

Developments in Primatology: Progress and Prospects
Series Editor: Louise Barrett

Sindhu Radhakrishna
Michael A. Huffman
Anindya Sinha *Editors*

The Macaque Connection

Cooperation and Conflict between
Humans and Macaques

 Springer

Developments in Primatology: Progress and Prospects

Series Editor: Louise Barrett

For further volumes:
<http://www.springer.com/series/5852>

Sindhu Radhakrishna · Michael A. Huffman
Anindya Sinha
Editors

The Macaque Connection

Cooperation and Conflict between
Humans and Macaques

 Springer

Editors

Sindhu Radhakrishna
National Institute of Advanced Studies
Indian Institute of Science Campus
Bangalore, India

Michael A. Huffman
Department of Social Systems Evolution
Primate Research Institute
Kyoto University
Inuyama, Aichi, Japan

Anindya Sinha
National Institute of Advanced Studies
Indian Institute of Science Campus
Bangalore, India

Nature Conservation Foundation
Gokulam Park, Mysore, India

ISBN 978-1-4614-3966-0 ISBN 978-1-4614-3967-7 (eBook)
DOI 10.1007/978-1-4614-3967-7
Springer New York Heidelberg Dordrecht London

Library of Congress Control Number: 2012942237

© Springer Science+Business Media, LLC 2013

This work is subject to copyright. All rights are reserved by the Publisher, whether the whole or part of the material is concerned, specifically the rights of translation, reprinting, reuse of illustrations, recitation, broadcasting, reproduction on microfilms or in any other physical way, and transmission or information storage and retrieval, electronic adaptation, computer software, or by similar or dissimilar methodology now known or hereafter developed. Exempted from this legal reservation are brief excerpts in connection with reviews or scholarly analysis or material supplied specifically for the purpose of being entered and executed on a computer system, for exclusive use by the purchaser of the work. Duplication of this publication or parts thereof is permitted only under the provisions of the Copyright Law of the Publisher's location, in its current version, and permission for use must always be obtained from Springer. Permissions for use may be obtained through RightsLink at the Copyright Clearance Center. Violations are liable to prosecution under the respective Copyright Law.

The use of general descriptive names, registered names, trademarks, service marks, etc. in this publication does not imply, even in the absence of a specific statement, that such names are exempt from the relevant protective laws and regulations and therefore free for general use.

While the advice and information in this book are believed to be true and accurate at the date of publication, neither the authors nor the editors nor the publisher can accept any legal responsibility for any errors or omissions that may be made. The publisher makes no warranty, express or implied, with respect to the material contained herein.

Printed on acid-free paper

Springer is part of Springer Science+Business Media (www.springer.com)

*If mountains shiver in the cold
with what
will they wrap them?*

*If space goes naked
with what
shall they clothe it?*

Allama Prabhu¹
12th century AD

¹Ramanujan AK (1973) Speaking of Siva. Penguin Books, New Delhi, p 151

Preface

The concept of this book arose from a symposium entitled “Human-Macaque Interactions: Traditional and Modern Perspectives on Cooperation and Conflict” that we organized at the 23rd Congress of the International Primatological Society, held in Kyoto in September 2010. The symposium highlighted the many aspects of human-macaque relations that exist today and brought to attention the various forms of interactions between macaques and humans, the changes in human attitudes toward macaques over the ages, and the conservation implications of these changes. Apart from some of the participants of this symposium, we also invited other scholars from this field of work to contribute to this volume. Our goal in editing this volume was to document the myriad facets of the association between humans and macaques over the ages, and we believe this book succeeds in doing this. We are indebted to many friends, colleagues, and family members for seeing this volume through and supporting us in all ways possible, be it sourcing literature, answering questions, or putting up with our preoccupied and distracted minds; they include B K Anitha, Hamsa Kalyani, Yoshi Kawamoto, Vaidehi Herbert, Anil Govind, Kakoli Mukhopadhyay, Hemalatha Radhakrishna, and N Radhakrishna. We are grateful to Mrs Rajeshwari Tejaswi for granting us copyright permission to translate and use the story *Gaadli* by K P Poornachandra Tejaswi. We would also like to extend a special note of thanks to all our reviewers who took time out to read the chapters and offer their constructive and timely suggestions – Etienne Benson, Loretta Ann Cormier, AR Vasavi, Janette Wallis, Latha Raman, TR Shankar Raman, Mewa Singh, and Martha Ann Selby. And last, but not the least, we would like to place on record our deep appreciation for the help and support offered by our editors at Springer – Aiko Hiraguchi, Melissa Higgs, and Janet Slobodien.

Bangalore, India
Inuyama, Aichi, Japan
Bangalore, India

Sindhu Radhakrishna
Michael A Huffman
Anindya Sinha

Contents

Part I Introduction

- 1 The Gulf Between Men and Monkeys** 3
Sindhu Radhakrishna

Part II Traditional Views of Macaques

- 2 The Nature of Love** 19
Harry F. Harlow
- 3 The Japanese and Japanese Monkeys: Dissonant Neighbors
Seeking Accommodation in a Shared Habitat** 33
Yoshihisa Mito and David S. Sprague
- 4 Songs of Monkeys: Representation of Macaques
in Classical Tamil Poetry** 53
Sindhu Radhakrishna

Part III Cooperative Relationships Between Humans and Macaques

- 5 Macaques and Biomedicine: Notes on Decolonization,
Polio, and Changing Representations of Indian Rhesus
in the United States, 1930–1960** 71
Neel Ahuja
- 6 Macaque Tourism: Implications for Their Management
and Conservation** 93
Avanti Mallapur
- 7 Pets, Property, and Partners: Macaques as Commodities
in the Human-Other Primate Interface** 107
Agustin Fuentes

