

Learning from Animals? Examining the Nature of Human Uniqueness

Edited by LS Röska-Hardy and EM Neumann-Held (2009). Published by Psychology Press, 27 Church Road, Hove, East Sussex BN3 2FA, UK. 268 pp Hardback (978-1-84169-707-9). Price £34.95.

Human language, culture and cognition are unparalleled in the animal kingdom. The task ahead is to attempt to determine whether the capacities of humans lie on a continuum with those of non-human species, forming the basis of the ‘continuity’ argument, or whether they arose as a result of new evolutionary pathways; the foundation of the ‘discontinuity’ model. *Learning from Animals?* presents findings from a multitude of comparative approaches to increase understanding of human uniqueness. The comparative approach is supported by the editors’ argument that we cannot know what capacities are uniquely human until we learn what other species can do. This book addresses the issues raised in comparative research from fields as diverse as primatology, comparative psychology, linguistics and philosophy. Nineteen authors contribute to a book containing twelve chapters, divided into three parts: Language, Cognition and Culture.

In the Introduction, Röska-Hardy reviews some key issues that surround human language, cognition and culture. Major issues in the debate over the significance of comparative research are introduced and descriptions of the varied methodological approaches taken by the contributors to the volume are included, representing the diverse and often competing positions of the authors.

The first section in the main body of the book contains three chapters on language. In the first, Fitch surveys the potential of the relatively new field of ‘Biolinguistics’, highlighting some problems that stand in the way of progress. Researchers agree that the human capacity to acquire and use language is biologically-based, however three broad conceptual areas challenge researchers in this field. Firstly, neuroscientists do not really understand how brains generate minds; secondly, how genes control the development of a complex behaving organism is unknown and, thirdly, biolinguists lack a good theory of meaning. Seven testable hypotheses are provided at the end of the chapter illustrating the need for productive interdisciplinary collaboration.

In chapter 2, Wildgen discusses evolutionary grammar as a starting point for making an informed guess about one possible intermediate stage between animal and human communication. The chapter requires specific knowledge and experience of the topic, unusual in a volume aimed at a broad audience. Chapter 3 goes some way towards explaining some of the complex issues raised in chapter 2, where Meguerditchian and Vaclair discuss communication in non-human primates. A prime question for primatologists lies in investigating whether there are direct precursors of language to be found in the communicative behaviour of non-human primates. The chapter reviews a number of major studies that provide evidence for both gestural and vocal precursors of language, concluding that the available information supports the gestural hypothesis for the origin of language.

The second part of the book deals with cognition, and chapter 4 opens this discussion with Bard and Leavens looking at the development of joint attention — when an individual is engaged with a social partner about an object or event — in human and ape infants. Ape and human development is shown to be very sensitive and effects of early rearing experiences are shown to influence sociocognitive development including joint attention. The authors conclude that there is much to learn from animals about human development.

In chapter 5, Rakoczy discusses collective intentionality; when two or more subjects share an intentional ‘we’ attitude. Chimpanzees have been shown to understand something about others’ perceptions and, thus, possess second-order intentionality. However, although many animal species have been shown to use tools in complex ways, only human children seem to be able to collectively assign fictional (or abstract) functions to objects as demonstrated in imaginary play. This is highlighted as a human trait underlying uniquely human sociality.

Burkart discusses co-operative breeding in Callitrichids (marmosets and tamarins) in chapter 6. Co-operative breeding systems share parenting between numerous individuals. This reduces the impact on the mother and results in a reduced interbirth interval. Unusually, this co-exists with a slow maturation of immatures and reduced within-group competition. These societies are highly tolerant and show reduced levels of aggression. Humans have the propensity for a short interbirth interval and slow maturation. Burkart suggests this is good evidence that our ancestors became co-operative breeders after the split from the Great Ape lineage. The effect of co-operative breeding on cognitive performance depends on the existing abilities of the species concerned, but the lengthened juvenile period enables the costly development of the larger brain.

Chapter 7 deals with social learning in domestic dogs. Virányi, Range and Huber discuss the difference between dogs and wolves in levels of attentiveness towards humans and their ability to learn socially with either humans or other dogs teaching them skills. The two issues are interrelated in that an individual can only learn socially from another if it pays attention to the demonstration. Domestic dogs were shown to possess greater levels of attentiveness and social learning ability and this was attributed to the inheritance of increased social attention from their shared ancestor with wolves; the exposure to humans generalising the social interest to human companions, and over 10,000 years of domestication providing the opportunity to develop an interest in human behaviour.

In chapter 8, Brinck examines the central components of the methodology of comparative psychology and its global objective: the issue of human uniqueness and attempts to clarify its nature form the central core of comparative psychology. The application of Morgan’s Canon is discussed as a reasonable methodological principle for making unbiased interspecies comparisons, and Tinbergen’s model on the causal origin of behaviour is described as the explanatory model that “still exerts a major influence” on the field.

