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Rethinking Animal–Human Boundaries: Insights from Primatology

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Rethinking Animal–Human Boundaries: Insights from Primatology*

Sindhu Radhakrishna

Abstract

Over the last decade or so, academic research in the humanities and the social sciences has increasingly focused attention on animal-related topics or the nature of human–animal relations. Discussions on this shift in scrutiny, usually referred to as the 'animal turn', often compare it to the situation in science where animals have always been central to the practice of the discipline. However, although biology and ecology interact directly with animals, there has been relatively little exploration about animal agency or the formulation of animal–human boundaries in these areas. An exception is the field of primatology that has engendered a great deal of polemical stances on the question of boundaries between animals and humans. Human interactions with other primates cover a fascinating diversity of associations and primates, more than any other animal group, provoke passionate debates on human ethics and animal sentience. In this paper, the author argues that the unusual breadth and scope of primatology—not only do primate studies range extensively from enquiries into the biology and behaviour of the species to investigations into the nature of human interface with other primates, the practice of the science itself is mediated strongly by cultural influences—offers a very unique perspective into understanding how we construct our relations with animals.

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Introduction

And so the dead beetle on the path
lies unmourned and shining in the sun.
One glance at it will do for meditation —
clearly nothing much has happened to it.
Important matters are reserved for us,
for our life and our death, a death
that always claims the right of way.

Szymborska,1998[1]

Wislawa Szymborska's meditation on death that oh, so quietly, mocks the notion of human exceptionalism is a provocative starting point to begin a discussion on human–animal relations, not least because Szymborska doesn't really question the notion of differences between humans and animals, only the construct of hierarchy based on those differences. For Szymborska, even consciousness, that prized human attribute, is insufficient to elevate humans above animals. Animals' lack of shame or scruples is equated with a clean conscience that only 'bestiality' enjoys and although Pascal's man may be more aware of 'good and evil', it does not make the human life any more significant than that of animals, merely different.[2]

The buzzard never says it is to blame.
The panther wouldn't know what scruples mean.
When the piranha strikes, it feels no shame.
If snakes had hands, they'd claim their hands were clean.
…Though hearts of killer whales may weigh a ton,
in every other way they're light.
On this third planet of the sun
among the signs of bestiality
a clear conscience is Number One.

Szymborska's perspective is uncommon, not only for the ambivalence of her world-view regarding nature and humans, but also for the gentle mockery she displays when she talks about animals and their roles in our lives. 'The Monkey', for example, is an ironical, whimsical comment on our 'poor relation' that nudges us to recognize

that humans make use of animals in unjust ways that are rarely, if ever acknowledged.[3] That this is a singular view becomes patently clear when one takes even a brief look at popular animal/nature poetry or other forms of literature and films that centre around animals. Even when they ostensibly celebrate 'animal' characteristics or eulogize deep bonds between human and animal, these works remain very much human in their concerns; lauding attributes valued by humans such as courage, loyalty, kindness or cleverness via the animal protagonists (Burnford's *The Incredible Journey* or London's *Call of the Wild*), describing relationships where the human partner plays a pivotal role in transforming the life of the animal (*Free Willy* or *Born Free*), and using the figure of the animal as a metaphor or muse for the desires/ ideals of the author (Shelley's *To a Skylark* or Hughes's *The Thought-Fox*) or more commonly, as vehicles for morality tales (Aesop's *Fables* and *Jatakas*, to name just two). Although there are exceptions to the rule (see, for example, Hughes's jaguar poems, or Julio Cortazar's short story *Axolotl*), by and large, animal writings are strongly anthropocentric in nature that appear to work from the premise that animals fall under the dominion of man. Elaborating on this paradox, Malamud[4] argues that in much of animal poetry, the 'animal subject exists for our pleasure, and at our pleasure. We use the animal in poetry, as we use it in industry, agriculture, science, zoos, to accomplish a specific purpose and satiate a specific desire: nutrition, entertainment, status, or fodder for contemplation'.

