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REVIEWS AND RESEARCH REPORTS

ATTITUDES TOWARD ANIMALS: ORIGINS AND DIVERSITY

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Abstract. *It would be difficult to overestimate the significance of animals in the social and psychological life of our species. Images of animals are everywhere: in our language, religions, dreams, television programs, and folklore. The feelings that we exhibit toward our fellow creatures are intense, complex, and paradoxical. Responses to animals range from the disgust we feel when confronted with a bloated tick to the reverence for animals as deities in so-called primitive cultures; from the love of a child for a pet bunny to the paralyzing fear of phobic experiences when confronted by a harmless spider.*

In recent years there has been increasing interest in human-animal relationships by investigators from a variety of disciplines. We will not attempt a synthesis of the growing literature on attitudes toward animals, but will follow a different course. For the past decade we have been exploring the diversity and origins of human-animal relationships, and our research has taken us into some rather odd places: cockfights in the United States and Latin America, slaughterhouses, and most recently, the world of supermarket check-

out-counter magazines. In this article, we will summarize some of our findings and speculations that bear on the subject of attitudes toward animals. We will also briefly examine alternative methods of gathering information that do justice to the richness of human experience with animals.

ORIGINS: EVOLUTION AND BIOLOGY

Clearly such factors as age, education, urbanization, and social class influence the formation of attitudes. But are attitudes toward animals simply culturally determined practices and emotions passed on through generations via language and observation? The great diversity across cultures in attitudes toward animals often leads to emphasis on cultural influences and learning. For example, as Serpell (1986) describes in an excellent overview of cross-cultural and historical differences in human-animal relations, in different societies dogs may be revered or relegated to the stew pot. But let us entertain the idea that such cultural variation dances upon a deep, genetically shaped reservoir of universal predilections and emotions. Perhaps behind the apparent diversity of attitudes are some underlying biological processes that are the result of natural selection.

The model suggested here parallels recent findings on human facial expressions. There is significant cultural variation in emotional expression, and also a repertoire of components that appear to be innate and universal (Ekman, Friesen, and Ellsworth, 1972). Kellert (1983) has argued that many of our responses to animals derive from our hunter-gatherer heritage. Is this heritage not genetic as well as cultural?

We suggest that human attitudes toward animals have some connection to natural selection. The evidence is of two types: 1) evidence of innate responses or the readiness quickly to learn

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certain things and 2) plausible scenarios indicating that the value-related considerations *could* have been produced or influenced by natural selection. There is space to discuss briefly only a few of these factors. We can classify these responses or attitudes into those that have been shaped directly or indirectly by selective pressures. By *direct* we mean aspects of our responses that are derived from human evolutionary history with animals. By *indirect* we mean attitudes to animals that are anthropomorphic generalizations of responses that originally evolved toward other people. Mixed effects could also occur in which the original selective forces cannot be distinguished.

Direct Selective Effects

a) *Fear of snakes*: Whether the fear of snakes (*ophidiophobia*) is learned or innate has been debated for many years. What is clear, however, is that many species of non-human primates express marked emotional reactions to live snakes or elongated models even when they have had little or no previous experience with them (Mundkur, 1983). Fear of snakes is also one of the most common human phobias. Why should we and other primates be afraid of snakes? Possibly because some are poisonous and deadly. Before guidebooks were available, hesitating to identify a snake might have been unwise; indeed, you could have been selected out. In Asia and Africa, where early humans evolved, there are no simple rules for quickly discriminating poisonous from non-poisonous species as there are in the United States and Europe. Thus we see no problem in ascribing the fear of snakes (and also spiders, of which a few are deadly) to genetic factors. The consequences of curiosity could kill more than a cat.

b) *Domestication*: At certain points in human evolutionary history, there might have been selection favoring individuals who exploited, tamed, and effectively cared for domestic stock. Today research is showing that farm animals given individual attention and perceptive care are more productive and healthier than those given automated, impersonalized care. Could not the extraordinary care and devotion many in-

dividuals lavish on domestic animals be derived, not from seeing them as child-substitutes and members of the family, but from selection of human characteristics that predispose to successful animal husbandry? This would be particularly true in societies where animal ownership was equated with status and wealth. In a similar vein Voith (1985) has put forth the intriguing argument that the presence of animals is soothing to people because in our evolutionary past, the proximity of non-frightened animals signaled that there were no nearby predators.

