A Jostling on the Shelves

Connie Barlow

In my most recent anthology for MIT Press, *Evolution Extended: Biological Debates on the Meaning of Life*, I ended the "Further Readings" section with a quotation by Julian Huxley: "Goethe, Emerson, Wordsworth, Blake, Carlyle, Dante, Sir Thomas Brown, Shelley, and the rest of the assembly of immortal spirits—they jostle each other on your shelves, each waiting only to be picked up to introduce you to his own unique and intense experience of reality." Huxley, incidentally, is likely one of the immortal souls right now jostling on your own bookshelf; he wrote the introduction to the English translation of *The Phenomenon of Man*.

Yes, Julian, I hear them jostling—more and more each year. My own "To Read" list is hopelessly out of control. So many books, so little time....

In this composite review, I will focus on recently published books that moved me deeply. The ideas they impart now jostle in my mind.

• Fans of Edward O. Wilson will not be disappointed by his newest book, the autobiographical **Naturalist** (1994, Island). Had he not already captured more than a fair share of Pulitzer Prizes, I would predict another. "Wilson's got a bad case of biophilia," concluded my mate, a scientist, who confessed to coming nearly to tears by the end of the book. I loved it too, but wished that "the great E. O." (as his students call him) had also chosen to deal with the part of his psyche that put him on the board of *Zygon* (the journal of religion and science) and that called forth in him the declaration "the evolutionary epic is probably the best myth we will ever have."

• As a committed biology watcher and reader of science journals, I found Wilson's earlier book, ***The Diversity of Life*** (reviewed by Arthur Fabel in the December 1992 *Teilhard Perspective*), to be a splendid refresher. But one chapter, "Biodiversity Threatened," had a powerful and lasting effect on me: I came to realize that we humans have always been the scourge of the earth. Three-fourths of the large mammal genera that lived in the Western Hemisphere during the late Pleistocene vanished at the very time that humans were fanning out across this new-found landscape. Among the casualties was my own favorite extinct animal: the giant ground sloth. Every time I pass through vast stretches of nothing but creosote bush in New Mexico or Nevada, I search the horizon wistfully for the herbivore that used to keep this imperialistic plant in check.

"If this were a trial," claims Wilson, "the Paleo-Indians could be convicted on circumstantial evidence alone." But Wilson goes on to build a very compelling case for human overkill as the cause of the great Pleistocene mammal extinctions. By the time he turns his attention to the collapse of diversity of the large marsupial mammals in Australia 30,000 years ago, I am braced for his verdict.

• For those who may have read Wilson's book and acquired a similar Angst about humankind, I strongly recommend a dose of Jared Diamond—specifically, chapters 17 and 18 of his ***The Third Chimpanzee: The Evolution and Future of the Human Animal*** (1992, HarperCollins). Diamond, like Wilson, is a highly respected biologist and has also won literary awards for science writing. Diamond, perhaps even more than Wilson, narrates a disastrous legacy of the peopling of the planet. Island after island lost its flightless birds and giant reptiles whenever humans joined their communities. From these depressingly numerous case studies, Diamond goes on to build a general theory about the kinds of situations in which human-induced extinctions can be expected. Irreversible human plundering of the living landscape occurs, he contends, whenever we (a) colonize an unfamiliar environment, (b) advance along a new frontier, (c) acquire a new technology, with insufficient time to appreciate its destructive power, (d) attempt to make a living in dry, fragile, or unforgiving environments, or (e) gather into centralized states in which rulers lose touch with the environment.

Diamond's message, that there never was a "golden age of environmentalism," may strike some as dour. But it fills me with hope. Instead of yearning merely to be as noble as our mythical ancestors, we can turn our sights to the future. We can try to put humanity in accord with nature—a wholly new turn in the "recent" evolution of our species. We can, for the first time, become the best of all possible humans. But the stakes are high; for the first time our very morality is on the line. "Tragic failures become moral sins," cautions Diamond, "only if one should have known better from the outset." Our ancestors did not know better; we inescapably do.

• Mihaly Csikszentmihalyi, author of ***The Evolving Self: A Psychology for the Third Millennium*** (1993, HarperCollins) fervently agrees. "The time of innocence is now past," he warns. "It is no longer possible for mankind to blunder about self-indulgently. Our species has become too powerful to be led by instincts alone." And so he urges us all to begin to think of ourselves as active, conscious parts of the evolutionary process. This revisualization is not only essential for the healing and future well-being of the planet; it is "the best way to give meaning to our lives at the present point in time, and to enjoy each moment along the way."

Csikszentmihalyi is a professor of psychology at the University of Chicago and author of *Flow: The Psychology of Optimal Experience*. That book sold very well in the self-help section of bookstores. (I never read it.) He was motivated to produce this sequel because "to transform the entirety of life into a unified flow experience, it helps to have faith in a system of meanings that gives purpose to one's being." And that faith, he contends, can best be vested in the past, present, and future unfolding of evolution.

