

BOOKS & ARTS

Our social roots

We share many behavioural traits with our primate relatives — some disquietingly nasty.

Gorilla Society: Conflict, Compromise and Cooperation Between the Sexes

by Alexander H. Harcourt and Kelly J. Stewart

University of Chicago Press: 2007. 416 pp. \$75 (hbk), \$30, £19 (pbk)

Macachiavellian Intelligence: How Rhesus Macaques and Humans Have Conquered the World

by Dario Maestripieri

University of Chicago Press: 2007. 192 pp. \$25, £14

Chimpanzee Politics: Power and Sex Among Apes

by Frans de Waal

25th Anniversary Edition. Johns Hopkins University Press: 2007. 276 pp. \$24.95, £16.50

Sarah F. Brosnan

Why do you spend more time with your colleague next door than the one down the hall? As a founding scholar of primate social behaviour, the fifteenth-century philosopher Niccolò Machiavelli might have been able to tell you. Today's primatologists are still fascinated by the evolutionary roots of power, sex and politics in human and non-human primates — surprising parallels emerge that may explain facets of our behaviour and codes governing our society.

A seminal book in the field is Frans de Waal's *Chimpanzee Politics*, just re-released as a 25th-anniversary edition. De Waal explores interactions among three high-ranking males in the Arnhem Zoo colony in the Netherlands to obtain insight into alliances, sex and power in our closest living relatives. The chimpanzees' lives include all the intrigue and shifting allegiances of the Florentine court; it is easy to forget that the participants are not human.

A quarter of a century after its first publication, the influence of de Waal's approach is pervasive. Dario Maestripieri's engaging new book, *Macachiavellian Intelligence*, argues that social cognition is the key to our species' extraordinary success. The book is also a salutary reminder that we are members of the Order Primates as much as of the Family Hominidae, and not all that different from our disquietingly nasty cousins.

Rhesus macaques and humans, Maestripieri explains, are group-living generalists who



Family feast: endangered mountain gorillas (*Gorilla gorilla beringei*) enjoying a vegetarian menu together.

succeed by advancing their own — and their family's — future through political manoeuvring. Altruism and social behaviour are therefore useful only when the pay-off is greater than the investment, although, according to Maestripieri, humans may have recently evolved more pervasive pro-social tendencies.

Some may question Maestripieri's pragmatic approach to human behaviour, such as his view that our sexual patterns were shaped to secure partner commitment. But, his use of anecdote, and comparisons between humans and macaques, make a persuasive case that a self-interested desire to manipulate others motivates much of human behaviour.

An understanding of how society determines the behaviour of individuals calls for an examination of an outgroup that varies in its degree of relatedness or its social organization. Gorillas, with their harem societies and lesser aggression, provide a nice counterpoint to chimpanzees and macaques (excepting, perhaps, the little studied but apparently more

gregarious western gorilla). *Gorilla Society* aims to develop a socio-ecological framework for understanding the animals' social organization and behaviour.

Harcourt and Stewart's book contains some novel approaches. For example, the authors attempt to model rarely seen behavioural variants in order to estimate their pay-offs, which helps in understanding previously unexplained behaviour. They also approach social organization from the male and female perspectives, developing a picture of infinite regress as the decisions of each sex affect each other's choices. They explain, among other things, the conspicuous absence of male takeovers in gorilla populations. Every chapter ends with a comparison between gorilla behaviour and that of chimpanzees, bonobos and orangutans in similar circumstances, illustrating the broader power of socioecological theory.

The authors of all three books are noted primatologists. Although aimed at different audiences, the books are all readable and

informative. There is some repetition in Harcourt and Stewart's because it is written as a reference work; extensive cross-referencing and helpful section headings make it easy to use. Maestripiere's slimmer volume will appeal to a general audience with its fast pace, references to popular culture and wide-ranging discussion of human behaviour. It cites the original studies, but could leave primatologists wishing for more in-depth discussion.

Just as we are on the brink of a more nuanced and thorough understanding of primate and human society, the breakdown of human society continues to fuel the demise of the remaining strongholds of primates in the wild. For

instance, gorillas are now listed as critically endangered by the World Conservation Union (*Nature* 449, 127; 2007).

Contrary to his stereotype, Machiavelli believed that force should be mitigated with prudence, that morality must not be abandoned. Where is our prudence and morality when we ignore the fate of other peoples and species who share our planet? Humans should find a way to narrow the gap between our own well-being and that of our fellow creatures. ■ Sarah F. Brosnan is an assistant professor in the Department of Psychology, Georgia State University, PO Box 5010, Atlanta, Georgia 30302-5010, USA.

“the intestine preoccupations of comparative anatomy” produced a more accurate taxonomy than one based on visible external characteristics? It's a question as pertinent today as it was in 1818, with the present generation of taxonomists doing their best to assess the value of different types of data, from morphological measurements to genetic sequences.

Appropriately, Burnett takes the debate out of the courtroom, out of nineteenth century New York, and into more universal territory. Amid much else, the author questions whether Linnaeus really brought order to the taxonomic chaos as rapidly and thoroughly as is commonly assumed. Zoological classification, Burnett suggests, could still be “divided, contentious, even fickle” decades after Linnaeus.

