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All Creatures Great and Small: New Perspectives on Psychology and Human–Animal Interactions

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Relations between humans and nonhuman animals are morally significant, intense, enduring, and pervasive. Presented here are current perspectives on social and psychological aspects of human–animal interactions. The articles in this issue focus on three broad themes—attitudes toward the use of other species, the effects of relationships with companion animals on human health and well-being, and the ethical and policy implications of our interactions with other species. The article represent a mix of theory, qualitative and quantitative empirical approaches, review, and policy recommendations on a topic that has historically been neglected by social scientists.

Nonhuman animals (referred to herewith simply as "animals"[1]) have been part of the human social and psychological landscape since the origins of our species. All human societies coexist with animals, and human–animal interactions range from predation to parasitism to partnership (Ingold, 1994). The notion of "an animal" is "a deeply and incurably emotive one" (Midgley, 1994, p. 38). Animals often mean a great deal to us yet are used extensively within virtually all societies. The term *animal use* describes a wide spectrum of practices, from, for

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[1]We recognize an ongoing debate within science over the question "what is an animal?" Human beings belong to the animal kingdom, yet one generic definition of an animal is those species that lack uniquely human attributes. We do not wish to contribute to the debate; we simply use the term *animal* throughout to refer to species other than *Homo sapiens* in order to distinguish nonhuman animals from human beings. Gordon Burghardt's article (Burghardt, 2009) discusses the concept of "speciesism," and individual articles refer to specific species or categories of animals.

example, using animals in invasive medical research, to farming for fur and for food, to keeping animals for companionship. Many animal use procedures lead to high costs to large numbers of animals; therefore, humans are presented with a predicament. We are fond of animals on one hand but gain from such practices on the other. Hence, the relationships that we have with other nonhuman species are complex and varied.

Human–animal interactions constitute a social issue for a number of reasons on many levels. For example, interaction between humans and dogs is a mechanism that can enhance the physical and psychological health of elderly citizens and promote a social support network between dog owners (Knight & Edwards, 2008). As a consequence, dependence and impact on health and social services are alleviated. However, caring for animals creates a financial burden to society. Huge numbers of abandoned or ownerless animals are fed, housed, and cared for in animal shelters, and in the United States each year four million of these unwanted animals (mostly dogs and cats) are euthanized. How we treat animals can reflect how we view and treat fellow human beings; therefore, animal abuse is also a social issue for several reasons. There is an abundance of research that suggests a relationship between animal abuse, child abuse, and spousal abuse. Protecting animals and enforcing animal welfare creates a cost to society. And abuse of animals creates conflict between abusers and those seeking to protect animals and/or enforcing animal welfare legislation.

There are many other instances when animals are the cause of social conflict. People can feel passionately about animal use. Vivisection and the wearing of fur can evoke anger and disgust in animal rights activists, and laypersons can also be repulsed by such issues when presented with the animal rights literature (McDonald, 2000). Both mainstream and more radical organizations exist that are concerned for the welfare and rights of animals; these aim to influence public attitudes and advocate action to benefit animals. However, other individuals and organizations gain from and are strongly in support of animal use such as those involved in the fur trade, the meat industry, and biomedical research. Hence, attempts to rally public attitudes and behavior in favor of animal welfare and rights can result in resistance, dispute, and occasional violence between individuals and groups with opposing views on how animals should be viewed and treated in society. Animal use practices are controversial, and the media regularly report and question the morality of practices such as fox hunting, cloning, and breeding animals for human transplants. These can evoke a range of responses from the extreme to the indifferent, and attitudes toward animal use can be passionate, complex, and paradoxical. In the UK, for example, supporters of animal rights have recently been jailed for campaigns that used hate mail, hoax bombs, and arson attacks to intimidate animal researchers and their families (Britten, 2006). Yet despite threats to themselves, their colleagues, and their families, scientists continue to conduct research that involves using animals.