Akin to Szymborska however, a smaller or perhaps more accurately, less well-known body of work views animals and their relations to humans with more sensitivity and realism. Malamud[5] draws attention to the works of Marianne Moore, Gary Snyder, and José Emilio Pacheco as rare illustrations of animal poetry that extol 'the sanctity and parity of nonhuman animals'. Analysing the descriptions of animals in Moore's poetry, Malamud points out that the complex syntax in Moore's poetry compels readers to adopt a 'cognitive perspective that is not human-centered' and thereby view the animals 'in their own places' and 'on their own terms'. In Snyder and Pacheco's poetry, awe and reverence for the majesty of animals, and a very real belief in their divine status is juxtaposed against their debasement at the hands of humans. Animals as represented through the writings of

these poets are infused with a vitality and dignity that is unlike conventional portrayals of animals in the industrialized Western society and almost Mesoamerican in spirit. Expounding on the Mesoamerican concept of 'animals souls' and belief in the interdependence of humans and animals, Malamud[6] observes that the contrasts between such a philosophy and the prevalent belief of human dominion over nature that exists in industrialized Western societies are too important to ignore. He goes on to suggest that a deeper appreciation of such different cultural orientations is not only necessary to drive us to re-evaluate the nature of our interactions with animals but also to aid us in developing a more equitable relationship with animals, one that is built on a very sincere regard for their individuality.

Animal–Human Boundaries

Malamud's concerns regarding the form and content of human–animal relations have been increasingly echoed by other scholars from fields such as literature, history, anthropology and sociology, over the last decade and half. Referred to as the 'animal turn' in the social sciences and humanities, this shift in research focus to animals and their relations with humans has revitalized the way we view and conceptualize animals. It also led to the rise of Animal Studies, a disciplinary approach that studies interactions and relationships between humans and animals. Also referred to as Human–Animal Studies and Anthrozoology, this is wholly an interdisciplinary field where researchers from areas as diverse as literature, anthropology, sociology, history, psychology, philosophy, geography, and feminist studies explore the multiple facets of people's attitudes and behaviour towards animals.[7] Some of the primary issues of interest have been the social construction of boundaries between humans and animals,[8] conflicting behaviour of humans with respect to animals,[9] and pivotal changes in human-–animal relations over time.[10] Scholars of Animal Studies argue that humans see themselves as hierarchically superior to animals and that this sense of divide functions as reason and justification for our less than equitable behaviour towards animals.[11]

Several studies point out intriguing evolutionary trends in the history of our association with animals, and propose that these historical shifts

reflect larger changes in societies and in people's attitudes towards animal species.[12] Thomas[13] suggests that in England, medieval ideas regarding the relationship between nature and man as one of rightful exploitation underwent a subtle change during the period 1500–1800, to incorporate a more 'modern sensibility' about the need to appreciate and protect nature from human plunder. However, it must be noted that although the colonial era witnessed a remarkable rise of interest in the natural history of animals and measures to manage and conserve animal resources in overseas colonies, for the large part these efforts were fuelled by the perspective that 'man stood to animals as did heaven to earth, soul to body, culture to nature'.[14] Ritvo[15] argues that societal changes that occurred in the 18th and 19th centuries caused a fundamental alteration in human–animal relations in England; 'people systematically appropriated power they had previously attributed to animals, and animals became significant primarily as the objects of human manipulation'. The Age of Reason brought about new advances in science and the application of technological innovations allowed more control over natural elements, including animals. With such human ascendancy, 'nature ceased to a constant antagonist' and 'could be viewed with affection and even, … with nostalgia'.

The historical impact of Charles Darwin (1809–1882) and his theories of evolution on human–animal boundaries have been discussed in many contexts.[16] Scholars have pointed out that although Darwinism with its emphasis on 'similarity and kinship' between man and other animals was a potent force that prompted a revaluation of traditional notions of separation between humans and animals, it did not significantly erase animal–human boundaries. The view prevailed that humans may have evolved from animals, but that only humans possess 'rationality, language, consciousness, or emotions'.[17] According to Gouabalt et al.[18] the development of ethology in the 1960s and 1970s and an increase in ecological awareness during this period challenged traditional humanist views, reinforced during the Age of Reason, regarding the separation between nature and culture and the superiority of man over animals. Nowadays, animals are considered to possess culture and personhood and a growing trend of animal personification in the media and in society appears to suggest the rise of a new zoocentrism, over anthropomorphism.[19]

