

## ETHICAL EVOLUTION

by *Eric J. Chaisson*

*Abstract.* Two papers on global morality and ethics—by David Loye and Solomon H. Katz—are hereby placed into an evolutionary context. Simply stated though no less true, ethical evolution will likely be the next great evolutionary leap forward into the future—if humankind is to have a future.

*Keywords:* cosmos; ethics; evolution; humankind.

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### A COSMIC PERSPECTIVE

Some say that the end of modern science is near. Others claim that organized religion is passé. And virtually everyone is having trouble finding traditional philosophy relevant for today's world. Rapid change, technological growth, social injustice, and information overload assault us from all quarters. What are we to do?

Humankind is vigorously pushing itself along the arrow of time—yes, pushing itself. We may have evolved, naturally and in turn with the galaxies, stars, and planets, by virtue of the twin actions of chance and necessity operating within nonequilibrium states. Yet lately we humans have become the cultural agents of change; we have literally taken matter into our own hands, granting ourselves the option of a grand and glorious future, or perhaps one marked by self-destruction, devolution, and death. This, the scenario of cosmic evolution and its cosmological imperative, I have written about elsewhere (Chaisson 1979).

Cosmic evolution is the study of many varied changes on a universal scale, for Heraclitus was probably right—there seems nothing permanent except change. This subject seeks to synthesize the reductionistic posture

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of specialized natural science with the holistic view that goes well beyond it. It is a story about the awe and majesty of twirling galaxies and shining stars, of redwood trees and buzzing bees, of a universe that has come to know itself. But it is also a story about our human selves—our origin, our existence, and perhaps our destiny.

There seems to be no stopping the arrow of time, that manifest yet undefinable flow against which cosmic evolution unfolds. Born of a titanic explosion some twelve billion years ago, time itself, as characterized by the expanding universe, can be identified, and not just among pantheists, as a Prime Mover—an underlying, almost Platonic, driving force that permits order, shapes structures, and fosters complexity, at least at localized sites within a cosmos irreversibly and relentlessly decaying toward maximum disorder. We see in our data, and increasingly so, a rich natural history of past phenomena steadily unveiling; the universe may not make progress, but we most certainly do. Yet with our relatively recent understanding of the role of nonequilibrium thermodynamics (and its inherent stochasticity) in the emergence of order, we now realize that much of modern science is no longer in the prediction business, nor is anything predestined. Rather, we strive to decipher the intricately woven tapestry of events that have already occurred, sequentially, from galactic and stellar evolution to chemical, biological, and cultural evolution. All these, and future evolution, too, constitute the inclusive cosmic evolution (Chaisson 1997a, 1998).

In the beginning, so says standard Big Bang cosmology, radiation dominated all, disallowing ordered structures of any kind, even atoms, let alone stars, galaxies, or anything tangibly familiar. Some thousand centuries thereafter, the so-called Radiation Era gave way to the Matter Era, a natural, indeed inevitable, change in the status of a thinning and cooling universe. Myriad structures evolved, triggered by random fluctuations and guided by deterministic energy flows, whether our Galaxy, our Sun, our Earth, or ourselves; the mechanisms are neither magical nor mystical, for we nearly understand them! And now, with the onset of sentient beings on at least one planet, we are seeing the dawn of the Life Era. This is not when life itself arises, nor even when humanity or consciousness emerges, but the event in spacetime when technological life forms begin to manipulate matter more than matter influences life, in much the same way that, early on, matter eventually came to dominate radiation. For humans, this spacetime event is here and now (Chaisson 1988).

Contrary to the popular view, and of crucial import regarding the collected papers of this special Global Issues volume, humankind is not necessarily along for the ride, not a mere passenger on the arrow of time. As we approach the Life Era, in which not just life but technological intelligence prevails, we do have an opportunity—a free will, partly—to shape our state, and our fate, on this island of order we call Earth—the big blue

marble where, from an astronaut's perch, there are no political boundaries, no obvious conflicts, only planetary citizens toiling as one. Perhaps Vice President Al Gore's proposal to orbit an inexpensive satellite, *Triana*, to look solely and unblinkingly Earthward is a good one; NASA's greatest contribution to science—that poignant picture of the whole Earth in space—could be seen constantly and in real time on the Internet, reminding all of us of the beauty, yet fragility, of our home in the cosmos.

Broad questions inundate the mind: What is needed for a civilization, a species, to enter the Life Era? On how many other worlds, serenely orbiting stars in the nighttime sky, are sapient beings struggling to get their act together, to develop a planetary society? Can any world attain the Life Era, and has one or more already done so? Is there a principle of cosmic selection, akin to Darwin's natural selection, that operates on a larger scale, beyond biology and on into the cultural—indeed, astronomical—realm? Stated succinctly, it may be the following: Those technological civilizations anywhere in the universe that recognize the need for, develop in time, and fully embrace global ethics will survive, and those that do not will not.

