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NO EVOLUTIONIST IS AN ISLAND

A review of Kevin N. Laland and Gillian R. Brown (2011) *Sense and Nonsense. Evolutionary perspectives of human behaviour.* Oxford: Oxford University Press. 270 pages, ISBN: 978–0–19– 958696–7

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I am really glad I was asked to review *Sense and Nonsense, Evolutionary perspectives on human behaviour*, because a great deal of it was completely novel to me. Granted, every scientist must balance the uncertain benefits of reading outside of their area of expertise, of absorbing perspectives that differ from their own and of wading through complex methods and unfamiliar logic when charted territory is to hand. In *Sense and Nonsense* LALAND and BROWN are the cartographers of an atlas of evolutionary approaches to human behaviour sketching out territories previously labelled "here be dragons" at least to inveterate evolutionary psychologists such as myself. From this overview they conclude that we are all closer together and better connected than it may seem from within our specialties. The landscape of each evolutionary approach to human behaviour is laid out accessibly and for the most part in broad strokes but *Sense and Nonsense* also takes time to focus on some of the best charted and scientifically beautiful places to visit with "case studies" of particular areas of research. However no overview would be complete without a description of the criticism levelled at the subfield; according to LALAND and BROWN every region has its trash heap with the exception of evolutionary psychology which has a nuclear landfill in desperate need of cleaning up.

Sense and Nonsense begins with an overview which seems written precisely for someone who is confused by or critical of an evolutionary perspective who decided to give the first chapter a shot before reading on. The chapter reviews Tinbergen's four whys and lays out the rest of the book. They validate the preconceptions of a sceptical reader; yes, the popular portrayal of our field is often distorted and hyperbolic, the jargon can be unnecessarily confusing and sometimes we are overly anthropocentric and do not pay enough attention to relevant animal literature. They also diplomatically deflect common confusions about genetic determinism and the lack of a role for culture in an evolutionary perspective. Through all this foundational explanation, LALAND and BROWN are very careful not to be strident or place any blame on the reader. They don't even ever use the word "misunderstanding". This chapter is instructive for anyone interested in how to write about our field without alienating an outside reader.

Chapter 2, "A history of evolution and human behaviour" goes over some familiar territory including Darwin, Wallace and the foundations of ethology. LALAND and BROWN also introduce a reader who may be well versed in this history to new material including the earliest incarnations of the nature–nurture debate between psychologists, behaviorists and ethologists. They devote more space than other reviews I have read to racism, eugenics and social Darwinism introducing the moral quandaries belying the application of evolutionary theory and including early evolutionists who fought for more progressive moral standards.

Chapter 3, "Human Sociobiology" reviews some key concepts like the gene's eye view, kin selection, and parent–offspring conflict. Moving on to the human sociobiology debate, the chapter describes the personalities involved including E.O. Wilson, the oft maligned author of *Sociobiology* and biologist and harsh critic Richard Lewontin, who I have seen dismissively caricatured many times. The following passage demonstrates how Laland and Brown navigate the middle ground in the debate:

> "Wilson was the kind of scientist who relished the challenge of major problems, saw the big picture, and constantly wanted to push fields forward by developing and synthesizing new theory. In contrast, Lewontin was much more cautious, suspicious of sweeping statements and unsupported speculation, and deeply sensitive to how vulnerable biological arguments are to abuse. For Lewontin, science had to be as correct as possible because mistaken scientific theories lent themselves to political abuse" (p. 63).

The chapter expounds greatly on the criticism of sociobiology from reductionism and genetic determinism to prejudice and storytelling. Finally they air the grievances that social scientists had with sociobiology stating that

> "for most social scientists, the real problem with sociobiology... was that too much human sociobiology was dilettante. In their enthusiasm, human sociobiologists capriciously flitted from one topic to the next often concocting superficial stories without ever stopping to develop a solid understanding of the topic, read the social science literature or consider alternative non-evolutionary explanations".

I can identify with early sociobiologists swept away with evolutionary thought and the above criticism, however I dispute that there is such a thing as a non-evolutionary explanation at the ultimate or functional level of analysis. Similar criticisms about not considering "non-evolutionary explanations" are levelled at evolutionary psychology in Chapter 5.