Chapter 9 opens the final section on Culture. Caldwell describes experimental studies into primate culture. Culture is described as “behaviour specific to a group which is transmitted via some form of social learning”. Caldwell describes how the ‘intellectual atmosphere’ has led to innovative and informative experimental approaches leading to a growing body of literature on culture in non-humans, exposing gaps in our knowledge of human culture. A number of experimental techniques are described in detail.

In chapter 10, McGrew illustrates some lessons learned from cultural primatology. McGrew promotes the fundamental assumption that humans and non-humans share attributes until shown otherwise, rather than operating under the more anthropocentric alternative. A previous publication written by the author provides 20 lessons learned from more than three decades studying wild chimpanzees. This chapter follows on, adding an additional 10 lessons based on further contemplation and new data.

Jamieson briefly discusses human resistance to viewing Great Apes as equals in chapter 11. The community of equals is the moral community within which certain basic moral principles govern our relationships with each other. Jamieson discusses five sources of resistance to recognising the moral equality of Great Apes, including the expression of deep-seated anxieties about our own place in nature and our relationships with those who are different. In chapter 12, Kettner responds to Jamieson by suggesting that “his analysis presupposes that there are compelling reasons for thinking the Great Apes really are our equals”. Kettner describes human dignity as belonging to beings that normally develop a ‘moral stance’. He argues that “there is no reason to extend the community of equals to other Great Apes because as far as we know, they don’t normally develop a moral stance”.

In the postscript, Röska-Hardy draws all the elements of the volume together, indicating that regardless of whether arguments support the continuity or discontinuity argument, all seem to be agreed that human capacities are the result of diverse evolutionary processes. The comparative perspective is described as “aiming to place species-specific capacities in an evolutionary context”, enabling the clarification of the “origins, selective pressures and evolutionary trajectories of specifically human traits”.

As the title of the book suggests, this volume questions the idea that we have much to learn about human language, cognitive and cultural capacities from animals. In discussing whether we can indeed learn about human uniqueness from comparative studies of other species, the answer is a resounding yes. These capacities are demonstrated to varying degrees in a number of non-human animals, including some less closely related to us than the Great Apes. Many contributors to the volume conclude by providing more questions and more testable hypotheses, indicating the depth of work still to be done in this field. As such, the volume implies that with further study, more will be uncovered about the capacity for language, culture and cognition in other species and therefore the welfare implica-

tions of such a volume are that we should afford them greater consideration in terms of improved welfare. However, the debate between animal rights and animal welfare blurs the argument as all sentient animals require a high standard of welfare, whereas the argument for similarities in culture and cognition would support a more rights-based viewpoint as exemplified in Jamieson’s chapter (11) where he suggests the Great Apes being added to the community of equals.

In summary, this is a comprehensive introduction to the field for newcomers, and a helpful tool for exemplifying where collaboration between traditionally separate methodological approaches would provide a benefit.

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Strategies and Tactics of Behavioral Research, Third Edition

JM Johnston and HS Pennypacker (2009). Published by Routledge, 27 Church Road, Hove, East Sussex BN3 2FA, UK. 400 pp Hardback (ISBN 978-0-8058-5882-2). Price £37.50.

Strategies and Tactics of Behavioral Research is a new edition of a methodological text aimed primarily at postgraduate students interested in the experimental study of individual behaviour. The authors’ stated objective is “to summarise what many researchers have learned about methods of studying behaviour”. On the face of it, the chapter titles suggest a thorough treatment of some of the most important issues involved in behavioural research. Topics covered include: asking experimental questions, selecting and defining response classes, observing and recording, assessing measurement, behavioural variability, creating experimental designs, analysing behavioural data, and interpreting experiments. For those familiar with the previous edition of this book, the core content remains unchanged, but the authors have made an effort to improve the accessibility of the material by removing extraneous detail, and adding a number of learning aids including, definitions of key terms, boxed discussion of selected topics, chapter summaries and study guides. What may not be immediately apparent to the uninitiated reader is that the authors come from a background in Skinnerian applied behaviour analysis, which is the field that uses experimentally-derived principles of conditioning to alter socially significant behaviour. As a consequence, the approach to research advocated and described in the book is strongly influenced by the authors’ behaviourist tradition and applied focus. This has a number of implications for the relevance of the book to researchers interested in using behavioural techniques to answer questions or solve problems in animal welfare.

Although the first author, Jim Johnston, has worked on non-human animals (eg Williams & Johnston 2002), the book is primarily aimed at researchers working on human behaviour, and the examples cited come primarily from studies on humans. Following from this, the book has almost nothing to say about the practicalities of doing