Part IV Current Scenarios of Human-Macaque Conflict

8 Gaadli	127
K.P. Poornachandra Tejaswi	
Translated by Honnavalli N. Kumara and Shanthala Kumar	
9 Macaque–Human Interactions in Past and Present-Day Sri Lanka	135
Charmalie A.D. Nahallage and Michael A. Huffman	
10 <i>Monyet Yang Dihargai, Monyet Yang Dibenci: The Human-Macaque Interface in Indonesia</i>	149
Jeffrey V. Peterson and Erin P. Riley	
11 Out of Asia: The Singular Case of the Barbary Macaque	167
Bonaventura Majolo, Els van Lavieren, Laëtitia Maréchal, Ann MacLarnon, Garry Marvin, Mohamed Qarro, and Stuart Semple	

Part V How Living with and Beside Humans Has Affected Macaques

12 The Monkey in the Town’s Commons, Revisited: An Anthropogenic History of the Indian Bonnet Macaque	187
Anindya Sinha and Kakoli Mukhopadhyay	
13 Anthropogenic Influences on Macaque Populations and Their Genetic Consequences	209
Debapriyo Chakraborty and David Glenn Smith	
14 Managing Humans, Managing Macaques: Human–Macaque Conflict in Asia and Africa	225
Nancy E.C. Priston and Matthew R. McLennan	
Index	251

Contributors

Neel Ahuja Department of English and Comparative Literature, University of North Carolina-Chapel Hill, Chapel Hill, NC, USA

Debapriyo Chakraborty Primate Programme, Nature Conservation Foundation, Mysore, India

National Centre for Biological Sciences, University of Agricultural Sciences Campus, Bangalore, India

Agustin Fuentes Department of Anthropology, University of Notre Dame, Notre Dame, IN, USA

Michael A. Huffman Department of Social Systems Evolution, Primate Research Institute, Kyoto University, Inuyama, Aichi, Japan

Shanthala Kumar Riverstone Ruby Apartment, Vallalar Nagar, Near Chinmaya Vidyalay, Vadavalli, Coimbatore, Tamil Nadu, India

Honnavalli N. Kumara Conservation Biology, Sálím Ali Centre for Ornithology and Natural History, Coimbatore, TN, India

National Institute of Advanced Studies, IISc Campus, Bengaluru, India

Els van Lavieren Moroccan Primate Conservation Foundation, Randwijk, Amsterdam, The Netherlands

Ann MacLarnon Centre for Research in Evolutionary and Environmental Anthropology, University of Roehampton, London, UK

Bonaventura Majolo School of Psychology, University of Lincoln, Lincoln, UK

Avanti Mallapur Director of Biodiversity Conservation, Department of Biodiversity Conservation, Aaranyaa, DeSoto, TX, USA

Laëtítia Maréchal Centre for Research in Evolutionary and Environmental Anthropology, University of Roehampton, London, UK

Garry Marvin Centre for Research in Evolutionary and Environmental Anthropology, University of Roehampton, London, UK

Matthew R. McLennan Faculty of Humanities and Social Sciences, Department of Social Sciences, Oxford Brookes University, Oxford, UK

Yoshihisa Mito Formerly Japan Monkey Centre, Inuyama, Japan

Kakoli Mukhopadhyay 44/1 Nandidurga Road, Ramya Royal Apartments, Bangalore, India

Charmalie A.D. Nahallage Department of Sociology and Anthropology, University of Sri Jayewardenepura, Gangodawila, Nugegoda, Colombo, Sri Lanka

Jeffrey V. Peterson Department of Anthropology, San Diego State University, San Diego, CA, USA

Nancy E.C. Priston Faculty of Humanities and Social Sciences, Department of Social Sciences, Oxford Brookes University, Oxford, UK

Sindhu Radhakrishna National Institute of Advanced Studies, Indian Institute of Science Campus, Bangalore, India

Erin P. Riley Department of Anthropology, San Diego State University, San Diego, CA, USA

Stuart Semple Centre for Research in Evolutionary and Environmental Anthropology, University of Roehampton, London, UK

Anindya Sinha National Institute of Advanced Studies, Indian Institute of Science Campus, Bangalore, India

Nature Conservation Foundation, Mysore, India

David Glenn Smith Department of Anthropology and California National Primate Research Center, University of California, Davis, CA, USA

David S. Sprague Ecosystem Informatics Division, National Institute for Agro-Environmental Sciences, Tsukuba, Ibaraki, Japan

Mohamed Qarro Ecole Nationale Forestière d'Ingénieurs, Salé, Hassane Rabat, Morocco

Part I

Introduction

Monkey on monkeyman's stick
puppet at the end of a string

I've played as you've played
I've spoken as you've told me
I've been as you've let me be

Mahadeviyakka¹ 1130 – 1160 CE

¹Ramanujan AK (1973) Speaking of Siva. Penguin Books, New Delhi, p 117

Chapter 1

The Gulf Between Men and Monkeys*

Sindhu Radhakrishna

1.1 Introduction

The term human–animal interaction involves a whole gamut of associations, from competition and commensalism to conflict, cooperation, coexistence and companionship, between humans and other animal species. Yet, conflict is the most common frame that defines human–wildlife interactions today (Conover 2002; Woodroffe et al. 2005). Contemporary scientific accounts of human and other animal interactions generally tend to explore the nuances of conflict between the species, the more specific and localised drivers behind the discord, solutions for problem mitigation and end with adjurations for more equitable relations between humans and their co-inhabitants on this planet. The reasons for this are not far to seek. Globally, problems due to wildlife are attracting more attention, and it has been claimed that the intensity of human–wildlife conflict has not only risen in recent times but is likely to escalate further in the future (Madden 2004). Increasingly, nonhuman animal populations are losing out in the competition for space and resources that they face with the human species, and both for utilitarian and utopian reasons, humans need be convinced that they must tolerate and share the available space and resources with their nonhuman brethren.

