

## Selfish Genes and the Evolution of Consciousness, etc.

(Food for thought, compiled by Jay E. Gould)

I am a strong supporter of the Selfish-Gene Theory of Richard Dawkins. This is the somewhat shocking notion that, biologically speaking, organisms are simply *protective replication machines for their genes*. This theory follows logically from the work of Mendel and others who have demonstrated that genes are the mechanism of hereditary transmission upon which Darwin's principle of Evolution by Natural Selection acts.

Our genes, in interactions with the environment, regulate the organization of the nervous system during development so as to produce behaviors that enhance survival and replication. Therefore, *genes themselves* are naturally selected that *selfishly*, or otherwise, enhance their *own* survival and replication. It is important to note, however, that copies of our genes are carried not only in ourselves, but in our kin as well. Thus there is also kin selection (with its principle of inclusive fitness, i.e., *direct fitness plus indirect fitness*). Hence, cooperative behavior evolved, which additionally extends to *non-kin* if they are likely to help us--and thereby our genes.

The evolution and development of brain mechanisms for consciousness would also naturally be selected for if consciousness facilitated survival and reproductive success, which it can by enhancing decision making. Natural selection has even been applied in an evolutionary theory of religion. This theory proposes that shared beliefs in supernatural powers facilitate survival and reproductive success through the enhancement of social cohesiveness and cooperation, and by providing optimism (or hope) in the face of adversity and the fear of death. This could explain the universality of religious beliefs, while allowing for diversity in their specific forms.

Our conscious thought processes and its products, however, might also lead to our downfall, and hence that of our genes. We must control our *aggressiveness toward other groups*, *our weapons of mass destruction*, and behaviors of *environmental degradation* created by the very minds that ironically evolved to *enhance* the survival and replication of our genes (although often at the expense of other individuals and species).

Finally, and importantly, we should note that the tremendous replicative success of simpler life forms, such as microbes and insects, indicates that *conscious minds* are apparently not essential, but rather just one means, for enhancing survival and reproductive success.