c) *Rarity and population distribution*: We tend to favor rare animals. This may seem somewhat arbitrary insofar as the suffering of an individual animal is concerned, but the death of a cow is not the front-page story that a beached whale merits. While knowing a species is endangered is intellectually transmitted knowledge, our concern for them, often so emotional, may be derived from the value put upon rare animals in early human history. Rare animals or their body parts played important roles in rituals, costumes, medicine, and social status. (Unfortunately, this is still the case in some parts of the world as evidenced by the demand for rhinoceros horn on the Arabian peninsula as dagger handles and in the Orient as aphrodisiacs.) Some species may be very plentiful in a small restricted area, say an island, but still be vulnerable to extinction and over-exploitation. Our concern for animals found only in restricted areas may be related to the needs and experiences of hunter-gatherer societies and have a biological component (Wilson, 1984). Of course, it is quite apparent that humans have caused the extinction of many local populations and species; the story is undoubtedly a complex one. But the fervor and intensity with which small segments of our population fight to save threatened species, albeit with an emphasis on large mammals and aesthetically pleasing species (Burghardt and Herzog, 1980) needs explanation from more than a cultural perspective.

Indirect Selective Effects

a) *Baby releasers*: The attractiveness of juvenile animals has long been recognized, although it

took Konrad Lorenz to isolate the specific features of infants (large eyes, large cranial expanse, short stubby limbs) that are the basis for our attraction to kittens, puppies, and other infant animals. Our response to "cute" animals is most surely based on the generalization across species of parental-care responses that were essential to the survival of young in species with prolonged juvenile dependency, such as humans.

b) *Juvenile behavior*: Some aspects of the behavior of juvenile mammals are as tugging as their appearance. One of us (GMB) remembers being enchanted by the awkward movements of a newborn moose at the Milwaukee Zoo. Though a moose even when young is not your standard cute animal, its behavior made it irresistible. As with baby releasers, our attraction to these attributes of animals could very well be based on genetic predispositions to attend and respond to juvenile humans. Slightly awkward children, lacking in seriousness, need parental safeguarding and attention. The term "toddler" describes this stage well.

c) *Communication method*: Our sensory abilities make us more aware of the cries of puppies than the high-frequency cries of baby bats or the pheromones given off by frightened mice. But in our evolutionary history, sensory abilities evolved to deal with our problems, not other animals'. Thus, we are biased toward those species with which we can at least have the illusion we are communicating or at least recognize their signals for what they are.

d) *Pain and suffering*: The issue of pain and suffering by animals is perhaps the most frequently discussed and controversial attribute of them all. We merely point out that we are often most adamant and emotional about the suffering of animals that respond as we think we might in similar circumstances. Thus, we are much more likely to show moral outrage to mistreatment of species that show physiognomic or psychological similarities to ourselves (Burghardt and Herzog, 1980). Many are upset by cruelty to primates; few evidence similar sensibilities toward brutality to reptiles. We ignore potential suffering in species to which we have difficulty relating. Such occasions include boiling of live lobsters, spraying cockroaches, or hooking fish.

In short, we believe that many of our attitudes toward animals may be based on biological, genetic predispositions. The source of these may be in anthropomorphic generalizations of responses that evolved toward conspecifics, as in our attraction to big-eyed baby harp seals, or neotenic breeds of dogs such as chihuahuas. Other responses may be the product of increased fitness that accrued to individuals who treated animals in specific ways—for example, avoidance of snakes. The notion that our cognitive evaluations of animals and their treatment is superimposed on more primitive affective responses that were adaptive many thousands of years ago has implications for any alteration of our behavior and attitudes toward animals.

THE INFLUENCE OF EXPERIENCE ON ATTITUDES

While it is easy and fun to speculate as to the biological roots of our feelings about animals, it is obvious that personal experiences have greater effects on individual differences in attitudes; whether we are "dog people," "cat people," or what we might call "animal misanthropes" (Brown, 1985). Consider, for example, the animals we eat. As populations have moved from rural to urban settings, dominant cultural attitudes toward animals and their use as a source of protein have made concomitant changes. As fewer individuals are raised around livestock, we become psychologically distanced from the fact that the convenient packages of pork, beef, and chicken that we purchased at the supermarket were once living creatures that were bred, raised, and finally killed for our benefit. Except for hunters and slaughterhouse workers, few in Western cultures have the experience of being involved with the slaughter of large animals. We might expect that this experience would have a significant effect on one's attitudes toward the consumption of animals. Several years ago, one of us (HAH) had the opportunity to investigate the psychological effects of the experience of slaughtering livestock on a group of relatively naive students working on a college farm crew (Herzog and McGee, 1983). Warren Wilson College is a small, liberal arts college located in the moun-

tains of western North Carolina. A unique feature of the college is the work program in which all residential students work 15 hours per week in exchange for room and board. The college maintains a farm that produces beef cattle and hogs, and students are involved with all aspects of animal production including slaughter.