The Evolving Self was given only a short and gruff review in *The New York Times Book Review*. I believe I know why. The book may only shine for readers who have already come to feel the warm embrace of cosmogenesis. One must first have been touched by Teilhard or Julian Huxley or Thomas Berry or Brian Swimme. For those readers, however, the book can be a godsend—because it is a useful and empowering guide for what to do with one's enthusiasm! At the end of each chapter, for example, he hurls a dozen or so exceedingly personal queries at the reader, designed to get us all to think, not just to read passively. Consider this one: "For most people, a central concern in life is the fear of oblivion after death. For that reason the ability to leave some legacy to the future is an important component of their peace of mind. Is it for you? And what do you consider more important to leave behind: a memory of yourself and your accomplishments, children who will carry on your biological blueprint, or values that might help influence how future generations act and think?" Here is another, "What is the most important bit of knowledge that you have learned in your life? Where did you learn it and in what way? Could it be taught to others?"

That last question is a tough one. The most important bit of knowledge... well, I'm not sure. But I can pass on a new insight I gained from reading another book, and I suspect that insight ranks, for me, in the top one hundred. The insight has to do with swarms.

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• Kevin Kelly's new book, ***Out of Control: The Rise of Neo-Biological Civilization*** (1994, Addison-Wesly) is a superb and entertaining introduction to the science and power of swarms. Kelly is a long-time associate of *Whole Earth Review* (formerly, *Coevolution Quarterly*). He now is editor of the hot new journal *Wired*, which concerns itself with the cyberspace manifestation of the blossoming noosphere—that is, the rise of computer culture. The global computer linkage manifested in the Internet and the World-Wide Web are the newest manifestations of the swarm mods of being. But Kelly's book is equally about how this "out of control" style of relatedness has contributed to evolution.

A flock of birds, a school of fish, a hill of ants, a hive of bees: these are quintessential swarms. The emergent behavior of the swarm itself—the way that a flock of shorebirds rises and falls as a lovely, coherent form—has always attracted the admiration of nature enthusiasts. But biologists haven't really explored the science of swarming. The seeming purposefulness of a flock could, after all, easily be attributed to the brains of the birds that compose it. And until very recently, scientists believed that the hills and hives of social insects were largely controlled at the directive of the queen. We now know that assumption to be false. Sensing and choosing and responding are distributed; no one is in charge. The order and creativity evident in hives and hills, in fact, owes to their being wildly "out of control."

Moreover, we have only recently discovered that the parts of a swarm can be essentially brainless, and still the swarm emerges as a seemingly purposeful thing (not an entity, not an aggregate, but a swarm). Pixel-sized "boids" can be programmed to follow three simple rote rules, while paying attention to the actions of only their nearest neighbors, yet the group as a whole will sweep across a computer screen and avoid obstacles in a pattern eerily like that of a flock of sandpipers or starlings.

Teilhard envisioned a higher-level something emerging at a time he called the Omega Point. But he was firm in his belief that the higher-level something would come into being without jeopardizing the individuality and self-directedness of its constituents (notably, humans). That rosy view of Omega has always been a brain teaser for me. But by allowing swarms to enter my personal metaphysic as a legitimate and powerful mode of being, I find Teilhard's vision less paradoxical. And I am hopeful that swarms may yet provide a solution to the scientific obstacles facing Gaia theory—liberating her proponents to happily call her a *swarm*, instead of searching for her in the far more questionable category of *individual* or *entity*. "It is the great irony of life," writes Kelly, "that a mindless act repeated in sequence can only lead to greater depths of absurdity, while a mindless act performed in parallel by a swarm of individuals can, under the proper conditions, lead to all that we find interesting."

Kevin Kelly is not at all timid about the questions he addresses in this book, nor in the answers he proposes. What does evolution itself want? he poses again and again. "Organisms, memes, biomes—the whole ball of wax—are only evolution's way to keep evolving. What evolution really wants—that is, where it is headed—is to uncover (or create) a mechanism that will most quickly uncover (or create) possible forms, things, ideas, processes in the universe. Its ultimate goal is not only to create forms, things, and ideas, but to create new ways in which new things are found or created." Here is how he depicts the "evolution of evolution" thus far on earth: first came *autogenesis* of chemical systems and cycles; then replication was invented; replication was eventually put under *genetic control* in the first living cells; but *somatic plasticity* gave each developing organism the chance to creatively respond to particular environments; the invention of *memetic culture*, the propagation and handing down of ideas, sped up evolutionary processes by orders of magnitude; and humans are now edging toward helping evolution become *self-directed* and intentional, rather than merely (and often cruelly) mindless and experimental.

Teilhard, the Omega point, a global mind—these things Kevin Kelly mentions only in passing. He assiduously shies away from the spiritual implications of emergent swarm modes of being and of his own cosmic view of evolution. But he ends one chapter this way: "I don't doubt that our discoveries about the hidden nature of deep evolution will also touch our souls."

The 40th anniversary of Teilhard's death will be memorialized by a MASS ON THE WORLD, celebrated by Fr. Thomas M. King, S.J., at the close of our Annual Meeting, April 22, 1995. All are invited to attend.

American Teilhard Association
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Syosset, NY 11791

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