Allied to the concept of zoocentrism is that of posthumanism, inarguably the strongest influence on how animal–human relations are viewed today. More strictly an umbrella term for a variety of approaches that have made themselves felt in a number of disciplines and sub-cultures, posthumanism is essentially a theoretical and philosophical approach that discards classic humanism to reconceptualize humanity's place in the world as 'but one life form among many'.[20] Posthumanist frameworks[21] to understanding animal–human boundaries question the so-called distinctions between human and animal and focus on networks and relationships between and within species rather than the 'entities' themselves. Jacques Derrida set the tone for this when he emphatically stated 'Animals are my concern' in his 2002 essay *The Animal That Therefore I Am (More to Follow)*, a publication that Wolfe[22] refers to as 'the single most important event in the brief history of animal studies'. Recalling Montaigne's cogitations on his cat[23]: 'When I play with my cat [ma chatte], who knows if I am not a pastime to her more than she is to me?' Derrida impresses upon the readers the importance of considering the 'question of the animal' and rues the absurdity that leads humans to ignore the multiplicity of non-human living beings and group all of them under the *singular* category of 'animal'.

Biology and Speciesism

The question of animal–human boundaries is a subject of growing importance in the social sciences and the humanities—disciplines that are traditionally concerned with human agency—yet the topic has rarely been probed to any great depth in the natural sciences, particularly biology and its allied partners, where the link between human and non-human organisms forms the cornerstone of scientific advances in the disciplines. Any discussions on animal–human relations or the effects of human behaviour on animals that have occurred in the biological sciences have largely been in the context of animal welfare and have tended to focus on issues of utilitarian benefits rather than ethics and moral values.[24] Commenting on this paradox, Birke and her colleagues[25] suggest that the reason for this can be traced to the reductionist and objectivist principles of biology that resist accepting living organisms as 'subjects and agents' in their own right. Biological sciences rest on

foundations of experimental methodologies and quantitative measurements, unsurprisingly therefore, all aspects that bring the taint of subjectivity with them, such as anecdotal reports on animal sentience or feelings, are vehemently opposed or ignored as unworthy of scientific attention. Nonetheless, it must be acknowledged that some of the more significant 'animal turns' in the century are directly related to research developments in the fields of ethology and animal cognition. Work in these areas, by a significant few[26] demonstrated that animals feel pain, experience emotion, exhibit purposive thinking and behaviour and possess language and self-awareness—attributes that were earlier thought to be the sole domain of humans—and thereby impelled both lay citizens as well as practitioners of varied disciplines to rethink their attitudes towards animals and their treatment at the hands of humans.[27]

A development in biology that did propel a heated debate on the legitimacy of animal–human boundaries is that of the creation of bio-scientific or interspecies hybrids. Although xenotransplantation, or the transplantation of animal cells or organs to human bodies, has a long history (blood transfusion by Jean Baptiste Denis in the 17th century is considered the first medically documented case of cross-species transplantation), the fate of early experiments in xenografting organs is not very clear, and attempts at xenotransplantation were very sporadic until the 20th century. More recently, genetic engineering and cloning techniques have ensured the survival of pig graft in non-human primates offering hope that genetically modified pigs may be a reliable source of animal organs for humans.[28]

The current notoriety surrounding xenotransplantation arises from anxieties regarding the fusion of human cellular material with animal embryos and the potential creation of half human-half animal chimeras that this may entail. Apart from the tacit assumption of human essentialism that this underscores, the debate on xenotransplantation also brings to the fore biology's uneasy relationship with primatology. Reemtsma's[29] overview of xenotransplantation, for example, ends with a section on the ethical considerations of using nonhuman donors that lists, among others, the problems inherent in selecting the appropriate species. The author cautions that although primates are preferred donors, their use in xenotransplantation raises ethical concerns, whereas

'the use of nonprimate donors, such as pigs, reduces ethical concerns' but is of course less satisfactory from the immunological viewpoint.