In order to describe changes in the attitudes of students toward animals as a result of the experience of slaughtering, the members of the crew who had participated in slaughtering were given questionnaires and subsequently interviewed. Surprisingly, the students overwhelmingly, with only a couple of exceptions, felt that slaughtering had been a valuable and significant experience in their lives. Reasons they gave varied from the mundane ("I now know about the various cuts of meat so I can shop more effectively.") to the more profound, in which students described their experience with the death of an animal in metaphysical terms. Students who were relatively experienced at slaughtering were more likely than novices to admit that they sometimes got a feeling of accomplishment from the experience, while inexperienced students were more likely to say that they avoided eating meat after a slaughtering session.

We also gave the students a scale designed to measure their general feelings about the use of animals for medical research, sport hunting, rodeos, and other animal-using activities. On the basis of their responses students were grouped into "doves" and "hawks." The results indicated that "hawkish" students were more likely to admit that slaughter gave them a feeling of accomplishment, while the "doves" were more likely to say that they sometimes felt guilty after slaughtering.

In general, the students felt that their farm crew experience, which included slaughtering as well as raising animals, had helped them clarify their attitudes about eating other creatures. They felt they were special. They knew things others do not know—such as where meat comes from and what a warm carcass feels like. They had, at least once in their lives, assumed the moral responsibility of carnivory, and they acknowledged that this experience had influenced their attitudes toward animals.

INDIVIDUAL AND SUBCULTURAL DIVERSITY OF ATTITUDES

Last summer, a man who seemed to be in a bit of a panic phoned our laboratory at the University of Tennessee where we study the behavior of reptiles. For the past ten years, he and his wife had kept a pair of large boa constrictors caged in their suburban living room as pets. That morning the female had, with no warning, produced a litter of 35 baby boas. The man was frantic. He had no idea what to do with the snakes and wondered if we could help him with temporary housing. When we mentioned that he might make a considerable sum of money, several thousand dollars, by selling the offspring to pet shops he balked, stating with all sincerity that finding a good home for all of the babies was his paramount concern, rather than financial gain. In addition, he said that he and his wife did not have any children, and the two adult boa constrictors were "just like members of the family."

This story illustrates what we might term "idiosyncratic diversity" of attitudes toward animals. While most people view snakes with something akin to revulsion, this quiet, apparently conventional middle-class couple had two large boa constrictors as child-surrogates—a niche more typically occupied by dogs or cats. While such individual differences in attraction and revulsion directed toward different species are fascinating, they are not always easy to explain (Kidd and Kidd, 1987).

In addition to individual differences in attitudes toward animal species and their use, there are also cultural norms that affect our feelings about animals and what constitutes acceptable treatment of them. And, of course, within a large and diverse country such as the United States, there are numerous subcultures that may have quite divergent views about the treatment of animals. As an example, we will use a group that is surprisingly common in our area of the southern Appalachian mountains—cockfighters.

Many people find the subject of "blood sports" distasteful, to say the least, and it might be argued that it is inappropriate even to discuss the topic in a volume on human-animal relationships. But, simply ignoring a topic that we might not like does not further the scientific in-

vestigations of human-animal interactions. We must be willing to explore "the good, the bad, and the ugly." Thus, it is essential that those of us interested in human-animal relations as a broadly conceived area of research attempt to understand the factors that underlie the reasons why such an activity is repugnant to most people but is held by a dedicated minority to be man's noblest sport. In addition, cockfighting, like drug use, will only be eradicated when individuals cease to be absorbed by it. Thus, an understanding of the activity is especially critical to those who would like to see such activities eliminated.