Although human–wildlife conflict is emphasised a great deal in conservation biology, a notable advance in the discipline (and in related fields) in more recent times is the growing body of work on the ethical and moral imperatives governing human interactions with other animal species. Many biologists and conservationists have argued that animals experience emotions in much the same way that humans do;

*I owe the title of this chapter to Cook (1999) who talks about the gulf between men and monkeys in his essay on Ibn Qutayba and the monkeys.

S. Radhakrishna (✉)
National Institute of Advanced Studies, Indian Institute of Science Campus,
Bangalore 560 012, India
e-mail: sindhu@nias.iisc.ernet.in

therefore an acknowledgement of animal sentience should primarily regulate the way we interact with other animal species (Bradshaw et al. 2005; Jickling and Paquet 2005; Bekoff 2002, 2006; Dawkins 2006; Goodall 2006; Simmonds 2006). Secondly, though humans share this earth with other animal and plant species, human needs have taken precedence over all else. Human actions have degraded the natural environment to such an extent that the future of many wildlife species stands at risk. Apart from causing the extinction of wildlife populations through exploitation of habitat and resources, human activities have also brought about 'suffering, fear, physical injury, psychological trauma and disease in wild animals' (Bekoff 2002; Bradshaw et al. 2005; Morrison et al. 2007; Darimont et al. 2009). Hence, it has been suggested that it is important to meld the science of wildlife conservation with compassion for other animals and to work towards shared coexistence rather than wildlife conservation in isolation (Vucetich and Nelson 2007; Paquet and Darimont 2010).

In common with other wildlife species, most discussions on human–other primate interactions also appear as conflict-oriented (Patterson and Wallis 2005). Conflict is a critical component of the human–other primate interface, but it is essential to recognise that other forms of associations also exist between human and non-human primate species (Fuentes and Wolfe 2002; Fuentes and Hockings 2010). As a group, macaques are perhaps the best exemplars of the multiplicity of relationships that may exist between human and other animal species. In their interactions with humans, macaques often play multiple roles that transcend the boundaries of categorisation—they are simultaneously pets and symbols of wild nature, deities and crop raiders, marauders and protected wards, employees and companions, surrogate humans and dispensable animals. The curious tendency of many macaque species to be strongly commensal labels them as common and borderland; they are neither fully wild nor domesticated and therefore are problematic units for management and conservation (Richard et al. 1987; Leong 2009; Radhakrishna and Sinha 2011a, b). For these reasons, they are excellent models for investigations into human–animal relations; they act as both 'mirrors and windows' for our understanding of human interactions with non-human species (Mullin 1999; Knight 2005).

1.2 Cooperation and Conflict with Macaques

Conflict and cooperation, it is contended, are integral aspects of societies (Hobbes 1651/1929; Dugatkin 2000). As two ends of a spectrum of associations that humans share with other humans and with non-human species, they are also interesting points to launch enquiries into the nature of the human–macaque interface. Humans interact with macaques in various ways, with the latter serving as pets, food, putative medicinal material, commodities of trade, entertainers, harvesting labourers, crop raiders, wild animals, religious symbols, commensal species, pathogen transmitters, experimental objects and cultural signifiers. Conflict between the two species occurs either when both seek the same resource, but only one can gain it, or when both have different objectives, with one attempting to prevent the other from

achieving its goal (Preuschoft and van Schaik 2000). According to this interpretation, crop raiding and property damage by macaques and hunting or trapping macaques for food or other purposes by humans are clearly sources of conflict between the species. However, the nature of the other interactions is not so well defined. As humans make use of macaques as pets, entertainers, labourers and experimental objects, scientists and philosophers concerned with animal rights would label these interactions as conflict-mediated (Regan 1984; Palmer and Sandøe 2011). A biological characterisation of these interactions, on the other hand, would veer towards cooperation.

In biology, a broad definition of cooperation refers to two or more organisms acting together to accomplish some common goal (Price 2011). In the field of human–other animal interactions, documentation of cooperation between humans and wild animals is not unknown, but certainly uncommon. The most well-known example of human–wildlife cooperation is the case of dolphins and fishers working together to obtain fish (Busnel 1973; Pryor et al. 1990; Peterson et al. 2008; Zappes et al. 2011). Describing the practice of using pig-tailed macaques to pick coconuts in Thailand, Sponsel et al. (2002) propose that this is a cooperative relationship between humans and macaques as both species gain from it. Humans profit economically, while the macaques obtain food, shelter and protection from hunting. The authors aver that although the macaques may be unequal partners in that they are not able to exercise their choice or free will in this relationship, cooperation in the strictest biological sense does not require the actions of the involved parties to be *voluntary*. Although the inequity involved in removing male pig-tailed macaque infants from their natal groups in the wild (in order to train them to pick coconuts) is undeniable, it must be noted that oftentimes the relationship between keeper and macaque is similar to that of parent and offspring (Sponsel et al. 2002).