#### A PERSONAL PERSPECTIVE

Ideas are the fuel of life; what we do with ideas determines our culture and defines our civilization. Democracy, for example, was an idea doubtlessly grasped by groups of humans throughout prehistory. Not until about twenty-seven centuries ago was it tried more formally in ancient Greece, where it worked poorly, probably because only free men could vote. But the idea survived in fits and starts over the ages, flourishing here and there only within the last two hundred years or so. Now, in the late twentieth century, it has begun to establish itself planetwide.

Scientific ideas, too, even great ones, often hang around “in the air” before being recognized as reasonable approximations of reality—after which, if they are supported by the evidence, nearly everyone agrees that they are obvious. This was certainly true of the concept of evolution, whose essence (if not the mechanism) was circulating well before Darwin and Wallace brought it to a head regarding the origin of species. Their achievement was to propose the ways and means of natural selection, clearly one of the most powerful ideas ever advanced. Likewise, the idea of a more encompassing cosmic evolution has been floating around for much of the twentieth century, an attempt to build a cosmology in which life has a role, indeed a hopeful role. After my first article on the subject twenty years ago, I well remember receiving a call from Ralph Wendell Burhoe (whom I had not met before), instructing me to visit the Harvard Divinity School library stacks, where I would find on a specific basement shelf and in a particular journal, indeed volume 1, number 1, of *Zygon*, a paper on these very issues: “Life, Hope, and Cosmic Evolution,” by astronomer Harlow

Shapley (1965). After another article in which I broached the idea of the Life Era, I soon came to realize that Teilhard de Chardin (1955), among others, had been essentially down that path well before me, though not from a scientific bent. (My problem is that I don't like to read; I prefer to think and explore.)

This "in the air" issue sometimes affects scientific "facts" as well. As a student at Harvard in the 1970s, I vividly recall having discovered water vapor for the first time in any galaxy far beyond our own—an idea that the astronomical community then surmised must be true, but which had not yet been proven experimentally—only to return home from the giant MIT radio telescopes to hear Walter Cronkite announce on the evening news that German researchers in Bonn had done so two days before. The presence of extragalactic water vapor was a given, a virtual fact; it was merely a matter of chance (and some determinism) among the many groups racing to find it as to who would actually be the first to do so.

And so it is with ethics. The *idea* of ethics, and especially its relevance as an instrument of behavior, has been around for a long time. Philosophers of old probably invented it, and theologians have warmly embraced it (or maybe it's the other way around), but who among them today speaks for planet Earth? Nor do I see the needed ethics arising from science per se, what with our heavy coupling to technology and our dogmatic determination to probe deeper and farther, beyond the world without end. To be sure, the larger notion of a worldly ethic, broadly conceived, is easy to grasp in principle, including a mandate for society to embrace global morality and planetary citizenship as a means to survival. I'd like to think, along the lines of earlier suggestions I have made in this journal, that it will likely be an amalgam of three powerful institutions that will collectively engender, or if necessary demand, the required ethics—a kind of ethical evolutionary advance possible only when we harmonize the agendas of philosophy, religion, and science. Future evolution, the next great evolutionary leap forward, thereby becomes synonymous with ethical evolution. But in practice, how can we actually achieve ethical evolution, by this means or another? What are the practical steps needed to secure passage into the Life Era? And how can we discover the means to help ensure our selection by the cosmos for survival?

Two papers published in this issue provide a feasible recipe for a promising future. Both address pressing global issues squarely, broadly, and fairly. Psychologist David Loye and anthropologist Solomon Katz offer a practical set of steps—a road map of sorts—to help us get beyond the mere idea of ethics, indeed to make it real on a global scale. They, along with futurist Barbara Marx Hubbard, whose recent work I cite below, are among today's leaders who are guiding us along the arrow of time. We owe them a huge debt.