Visitors to the Southern Appalachian mountains casually driving through the countryside may be puzzled occasionally to see fields containing wire cages, each housing a single rooster. Discrete inquiries will reveal that these are not ordinary barnyard fowl but gamecocks, animals maintained solely for the clandestine sport of cockfighting. Several years ago, we became acquainted with a number of "cockers" as they are called and began to investigate a widespread, though generally illegal, activity throughout much of the United States. We were surprised to discover that in the United States there are three magazines (*Grit and Steel*, *The Gamecock*, and *Feathered Warrior*) exclusively devoted to cockfighting, each of which contains ads for equipment and paraphernalia, announcements of upcoming fights, and advice columns. We were not aware that there was a formal lobby group, the United Gamefowl Breeders Association, whose goal is to combat the growing number of attempts in state legislatures to strengthen anti-cockfighting statutes. Nor did we suspect that, just as there is a football season, there is a cockfighting season (Thanksgiving to the Fourth of July).

Over a period of several years, we interviewed many rooster-fighting aficionados. We found a diverse group of individuals, young and old, almost exclusively male, who, for the most part, were intensely proud of their involvement with cockfighting despite the fact that their sport is viewed rather dimly by the majority of Americans. Many were socialized into cockfighting at an early age. It is not unusual for young kids to be brought to fights by their fathers. Generally

the cockers were not at all secretive about their interest in cockfighting and were quite willing to discuss various aspects of their sport.

While a detailed description of the culture of cockfighting is beyond the scope of this chapter, we would like to mention some of its more salient aspects. (The interested reader may want to consult sources such as Pridgen [1938], Rupport [1949], Del Sesto [1975], or Herzog [1985] for more detailed information.) Game roosters are strains of chicken bred exclusively for combat. The fighting strains have been kept reproductively separate from production strains for many generations. Strains have names such as Madigan Gray, Roundhead, Butcher, and Claret and vary widely in color. Owners typically take great pride in the appearance of their animals and are vehement on the subject of their care. In fact, cockers commonly defend their sport on the grounds that their roosters are much better cared for than are factory-farm broilers or even most barnyard fowl.

Fights are highly organized affairs that take place in specially built arenas complete with refreshment stands and public address systems. An intricate set of rules governs the conduct of the fight. During the actual fight, there is a referee present in the pit as well as the "handlers" of the cocks. Gambling is an intrinsic part of the enterprise, and spectators yell out bets and odds throughout the fight. Prior to each match, steel "gaffs" are attached to the stubs of the roosters' natural spurs. This, of course, means that cockfights are lethal affairs, and they end with the death of the loser in over 85% of matches (Herzog, 1978).

It is not, however, the details of animal husbandry and rules of the fight that are of interest here but the underlying attitudes that make cockfighting morally acceptable to a subgroup within American culture. It seems clear that cockfighters do not exhibit obvious identifiable psychopathology. Clifton Bryant and the late William Capel (unpublished manuscript) gave a variety of psychological tests to cockers and essentially found that they are quite typical of the rural population from which they are primarily drawn. They are no more psychotic or sadistic than any other group of predominantly lower-middle-class, rural males. In fact Capel (pers.

comm.) found that cockfighters were psychologically indistinguishable from stock-car-race fans—the most popular Southern sport.

However, as with other groups of individuals with utilitarian approaches toward animals, such as hunters, ranchers, and medical researchers, cockfighters possess a set of values and attitudes that enables them to justify their sport (see also McCaghy and Neal, 1974). We have heard the following arguments from cockfighters:

1. Critics of cockfighting have never been to a fight and really do not understand the sport.
2. Gamecocks were meant to fight and do so naturally; therefore, it is unnatural not to pit them against each other. There are several variations of this theme. One variation is that God put gamefowl on Earth to fight; another is that humans have bred roosters to fight and, thus, they have a right to enjoy cockfighting as a sport.
3. The bravery of the game rooster is a superb model for humans to emulate.
4. It is a family sport that keeps the kids off the street, as they are often involved in the day-to-day maintenance of the animals as well as in the exercise regime that goes along with preparation for upcoming fights.
5. Chickens are too dumb to feel pain.
6. Some of our great American heroes such as Andrew Jackson and Abraham Lincoln have been avid cockfighters.

Paradoxically, most of the cockfighters that we are acquainted with draw a clear moral distinction between cockfighting and other bloodsports such as dogfighting and bearbaiting, which also occur in the southern mountains (though much more surreptitiously). The majority feel that dogfighting is cruel and want nothing to do with it.

It is difficult to describe the attitudes and feelings that cockers have toward their roosters. It is clear that they have immense respect for their birds and truly admire that combination of courage, tenacity, and confidence that they refer to as "gameness." They take pride in the way their birds look, and of course, in the way they fight. For many, the attraction of cockfighting is

really the challenge of breeding a better fighting bird, and some have a sophisticated understanding of genetics and selective breeding.

