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The Evolving Mind: Buddhism, Biology, and Consciousness. By Robin Cooper. Birmingham: Windhorse, 1996. Pp. 266. ISBN 0-904-76674-8 (paperback), \$21.95.

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Within the academic world, the relationship between religion and science has become a very active field of study. With the recent encouragement of the John M. Templeton Foundation in the form of large cash awards, courses in religion and science have appeared at a great rate over the last couple of years, with no sign of slowing down. Most of this ferment, however, has taken place at the intersection of science and Christianity, or at least science and one of the major Western monotheisms. Such historical developments as the trial of Galileo, the Scopes “Monkey Trials,” and the current controversy over Creation Science and “strong” artificial intelligence give many the impression that science and religion must, in the nature of things, oppose each other implacably.

Within this context, Robin Cooper’s new book makes a significant contribution by providing an example of the issues and priorities that arise when a non-Western religion engages with the findings of modern science. As one might expect, the resonances and tensions that emerge from the juxtaposition of Buddhism and modern science differ markedly from those that arise from the current struggles to position science within a Christian theological framework.

Robin Cooper appears well qualified to comment on Darwinism and Buddhism. In addition to his professional experience as an environmental physicist and natural historian, he has also taken refuge in Buddhism within the Western Buddhist Fellowship under the influential British master Sangharakshita. The seeds of many of Cooper’s ideas come from the latter’s books and lectures, as Cooper readily acknowledges, and so it appears that Cooper aims primarily at providing documentation and closer argumentation so that Sangharakshita’s ideas may have a firmer foundation in modern science.

In order to make clear the significance of approaching scientific issues from a Buddhist perspective rather than a Christian one, let us look briefly at the primary threats that Christians perceived in Darwinism during the late nineteenth and early twentieth centuries. According to Ian G. Barbour (*Religion in an Age of Science*, San Francisco: Harper Collins, 1990:155-56) there were three:

(1) Darwinism opposed a literal reading of the biblical story of creation. Obviously, such an issue cannot arise within Buddhism, which famously lacks any religiously significant account of creation.

(2) Christians saw in Darwinism an affront to human dignity stemming from its denial of humanity’s special status. By asserting that humans as well as all other living things came ultimately from a common ancestor, Darwinism denied that humanity stood apart from the rest of creation as the only being to share in the image of God and to possess an immortal soul.

Again, such a qualm does not arise within the Buddhist context. The realm of humans is but one of the six realms of rebirth, and living beings may course in any of them according to their karma. Buddhism has never entertained the notion that humanity stands apart from other living beings.

(3) Darwinism provided an alternative account for the apparent design of the world that rendered any notion of an intelligent designer superfluous. All apparent joining of mechanisms to purposes came about through small, incremental, and accumulating adaptations to changing conditions. (Not all Darwinian theorists hold to the view that the processes of evolution rest on pure chance with no role for mind at all, but some, such as Richard Dawkins and Daniel C. Dennett, do.)

Unlike the first two points, one cannot simply dismiss this issue as a non-problem for Buddhism, and this will provide us with a point of entry into Cooper's argument. Buddhism, he says, has always been compatible with evolutionary thought. However, Buddhism has always maintained that the force impelling the transformations of living things is consciousness, and the law that governs how this force acts is karma.

Thus, in order to harmonize Buddhism and modern Darwinian theory, Cooper argues that, besides random genetic mutation and competition, mind does play a role in the evolution of living things. For instance, many times, animals (plants have no part in this argument) gain a competitive advantage not from some change in their phenotype (larger muscles, a longer neck, and so on), but by displaying a flexibility of mind that allows them to conceive and try new behaviors. Somewhere on the way to the evolution of spider monkeys and gibbons, some creature conceived the notion to attempt climbing up a tree for shelter or to escape a pursuer. The gambit worked, and it lived to reproduce.

This did not involve any phenotypic variation (the creature need not be better adapted physically for tree-climbing than its fellows for this argument to work); rather, the simple conception and execution of an idea brought about the result. Cooper says that not only do such "mind-led" alterations provide greater fitness, they also have the potential to act on the environment, shaping it in some new way to the creature's advantage. Beavers and bowerbirds both shape their environment in significant ways, altering the fitness landscape through the execution of a plan, and altering the further evolution of the species.