Reemtsma's exhortations, unwittingly though, raise the spectre of species inequality (and its attendant philosophical baggage about the value of animals), but they also underline the curious position of primates in the biological sciences. Because of their unique evolutionary link to humans and 'nearly human' characteristics, primates are acknowledged to occupy a position higher than other animal species, however, this special status does not extend to viewing them outside the animal 'category'. Similarly primatology, or the science of studying primates, although based in the biological sciences, is seen as a half-breed discipline, with methodologies that are adopted from the natural sciences, as well as the social sciences. As Patricia Whitten puts it:

> As objects of research, primates have long been the stepchildren of biology … The unique elaboration of individual differences within the primate order has defied easy categorization and the inclusion of humans within the order has provided any generalizations with controversial, and ultimately political, overtones. These various pressures have often led primatology towards an emphasis on the individual and the particular and away from the synthetic approach which is a hallmark of good biology.[30]

In the area of animal–human relations though, this defining aspect of primatology has left a remarkable impact. Studies on primates that revealed astonishing similarities between human and primate lives may have received stepmotherly treatment when they were first publicized, but they undeniably went on to wield immense influence on the way animals were reconsidered in the academic world and in society at large.

The Primate Turn

Among the modern natural sciences, primatology has distinguished itself over the last four decades as an exceptionally public science, especially in and among those nations where science has been adopted as both an everyday and an institutionalized

dimension of social life. Of all primatologists the most excessively public have been Jane Goodall and Dian Fossey, and of all nonhuman primates, the most public are chimpanzees and gorillas.
Brian Noble, 2000

Primatology comprises a bewildering range of subdisciplinary aspects from experimental studies on captive primate individuals for behavioural, cognitive, or immunological data to observational studies that focus on the natural behaviour of species in wild or semi-free-ranging habitats. Although the ethical treatment and welfare of primate species in captive conditions is a significant area of study in Animal Studies, the focus in this paper is on field primatology and the effect of some of the early primate studies on the human–primate interface.

The origins of western[31] 'naturalistic' primate studies is usually traced to C.R. Carpenter's 1931–33 field study of howler monkeys in Barro Colorado, Panama.[32] Following a briefly dormant period around World War II, there was a resurgence of field primatology in the 1950s that saw studies being initiated on a variety of primate species in Asia and Africa, for example, on baboons in Uganda, vervets in Kenya, macaques and langurs in India, lemurs in Madagascar and apes in Tanzania and Uganda.[33] All these studies were landmarks in establishing new methodologies to study primates and in their formulations of primate behaviour as seen through an evolutionary framework. However the long-term studies by Jane Goodall on chimpanzees in Tanzania and by Dian Fossey on gorillas in Rwanda captured public and scientific attention as few studies on animals have done.[34] Both Goodall and Fossey were mentored by Loius Leakey, the famed British anthropologist, who encouraged them to go out into Africa to study apes and raised funds for the initial phases of their work.[35] With little primatological research experience, Jane Goodall began her study on the chimpanzee population at the Gombe Stream Reserve in Tanzania in 1960; less than six months into her study, Goodall observed chimpanzees using and making sticks as tools to extract termites from their mounds. Until then, it was believed that only humans were capable of manufacturing tools, and that this characteristic marked a crucial difference between humans and primates. Goodall's historic findings brought this barrier crashing down and compelled established

scientists in the discipline to revaluate their understanding of the evolutionary gap between primate and humans. Goodall's involvement with chimpanzees led her to become more deeply concerned about their future survival on earth and today she is best known for her efforts to conserve wild chimpanzee populations and to improve the welfare of captive chimpanzee individuals. Like Goodall, Dian Fossey initially began studying the gorilla population near Mount Visoke in Rwanda for ethological data, but was soon transformed into an active conservationist who only sought to protect her gorillas. Fossey's work often brought her into opposition with local poachers, and in 1985, she was killed by unknown assailants at her Karisoke research centre, where she had spent a major part of her life living with the gorillas.

Many factors conspired to bring Goodall's and Fossey's work into prominence: their relative youth (Goodall was only 26 years old when she commenced her work on the chimpanzees and Fossey was in her early thirties), that they were untrained in scientific methods when they began their primate studies, their tremendous passion for their study species and above all, the very personal bond they forged with their study individuals. Goodall, in particular, is well-known for ascribing personalities to her study individuals and strongly rejecting any attempts to sanitize her anthropomorphic descriptions of chimpanzee behaviour.[36] Analysing the impact of Goodall's and Fossey's work on the larger dialectic surrounding the nature–culture divide, Noble[37] contends that popular media in the form of films, books and articles about and by the two women played a very crucial role in making them public personalities and in altering public perceptions concerning the primate species they worked on. Popular science writings by Goodall and Fossey (and other primatologists) that chronicle their field studies[38] abound in anthropomorphic descriptions of primate individuals that 'treat the animals as characters, as individuals with lives, feelings, histories and motives of their own'.[39] And while the motivations behind such narratives may be debated,[40] the attribution of agency and personhood to the animal subjects in such writings made them real and substantial beings in their own right.