The deep bond that typically develops between humans and the animals they care for, and the behavioural characteristics of the animals that make this possible, has been remarked upon in several contexts but particularly in that of domestication (Campbell 2005; Hart 2005; Marvin 2005). The concept of domestication, with its adherent image of dominant man and subordinate animal, is fertile ground for debates on the intimacy of man–other animal relations (Knight 2005). Rejecting the common and anthropocentric view of domestication that sees humans as solely responsible for removing some animal species from the wild habitat and utilising them for their purposes, some authors have argued that domestication arose as a by-product of a mutualistic or commensal association that existed between humans and certain animals (Reed 1980; Brothwell 1983; O'Connor 1997; Budiansky 1999). Associating with humans benefited some animal species because it reduced food competition from larger species and provided greater protection from predators. Hence, these species may have ‘actively sought the closer relationship with humans’, and these commensal associations paved the way for domestication (O'Connor 1997). Domestication therefore can be seen as symbiotic or cooperative since both humans and the partner animals benefit from the process (Bokonyi 1989; O'Connor 1997; Budiansky 1999).

By the same analogy, interactions between macaques and humans, wherein both species obtain some benefit from the other, may be categorised as cooperative.

Humans profit from their associations with macaques when they use them as pets, entertainers, labourers and for experimental purposes (see Ahuja, Fuentes, this volume). Although macaques do obtain food and protection in return, it can be argued that wild macaque populations also achieve these ends quite effectively, without the interference of humans. Instead, an alternative proposition to understand how macaques could gain from these interactions is to see these relationships as offshoots of macaque commensalism. O'Connor (1997) suggests that early humans assigned roles such as domestic, companion and helper to various commensal species in a bid to benefit from animals that were clearly 'not going to go away'. It is probable that the human-macaque interrelationship also moved along similar lines. Initially, the macaque could have been merely a commensal species found near human habitations; soon people may have attached cultural import to the species and begun utilising it for its functional aspects. Classical literature from some parts of the world supports such a view. Some of the early writings on human-macaque interactions merely record the commensal nature of the macaque; the religious significance of the macaque which is such a prominent part of the human-macaque interface today appears to be a later phenomenon (see Mito and Sprague, Radhakrishna, this volume). Macaques have certainly benefited from their commensality with humans. For one, their cultural and religious importance ensures proximate gains in terms of food and shelter, as well as long-term survival advantages. More importantly, their geographic spread is unrivalled in the non-human primate world, and until the 1990s at least, species population densities were, for the most part, relatively stable (IUCN 2011).

Gudger (1923) quotes the example of monkeys trained to pick fruits in Egypt around 2500 BCE (as evidenced by rock paintings of this era) to demonstrate that the practice of using monkeys as harvesters is an ancient one that has extended to present times. The author's final remark in this article is thought-provoking, commenting that the concept of using monkeys for human tasks has survived a passage of more than 5,000-odd years; he ends by stating: 'Verily there is nothing new under the sun'. Indeed, if one only considers the generalities of man-other animal association, this would appear to be true. However, some particulars have changed—human population size has increased, land is more of a premium now and cultural values are different—and this has created a formidable transformation in our attitudes towards animals and wildlife.

1.3 Social Construction and the Power of Perception

We call it a grain of sand,
but it calls itself neither grain nor sand.
It does just fine without a name,
whether general, particular,
permanent, passing,
incorrect, or apt.

Szyborska (1995)

It has been argued that the term human–wildlife conflict is a misnomer because it emphasises ‘conscious antagonism between wildlife and humans’; in most instances, the issue is one of human–wildlife competition for resources or human–human conflict, as it is actually a disagreement among different human groups over how wildlife and their needs should be regarded or managed (Madden 2004; Peterson et al. 2010). Emphasising the importance of appropriate language and phrasing in discussing problems that arise from human–wildlife interactions, Peterson et al. (2010) contend that the rhetorical framing of such issues critically influences the way people react to the situations in reality. This standpoint of course harks back to the larger debate concerning social construction (Schneider and Ingram 1993; Soule and Lease 1995; Czech et al. 1998; Crist 2004). Social constructivists hold that all our assessments and representations regarding the world around us are mediated through our social contexts; in other words, we ascribe meaning to phenomena or concepts that surround/influence us based as much on our cultural experiences and social learning as on the properties of the subject in question. As noted by several studies, social construction deeply impacts the tone and form of human–other animal interactions, and by extension, the welfare of the animals involved in such relations (Evernden 1992; Czech et al. 1998; Herda-Rapp and Goedeke 2005; Leong 2009). (A related note of philosophical enquiry is of course the much more fundamental question about the perceived distinction between human and animal that was so provocatively raised by Derrida (2008).)

The power of social construction is particularly evident in the varied and shifting modes of human–macaque relations over the ages. One of these has to do with what is seen as the most problematic face of human–macaque interactions, at least as far as humans are concerned, that is, macaque depredations. Expressed as crop raiding in rural areas and damage to property and kitchen gardens in urban areas, conflict due to macaque species and its effective resolution has been the subject of much discussion and heartburn in the recent decades (Patterson and Wallis 2005; Gumert et al. 2011). But damage or danger to human life and property due to wildlife is not a recent or even a modern phenomenon. Classical Tamil poetry from southern India dating back to 100 BCE describes crop raiding by wild animals and birds and people’s attempts to guard their fields from them (Hart and Heifetz 1999; Selby 2011). Popular sayings and local legends in many cultures suggest that crop losses due to wildlife were considered acceptable and a natural way of life (Sutlive 1978; Ohnuki-Tierney 1991; Morris 1998, 2000). A crucial difference in modern times may be the lowered tolerance for wildlife crop depredations. Knight (2000) proposes that technological advances in the field of agriculture brought in its wake assurances of higher productivity and protection from typical pests; this has resulted in farmers having higher expectations of crop yields and therefore being less accepting of crop damage.