On the other hand, gamecocks are not pets in any sense of the word. They are animals to be used. The attitudes of cockers toward their roosters is clearly what Kellert (1980) has labeled "utilitarian." Gamecocks are of value only as long as they win. Tears are not shed over a dead loser. Animals that flee in the pit are an embarrassment to their handlers and breeders.

Finally, what draws individuals to what has been referred to as a deviant sport? The attraction is not sadism. Cockfighters do not get their thrills from watching chickens bleed to death. Rather, they seem to be drawn by their intense sense of competition and tradition, the excitement of betting, and the aesthetics of the fight.

In addition, cockfighters in the southern mountains are, for the most part, not violating the mores of the cultures in which they live (Herzog, 1988). They often make little attempt to hide their involvement in an illegal bloodsport. Indeed, they often publicly proclaim their enthusiasm by wearing cockfighting belt buckles or by proudly displaying on their cars "Sport of Kings" license plates complete with crossed gaffs. The fact that the football team of the University of South Carolina is officially designated the "Fighting Gamecocks" says something about the defacto acceptance of cockfighting as a Southern tradition.

VIEWS OF ANIMALS IN POPULAR CULTURE

Cockfighters represent an unusual subculture with ideas about the uses of animals that are at odds with the majority of American society. But, there is also wide variation of attitudes toward animals within what is sometimes termed the "dominant culture." These differences in value orientations have been extensively documented by Kellert (1980), who has developed sophisticated survey techniques to assess and compare attitudes about animals.

However, there are limits to the types of information that can be obtained through surveys, and we need to be vigilant for alternative win-

dows into the nuances of human-animal relations. Some years ago, Clifton Bryant (1979) pointed out that images of animals are ubiquitous in American language and culture, and we have recently begun to use the portrayal of animals in popular media as a means of assessing aspects of attitudes toward animals that are not easily uncovered by more traditional methods. Specifically, we have found that the "supermarket tabloids," periodicals such as *The National Enquirer*, offer an unusual, and sometimes humorous, glimpse into the roles of animals in our psychological life. Take, for example, the depiction of dogs in the tabloid press.

Our canine friends have a multitude of roles in these papers, as they do in our lives. The bulk of dog stories and pictures portray the dog in its most common role, that of companion. These items most often take the form of images of puppies kissing children, or cuddling equally cute non-canids such as kittens, bunnies, or baby squirrels. Similarly, there are numerous stories that portray unusually intense bonds between master and dog: "John Paul Getty Treats a Dog Better Than His Dying Boy" (*National Enquirer* 4/1/86); "Widow Marries Dog To Get Tycoon Hubby's Fortune" (*World Weekly News* 1/6/87).

There is another category in which the dog is stereotypically man's best friend. The motif in these stories is that of the brave and loyal pooch saving the master's life. The image of the dog as savior is one of the most pervasive images of animals in popular culture and runs from Appalachian folk tales through TV shows such as "Lassie" and "Rin Tin Tin." The tabloid press is no exception as witnessed by headlines such as "Loyal Dog Saves the Life of Freezing 80-Year-Old Man" (*National Examiner* 4/15/86).

But, dogs are also capable of the ultimate betrayal; they can eat your children. While the world of sensationalistic papers is populated with hostile beasts—man-eating tigers, crocodiles, vampire bats, and giant snakes—it is the dog that accounts for the bulk of stories where humans are attacked by animals. Surprisingly, the portrayal of our canine companions as potential predators is based on fact. In the Western world, dogs are the animals (aside from allergic reactions to insects stings) most likely to represent a real threat to human life and limb (Borchelt,

Lockwood, Beck, and Voith, 1983). This is amply demonstrated in the tabloids with such exaggerated headlines as "St. Bernard Bites off Mailman's Leg...He Buries It in Backyard" (*Sun* 10/14/86) and "Heavy Metal Rock Music Turns Poodle into Vicious Killer" (*Sun* 3/24/87).

But humans can also treat animals cruelly, as evidenced by headlines such as "Horried Mom Learns Her Neighbor Is Butchering Little Dogs to Make...Puppy Chow" (*World Weekly News* 6/3/86) and "Breeders Kill Dalmation Puppies...Spots Were in the Wrong Place" (*Sun* 10/26/86).

