

## Book Reviews

### ***Feline Behaviour: A Guide for Veterinarians, 2nd Edition***

BV Beaver (2003). Published by Saunders, Elsevier Science Ltd, 11830 Westline Industrial Drive, St Louis, Missouri 63146, USA; <http://www.elsevier.com>. 349 pp. Paperback (ISBN 0 7216 9498 5). Price £26.99.

Understanding the natural behaviour and biology of a species is the essential first stage in both diagnosing and treating unwanted or abnormal behaviour problems. In the cat particularly, many of the 'problem behaviours' that are seen in practice are actually normal patterns of behaviour from the cat's perspective. These behaviours become 'problems' where they are misunderstood by owners, or where they occur in an inappropriate context from the owner's point of view. For this reason, 'Feline Behaviour: A Guide for Veterinarians', with its in-depth analysis of normal feline behaviour, is an invaluable resource for anyone interested in the understanding of problem behaviour in cats. It is particularly recommended for vets, students, and those studying clinical behavioural medicine because of its thorough referencing and balanced review of the relevant literature.

The book starts with an introductory chapter that discusses the evolutionary origins of the modern cat, as well as the history of the relationship between cats and humans, right through to the roles that cats have in modern day society. The author then goes on to discuss the approach to evaluating problem behaviours, using a very rational functional approach to the classification of problems. The process of a behaviour consultation is discussed, and treatment options introduced, including a new section in this edition on pharmacotherapy. This new section is a very comprehensive evaluation of the drugs that are currently used to treat cats with problem behaviours. It was very good to see in this section that the author has emphasised the importance of accurate diagnosis before the use of drug therapy, the importance of a scientific approach in the evaluation of drug use, and also the fact that drug use is an adjunct to appropriate behaviour therapy.

Chapter 2 describes the sensory and neurological development of the kitten, and relates these processes to the development of normal patterns of behaviour, such as play, and the development of learning. The chapter finishes with an interesting examination of the behaviour problems that arise through sensory or neural origin, such as stress behaviours and inappropriate play behaviours. The third chapter examines the communication behaviour of the cat, including a very thorough description of vocalisation types, postural forms of communication and scent marking behaviours. The last section is a review of problem behaviours that arise from communication, such as excessive vocalisation and scratching.

In the next chapter, there is a comprehensive review of social behaviour in the cat. The author presents an excellent description of the different types of social groupings in cats: those that are mostly solitary, feral colonies, and cats kept in

domestic households. She has also approached the controversial issue of social orders in cats in a balanced way; describing the different theories and the findings of research conducted in feral situations. Her conclusion that there is not a specific hierarchy between most cats within an established social group (apart from individual 'despots' and 'pariahs') is consistent with current opinion within the UK, although this is an area of domestic cat behaviour that undoubtedly warrants more research because of its impact on the welfare of domestic cats. The chapter concludes with an excellent evaluation of aggression, and problems related to social stress in domestic cats. The latter includes a very relevant discussion of the problems of introducing a new cat to a household, although it would have been nice to have seen more emphasis on the importance of distributing important resources within established multi-cat households to help reduce social stress.

Chapters 5 and 6 thoroughly evaluate the available literature on sexual behaviour in males and females, including sections at the end of each discussing the problem behaviours related to sexual behaviour. Chapter 7 describes ingestive behaviour in the cat. Again, this is a very thorough review of current knowledge on this subject, including the development and form of hunting behaviour, and food preferences. The section at the end of this chapter deals with problem forms of ingestive behaviour and includes excellent descriptions of abnormally extended sucking behaviour, such as wool sucking, excessive eating, anorexia and pica. Eliminative behaviour is the subject of Chapter 8. As before, there is a review of current knowledge on normal eliminative behaviour, including a guide to litter training. The section on behaviour problems in this chapter gives an excellent evaluation of current knowledge about the development and treatment of urine spraying and inappropriate elimination in the domestic cat. The salient issues causing changes in these behaviours are covered very well, including the importance of medical causes of elimination behaviour change, although greater emphasis could have been put on the importance of social stress in the development of both problems in the domestic situation.

The excellent descriptions and diagrams of locomotory behaviour in the cat have been retained from the first edition in Chapter 9. These include descriptions of the amazing ability of the cat to right itself when falling, and the athleticism involved in jumping and swimming. Postures of sleeping, sitting and resting are also described. Problems described in this section include narcolepsy, overactivity, stereotypies and obsessive compulsive disorders. The author has separated the last two of these because of the presence of an obsessive element in the latter. There is some debate in the UK as to whether domestic animals have the ability to 'obsess' as a human would, and as a result such behaviours are more often described as compulsive behaviours. The author also discusses the treatment options for jumping on counters or tables, through the use of remote

punishers, such as sticky tape or piled up objects. She also includes electric shock mats in this list, which are generally not used in the UK because of welfare concerns over their use. Chapter 10 discusses grooming behaviour, including the function and patterns of normal grooming. The problem behaviours in this section include excessive grooming, lack of grooming and hyperaesthesia. The book also includes useful appendices on feline vocalisations, the development of sensory and motor responses pre- and post-natally in the kitten, and the doses of commonly used psychopharmacologic agents.