Cross-cultural tensions also exist between those who are influenced by different traditions. For example, the West has reacted with disgust and anger to the consumption of cats and dogs, practiced in some Eastern countries (Podberscek, 2009). In the 1988 Seoul Olympics, South Korea ordered that restaurants take dog meat off the menu in order to avoid offending foreign visitors, and in the 2008 Olympics China followed suit. Another example of cross-cultural conflict is the ongoing controversy between Japan and the West that followed the International Whaling Commission voting for a moratorium on commercial whale hunting in 1982. While whaling has been portrayed mostly as inhumane and unacceptable by the West, the Japanese have argued that the practice is deeply ingrained in their culture and part of their heritage. A similar argument has been used to defend the practice of fox hunting in the UK.

Seemingly disparate attitudes toward animal use are also common within individuals and groups (Podberscek, Paul, & Serpell, 2000). For example, the same person may be repulsed by the killing of wild animals for their skin or for ivory and disagree with fox hunting as a sport, yet participate in fishing as a hobby and support medical research that causes discomfort and death to those animals involved. This demonstrates the complex nature of our relationship with animals. Companion animals serve as de facto family members in two-thirds of American homes, and $40 billion is spent on their care and feeding. Yet every year in the United States alone, 20 million animals are used in biomedical research, and 9 billion birds and mammals are eaten. And while some animals are protected by legislation, laws vary widely between countries and states and depend upon the species of animal in question. For example, in 2008, Switzerland enacted legislation requiring that prospective dog owners take a 4-hour course in pet care, that recreational anglers use humane methods when catching fish, and that goldfish are only kept in aquariums that are transparent on all sides.

Despite the importance of animals in many peoples' lives, few social scientists have explored the psychology of these relationships. Perhaps this neglect is not surprising. Rozin (2006) recently argued that in their zeal to uncover general processes underlying thinking and behavior (e.g., memory, learning, motivation), psychologists have historically neglected the study of important domains of human life. We believe that human interactions with other species join food, religion, leisure, work, and politics as areas that are critical to human happiness yet have been largely ignored by researchers. A notable exception was the publication in 1993 of a special issue of this journal titled "The Role of Animals in Human Society." Edited by Scott Plous, this publication raised the visibility of human–animal studies among scholars in the social sciences, and the papers included have been widely cited. There is now room for a new look at the topic of human–animal interactions. The present issue presents a collection of nine innovative papers that focus, first, on factors underlying attitudes toward nonhuman animals and human–animal interactions, second, on the effects of animals on human health,

well-being, and social interactions, and third, on research, policy, and practice concerning nonhuman species in society.

The issues raised by the authors are relevant to *JSI* readers for several reasons. First, animals play a major role in the lives of many people. Companion animals are a major source of psychological support. Attachment to pets is often intense, as exemplified by the number of pet owners who refuse to evacuate their home in the face of natural disasters (Heath, Kass, Beck, & Glickman, 2001). Many studies have found that pets enhance psychological well-being, and there is now experimental evidence demonstrating that companion animals also have beneficial psychophysiological effects. Indeed, the presence of a pet can be more effective than the presence of a friend or spouse in ameliorating the cardiovascular effects of stress (Allen, Blascovich, & Mendes, 2002).

Second, over the last three decades the treatment of animals has emerged as a contentious social issue. There is a considerable disagreement over the moral status and acceptable treatment of nonhuman species. While there is a general agreement that animals should not be intentionally mistreated, over half of Americans continue to support the use of animals in some biomedical research (Herzog, Rowan, & Kossow, 2001), and the number of animals killed for their flesh in the United States has tripled in the last three decades. However, a fairly small yet highly committed segment of our society believes that many present uses of animals constitute a moral tragedy. Some of these individuals take their beliefs to violent extremes, and officials at the Federal Bureau of Investigation recently concluded that groups such as the Animal Liberation Front pose a serious domestic terrorist threat in the United States. Finally, aspects of the psychology of our interactions with animals are relevant to more general issues in psychology. For example, terror management theory argues that emotions such as fear, anxiety, and disgust are ultimately rooted in the universal human realization that we are all animals and will therefore die (Goldenberg et al., 2001).