Chapter 4 on Human Behavioural Ecology (HBE) is introduced as a perspective that sees humans as more flexibly adaptive than evolutionary psychology (EP); these chapters can usefully be compared and contrasted to reveal imbalance in the book's approach. For instance, the case studies focusing on specific areas of research are approached fairly uncritically in the HBE chapter compared to the case studies in the EP chapter. The authors say of the inability of a model of optimal for-

aging size in Inuit populations to predict "when the data do not fit the assumptions of a simple model, the lack of fit can often be very informative in pointing out what might actually be going on" (p. 84). However in a case study of BUSS's study on sex differences in mate preferences (BUSS, ABBOTT, ANGLEITNER and ASHERIAN 1990) LALAND and BROWN are less charitable pointing to chastity, the most culturally variable of the sex differences, as an indication that sex differences are not as important as culture without further mentioning that in no culture did females express a greater preference for chastity than males.

A case study in HBE covers research showing that wealth is related to number of offspring in preindustrial societies but not compellingly in postindustrial societies (although LALAND and BROWN devote a generous amount of space to caveats). In my mind this result has always been a fundamental problem in the idea that there isn't much adaptive lag, "the discrepancy between past and current environments [that] may produce a mismatch between behaviour and the environment" (p. 97). However, LALAND and BROWN repeatedly express scepticism about adaptive lag stating that "humans are particularly adept at constructing their niche... it is even conceivable that the modern worlds has been fashioned by us to suit our psychological... adaptations, a hypothesis that would mean that the amount of 'adaptive lag' has been greatly overestimated" (p. 99).

LALAND and BROWN are very critical of the concept of the "environment of evolutionary adaptedness" (EEA) and other fundamentals of evolutionary psychology like domain specificity. With regard to TOOBY and COSMIDES definition of the EEA (1990), LALAND and BROWN ask "How can one compute a 'statistical composite' of all the relevant environments encountered by our ancestors and weight them accordingly?" (p. 125, although similar scepticism is not levelled against complex optimality models in HBE). They further suggest, "In principle, EEA supporters should carry out a phylogenetic analysis of the traits of ancestral humans to determine the earliest known ancestor that exhibited a particular trait." They also critique how evolutionary psychologists define adaptation, seemingly rejecting the idea that evidence for function and design (e.g. SCHMITT and PILCHER 2004) is adequate and proposing that evidence for genetic variation, heritability and relationship to fitness are fundamental to establishing that a characteristic (in this case fluctuating asymmetry) is the result of sexual selection. It is unclear if they are suggesting that the entire foundation of EP is faulty. They do have favourable things to say about homicide and disgust research that have not directly examined heritability or fitness. Some painful truths are also uncovered, for instance the fact that some evolutionary psychologists may "cheat" and make predictions about details of a psychological mechanism that are already known to exist (although they never name names). Regardless of the fact that I wish the authors had been a bit more consistent with their level of criticism across fields, it is refreshing to read a critique that so fully understands EP and evolution and praises some of the most rigorous research.

The later chapters deal with cultural evolution and gene-culture co-evolution. While I knew that cultural evolution and biological evolution could be shown to

have analogous properties, I didn't previously understand how this could be used to explain human behaviour. Research in cultural evolution has begun to take off fairly recently and the chapters show how culture is a source of much adaptive behaviour including examples of how culture is maintained in a tradition rather than being evoked by different ecologies (as culture is usually understood by evolutionary psychologists). Gene culture co-evolution is described very accessibly including a simplified mathematical model of transmission rules for a characteristic. Reading both of these chapters has really given me the fundamentals for understanding what seem to be rapidly developing fields of study.

The final chapter compares approaches and shows how they could be integrated into different programmes of study. They compare and contrast hypothesis generation and view of culture and learning. The authors also talk about the popularity of each approach concluding the EP is the "reigning champion of Darwinian memes" which may help explain why there is such harsh critique; EP may very well be the "face" of evolutionary approaches to human behaviour. One real explanatory gem in this chapter is a summary table of all the different approaches discussed and their views of culture, how they generate hypotheses etc. The authors conclude that it is important to guard against reckless popularization and adaptationist storytelling (and they are really only talking about one field here) taking down the whole tree of evolutionary approaches to human behaviour.

This is a great book to introduce students, psychologists and other social scientists to evolutionary approaches to human behaviour as it is accessible and readable. While the treatment of EP is not wholly sympathetic, the foundational knowledge supplied paves the way for more sophisticated criticisms than are often brought up. This book could very well help multidisciplinary understanding and collaboration to develop and thrive. I would highly recommend it to other evolutionary psychologists both for the critical examination of our field and in order to better understand other evolutionary work including human behavioural ecology and cultural evolution.

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