http://www.wired.com/wired/archive/3.07/dawkins.html?topic=&topic_set=

Revolutionary Evolutionist

For Richard Dawkins, genes are selfish, the watchmaker is blind, and the mystery of life is no mystery - it's digital.

With *The Selfish Gene*, Dawkins offered scientists a conceptual bridge between the reductionist imperatives of molecular biology and the taxonomies of zoology, psychology, and sociology. In other words, the metaphor of the selfish gene not only created an important context to explain human and animal behavior - it also created a framework for molecular biologists to examine the organic interactions of genes. The metaphor scaled from double helices to human interactions.

But looking at the richness and complexity of life on Earth, Dawkins freely acknowledged that an ethology of the gene alone was simply not robust enough to explain evolution. So he applied a Darwinian view of culture, as well. Dawkins argued for the concept of *memes* - ideas that are, to use the felicitous phrase of William Burroughs, "viruses of the mind." Memes are to cultural inheritance what genes are to biological heredity. A meme for, say, astrology, could parasitize a mind just as surely as a hookworm could infest someone's bowels. Ideas - like genes - could compete and cooperate, mutate and conserve. They, too, are operated on by natural selection. Human evolution, Dawkins postulates, is a function of a co-evolution between genes and memes.

offers a powerful intellectual framework for a new understanding of life as an information process.

What do genes and memes have in common? Dawkins asked. They are replicators. Through various but distinct coded systems, they reproduce; they effect change in their world so they can propagate, just like viruses in either digital or organic form. Dawkins's most powerful paradigm is that the unit of evolution is not the individual - the gene - or the meme, but the *replicator*.

Dawkins's head holds more provocative ideas than most. Two decades ago, Dawkins presented a radical evolutionary perspective in a small book called *The Selfish Gene*, a disturbingly persuasive essay arguing that living things are little more than corporal vessels impelled to heed the primal dictates of selfish genes hellbent on their own replication and propagation.

These ideas are intriguing, even a little outrageous, but - most importantly - they have proven astonishingly influential.

Dawkins's revolutionary evolutionary rhetoric has particularly inspired researchers of artificial life. Indeed, Dawkins's work has created new contexts for exploring genetic algorithms and has sensitized the growing community of artificial-life researchers to the evolutionary dynamics of their software creations.