By denying that mutations in genotype in interaction with a competitive environment constitute the only factors driving evolution, and by positing such "mind-led" factors as equally or even more determinative, Cooper hopes to use Buddhism to correct the tendency on the part of some evolutionists to deny mind any part in the process of evolution by natural

selection.

Cooper's emphasis on consciousness' role in evolution provides the starting point for another of his concerns: the continuity of biological, mental, cultural, and "higher" evolution in a single process. The categories of "lower" and "higher" evolution, which refer respectively to the natural evolution of body, mentality, and culture and the deliberate cultivation of an enlightened consciousness, come from Sangharakshita's writings. Cooper here seeks to synthesize them into a single process.

The picture that emerges shows a continuous development from the first self-replicating molecules, to simple organisms that exhibit mechanical responses to external stimuli, to organisms with nervous systems and brains that are capable of perceiving a center of experience, finally to beings possessing self-reflective consciousness. Such beings mark the end of "lower" evolution, and may or may not proceed to move on to "higher" evolution (for which Buddhism provides the best program of training). However, the fact that they have the capability of making this choice at all comes from all the evolutionary processes that have gone before. There is a smooth line linking the earliest abiogenesis to the achievement of enlightenment.

However, the argument involves two points that biologists may find difficult to accept, both of which hinge on a transfer of terminology from the realm of evolution by natural selection to the realm of religious practice, and vice versa.

Cooper defines moments of mind-led evolution as "self-transcendence." The Japanese monkey who invented the technique of throwing mixed rice and stones into water to separate them experienced a moment of self-transcendence by breaking out of fixed, instinctive patterns of thinking in order to conceive an original idea. This vocabulary imparts a quasi-religious valence to a perfectly mundane act of creativity. Cooper may not grant that self-transcendence and creativity denote two different phenomena, but I believe that the former term carries connotations that would give instances of inventiveness a greater mystical or religious content than they warrant.

In the other direction, the appropriation of the word "evolution" for the fruits of religious practice only succeeds because the word has at least two meanings in ordinary parlance and biological discourse. True, "evolution" can mean any kind of transformation or change. However, to a biologist "evolution" specifically means "evolution by natural selection," and in this context refers only to changes in the heritable genetic makeup of entire populations. One cannot predicate this technical meaning of evolution to single individuals, whose genotype is fixed. Cooper admits this, and yet

continues to use Sangharakshita's vocabulary of "higher evolution" in order to delineate the continuity between biological evolution and Buddhist cultivation.

By these two moves, Cooper imputes a Buddhistic valence to the biological processes of natural selection, and a scientific valence to Buddhist practice. When biological evolution is "self-transcendence" and Buddhist cultivation is "higher evolution," then the task of joining the two into a single sequence of events heading toward the final goal of enlightenment becomes much easier.

I find this ultimately unconvincing. One cannot create an easy segue from a phenomenon that occurs at the level of populations to one that takes place at the level of individuals. Individuals may "evolve" if by that one means that they may change and develop, but they do not evolve in the scientific sense.

While Cooper certainly makes a valid point in stating that Buddhism has never had the problems with Darwinism that monotheism has, it does not thereby follow that one can easily harmonize the two. Buddhism certainly does talk about evolution, but never at the level of populations. Buddhist notions of evolution involve the movement of an individual karmic stream through *samsāra*, taking on different bodies in different environments according to regular laws of cause and conditioning. The process carries no certainty of progress from lower to higher or from simple to complex, and the overall context of this is the idea of rebirth, a topic that Cooper leaves out of an otherwise fairly complete account of basic Buddhist theory and practice.

I find this book valuable as a primary source, not a secondary work of scholarship. It represents the latest, and perhaps most sophisticated to date, example of the trend in Western (or Westernized) Buddhism to present Gautama's teachings as fully modern and wholly compatible with the scientific outlook. It is instructive to see what Cooper selects from the panoply of Buddhist belief and practice, both Nikāya and Mahāyāna, to support his case. It is even more instructive to see what he omits. The latter group includes rebirth, Pure Lands, tantric practice, scripture-recitation, merit-transference, *pūjā*, and many other facets of traditional Asian Buddhism.

Ultimately, this is not a reconstruction of a pristine Buddhism that has always been compatible with modern Darwinian thought. Rather, it is another attempt at constructing a Buddhism suitable for modern culture with its predominantly scientific worldview. This makes it a valuable document for tracing the history of modern Buddhist thought in the West, and a very useful example of how religion and science interact outside of monotheism.