## PRACTICAL STEPS TO THE LIFE ERA

David Loye I've known well since systems philosopher Ervin Laszlo and the late immunologist Jonas Salk brought a dozen of us together in 1986 to form the General Evolution Research Group. A widely published and original thinker, Loye has consistently raised the issue of moral sensitivity, which he roots firmly in science, especially evolutionary science. I admit my bias up front: I like the man, I like what he says, and I like the way he says it. Hear him now: "The differences between religion, philosophy, and science so magnified by history drop away before the greater majesty of evolution, and we see the wide rainbow arc of goodness through space and time" (pp. 227–28). In the accompanying paper, Loye draws on decades of thoughtful analysis and interdisciplinary scholarship to propose a theory of moral transformation, an inherent part of which is a call for a global ethic that he sees naturally arising from considerations of general evolution, systems science, and a spectrum of social studies. He bases his moral code on numerous qualities (such as goodness, love, and partnership), most drawn from the foundations of post-Enlightenment science but ironically excluded by the prevailing valueless scientific paradigm, yet all of them consonant with declarations on human behavior made recently by the Parliament of the World's Religions and by the Union of Concerned Scientists. Indeed, Loye's work spans well the cultural-scientific divide; in a recent meeting on the future of science education that I hosted at the American Academy of Arts and Sciences, he passionately argued that human nature and human values must be an integral part of any effort to reform the teaching of science in today's classrooms (Chaisson and Kim 1999). David Loye is genuine; he lives what he says, and he says straightaway what he means in offering us a six-point recipe for all to adopt a short and simple moral code. Along with that of his partner in life and work, the cultural historian Riane Eisler (of *The Chalice and the Blade* fame, 1987), who has done so much to advance the archaeological and anthropological base of moral transformation theory, Loye's is an action-oriented voice, indeed a deeply moral voice, that needs to be heard more often.

Solomon Katz is another realistic practitioner, providing for us warm and penetrating insight regarding the ways science and religion can together help us identify and embrace a global morality, a sense of values spanning all cultures. Clearly, Katz is best when in his anthropological role; so he, too, approaches his subject from a strong scientific viewpoint, yet one that is tempered with a clear spiritual dimension. Admittedly, I also count Katz among my friends, so this, too, is a biased report. No matter, his message in the accompanying paper is not to be missed: To solve perhaps the three most serious challenges now confronting our planet—human health, environmental degradation, peace and security—humankind will need a goodly dose of science, technology, religion, and,

yes, politics. But in what proportions, and with what timing? After reviewing the current biocultural evolutionary paradigm and illustrating the urgency of our plight with an effective analysis of the exponential nature of our growing population, Katz outlines specific ways that traditional religions can provide the needed sense of values, provided that those religions, in turn, are better able to reconcile the technopolitical character of today's society. To be sure, it is human values and moral leadership that Katz seeks in his anthropological research mode. I think we would all agree that a common set of values points the way toward global morality and a planetary ethic; what we seem to find troubling are the specific action items and essential resources needed in a world where cultural diversity is also valued. Sol Katz is a familiar voice within the pages of *Zygon*, and here he is at his best in a paper whose substance has percolated for nearly a quarter century.

When it comes to addressing *le monde problématique*, few can match the combination of a sweeping, hopeful vision and sheer practicality of social explorer Barbara Marx Hubbard, once a politician (of sorts), indeed a former U.S. vice presidential nominee. In a recent book, *Conscious Evolution* (1998), that occasionally resembles a survival manual, complete with Internet addresses, Hubbard argues that an ongoing, dangerous, yet completely natural evolutionary trajectory has wrought both humanity and its current predicament, and that it is that same evolutionary greatness that now allows us to *create* the future well-being of all humankind. Her plan may not please everyone in all details, but she does have a specific, five-point agenda that speaks directly to the healing of society. The plan pivots firmly about social activism at the grassroots level, amid a growing awareness that talented people are welcoming change as a positive development, networking innovatively to build a co-creative society—in short, consciously working to evolve our world. Hubbard's Co-Creation Web site of global projects now working and her proposed "peace room" in the White House are but two novel examples of a call to action to "awaken the power of our social potential." Barbara Marx Hubbard sees better than most both the big evolutionary picture and the daily social issues surrounding us, and she writes about them with a vigor and clarity that would put most scholars to shame. She is precisely the kind of noble, credible visionary having an evolutionary persuasion and spiritual motivation, yet holistic politics, that planet Earth desperately needs right now.

#### AN AGE OF SYNTHESIS

In the midst of my professional career I have been privileged to write for *Zygon* once every tenth year and to attend an IRAS conference on Star Island once every fifth year. That is about the right frequency of my small contributions to the great dialogue between religion and science. I try to

be economical in what I write and brief in what I say on such weighty matters. So I'll close this piece with a single summary paragraph, culled from a recent editorial (Chaisson 1997b).

We are now entering an age of synthesis such as occurs only once every few generations. The years ahead will surely be exciting and productive times in the world of science, largely because the scenario of cosmic evolution will give us an opportunity to systematically and synergistically inquire into the nature of our existence—to mount an integrated effort to build a modern universe history (*weltgeschichte*) that people of all cultures can adopt—a Big-Bang-to-humankind story that traces generative and developmental change ranging from quark to quasar, from microbe to mind. As we approach the end of the millennium, such a coherent story of our origins—a powerful and true myth—can act as an effective intellectual vehicle to invite all our citizens to become participants, not just spectators, in the building of a whole new legacy. We are indeed on the road toward becoming wise, ethical human beings; we are beginning to experience ethical evolution.

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