Moreover, understanding attitudes toward the use of animals for human benefit may relate to wider knowledge of attitudes, action, and emotion, and also moral decision-making processes. A common theme concerning people and organizations advocating animal welfare is the predicament of disadvantaged others. Traditionally, researchers interested in how individuals respond to such moral issues apply Kohlberg's rationalist framework; this assumes that moral judgments are based on a priori evaluation of relevant and available information. Attitudinal research has also tended to focus on the cognitive processes underlying people's views. For example, the theory of planned behavior proposes that behavior is governed by beliefs, norms, and intentions to act (Ajzen, 1991). In contrast, others have reassessed the impact of reason and emotion in relation to decision-making processes (Haidt, 2001; Pizarro, 2000). The social intuitionist theory proposes that we respond to controversial stimuli less in a rational manner and more at an emotional gut level (i.e., "moral intuition"), following which we use rational

explanations to justify our initial reaction (Haidt, 2001, 2007). Social science research that explores the cognitive and emotional factors underlying our attitudes toward animals and how we interact and treat these can be applicable to real-world social issues, for example, how to reduce prejudice and encourage tolerance and concern for outgroup members. Findings can also inform psychological theory seeking to understand attitudes, emotions, moral judgment, and behavior.

Another way in which our understanding of human–animal interactions can inform more general issues in psychology relates to the complex relationship between childhood animal abuse and subsequent violence directed toward other humans. There is some evidence that early exposure to animal cruelty is associated with an increased incidence of adult psychopathology. However, recent studies suggest that, particularly in males, childhood animal cruelty is common yet most individuals who engage in early animal abuse grow up to be normal adults (Arluke, 2002). These studies of human–animal interactions may shed light on processes whereby some individuals escape and others are vulnerable to the consequences of potentially harmful, early experiences.

Organization of this Issue

This issue is organized according to three overarching themes relating to the investigation of human–animal interactions. The first section presents three studies that examine factors that underlie and influence attitudes toward animals and how they are treated. The first two articles use empirical methods to understand cognitive and emotional factors that influence moral decision-making processes and human attitudes toward nonhuman species (Herzog & Golden, 2009; Knight, Vrij, Bard, & Brandon, 2009). Then follows a philosophical discussion of how society integrates animals and ethics (Burghardt, 2009). The second section comprises two articles that address the effects of human–animal interactions on human physical, psychological, and social well-being. In a comprehensive review, Wells (2009) identifies ways in which humans benefit from interacting with other species and explores ideas for future directions in research and practice. The second article examines the potential benefits of human–animal interactions with a technological emulation of a living animal: the robotic dog (Melson, Kahn, Beck, & Friedman, 2009). Implications for the human–animal bond and the use of robotic pets as companions and in therapy are discussed. Finally, the third section comprises articles that address research, policy, and practice concerning animals in society. The first article examines the relation between child abuse and animal abuse, referred to as "The Link," and the relation between empathy toward people and empathy toward animals (Ascione & Shapiro, 2009). The second article provides a critical evaluation of "The Link" (Patterson-Kane & Piper, 2009), assessing the research in this field and providing a contemporary view on the findings from this field of work. In the final article, cultural differences concerning the consumption of

certain species of animals are addressed, demonstrating cultural variation in how we view animals and what is constituted as acceptable or unacceptable in terms of how animals are treated (Podberscek, 2009). Each section is discussed below in more depth.

Factors Underlying Opinions and the Treatment of Animals

Many people feel great affection for animals yet continue to support practices such as the use of animals for food and for scientific research. Animal use procedures have changed tremendously in the last few decades as industry and technology have advanced, and issues such as factory farming, breeding animals for human transplants, and genetic engineering provoke responses from humans ranging from the extreme to the indifferent. Hence the use of animals for human benefit is a major source of conflict between groups holding opposing views about the treatment of animals, and the moral status of animals in society is dependent upon the attitudes and behaviors of the general public and specialists in the field. These have an impact on the lives of all animals kept in captivity, whether for companionship, farming, research, or for other purposes. The problem is that the use of animals can greatly benefit humans but comes at great cost to the large numbers of animals involved. Hence, we are presented with a dilemma where we are fond of animals on one hand but need to justify animal use on the other. Some people cannot find justification; these are the supporters of the movement to give legal rights to animals. However, most people hold less extreme views and do reach some kind of compromise between feeling affection for animals and supporting their use for human benefit. Attitudes can also have an impact on policy, law, and legislation as these are said to reflect societal values and views of the time. The exploration of attitudes toward animal use, and the social and ethical issues relating to such practices, are addressed in this section.

