

Evolution and Human Society

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Abstract

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Darwin's fabulous intellect implanted the concept and general nature of evolution permanently in the minds of humans willing to think seriously about it. His several challenges included demonstrating that evolution tends to save only traits that contribute to reproduction, that evolution continues via what he called "numerous, successive, slight modifications," and that traits carried by sterile individuals can be furthered if relatives of the sterile individuals are sufficiently and appropriately aided.

In 1930, Sir Ronald A. Fisher elaborated on Darwin's arguments by explaining factors affecting rates of evolution, how such traits as allelic dominance, sex ratio selection, heroism, and runaway sexual selection could evolve, and how kin selection can be quantified.

The arguments of Darwin, unfortunately, were not sufficient, and those of Fisher too late, to cause the social and medical sciences, and of course religion, to accept the evolutionary process, combined with the succession of evolutionary environments, as the key to profound explanations of virtually everything about life. The building blocks were there, but the willingness and necessary vision were not.

As a consequence, the human-oriented sciences generated and elaborated the strategies, practices, and principles of their societies in a virtual absence of contributions from evolution-based science. For more than a century evolutionary biology was largely restricted to studies of pattern rather than process, amassing data from fossils and comparisons from phylogenies and genealogies of species. In the early and middle 20th century, mathematical versions of the evolutionary process, via population genetics, primarily considered the evolutionary process to be focused on increasing the average fitness of populations, until Alice Brues, in 1964, explained as J.B.S. Haldane's "Dilemma" his claim that too many rare beneficial alleles would render the average fitness of a population so low as to threaten its extinction.

This general state of affairs was not alleviated until George C. Williams (1966) put together the arguments that (1) life is organized hierarchically, (2) selection can operate at many levels simultaneously, (3) selection can be reversed at different levels, and (4) selection is most likely to be potent at the lowest levels of organization.

The resulting chaos of conflicts was most traumatic for the already established human-oriented disciplines. Social scientists, medical scientists, philosophers, religious people, and those in the arts and literature for the most part vigorously rejected (or avoided) the intrusive revival of Darwinian and Fisherian arguments, and, even more forcefully, the establishment -- by such as George C. Williams, Robert L. Trivers, and William D. Hamilton -- of a "new" science of evolutionary adaptation with consequences for human understanding apparent in every direction.

The objections will continue. They are bolstered by ideological, moral, and ethical systems that seem to conflict with evolution as an approach and with science as the vehicle. They are aided immensely by our continuing -- and, unfortunately, to-be-long-continued -- ignorance of the incredibly complex, largely uncharted, and all-too-often unyielding processes of ontogeny and learning.

It is easy to be hostile toward evolution as the background of adaptive forces that conflict with current ethical views. It is easy to be skeptical, or even fearful, of oversimplified ontogenetic and experiential hypotheses, assumptions, and biases. It is tempting to assume or accept that human society is doing just fine, and that if it is not, an evolutionary perspective is not likely to help matters.

During the last century, between 50 and 150 million people were reported killed in warfare and genocides – an average of ca. 1400-4000 per day for 100 years. If data on current conflicts are accurate and relevant, up to hundreds of times as many people as were killed were maimed physically, mentally, or emotionally, often permanently. On this single basis, we can make no claim to be doing just fine. We are beginning to face global problems that will require global cooperation to be solved. There is reason to believe that we have not evolved to solve global problems by global cooperation, and that we have never accomplished such. Indeed, the most important and frightening of all human adaptations is likely our stubborn and perhaps unique manner of alternating our most intense emotional expressions between the two extremes of amity and enmity within our own species. We need every tool available to understand such things about ourselves. These are reasons why the Human Behavior and Evolution Society is potentially the most important scientific organization in the world.

A hydrogen bomb is an example of mankind's enormous capacity for friendly cooperation. Its construction requires an intricate network of human teams, all working with single-minded devotion toward a common goal. Let us pause and savor the glow of self-congratulation we deserve for belonging to such an intelligent and sociable species. (Robert S. Bigelow, 1969. *The Dawn Warriors*)

The challenge of Darwinism is to find out what our genes have been up to and to make that knowledge widely available as a part of the environment in which each of us develops and lives so that we can decide for ourselves, quite deliberately, to what extent we wish to go along. (Richard D. Alexander 1979. *Darwinism and Human Affairs*)

Heredity is particulate, but development is unitary. Everything in the organism is the result of the interactions of all genes, subject to the environment to which they are exposed. What genes determine are not characters, but rather the ways in which the developing organism responds to the environment it encounters. (Theodosius Dobzhansky 1961. In: *Insect Polymorphism*, John S. Kennedy, editor)

Kindness and generosity arise spontaneously when the otherness of others goes away. (Barry R. McKay, 3 August 2007 letter to the *Ann Arbor News*)