From Cultural Primatology to Ethnoprimatology

Now we must redefine tool, redefine Man, or accept chimpanzees as humans.

Louis Leakey, 1960

These words of Leakey in response to Jane Goodall's description of tool use and tool manufacture in her Gombe chimpanzees are emblematic of the furore that ensued when Goodall first announced her startling discoveries regarding chimpanzee behaviour. Goodall's findings were momentous, not only because they overthrew established dictums regarding humanity's unbreachable evolutionary uniqueness as Man the Toolmaker; but also because these facets of chimpanzee behaviour were shown to be not just individual traits but part of a collective behavioural repertoire that had been rigorously documented.[41] The significance of the latter cannot be overstated; decades before Goodall began her work, Kroeber (1876–1960), the eminent cultural anthropologist, was deeply influenced by Koehler's path-breaking work in chimpanzee cognition[42] to consider the question of culture in the apes and suggest a set of criteria by which claims of ape culture could be tested on an objective scale.[43] Goodall's distinction rests on this, that she succeeded in adding science to what began as natural history observations and thereby elevated what may have been dismissed as anecdotal novelties, to a full-fledged research sub-discipline.[44]

Inspired by Goodall and other pioneers in the field such as Junichiro Itani, Toshisada Nishida, Vernon Reynolds and Yukimaru Sugiyama, work in cultural primatology, i.e., the study of culture in primates, went on to document behavioral variations within and across populations and to test for the putative determinants of differential learning.[45] Today of course, not only culture and cognition, but other parameters of humanness such as language, emotion and morality have also been breached, not just by chimpanzees, but other primate species as well.[46] The journey, needless to add, has not been easy and there are any number of scholars and lay people who argue that nonhuman primate culture is not true culture and can clearly be distinguished from human culture by its mechanisms of operation.[47] It is not the intent of this

paper to add to the debate on animal culture, instead to focus on what is thought to be a singular outcome of the early studies on chimpanzee behaviour; that they transformed the way animals were viewed in the biological sciences and led people to think about the possibilities of culture in other animal species, and not just primates. Reznikova[48] points out that although Charles Darwin was the first to introduce notions of social learning and imitation in animals, it was Goodall's observations that stimulated a number of 'cultural' studies on chimpanzees, and these in turn, served as templates for other studies on animal traditions. In their analysis of the impact of Goodall's chimpanzee research on the teaching of science in higher education, McClain and McGrew conclude that Goodall is the most influential researcher on wild chimpanzees and that the tripling of chimpanzee citations in university course publications from the 1960s to the 1980s evidences the growing importance of primatology in the teaching of science in this era.[49]

The primate turn in ethology is identified most visibly with Jane Goodall; however cultural primatology also has other equally illustrious proponents who brought radical perspectives to the field. Chief among them is Kinji Imanishi (1902–1922), the father of Japanese primatology. Japanese primatology, as we know it today, operates in a manner that is radically different from Western primatological practices.[50] A significant aspect of this is the way Japanese primatologists construct their relationships with their study subjects (as related species that are part of an interconnected living ecosystem[a]) and Imanishi is credited with espousing this unusual approach to studying animal behaviour.[51] He initiated the first study on a wild primate group in Japan, inspired and led a team of researchers who went on to systematically study primate behaviour in many parts of Japan, and promoted the use of certain methodologies, notably provisioning, individual identification and long-term observation that continue to influence field primatology today. Imanishi's legacy to cultural primatology is usually seen as a twofold contribution: (i) his postulation that animals may also possess culture and (ii) his establishment of primate behavioural studies that

[a] As opposed to the more common perspective in Western science that sees man as an evolutionarily superior species.

