Andreas van Cranenburgh[1], April 29, 2009

Are genes ruling our world?

Neodarwinism (eg., Dawkins 1976) posits that the sole driving force of evolution is the selection of genes. Individuals, species, even whole ecosystems are mere pawn and chessboard for the gene's struggle for domination. While it is undoubtedly commendable to counter any residual anthropocentrism and teleology in a scientific account of life, it appears to me as a tunnel vision.

The alternative is natural selection ocurring on multiple levels concurrently. The relevant levels include the genetic, cellular, indivudual and species level. Such a theory is put forward by Varela et. al (1991), as part of a larger philosophical reogorganization of science. Their argument is that the traditional, neodarwinistic account relies on presupposed optimum, towards which evolution naturally converges, given time. However, presupposing such an optimum seems to beg the question of how this optimum came about. Life may be molded by evolution into an ever more optimal and complex vessel for its genes, but such a story fails to account for the world which is the stage of life.

This problem can be remedied by taking into account how life and the world mutually influence each other, and by noting how there are multiple levels of natural selection which are dynamically influencing each other. The 'optimal' path for evolution is laid down by the interaction of life and world itself, as in laying down a path in walking.

A clear example of the neodarwinistic complacency in the power of genes is the attempted reduction of altruism to genetic factors through the notion of inclusive fitness (Hamilton 1964). Through sophisticated mathematics it has been possible to demonstrate that it is advantageous for the survival of genes to have individuals act in an altruistic manner, provided that the exchange is between people who have shared genes (ie., family members). Brothers share 50% of their genes, so rescuing one's brother helps this 50% of genes survive better. This is obviously a convincing account of altruism, a phenonomenon which had previously been a problem for selfish explanations of behaviour. The problem is, however, that it only explains altruism on one level, the level of genes. It says nothing about an individual's reasons for altruism, eg. avoiding feelings of guilt, desiring reciprocity, kindness, etc. In fact the only thing which is explained is that for a genetically determined version of altruism, there is a possible route through natural selection for such a trait to survive.

It is not possible, of course, to claim that acts of kindness have now been reduced to genetics. For every form of behavior it is possible to give an explanation in terms of the genes' tendency to reproduction, but this hardly helps with understanding the motivation for that behavior, because genes are neither conscious nor making decisions.

I claim that to fully explain behavior there needs to be an individual having grown, evolved and attuned dynamically with its surroundings, drifting in some direction determined together by its genes, environment and self. This picture is much less neat and ordered, of course, but such is the price of completeness!

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References

Dawkins, Richard (1976), "The Selfish Gene"

Hamilton, W. D. (1964) "The Genetical Evolution of Social Behaviour I and II," J. Theor. Biol. v7, pp 1-16, and 17-52.

Varela, F.J., Thompson, E., & Rosch, E. (1991), "The Embodied Mind: Cognitive Science and Human Experience." Cambridge, MA: MIT Press.