

Ain't misbehavin'

Sir — The review by Steven Rose of *Behavioral Genetics* by Plomin, DeFries, McClearn and Rutter (*Nature* 388, 138; 1997) gives a distorted portrayal of the attitudes and intentions of the authors, which is accentuated by the selection of the heading of "Men behaving badly".

I have used earlier versions of this textbook on undergraduate courses and welcomed the production of the third edition earlier this year. One of the authors' summary statements (page 87) states that "Genetic influence on behavior is just that — an influence or contributing factor, not preprogrammed and deterministic. Environmental influences are usually as important as genetic influences." It is difficult to reconcile this statement with Rose's view that the authors have a "genetically deterministic view of human behaviour".

Rose states that the authors give a "quick flip through" basic genetics. The presentation of the biological basis of inheritance and the molecular and quantitative genetic research strategies that are currently employed takes up the first 107 pages of what is a 367-page book — hardly a "quick flip". Moreover, the book is centrally concerned to integrate molecular and quantitative genetic approaches (for example, the opening of Chapter 6) rather than with "quantitative and statistical population genetics" approaches alone, as Rose states.

Rose claims that the textbook ignored the "social context" of human behaviour. One quotation from the introductory section to the chapter in the book devoted to findings and concepts related to environment effects can counter this: "Genetic research will profit if it includes sophisticated measures of the environment, environmental research will benefit from the use of genetic designs, and psychology will be advanced by collaboration between geneticists and environmentalists." The specific issue of the impact of social context on the expressions of genetic effects on individual differences in behaviour is extensively discussed as genotype-environment interactions (six entries in the list of contents).

Rose suggests that a failing in this textbook is the absence of an assessment of psychiatric categories being used. The book makes constant, and deliberate (see page 108), reference to the *Diagnostic and Statistical Manual of Mental Disorders* as one of the standard schemes of classification. *Behavioral Genetics* was not designed as a basic general textbook in either psychiatry or psychology, and the authors can rightly assume that these issues

would be covered elsewhere in a student's course. The actual and potential contribution of genetic studies to the development of nosology are, however, identified and discussed.

The most serious charge made by Rose is that the authors have been "scrupulous with neither data or presentation". The only specific instance of distortion or an alternative interpretation of data mentioned in the review is that the authors have not reflected on whether quantitative trait loci (QTL) are a "biological reality" or a "statistical artefact". In the book there are three main sections on QTL. They are introduced with reference to animal studies, including the studies by Ghosh and colleagues on diabetes in the mouse (*Nature Genet.* 4, 404–409; 1993). The second is the QTL for reading ability on chromosome 6 (L. R. Cardon *et al. Science* 266, 276–279; 1994). Finally, the QTL associated with drug and alcohol related behaviour in the mouse are discussed (J. C. Crabbe *et al. Science* 264, 1715–1723; 1994). The best protection against statistical artefact in this context is replication and, for the application to human abilities, the authors quote the replication in a second sample by Cardon and in an independent sample by Grigorenko.

Another aspect of partiality according to Rose is that the textbook is "illustrated by pictures of leading advocates in the field, supplemented by 'boxes' of uncritical hagiography". I have reread these boxes carefully in the light of Rose's comments and can find no evidence of inflated or exaggerated claims of the importance of the work of these researchers. There is in fact a striking absence of qualifiers in the description of their work — beyond a "many" when describing the papers they have produced. Despite being somewhat dry, these biographies were, I thought, a valuable addition to this edition.

What I want my psychology students to appreciate from a course in behavioural genetics is how the techniques of both molecular and biometrical genetics can be applied to behaviour, what are the methodological problems that arise in genetically informative research on human behaviour and that it is the joint action of genetic and experiential factors that produces individual differences. With this aim in mind I shall unhesitatingly continue to use *Behavioral Genetics* as a recommended text on my courses and, unlike Rose, can endorse it as the definitive introductory text in this field.

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Faraway Faraday

Sir — Your report that an edited version of last year's Christmas lectures at the Royal Institution (RI) will be presented in Japan is gratifying (*Nature* 388, 221; 1997).

Abbreviated versions of RI annual lectures (initiated by Michael Faraday in 1826) started in Japan in 1990 and have attracted large numbers of schoolchildren. This is not surprising, as Japanese translations of Faraday's *Chemical History of a Candle* (RI Christmas Lectures 1859–60) have gone through more than 70 editions, and are recommended reading for Japanese schoolchildren.

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Skewed citations

Sir — You report that scientific papers from the United Kingdom have been cited on average 4.19 times but that those from Japan notch up only 3.18 citations (*Nature* 387, 537; 1997). Do these relative scores reflect more than the reading (and non-reading) habits of Americans, who themselves dominate the writing (and citing) of scientific literature?

A paper's 'impact factor' measures, as much as anything else, how visible and accessible it is in the United States. It would be misleading and unfair to our Japanese colleagues to infer a genuine 'quality gap' from bibliographic data of this kind.

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Natural name selection

Sir — Butlin and Tregenza¹ quite rightly recognize Dobzhansky's contribution to the debate about whether natural selection can act directly to increase the reproductive isolation of incipient species^{1,2}. We should remember, however, the source of this insight in the work of Alfred Russel Wallace³. Verne Grant has proposed that the phenomenon of reinforcement should be named in his honour the 'Wallace Effect'^{4,5}.

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1. Butlin, R. K. & Tregenza, T. *Nature* 387, 551–553 (1997).
2. Dobzhansky, Th. *Genetics and the Origin of Species* (Columbia Univ. Press, New York, 1937).
3. Wallace, A. R. *Darwinism* (Macmillan, London, 1889).
4. Grant, V. *Am. Nat.* 100, 99–118 (1966).
5. Murray, J. *Genetic Diversity and Natural Selection* (Oliver & Boyd, Edinburgh, 1972).