led to the discovery of social learning in the Japanese macaque. Imanishi expressed his belief in culture in other animal species in terms of a simple proposition: if individuals learn from each other, in time their behaviour may differ from other groups and this can be seen as a cultural characteristic. Observations of sweet potato washing in the Japanese macaque populations that he studied (still showcased as the earliest example of cultural traditions amongst primates), supported his premise and paved the way for future work on animal culture.[52]

More than half a century ago, cultural primatology sparked off a debate on the boundaries that separate primates from humans and challenged preconceived notions of human exceptionalism. Now another sub-discipline of primatology called ethnoprimatology offers fresh insights into the ways in which we interact with our nonhuman brethren. Ethnoprimatology, defined as the study of interactions between humans and primates, considers all elements of this interface, including 'behavior, knowledge, emotion, and meaning'.[53] Delineating the emergence of this sub-discipline, Fuentes and Hockings state that:

> Ethnoprimatology emphasizes that interconnections between humans and primates should be viewed as more than just disruptions of a 'natural' state, and instead anthropogenic contexts must be considered as potential drivers for specific primate behavioral patterns. Rather than focusing solely on the behavior and ecology of the primate species at hand, as in traditional primatology, or on the symbolic meanings and uses of primates, as in socio-cultural anthropology, ethnoprimatology attempts to merge these perspectives into a more integrative approach.[54]

Such an approach permits a more nuanced appreciation of relations, as they occur in practice, between humans and primates (and by extension, all animal species). Wheatley's attempt to understand human–macaque interactions in Bali against the background of the deep religious and cultural ties that people have with monkeys on the island, Sponsel's identification of relations between people in Thailand and the pig-tailed macaques that they use for coconut-picking as cooperative and akin to that between parent and offspring and Cormier's analysis of how Guajá foragers of Eastern Amazonia see

the howler monkeys as both food and child are good examples of this genre of research that expose blurring boundaries between human and animal and add new dimensions to conventional understandings of relations between animal and human.[55]

Fuzzy Boundaries

A fish is only a fish if it is socially classified as one.
Keith Tester, 1991

Much of the discourse on animal–human relations rests on case studies and examples drawn from Western societal practices. For instance, it has been suggested that the roots of the human–animal divide seen today can be traced back to classical Greek thought and Judaeo-Christian theology and that Aristotle's (384–322 BC) most famous idea, the Great Chain of Being, played a seminal role in influencing countless generations after him from St Augustine (AD 354–AD 430) and Thomas Aquinas (AD 1225–AD 1276) to Kant (1724–1804) and Pope John Paul II (1920–2005)—to propound beliefs regarding a natural hierarchy of life where humans attain antecedence over animals by virtue of their unique rationality, ability of speech, and consciousness.[56] Yet clearly, as the preceding section on Japanese primatology and ethnoprimatological investigations in Amerindian and southeast Asian communities shows, other scenarios also exist where the divide between animals and humans is less absolute. Many human societies that hold strong animistic, pantheistic or shamanistic beliefs celebrate the presence of animal gods, half human-half animal figures, reincarnation from animal to human or vice-versa and transmigration, emphasizing the porous borders between humans and animals in these cultures.[57] In Early China, there were no clear categorical or ontological boundaries between human beings and animals and humans, animals and other creatures were seen as part of an organic whole with mutually interdependent relations.[58] At its core, Shinto, the traditional religion of Japan, also emphasizes permeability between human, nature and the divine. Primarily built around *kami* worship and associated rituals, in Shinto faith, kami spirits are not only heavenly deities, but also humans, animals, birds, plants, rocks and sea.[59] In these contexts, liminality, or the state of being 'betwixt and between'[60] is socially accepted and seen as natural.

Central to an understanding of how animal–human boundaries operate is that of categorization; in many human societies positioning animals in particular categories necessarily defines how we relate to them. Arluke and Sanders propose that in our interactions with animals, we identify them according to a *sociozoologic* scale that is based on how useful they are to us. Such a ranking order allows us to slot them into various categories that determine whether we treat them with affection, indifference, awe or revulsion.[61] But when animal ontological categories are more amorphous, relations between humans and animals also take on multifarious forms. An interesting illustration of this is the case of the rhesus monkey in India. One of sixteen primate species in India, the rhesus macaque *Macaca mulatta* is a robust, highly adaptable monkey species with a demeanour that even primatologists would not hesitate to describe as pugnacious. Early on, an unusual trait was documented in the species—a tendency to gravitate towards human settlements and live in close association with humans.[62] Labelled a 'weed macaque' on account of this quality, the rhesus macaque inhabits urban and rural habitats with as much ease as it does forest areas. Possibly due to this attribute, rhesus macaques have long been popular as 'performing animals' in northern India; brought up from infancy in human families, rhesus macaques are trained to execute acrobatics or other tricks, that they exhibit on the streets (sometimes along with human children) for entertainment purposes.