Apart from a general reduction in forbearance levels, another critical factor that affects people’s attitudes towards crop-raiding wildlife has to do with perceived notions regarding the amount of damage caused by a species. Perceptions regarding

the destruction wrought by a wildlife species dictate reactions against the species far more strongly than do actual losses (Knight 2000; Gillingham and Lee 2003; Naughton-Treves and Treves 2005). Examinations of macaque crop-raiding occurrences underline the relevance of both these parameters for deeper insights into how social construction shapes the character of human–macaque interfaces (Singh and Rao 2004; Chalise and Johnson 2005; Wang et al. 2006; Marchal and Hill 2009; Riley and Priston 2010). For example, farmers in central Sulawesi consider the Tonkean macaque as most detrimental to their cacao production primarily because the macaques raid the farms even when the farmers are present. Yet quantitative investigations regarding crop losses revealed that in actuality, forest rats cause greater fiscal damage than do macaques (Riley 2007).

Yet another example of the role of social construction in influencing people's reactions towards macaques is the difference in human demeanours towards 'forest macaques' and 'temple macaques'. Across much of south and southeast Asia, significant numbers of macaques can be found inhabiting temple premises (Aggimarangsee and Brockelman 2005; Loudon et al. 2006; Medhi et al. 2007; Nahallage and Huffman, this volume). These macaque populations are typically provisioned and protected from any possible harm and enjoy an elevated status in the minds of the devotees frequenting the temples. However, similar goodwill may not always be extended to the same macaque species outside the boundaries of the temple complexes (Loudon et al. 2006; Malaivijitnond and Hamada 2008; Nahallage and Huffman, this volume). This appears to contradict the tenet of sacredness that is often invoked to explain why macaques are tolerated in regions where Hinduism, Buddhism and Jainism are predominant (Eudey 1994; Strum 1994; Wheatley 1999). Fuentes et al. (2005) suggest that this puzzle resolves itself when it is understood that macaques are protected in temples not because they are sacred, but because they are residents of a 'sacred geography'. The sanctity that is allied to temples and other icons of religious significance such as sacred groves and particular tree species is also passed on to those beings that are found within its precincts. It is for this reason that even bats are revered when they are found within these environments, but not treated with the same indulgence when found outside, or separate from these elements. A similar position is reiterated by Peterson and Riley (this volume) who show that 'perceptions of macaque sacredness are more strongly tied to space than to an inherent holiness for monkeys in the eyes of Balinese Hinduism'.

In his essay on comparing human–other animal relations among hunter-gatherers and in pastoral societies, Ingold (1994) draws attention to a fundamental aspect of human–animal relations, that of characterisation or description. He observes that 'Just as humans have a history of their relations with animals, so also animals have a history of their relations with humans'. The crucial difference is that only humans narrate their history (Ingold 1994), creating a form of asymmetry in the relation. Narratives lend power to a thought, action or deed, and few subjects demonstrate this more forcefully than human–other animal relations. Human narratives, through their depictions of macaques, have strongly affected macaque lives in the past and will, in all probability, continue to do so in the future. A case in question is the

recent attempt to declare the rhesus macaque as ‘vermin’ in the state of Uttarakhand in northern India so that farmers and ordinary people at the receiving end of rhesus macaque depredations can kill animals opportunistically (Radhakrishna and Sinha 2011b). Although humans manifestly have the upper hand in scripting these narratives, it may perhaps be instructive to remember that as subjects of these narratives, macaques are also co-players in this theatre of interactions.

1.4 Macaque Connections

The concept of this book and its title owes much to Bryant (1979). In his elegant paper on recognising the importance of human–other animal relationships, Bryant catalogues the numerous ways in which animals routinely influence our lives and calls upon sociologists to more keenly appreciate this ‘zoological dimension’. Much of our own behaviour, he asserts, will be seen through new eyes if we take into account the ‘zoological connection’ (Bryant 1979). This book is an attempt to capture the essence of those connections that exist between macaques and humans. Our cultural heritage shows that macaques have strongly impacted human lives and thoughts over the ages. In turn humans have also, rather powerfully, modified the course of macaque lives. The more obvious and much discussed effects naturally concern macaque conservation and future survival. As the essays in this volume reveal, in many parts of the world, regard for macaque species is fast being replaced by hostility and anger due to the destruction and damage caused by the animals, and this is serious cause for alarm, not only for wildlife biologists and conservationists, but also for sociologists and humanists. The essays in Part II of this book present snippets of the human gaze vis-à-vis macaques in earlier times and the consequences of those perspectives for macaque lives. Harlow’s essay not only recaptures the debate around what is possibly the most infamous experimental use of macaques, it also succeeds in presenting the human perspective behind the laboratory utilisation of monkeys. The human–macaque interface in Japan has always been of interest to primatologists, not only due to the unique beginnings of primatology in Japan, but also because of the unusual philosophy of subjectivity that has shaped the Japanese approach to primatology. In their chapter, Mito and Sprague trace the history of human–macaque interface in Japan and try to explain how people relate to monkeys on this island nation. The last essay in this section on the representations of monkeys in classical Tamil poetry delineates the commensal nature of the macaque more than 2,000 years ago. Radhakrishna points out that in the classical Tamil era, macaques were a part of the natural landscape for people, along with other elements like trees, elephants, wild pigs and birds, and unlike the complexities of present times, a simple acceptance characterised the human–macaque interface then.