It's a shame that this nuanced history has come too late to feed into this year's tercentennial of Linnaeus's birth. Thankfully, its vivid portrayal of a pre-darwinian world gives a valuable context for anyone intent on Darwin glorification for his bicentenary in 2009. When Mitchill confidently asserted that “a whale is no more fish than a man”, he strayed well into what is normally considered Darwinian territory, bridging the sacred void between the animal kingdom and *Homo sapiens*. It's fascinating to see how this statement (and others like it) played out some 30 years before the publication of *On the Origin of Species*.

Burnett is right to describe *Maurice v. Judd* as a “mini-bonanza”. Newspapers and periodicals found much in the case to poke fun at. In fact, it would be hard to make this fascinating case a dull read. It's also hard to imagine how anyone could do a better job: he marshals a wealth of primary material — biblical commentaries, school primers, university lecture notes, published taxonomies, sailors' logbooks and private letters.

Burnett curates the abundant quotations with skill and strengthens his thesis with some marvellous contemporary illustrations. His clear writing and delightful detours help build a sense of suspense at the outcome of the trial. All of which makes this serious book an unexpected page-turner. ■

Henry Nicholls is a editor of *Endeavour* magazine and author of *Lonesome George: The Life and Loves of the World's Most Famous Tortoise* (Pan, 2007).

Taxonomy on trial

Trying Leviathan: The Nineteenth-Century New York Court Case That Put a Whale on Trial and Challenged the Order of Nature

by D. Graham Burnett

Princeton University Press: 2007. 304 pp. \$29.95, £17.95

Henry Nicholls

When the Catholic Church put Galileo on trial for his heretic views, man's position in the Universe was at stake. When schoolteacher John Scopes entered a Tennessee courtroom in 1925 for violating the state's anti-evolution statute, the issue was man's relationship to the animal kingdom. It's hard to imagine that a case brought by a Manhattan fish-oil inspector against a purveyor of whale oil could end up in similar territory. As D. Graham Burnett's enthralling book demonstrates, it did just that.

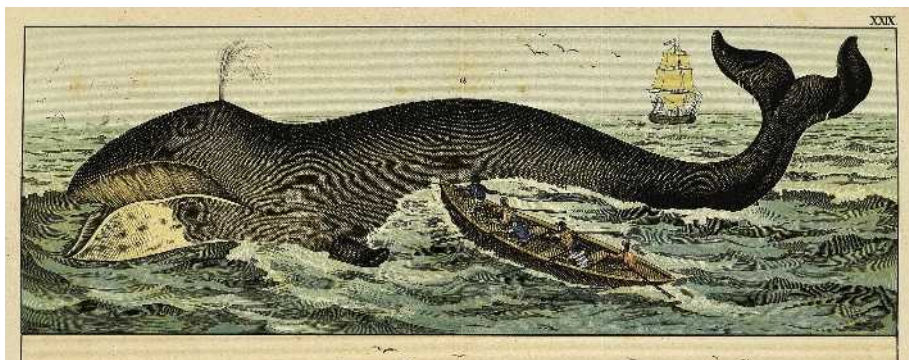
Trying Leviathan chronicles a courtroom drama that gripped New York in 1818: the case of *Maurice v. Judd*. Earlier that year, the state had introduced a law obliging those selling ‘fish oils’ to have their casks inspected and certified. It was hoped that this would raise the bar for a product often diluted with sediment and dirty water. For James Maurice, New York City's inspector of fish oils, whale oil was part of his remit. Traders such as Samuel Judd, head of the New York Spermaceti Oil and Candle factory, begged to differ and put the law to the test.

The ensuing legal tussle had to settle the superficially simple question of whether whale oil was fish oil and therefore liable for inspection. Burnett, a historian of science at Princeton University, shows it did far more — fuelling a sensational public debate that put the order of nature, and how we know it, in the dock. The impact of this case may, in part, explain why thinkers such as William Whewell and John Stuart Mill applied their minds to precisely this problem of whether a whale is a fish, and why Herman Melville's Ishmael pondered the question in *Moby-Dick*.

Burnett scrutinizes the central whale/fish conundrum from the four main perspectives of the time: laymen, natural philosophers, whalers and businessmen. This conjures up a rich and rounded vision of life in the young republic. He brings New York and the packed courtroom alive, characterizes the state of scientific knowledge at this interesting moment in the history of natural history, cuts deep into cetacean flesh, and steps into the wheeling, dealing commercial world of downtown Manhattan.

Two characters take centre stage in the trial: distinguished naturalist Samuel Latham Mitchill and prosecution lawyer William Sampson. As the star witness for the defence, Mitchill brought the latest science into the courtroom, using linnean taxonomy and state-of-the-art Cuvierian comparative anatomy to make the case for the whale as a mammal. Sampson mugged up on his history of science, and his cross-examination of Mitchill is an awesome display of eloquence and wit. *Trying Leviathan* is worth reading if only for the extraordinary exchange between these men.

Mitchill's faith in comparative anatomy painted an enlightened picture of whales to the jury — viviparous, lactating beasts with complex hearts, lungs and livers. Sampson countered by satirizing the subjective nature of taxonomic division. Who exactly, Burnett asks on Sampson's behalf, had decided that



Mammal or fish? The question provoked a notorious court case in the early nineteenth century.