Social psychological models of attitudes and moral decision making provide a practical and theoretical basis for research in this area. For example, expectancy value models such as the theory of reasoned action and the theory of planned behavior (Ajzen, 1991; Fishbein & Ajzen, 1975) have been used in many instances to demonstrate that concern for an issue translates into behavior. Therefore, attitudes toward animals can influence how they are treated by society, and the views of the public as well as specialists in this area (such as scientists and animal welfare persons) can affect changes in policy, practice, law, and legislation.

The basis and nature of attitudes toward animal use are explored in the first three papers that constitute the first section of this collection. Topics examined include the attitudes of "specialist" groups in relation to those of laypersons (Knight et al., 2009), and a new approach to understanding the moral decision-making processes of those involved in animal use (Herzog & Golden, 2009). Since attitudes, moral judgments, and behavior are influenced by what we think

and what we feel, these first two studies explore cognitive and emotional factors underlying our attitudes and how we treat nonhuman species. This first section ends with a philosophical exploration that addresses the ethical implications of recent research on consciousness in nonhumans species (Burghardt, 2009).

In the first article, Knight and colleagues (2009) examine the attitudes and beliefs of people likely to have strong views on the subject of animal use. Cognitive factors such as the degree that people believe that other species are "minded" were found to explain differences among groups in terms of their attitudes toward animal use, providing new directions for future research. This research advances our knowledge of scientists and animal welfare persons and shows how the views of these groups compare to those of the general public. Findings are of particular value since studies involving people who hold strong views about animal use, especially scientists, are rare.

Recent research suggests that intuition plays a major role in the moral judgment process. Whereas Knight et al. (2009) explored cognitive aspects of attitudes toward animals and how they are treated, the second article in the first section focuses more on emotional factors that distinguish between individuals and groups. Herzog and Golden (2009) examine the role of a moral emotion—disgust—in animal activism and in attitudes toward the use of other species. They suggest that differences in moral intuition make it difficult for animal activists and proponents of animal to communicate. In addition, it is shown that social networking Internet sites such as Facebook and MySpace can provide researchers access to samples of individuals involved in social activism.

Finally, Burghardt (2009) explores ethical issues arising from recent work examining animal consciousness. Lack of mental awareness is often used to defend animal use, and conversely, that animals are capable of mental experience is one argument that is used by opponents of animal use. Such issues provide the basis for discussions concerning the morality of human–animal interactions. This article reviews the ethical implications of recent findings in cognitive ethology.

The Effects of Animals on Human Health, Well-Being, and Social Interactions

While humans can benefit from using animals for food and research, they can also profit from other uses that have a less invasive impact on the animals involved. Keeping animals for companionship is hugely popular; for example, it is estimated that just under half of UK households own a pet (Pet Food Association), and in the United States a total of 72 million dogs were owned in 2006 (American Veterinary Medical Association, 2007). There have been numerous studies examining the advantages of keeping animals for companionship, and it is becoming widely accepted that there are both physical and psychological benefits. These include prevention and recovery from ill health and the ability of certain animals to detect

illness in humans. These can have serious implications for policy and practice. The second section provides an overview of the most relevant findings relating to the health benefits that can result from contact with nonhuman species and includes innovative research on ways forward for future research, policy, and practice.

There is a substantial body of research on the relationship between companion animals and human health. In the first of two articles in this section, Wells (2009) reviews the evidence that demonstrates animals to have both positive and negative effects on the physical and psychological well-being of humans. Explored is this relationship in the context of prevention of ill health, the facilitation of recovery from illness, and the prediction of illnesses by animals.