The essays in Part III explore various facets of cooperative relations between macaques and humans. Among macaques, the rhesus macaque has always been an important laboratory primate, and many of our biomedical advances stem from

successful experiments on the species. Ahuja's paper documents the growing significance of the rhesus in research laboratories in the USA during a certain period in the past, the political machinations surrounding its import and breeding and its embedment as a national symbol in the political history of America. Ahuja posits that the end of colonisation led to a different kind of domestication of the rhesus; captive breeding of the species was now actively encouraged within the USA and the earlier image of the animal as an untamed, wild, colonial species transformed to that of a docile, national, laboratory resident. A different perspective on human-macaque cooperation is offered by Mallapur who examines the use of macaque tourism by humans as a tool for macaque conservation. Tourism tends to boost the economic development of the tourist destination; for this reason, macaque tourism has been recommended as a practical way to engage local human populations in the conservation of macaque species and their habitats. However, this method also has undesirable consequences such as food provisioning and its ramifications on macaque population size, higher possibilities of anthrozoönotic disease transmission and negative effects on macaque social behaviour. Fuentes' paper on macaques as commodities engages with the discourse that macaques are co-participants in a shared ecology. Recommending that we move beyond traditional approaches that study macaque behavioural ecology and identify the human-macaque interface with human uses of macaques or the costs of competition between the species, Fuentes uses the broader framework of multispecies ethnoprimateology to analyse how macaques function as certain kinds of commodities in human societies.

Part IV of this book deals with the most well-known feature of the human-macaque interface, that is, conflict. The contributions to this section comprise a set of case studies (for want of a better word) from various parts of the macaque world and showcase people's reactions to crop-raiding macaques in different regions. The first composition in the section, Gaadli, is a story about crop-raiding macaques in southern India. Comprising all the familiar elements of human-macaque conflict in Asia—poor farmers, macaque sacredness, inefficient mitigation methods and translocation—the story whimsically recounts how people typically react to crop-raiding macaques in the region. Nahallage and Huffman's paper on human-macaque interface in Sri Lanka records people's views on the toque macaque, the various ways in which people interact with the species and the conservation implications of this for the future survival of the species. Peterson and Riley present a snapshot of the macaque situation in Indonesia and report the different aspects of human-macaque interactions in the country. In the second part of their essay, they examine what they term the 'paradox of macaque sacredness'. Many studies have commented on the sacredness of macaques in Indonesia, yet conflict with macaques is also an important part of the human-macaque interface in the country. Peterson and Riley present preliminary results from their study in Sulawesi to show that reverence for macaque is often conditional to the species residence in holy places. The last chapter in this section talks about human-macaque interface with regard to the lone African species, the Barbary macaque. Majolo et al. chronicle the history of human-macaque relations in Morocco, Algeria and Gibraltar and the conservation threats faced by

the species due to their conflicts with humans and conclude by presenting insights gained from their study on macaque tourism in Gibraltar.

The final part of this book tackles an often ignored topic—how living beside humans has affected macaque populations. Across Asia, macaques, perhaps more than any other animal species, exemplify the multiple outcomes of synurbisation and the conservation problems of commensal species. With the rapid encroachment of human populations into forested areas, some macaque species have dwindled in number, while others have increasingly moved in greater numbers into human habitats. In the case of the former, the spectre of species extinction looms very large indeed, and in the case of the latter, the urban troops are clearly doomed to a losing battle for survival. A secondary, and largely ignored, consequence has to do with changes in macaque behaviour and society due to human interactions. In the first essay in this section, Sinha and Mukhopadhyay summarise the results of their long-term study on bonnet macaques and offer their understanding of how anthropogenic factors have influenced changes in social structures and relationships within a bonnet macaque population in southern India. The next chapter in this book by Chakraborty and Glenn Smith investigates the genetic consequences of anthropogenic factors on macaque populations across the world. Using the phylogenetic histories of the Barbary macaque, the Japanese macaque and the long-tailed macaque in Mauritius as examples, the authors identify three main axes along which humans have critically impinged macaque biology through their actions. The final chapter in this book by Priston and McLennan completes the enquiry into how living near humans has affected macaques by reviewing the various strategies that are used by humans to manage macaques. The authors first present an overview of the different forms of human–macaque conflict that commonly occur and then discuss the types of mitigation options that are employed by humans to deal with problem macaque populations. They conclude by reminding the readers that all occurrences of human–macaque conflicts are embedded in particular cultural contexts and that resolution mechanisms must bear in mind that a single strategy may not work in all situations.

Certain aspects are missing in this volume: Some macaque species (e.g. the lion-tailed macaque and the stump-tailed macaque) and their interactions with humans find no mention, nor are there any debates on the moral concerns of human treatment of macaques. Although the specific context of human–macaque interaction is unique for every macaque species, a delineation of all the different circumstances that frame human–macaque interactions in different parts of the world would result in a very cumbersome tome. Hence the objective in this volume has been to emphasise some main trajectories rather than to capture every possible feature. However, the absence of a full-bodied discussion on the ethical issues surrounding human–macaque interface may be seen as a more serious lacunae. Due to the wide range of human–macaque interactions, the ethical considerations of human treatment of macaques are rarely simple or straightforward matters. Hence, rather than engage in polemical stances on the morality of human actions concerning macaques, the attempt in this volume has been to highlight various contexts wherein the ethical connotations of human behaviour towards macaques assume considerable importance. For example, Mallapur, Majolo et al. and Sinha and Mukhopadhyay review the animal

welfare concerns of using macaques for tourism benefits; Fuentes underlines the moral disquiets of keeping macaques as pets and performers, and many of the other chapters (Nahallage and Huffman, Peterson and Riley, Priston and McLennan) point out the travails borne by macaques as a result of interactions with humans. The most prominent face of the animal ethics debate, namely, the utilisation of macaques for laboratory experiments, is addressed in two different ways by the Harlow and Ahuja chapters. While Harlow's essay showcases some of the viewpoints that fuel the animal experimentation controversy, Ahuja demonstrates how the changing representations of the rhesus macaque in the cultural consciousness of the USA was mediated not only by geopolitical realities but also by scientific pursuits that evidenced the biological links between man and monkeys and underscored the cognitive and sentient capacities of primate species.