There are several other categories of stories in which dogs are depicted. Many dog pictures and stories have an anthropomorphic slant in which the animals are dressed in human attire or engage in human activities "Why Drunken Poodle Had To Give Up Booze," (*National Examiner* 5/6/86). Another category includes dogs with supernatural powers or experiences: "Dog Is Reincarnation of 4-Year-Old Boy," (*World Weekly News* 4/21/85); "Ghost of Dog Returns to Beloved Master" (*National Examiner* 5/14/87). Finally, the role of dogs in human life is reflected in the numerous cartoons in which dogs are the central figure. In the bulk of cartoons, the punch line is that the dog is smarter than the owner.

Our thesis is that the themes underlying the bizarre and ridiculous tabloid stories reflect the sometimes contradictory roles that animals play in our lives as well as the psychological factors that mediate our feelings toward animals. For example, the headline "Vet Slapped With \$100,000 Suit for Sparing Pooch's Life... 'How Do You Kill a Dog Who's Wagging His Tail and Licking Your Face?'" (*World Weekly News* 5/20/86) says something fundamental about human nature. Whether or not these stories are true is irrelevant; these tales are, in a sense, metaphors illustrating archetypes of human feelings and beliefs about animals that are not uncovered by more traditional measures of attitudes.

ANIMALS AND HUMAN EXPERIENCE

Finally, we would suggest an additional source of information about our psychological responses to animals—human consciousness. After having been banished from psychology with the ascen-

dancy of behaviorism, the concept of consciousness as a topic of scientific scrutiny, even in animals, is making a comeback (see Burghardt, 1985; Griffin, 1981; Pollio, 1982). Though the traditional problems remain (such as how to get reliable data), in recent years a number of psychologists have concluded that there are some important questions that can only be investigated by studying subjective reports of conscious experience, a position referred to as phenomenology. We concur and suggest that methods that phenomenologists use to investigate "being in the world" might be fruitfully applied to the study of human-animal relationships.

The sometimes mystical relations between horse and rider, pet and owner, and even hunter and prey have eluded scientific description. Poets or fiction writers are, perhaps, more likely to capture these experiences than scientists. Thus the prose of Norman McClean in his classic story "A River Runs Through It" (1976) offers great insight into the psychology of fishing; insight currently beyond any scientific analysis:

The body and spirit suffer no more sudden visitation than that of losing a big fish, since, after all, there must be some slight transition between life and death. But, with a big fish, one moment the world is nuclear and the next it has disappeared. That's all. It has gone. The fish has gone and you are extinct, except for four and a half ounces of stick to which is tied some line and a semitransparent thread of catgut to which is tied a little curved piece of Swedish steel to which is tied a part of a feather from a chicken's neck....

Poets talk about "spots of time," but it is really fishermen who experience eternity compressed into a moment. No one can tell what a spot of time is until suddenly the whole world is a fish and the fish is gone. I shall remember that son of a bitch forever.

While intrinsically less rigorous than techniques such as attitude surveys, the phenomenological methods of loosely structured interviews and analyses of text have the potential of providing insight into the meaning of animals in human life that could not be gained through the more traditional methods of behavioral scientists.

This is ultimately a matter of levels, for we can go from physiology to genetics to individual learning to cultural settings and habitat. Methodologically we can observe, experiment,

and study artifacts, opinions, and political systems. But, in the end, we cannot ignore the deep-seated experiential values concerning animals held by every person, for these provide the ultimate source of both our personal insight and scientific understanding.

SUMMARY

In this article, we explore a variety of topics that illustrate the sources and diversity of attitudes that individuals exhibit toward animals. We have suggested that we must look to human evolutionary history as well as to individual experiments for insight into the muddled reasons as to why we treat animals as we do. The studies of inexperienced college students who slaughter cattle and hogs show that experiences with animal death can have a significant impact on attitudes about their use.

We have also examined the extraordinary diversity of feelings that individuals have about animals. Some of this variation is idiosyncratic; we have no idea why a middle-class couple from east Tennessee would prefer a pair of boa constrictors to a couple of dogs as pets. However, as southern Appalachian cockfighters demonstrate, some variation in attitudes is due to subcultural and regional differences regarding morally acceptable behavior toward animals.

Finally, we would like to emphasize that there are innumerable reservoirs of information, including such diverse sources as popular culture and human consciousness, that can be fruitfully tapped by investigators exploring the complexities of our relations and feelings about animals. We have only begun to scratch the surface of a topic that is developing into an exciting interdisciplinary field of study.

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