

Human Hierarchies, Health, and IQ

R. M. SAPOLSKY'S REVIEW "THE INFLUENCE of social hierarchy on primate health" (29 Apr., p. 648) begins and ends with the conundrum that there is a graded, inverse association between low socioeconomic position (SEP) and important health outcomes in humans. The nicely described animal work on stress responses and social hierarchies forms the main portion of the piece. The application of these findings to humans is critical, yet, apart from some examples of the physiological responses to stress, there is no clear series of data-based findings to take us mechanistically, in human samples, from human social hierarchy, to psychosocial stressors, to stress-related physiological responses, to adverse health outcomes and mortality.

In humans, there is another factor and other possible mechanisms to consider. It is surprising that there was no mention of intelligence (IQ). Childhood IQ is moderately strongly correlated with adult socioeconomic position. Lower IQ is also associated with increased rates of all-cause mortality (1, 2), cardiovascular disease (2–4), hypertension (5), contact with psychiatric services (6), and other nega-

tive health outcomes (7). These associations remain after controlling for socioeconomic position in early life. Stable population variation in IQ is perhaps more consistent with the highly graded socioeconomic position-health relation than are the shifting effects of small-group rank on psychosocial stress. The well-replicated, although relatively recent finding that lower childhood IQ is related to later morbidity (7) and mortality experience affords hypotheses about mechanisms linking cognitive resources to health differences. These hypotheses merit consideration alongside the psychosocial stress hypothesis (8, 9).

IAN J. DEARY,^{1*} DAVID BATTY,²
LINDA S. GOTTFREDSON³

¹Department of Psychology, University of Edinburgh, Edinburgh, EH8 9JZ, UK. ²Medical Research Council Social and Public Health Sciences Unit, University of Glasgow, Glasgow, G12 8RZ, UK, and Department of Psychology, University of Edinburgh, Edinburgh, EH8 9JZ, UK. ³School of Education, College of Human Services, Education, and Public Policy, University of Delaware, Newark, DE 19716, USA.

*To whom correspondence should be addressed.
E-mail: I.Deary@ed.ac.uk

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Response

DEARY *ET AL.* RAISE TWO IMPORTANT POINTS, with which I agree. The first is that it is immensely difficult to carry out studies in humans that would uncover the series of steps linking social experience all the way down to the reductive biology of health and disease. Thus, the Letter nicely reiterates the rationale for the paper, namely, the usefulness of studies of nonhuman species.

Their second point is that IQ may be an important variable in understanding the health/socioeconomic status relationship. This is absolutely so and is likely to be relevant in a number of ways (e.g., having access to the most current information regarding health risk factors, being able to understand the pertinence of such factors, and so on).

ROBERT M. SAPOLSKY

Stanford University, Stanford, CA 94305–5020, USA,
and Institute of Primate Research, National
Museums of Kenya.