This volume thus brings together not only representations of the diverse human-macaque connections that exist but also the divergent views of scholars involved in this area of work. How do people perceive macaques? As the chapters in this volume attest, macaques are sometimes seen as passive laboratory specimens that may be utilised for particular purposes, at other times, as sentient beings, with rich, emotional lives. In some cultures, they are simply elements of the landscape, while in others, they represent the exotic wild. They may fulfil roles as companion individuals with unique personalities; equally they may be icons of sacredness and tourist attractions. To some groups of people, they are conservation-worthy wildlife; to others, annoying pests. While some of the essays are prescriptive in tone, offering suggestions on the way to move forward, others are more reflective, highlighting particular singularities that mark our affiliation with the macaques. The goal behind editing this book was to capture the myriad perspectives that embody human-macaque relationships, and hopefully, not only primatologists and anthropologists but all enthusiasts of animal studies will find that objective fulfilled.

Acknowledgements I am immensely grateful to T R Shankar Raman, Michael Huffman and Anindya Sinha for their patient reading of this chapter; their insightful comments helped to significantly improve an earlier version of this chapter.

References

- Aggimarangsee N, Brockelman WY (2005) Monkey-human interactions in Thailand. *Am J Phys Anthropol*, vol 126 (Suppl 40):62–63
- Bekoff M (2002) *Minding animals: awareness, emotions, and heart*. Oxford University Press, New York
- Bekoff M (2006) Animal emotions and animal sentience and why they matter: blending 'science sense' with common sense, compassion and heart. In: Turner J, D'Silva J (eds) *Animals, ethics and trade: the challenge of animal sentience*. Earthscan, London, pp 27–40
- Bokonyi S (1989) Definitions of animal domestication. In: Clutton-Brock TH (ed) *The walking larder: patterns of domestication, pastoralism, and predation*. Unwin Hyman, London, pp 22–27
- Bradshaw GA, Schore AN, Brown JL, Poole JH, Moss CJ (2005) Elephant breakdown: social trauma: early disruption of attachment can affect the physiology, behaviour and culture of animals and humans over generations. *Nature* 433:807

- Brothwell DR (1983) Why on earth the guinea-pig? The problem of restricted mammal exploitation in the new world. In: Proudfoot B (ed) Site, environment and economy, vol 73, International series. British Archaeological Reports, Oxford, pp 115–119
- Bryant CD (1979) The zoological connection: animal-related human behavior. *Soc Forces* 58: 399–421
- Budiandy S (1999) The covenant of the wild: why animals chose domestication. Yale University Press, New Haven
- Busnel RG (1973) Symbiotic relationship between man and dolphins. *Trans N Y Acad Sci* 35: 112–131
- Campbell B (2005) On ‘loving your water buffalo more than your own mother’: relationships of animal and human care in Nepal. In: Knight J (ed) *Animals in person: cultural perspectives on human-animal intimacy*. Berg, Oxford, pp 79–100
- Chalise MK, Johnson RL (2005) Farmer attitudes toward the conservation of “pest” monkeys: the view from Nepal. In: Paterson JD, Wallis J (eds) *Commensalism and conflict: the human-primate interface*. American Society of Primatologists Publications, Oklahoma, pp 223–239
- Conover MR (2002) Resolving human-wildlife conflicts: the science of wildlife damage management. Lewis Publishers, Boca Raton
- Crist E (2004) Against the social construction of nature and wilderness. *Environ Ethics* 26:5–24
- Czech B, Krausman PR, Borkhataria R (1998) Social construction, political power and the allocation of benefits to endangered species. *Conserv Biol* 12:1103–1112
- Darimont CT, Carlson SM, Kinnison MT, Paquet PC, Reimchen TE, Wilmers CC (2009) Human predators outpace other agents of trait change. *Proc Natl Acad Sci* 106:952–954
- Dawkins MS (2006) Through animal eyes: what behaviour tells us. *Appl Anim Behav Sci* 100:4–10
- Derrida J (2008) *The animal that therefore I am*. Fordham University Press, New York
- Dugatkin L (2000) Cheating monkeys and citizen bees: the nature of cooperation in animals and human beings. Harvard University Press, Cambridge
- Eudey AA (1994) Temple and pet primates in Thailand. *Revue d’Ecologie (La Terre et la Vie)* 49:273–280
- Evernden N (1992) *The social creation of nature*. Johns Hopkins University Press, Baltimore
- Fuentes A, Hockings K (2010) The ethnoprimateological approach in primatology. *Am J Primatol* 72:841–847
- Fuentes A, Wolfe LD (eds) (2002) *Primates face to face: the conservation implications of human-nonhuman primate interface*. Cambridge University Press, Cambridge
- Fuentes A, Southern M, Suarayan KG (2005) Monkey forests and human landscapes: is extensive sympatry sustainable for *Homo sapiens* and *Macaca fascicularis* in Bali. In: Patterson JD, Wallis J (eds) *Commensalism and conflict: the primate-human interface*. American Society of Primatology Publications, Oklahoma, pp 168–195
- Gillingham S, Lee P (2003) People and protected areas: a study of local perceptions of wildlife crop-damage conflict in an area bordering the selous game reserve, Tanzania. *Oryx* 37:316–325
- Goodall J (2006) The sentience of chimpanzees and other animals. In: Turner J, D’Silva J (eds) *Animals, ethics and trade: the challenge of animal sentience*. Earthscan, London, pp 3–11
- Gudger EW (1923) Monkeys trained as harvesters: instances of a practice extending from remote times to the present. *Nat Hist* 23:272–279
- Gumert MD, Fuentes A, Jones-Engel L (2011) *Monkeys on the edge: ecology and management of long-tailed macaques and their interface with humans*. Cambridge University Press, Cambridge
- Hart LA (2005) The elephant-mahout relationship in India and Nepal: a tourist attraction. In: Knight J (ed) *Animals in person: cultural perspectives on human-animal intimacy*. Berg, Oxford, pp 161–190
- Hart G L, Heifetz H (trans ed) (1999) *The Purananuru: four hundred songs of war and wisdom*. Columbia University Press, New York, pp 15–37
- Herda-Rapp A, Goedeke TL (2005) *Mad about wildlife: looking at social conflict over wildlife*. Brill, Boston