In conclusion, the whole book is extremely well researched and referenced, making it an invaluable addition to the library of anyone working in clinical behavioural medicine. The approach taken by the author, of evaluating normal patterns of behaviour and then examining where problems occur with these behaviours, is a very rational one. This approach effectively directs the reader to understand the normal before considering the abnormal, and is to be commended. Enhancing the understanding of feline behaviour both amongst owners and veterinary surgeons is an important way of improving the welfare of pets, and hence this book is an important tool in improving the welfare of cats within the domestic environment.

Rachel Casey

Department of Clinical Veterinary Science

University of Bristol, UK

**The Neuroscience of Social Interaction:  
Decoding, Imitating, and Influencing the Actions  
of Others**

Edited by CD Frith and DM Wolpert (2004). Published by Oxford University Press, Great Clarendon Street, Oxford OX2 6DP, UK; <http://www.oup.com>. 329 pp. Paperback (ISBN 0 19 852926 0); price £29.95. Hardback (ISBN 0 19 852925 2); price £70.00.

At first glance, the title of this volume appears alarmingly over-ambitious. Of course, social interactions continue to be studied extensively by sociologists, social psychologists, and, in non-human animals, by behavioural biologists. But the field is so diverse and so complex, it would seem to me almost impossible to decide where to start attempting to underpin such a variety of behavioural and cognitive processes at the level of neuroscientific analysis. Chris Frith and Daniel Wolpert's solution is to limit their remit radically: to the neuroscience of people's (and perhaps some animals') capacities to decode, imitate and influence the actions of others. Central to their interest in these areas is the phenomenon described as 'mentalizing' — the perception and communication of mental states such as beliefs and desires. Their aim is to uncover the variety of neural mechanisms underlying this ability — effectively to 'read other minds' — and to show how these mechanisms might have evolved. To this end, they have grouped chapters into three broadly themed sections: 'Biological motion', 'Mirror neurons' and 'Mentalizing'.

The first section, 'Biological motion: decoding social signals' contains four contributions concerning the hierarchical processes by which biological actions (eg movement, gaze direction, pointing gesture) are detected and interpreted. Puce and Perrett (Ch 1), and Rittscher *et al* (Ch 4) focus on the most basic of these: the detection and interpretation of biological, particularly animate, systems on the basis of perceived motion alone. The neural processes involved, it is proposed, can be localised to a specialised brain area called the superior temporal sulcus (STS). Interestingly, this area also appears to be concerned with discerning socially important facial movements, such as mouth opening (indicating the initiation of an utterance) and gaze aversion (indicating that the other's attention is diverted away from the observer). Thus, the STS apparently has specialised functions concerning the allocation of attention within the context of human social interactions. Csibra (Ch 2) also considers the perception of gaze direction, this time from a developmental perspective. Even infants as young as 12 months show an appreciation that emotional expressions (eg by their mother) reference the affective relevance specifically of objects towards which gaze is directed. The same aged children also show strong tendencies to follow the gaze of others, demonstrating 'joint attention', a relatively sophisticated process regarded as an important marker for subsequent language acquisition. Such skills may or may not be interpreted as 'theory of mind', but are, at the very least, important skills involved in the understanding of humans as agents who act in an intentional manner. Frith and Frith (Ch 3) consider further developmental steps towards full human 'mentalizing', such as explicitly understanding the events that give rise to a false belief (and thus the capacity to deceive). Again, they return to the neural structures involved in this process, proposing a multi-layered capacity, involving several brain structures including the STS, and, at the highest level of sophistication, the medial pre-frontal cortex.

The second section, 'Mirror neurons: imitating the behaviour of others' takes as its starting point the relatively recent discovery that certain neurons in the pre-motor cortex of rhesus macaques respond both when an action is observed and when the same action is performed. Potentially a key neural substrate for imitation, empathy and certain aspects of perspective taking and theory of mind, the finding of these mirror neurons has stimulated considerable research and renewal of interest in the investigation of such processes in humans and primates. Of particular interest to evolutionary biologists is the issue of the layers of cognitive processing that may be needed to translate basic mirror responses in monkeys to full imitative learning in humans. With this in mind, Wohlschläger *et al* (Ch 6), working with children and adults, propose a theory of 'goal directed imitation' in which the task to be learnt is *not* imitated slavishly. Instead, it appears that the perceived task, and in particular its goal, is identified and broken down into its (more and less critical) component parts. The imitator/learner is thereby able to identify the essential features of the task, and thus achieve the goal in a manner that is flexible and