In the second article, Melson et al. (2009) investigate how humans view and interact with personified technologies that emulate living animals, and the implications for the use of these as companions and as therapeutic tools. Previously, it has been found that humans can become intensely attached to mechanical animals; Melson and colleagues address peoples' attitudes and relationships with the Sony AIBO robotic dog. Four sources of data are drawn, in order to demonstrate how human–robotic pet relationships are similar and different to human–animal relationships. Cognitive, psychological, social, emotional, and ethical implications are discussed, as are robotic pets used as therapeutic agents. Also explored are the limitations of using robotics pets as a replacement for real-life companion animals.

Animals in Society: Treatment, Policy, and Practice

While humans often feel great affection for animals, animal neglect and maltreatment are common. Recounted almost daily by the media, reports of animal cruelty evoke compassionate reactions from many people. Understanding how humans can mistreat animals is important for several reasons. First, there is the ethical issue of humans causing deliberate suffering to another living creature, and whether the rights of animals to be protected from harm should be considered. Second, as a form of deviance such behavior is of particular interest to sociologists and psychologists. And third, there is evidence to suggest that people who are cruel to animals are often also cruel to humans, for example, women and children. Hence, if we can understand further why animals are victims of mistreatment, we may understand further other wider social issues such as domestic violence and child abuse.

In the first article in the third section Ascione and Shapiro (2009) explore the nature of human–animal relationships when animals are abused. In the past, a relationship between the way animals are treated and the way fellow humans are treated has been implied, and research has shown that victimization affects many groups including children, women, the elderly, and animals. The authors provide a historical overview of relevant issues and arguments and discuss practice and

policy that might enhance the human–animal bond and reduce the frequency of animal cruelty cases. The authors also examine innovations aimed at prevention through to interventions, applied at the onset of target behaviors or with "at-risk" populations.

Secondly, Patterson-Kane and Piper (2009) present a critique of the evidence that supports "The Link." This article recommends caution in interpreting research findings, in particular those that suggest the identification of animal abuse as a red flag warning for potential violence toward people. Acceptance of a link between animal abuse and other violent acts has led to professional bodies such as animal welfare organizations and local authorities sharing information about individuals. Here research methods and findings used as a basis for this practice are critically evaluated, and the authors urge caution regarding the use of "The Link" to justify intervention.

In the last article in the third section, Podberscek (2009) examines attitudes toward the use of dogs and cats as food, sampling people from a non-Western culture. This is a timely subject since there has been much press coverage of this issue of late, with Western societies condemning such practices. This article comprises, first, a historical and cultural review of the views of South Koreans concerning the consumption of dogs and cats, and second, a Market and Opinion Research International (MORI) poll of attitudes. Discussed is the lack of coherence in (Western) people's criticisms of such practices, and differences between cultures concerning what is perceived as acceptable in terms of animal use, and what is not.

This special issue ends with a concluding chapter that integrates new material with key messages from these eight articles to demonstrate how human–animal interactions constitute a social issue (Serpell, 2009).

Summary

As the anthropologist Claude Levi Straus wrote, "Animals are good to think with." How we think about and treat animals shed light on general processes that govern human social cognition and behavior. Hence, we can learn about ourselves by studying our attitudes toward and our treatment of other species. Earlier research in the field of human–animal interactions focused on describing this relationship and related variables. Articles presented here move toward a better understanding of the relationship. Recognition of human–animal interactions as a serious subject for scientific study has led to international and interdisciplinary interest in the new field of anthrozoology. This is evidenced by the existence of journals dedicated to this field (e.g., *Anthrozoos*, *Society and Animals*), scholarly organizations such as the International Society for Anthrozoology, and research centers at major universities. We anticipate that the collection of articles in the present issue will be of interest to both researchers and practitioners. This literature may inform

(1) those interested in the benefits of human–animal interactions; (2) professionals working in the field of marital and familial violence and child abuse, and those in the field of animal maltreatment and abuse; (3) politicians and policy makers who are faced with a diversity of public attitudes toward animal-related issues; and (4) social scientists interested in the nature of attitudes and beliefs, moral judgments and behavior, both animal related and in more general theoretical terms.

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