- Hobbes T (1651/1929) *Leviathan, or the matter, forme and power of a common-wealth ecclesiasticall and civil*. Clarendon, Oxford
- Ingold T (1994) From trust to domination: an alternative history of human-animal relations. In: Manning A, Serpell J (eds) *Animals and human society: changing perspectives*. Routledge, London, pp 1–22
- IUCN (2011) IUCN red list of threatened species. Version 2011.2. www.iucnredlist.org
- Jickling R, Paquet PC (2005) Wolf stories: reflections on science, ethics, and epistemology. *Environ Ethics* 2:115–134
- Knight J (2000) Introduction. In: Knight J (ed) *Natural enemies: people-wildlife conflicts in anthropological perspective*. Routledge, London, pp 1–35
- Knight J (2005) Introduction. In: Knight J (ed) *Animals in person: cultural perspectives on human-animal intimacy*. Berg, Oxford, pp 1–14
- Leong KM (2009) The tragedy of becoming common: landscape change and perceptions of wildlife. *Soc Nat Resour* 23:111–127
- Loudon JE, Howells ME, Fuentes A (2006) The importance of integrative anthropology: a preliminary investigation employing primatological and cultural anthropological data collection methods in assessing human-monkey co-existence in Bali, Indonesia. *Ecol Environ Anthropol* 2:2–13
- Madden F (2004) Creating coexistence between humans and wildlife: global perspectives on local efforts to address human-wildlife conflict. *Hum Dimens Wildl* 9:247–257
- Malaivijitnond S, Hamada Y (2008) Current situation and status of long-tailed macaques (*Macaca fascicularis*) in Thailand. *Nat Hist J Chulalongkorn Univ* 8:185–204
- Marchal V, Hill C (2009) Primate crop-raiding: a study of local perceptions in our villages in north Sumatra, Indonesia. *Primate Conserv* 24:107–116
- Marvin G (2005) Disciplined affections: the making of an english pack of foxhounds. In: Knight J (ed) *Animals in person: cultural perspectives on human-animal intimacy*. Berg, Oxford, pp 61–78
- Medhi R, Chetry D, Basavdatta C, Bhattacharjee PC (2007) Status and diversity of temple primates in northeast India. *Primate Conserv* 22:135–138
- Morris B (1998) *The power of animals*. Berg, Oxford
- Morris B (2000) *Animals and ancestors: an ethnography*. Berg, Oxford
- Morrison JC, Sechrest W, Dinerstein E, Wilcove DS, Lamoreux JF (2007) Persistence of large mammal faunas as indicators of global human impacts. *J Mammal* 88:1363–1380
- Mullin MH (1999) Mirrors and windows: sociocultural studies of human-animal relationships. *Annu Rev Anthropol* 28:201–224
- Naughton-Treves L, Treves A (2005) Socio-ecological factors shaping local support for wildlife: crop-raiding by elephants and other wildlife in Africa. In: Thirgood S, Rabinowitz A (eds) *People and wildlife: conflict or coexistence*. Cambridge University Press, Cambridge, pp 252–277
- O'Connor TP (1997) Working at relationships: another look at animal domestication. *Antiquity* 71:149–156
- Ohnuki-Tierney E (1991) Embedding and transforming polytrope: the monkey as self in Japanese culture. In: Fernandez JW (ed) *Beyond metaphor: trope theory in anthropology*. Stanford University Press, Stanford, pp 159–189
- Palmer C, Sandøe P (2011) Animal ethics. In: Appleby MC, Mench JA, Olsson IAS, Hughes BO (eds) *Animal welfare*, 2nd edn. CAB International, Oxfordshire, pp 1–12
- Paquet PC, Darimont CT (2010) Wildlife conservation and animal welfare: two sides of the same coin? *Anim Welf* 19:177–190
- Patterson J, Wallis J (eds) (2005) *Commensalism and conflict: the primate-human interface*. American Society of Primatologists Publications, Oklahoma
- Peterson D, Hanazaki N, Simões-Lopes PC (2008) Natural resource appropriation in cooperative artisanal fishing between fishermen and dolphins (*Tursiops truncatus*) in Laguna, Brazil. *Ocean Coast Manag* 5:469–475
- Peterson ML, Birckhead JL, Leong K, Peterson MJ, Peterson TR (2010) Rearticulating the myth of human-wildlife conflict. *Conserv Lett* 3:74–82