

ESSAY REVIEW

Mind the gap—hierarchies, health and human evolution

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Darwinism Today: Mind the Gap. Richard Wilkinson. London: Weidenfeld and Nicolson, 2000, pp. 70, £7.99. ISBN: 029764686.

'Bien étonnés de se trouver ensemble'—this book about income inequality and its health effects was published in a series called *Darwinism Today*, so the first thing I did was try to find out what the connection between the two is. 'Evolutionary theory can help', Wilkinson writes, 'by clarifying not only why we are sensitive to—and stressed by—particular dimensions of social life, but also why these sources of stress lead to disease'. The idea is, first, that during our hunter-gatherer prehistory—the vast majority of human existence—we lived in egalitarian groups characterized by co-operation and sharing of food. A class society like our own, on the other hand, is characterized by status and power hierarchies that generate high levels of social anxiety. Second, evolution presumably has given us a stress response that is adequate when the major threats to survival relate to short-term emergencies, as was the case when our hunter-gatherer forebears encountered large predators and the occasional human enemy. Now that we are no longer faced with these immediate threats to survival, the balance is less favourable, with long-term health costs of chronic stressors outweighing the negligible immediate health benefits.

This is a well-written and sweeping account of Wilkinson's theory about the connection between income inequality, social hierarchy, social anxiety and health. It starts from the observation that health is closely linked to socioeconomic factors, and that societies with larger degrees of income inequality have worse health as indicated by mortality and life expectancy. It argues that the health effects of income inequality are likely to be due to effects on social cohesion, and to the higher levels of social anxiety prevailing in less egalitarian societies. This chronic anxiety, according to the theory, leads to ill-health mainly through its effects on the sympathetic nervous system and the hypothalamic-pituitary-adrenal axis, which in their turn lead to, among other things, high blood pressure, insulin resistance and disruption of the immune system.

One of the problems of this theory is that the starting-point of the theory, the evidence for a close association between income inequality and average population health, has more or less dissipated since Wilkinson published his first paper on this issue. In 1992, the *British Medical Journal* published his now famous paper showing a strong negative correlation between income inequality and life expectancy in a group of nine Western industrialized countries. It has recently become clear, however, in a

paper by Lynch and others in the *Lancet* in 2001, that the findings in Wilkinson's 1992 paper were an artefact of the selection of countries.¹ Now that good data on income inequality have become available for more countries, the association can no longer be detected. The evidence favouring a correlation of income inequality and mortality is almost entirely limited to analyses of geographical units within the US, and even there, it is not certain that the association reflects a contextual effect of income inequality on everyone's mortality, instead of some spurious effect of curvilinear relationships between income and mortality at the individual level, or of confounding by some other factor such as race.

Where does that leave the theory so eloquently outlined in this small book? Parts of it may still be true. The association between income inequality and mortality was only one reason—and perhaps not the strongest one—to think that psychosocial factors may generate ill-health. It may well be that psychosocial stress explains part of socioeconomic inequalities in health, and, more generally, of the levels of ill-health in modern populations, either through its biological effects or through effects on health-related behaviours like smoking and excessive alcohol consumption. How important the role of stress and other psychosocial pathways is, as compared to other factors, is a matter for further empirical research, and Wilkinson's work has certainly served as a strong stimulus for work in this area, as well as other areas such as that of the health effects of social cohesion and social capital. It seems unlikely, however, that the major source of psychosocial stress lies in the painful social comparisons generated by steep social hierarchies, although these may play a role in some areas, such as violence.

This is a sympathetic book, if only because of its emphasis on the health benefits of friendship. Social hierarchy excludes friendship, Wilkinson argues, and friendship is good for health. He thinks that the main effect of friendship cannot be through material support, because 'even where friends give each other nothing worse than unnecessarily large dinners and an occasional bed for the night, the mix is of no obvious benefit to health'. Think about this for a while. What if dinner is the accepted vehicle for feelings of friendship, would it not be difficult to separate 'material' from 'psychosocial' effects? Give this book to a friend, and discover for yourself whether the antithesis between material and psychosocial factors is false or not.

Reference

- ¹ Lynch J, Davey Smith G, Hillemeier M, Shaw M, Raghunathan T, Kaplan G. Income inequality, the psychosocial environment, and health: comparisons of wealthy nations. *Lancet* 2001;358:194–200.

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