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## Letter to the Editor

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# A False Antithesis and Evolutionary Psychology

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Recently Wilson (1994) provided an insightful critique of some tenets of evolutionary psychology, using work by Tooby and Cosmides (e.g., 1992) as exemplars. Wilson argued that these evolutionary psychologists have uncritically accepted the hypothesis that adaptive differences among individuals result from "phenotypic plasticity," that is, a genetic system that produces different adaptive phenotypes under different environmental conditions. On the basis of optimization models with biologically realistic assumptions, Wilson concluded it is more likely that human (and non-human) populations will consist of a mixture of (1) genetically homogeneous but phenotypically plastic individuals, and (2) genetically different individuals who each express a particular phenotype regardless of environmental conditions.

The purpose of this note is to modify one point that, if unintended, might fester into another round of "nature versus nurture" debates in a new guise, and divert interested parties from the real issues.

What Wilson terms "phenotypic plasticity" itself has a genetic basis, and is itself subject to evolutionary processes (e.g., Schmalhausen 1949; Wcislo 1989). Every genotype has a "norm of reaction," which describes the entire range of development that can be expressed under all environmental conditions, both natural and artificial (e.g., Dobzhansky 1970). A norm of reaction can be narrow or wide, and its breadth can evolve in response to selection. Genotypes with extremely narrow norms of reaction produce the *same* phenotypes regardless of environmental differences (Wilson's "adaptive genetic differences" among individuals). At the other end are what Wilson calls phenotypically plastic individuals. These terms, however, do not represent mutually exclusive classes, since even in populations of phenotypically plastic individuals there can still be adaptive genetic differences among individuals in the degree of plasticity. Indeed, some biologists argue that the term "plasticity" be discarded altogether (e.g., Williams 1992: 91).

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The dichotomy proposed by Wilson between "phenotypic plasticity" and "adaptive genetic differences" is artificial and mirrors the false dichotomy of whether nurture or nature shapes human behavior (see West and King 1987). Rather than get side tracked down this road, evolutionary psychologists would do better by addressing the substantive issues that Wilson raises, namely, the likelihood of genetically heterogeneous populations.

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## REFERENCES

- Dobzhansky, T. *Genetics of the Evolutionary Process*, New York: Columbia University Press, 1970.
- Schmalhausen, I.I. *Factors of Evolution* (1986 reprint), Chicago: University of Chicago Press, 1949.
- Tooby, J., and Cosmides, L. The psychological foundations of culture. In *The Adapted Mind: Evolutionary Psychology and the Generation of Culture*, J.H. Barkow, L. Cosmides, and J. Tooby (Eds.). Oxford: Oxford University Press, 1992, pp. 19-101.
- Wcislo, W.T. Behavioral environments and evolutionary change. *Annual Review of Ecology & Systematics* 20:137-169, 1989.
- West, M.J., and King, A.P. Settling nature and nurture into an ontogenetic niche. *Developmental Psychobiology* 20:549-562, 1987.
- Williams, G.C. *Natural Selection: Domains, Levels, and Challenges*, Oxford: Oxford University Press, 1992.
- Wilson, D.S. Adaptive genetic variation and human evolutionary psychology. *Ethology and Sociobiology* 15:219-235, 1994.