form of case studies that demonstrate how creativity and communication, concerted public action based on enlightened self-interest and self-correcting systems of decision making.

It is all rather upbeat and optimistic. It is pragmatic. It is inventive. It is anything but utopian, for Brand also understands the criticisms that await him. In a particularly engaging chapter, he anticipates the jibes he is likely to take.

Some come from what, I suppose, might conveniently be called “the left.” They take the form of accusations that there is nothing much new here. Two decades ago, the Report of the World Commission on Environment and Development, *Our Common Future*, went

on about our “common concerns,” our “common challenges” and our “common endeavours.” Subsequently, the UN Conference on Environment and Development (UNCED), commonly known as the Earth Summit, was dutifully held in Rio de Janeiro in June 1992. The Kyoto Protocol on global warming followed in December, 1997. Targets have been established with regard to the ecology, foreign aid, human rights and so on. None have been met. Accordingly, skeptics may be forgiven for thinking that yet another fancy restatement of old-fashioned “systems theory,” fashionably dressed up in decorative biological language will yield nothing but a flurry of “discourse,” but few material consequences.

Others come from what, I equally imagine, can be called “the right.” Triumphant neoliberalism, at least temporarily augmented by the corporate denial of basic science and its implications in terms of global warming, seems to hold sway over any reformist enthusiasms. Even largely symbolic gestures such as household trash separation are sometimes considered too “radical,” “uneconomical,” and fundamentally at odds with the genuine engine of change, the free market. Imposed solutions imply evolutionary distortions; the “invisible hand” as interpreted by the likes of Hayek if not Adam Smith is pronounced the source of reliable wisdom.

In the end, Brand speaks hopefully of growing awareness, of the utility of technological innovation and of public attitude change. He cites throughout the admirable lessons to be learned from innovations (improved public transit and restrictions on private vehicles) to reduce traffic congestion in the Belgian city of Hasselt and from changes in grocery shopping (the purchase of more locally produced vegetables with a common logo, or “brand”) in the German county of Fürstentum.

This is all quite pleasant. It shows that concrete results can, in fact, come from “thinking globally” and “acting locally.” I do not wish to dismiss such initiatives; however, some skepticism is warranted for they do not, I am genuinely sorry to say, bring much hope to those concerned less with tidying up fully modern (or postmodern) societies than with addressing the fact that something more than two billion people in China and India alone are eager to join in the pollution factory that is modern society. My friend Phil King recently reminded me that each year the number of automobiles in Beijing increases by 200,000, while airplanes powered by fossil fuel bring bottled water from France to Hawaii.

About the Author

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