In recent years, in many urban and rural areas in northern India, the rhesus macaque has nearly turned into a pest on account of its crop- and kitchen-raiding behaviour. Acute financial losses to farmers in the hill-states of Himachal Pradesh and Uttarakhand and property damage and physical injury to people in cities such as Delhi and Shimla has led to the rhesus being branded a 'simian terrorist'.[63] In Himachal Pradesh, public ire goaded by the crop depredations of the species grew to such an extent that the state government, for a brief period in 2010, issued culling permits to aggrieved farmers.[64] Yet, a study on farmers' attitudes towards the rhesus macaque in Himachal Pradesh showed that although some of the respondents categorized the rhesus an agricultural pest, the majority of them identified it as a religious icon. None of them thought that it was 'an animal that humans should take care of' and only one person expressed the opinion that it is a

'wild animal'. Most interestingly, many of the farmers sympathized with the species, acknowledging that lack of natural foods due to drought, fire and decreasing forests may have caused the species to crop-raid.[65]

Donaldson and Kymlicka[66] define liminal animals as those species that are non-domesticated but live amongst humans; animals there are neither full members of the human community, nor completely outside it. Many of these species have opportunistically gravitated towards human spaces and support the proposition that animal agency is as much responsible for the nature of animal–human interaction as human actions are.[67] Such a theory of liminality is built on the edifice of geography, and is propelled by the notion that physical spaces determine identity and that certain species become liminal when they occupy borderland spaces.[68] While there is much truth in this supposition, liminality, as illustrated by the case of the rhesus macaque, can also arise when we construct multiple identities for a species, such as god and pest, child and servant, companion and helper. In this sense, the liminal position of the rhesus macaque may well be applied to other primate species in India too, such as the Hanuman langur or the bonnet macaque, species that are cultural companions to humans as much as they are spatial associates.

Primates as liminal beings is a thought of some antiquity; the ape, as Bishop[69] notes, has long held attention in the Euro-Western world-view as representing the 'boundary between human selfhood and animal degeneration'. The liminal primate in Euro-Western imagination that inspires anxious debates about 'being human' and 'becoming animal' is a wholly mythical creature that embodies changing conceptions of the human through representations in literary arts and popular imagery.[70] In contrast, the very real liminal monkey in the town's commons, described so evocatively by the poet Mutamociyar in southern India more than 2,000 years ago, is a co-inhabitant of the environment, as much a part of it as the tree, the birds and the songs of the bards.

When the ape
on the bough
of the jackfruit tree

in the town's commons
mistakes for fruit
the eye
on the thonged drumheads
hung up there by mendicant bards,
he taps on it ,
and the sound rouses
the male swans below
to answering song[71]

Why is the ape 'a symbol of the barbarous subversion of nature'[72] in some parts of the world, but an environmental co-participant in others? Are differences in perceptions regarding animals related to the familiarity of association with the animal species? Are animal–human divides less apparent when the alliance between species looks not to biology for meaning but to the moderation of real-world coexistence? Certainly, primatology would argue that illusionary boundaries are a far greater burden on animal–human relations than the physical spaces occupied by transgressing animals.

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End Notes

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[2] E M Bojanowska, Wislawa Szymborska: 'Naturalist and Humanist', *The Slavic and East European Journal,* 41, pp. 199–223, 1997.

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[31] The practice of primatology differs a great deal across regions and various primatological traditions are recognized that function in very individualistic styles and strongly influence the way primate behavioral studies are conducted under their aegis. The best-known examples are the Japanese school of primatology, the Western school of primatology (comprising Europe and North America) and the Brazilian school of primatology. See Shirley Strum and Linda Fedigan (eds) *Primate Encounters: Models of Science, Gender, and Society*. Chicago: University of Chicago Press, 2000.

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