

Evolution by numbers

SIR — In the discussion in your columns about the application of quantitative methodology based on the study of evolutionary processes to the analysis of the development of human culture^{1,2}, there is an unquestioned assumption on both sides of that issue that quantitative theory, as expounded by practitioners such as Fisher, Haldane, Wright, Cavalli-Sforza and Maynard Smith, has been successful in illuminating and explaining the process of biological evolution and the genetic relationships between species. As far as I know, there is no evidence to support this assumption. Indeed, there is a vast number of observations unaccounted for in the extant quantitative evolutionary theories. Many of these observations (inducible mutation systems³, rapid genomic changes involving mobile genetic elements⁴, programmed changes in chromosome structure⁵⁻⁸) challenge the most fundamental assumptions which these evolutionary theories make about the mechanisms of hereditary variation and the fixation of genetic differences.

As a practising geneticist, I am frequently astonished by the ease with which population theorists assume complex (and therefore troublesome) phenomena out of existence, no matter how solid the documentation. Perhaps they should set their own house in order and come to terms with what genetics and molecular biology have to teach them about possible mechanisms of biological evolution before they try to save anthropology from the anthropologists.

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