
Human Genetic Diversity: Fact and Fallacy

Lisa Gannett*¹

¹Saint Mary's University – Canada

Abstract

R. C. Lewontin's 1972 paper "The Apportionment of Human Diversity" sought to undermine racial classification by showing that only 6.3% of total human genetic diversity is found among races (with 85.4% found within populations and 8.3% found among populations within races). These data have been widely used to contest the biological significance of race. In 2003, A. W. F. Edwards published a paper titled "Human Genetic Diversity: Lewontin's Fallacy," which argues that Lewontin had succumbed to an "old statistical fallacy" of analyzing genes without allowing for the correlation of loci. I am sceptical, however, that Lewontin was ignorant of the importance of such correlations. In the early 1990s, Lewontin criticized DNA forensic scientists for establishing match probabilities by using the relevant reference database ("Caucasian," "black," or "Hispanic") and multiplying frequencies of alleles at typed loci (as if independent). Lewontin argued that this wrongly ignores allelic correlations due to ethnic subdivision.

In this paper, I address several questions raised. Was Lewontin's 1972 reasoning indeed fallacious, or does the widespread acceptance of Edward's critique of Lewontin evidenced in the literature indicate a lack of appreciation for context, one in which Lewontin aimed to counter racism by showing that stereotyping individuals on the basis of group membership ignores that within-group differences dwarf between-group differences? Do facts about population genetic structure and the distribution of human genetic diversity tell us anything interesting—whether scientifically or socially—irrespective of particular contexts and aims? Did Lewontin's leftist politics get in the way of sound science when he paid attention to correlated loci in order to protect civil liberties in the early 1990s but ignored such correlations when it came to fighting racism in the 1970s?

*Speaker