

humane societies constitute an audience for cruelty and can experience increased solidarity after egregious instances of harm come to their attention (Arluke 2006), and humane law enforcement officers, who are another collective audience, can find ways to elevate their professional status as a result of their contact with cruelty (Arluke 2004). Finally, by focusing on intent as the basis for defining cruelty, serious forms of animal harm such as hoarding are minimized because the perpetrator lacks clear intent to harm, and it is also important to capture the voice of those who commit such forms of passive cruelty (e.g., Vaca-Guzman & Arluke 2006).

2. Gender and animal cruelty. According to Nell, sex differences in testosterone levels and in hunting mean that cruelty should be a predominantly male enterprise. When it comes to animal abuse, this is indeed the case. Gerbasi (2004) reviewed gender differences in media reports of animal abuse convictions. The male/female ratios were as follows: beating, 38 to 1; shooting, 16 to 1; mutilation/torture, 20 to 1; and burning, 17 to 1. Arluke and Luke (1997) reported that virtually all cruelty cases prosecuted in Massachusetts courts over a 10-year period involved males. While these represent extreme forms of cruelty, males are also more likely to be involved in lesser forms of cruelty. For example, both parental reports and child self-reports indicate that boys are more likely to abuse animals than girls. Of course, this preponderance of males is likely to change in the future if the demographics of animal abusers follow the trend toward increasing violent crimes in general by women.

3. Animal cruelty as play. Consistent with Nell's hypothesis, cruelty can be a recreational extension of hunting. An apparent example of this relationship is found in Jared Diamond's depiction of animal abuse among traditional hunters in the highlands of New Guinea. Diamond (1993) observed captive animals systematically tortured by hunters, much to the amusement of onlookers. Arluke (2002) found that childhood animal cruelty frequently takes the form of "dirty play," akin to other forms of play such as the use of sexual or racial epithets that are objectionable to many adults, but that can function as a form of socialization into the world of adults. In fact, some individuals he interviewed interpreted their involvement in animal abuse as a rehearsal of the hunting experience. Similarly, at Appalachian cockfights, young boys learn the formal rules and informal norms of their fathers' sport by staging their own mini-fights with discarded roosters in the corners of cockpits during derbies (Herzog 1985).

4. The relationship between animal cruelty and human violence. Perhaps the most controversial issue in anthrozoology concerns the putative relationship between animal abuse and human-directed violence. The idea that these phenomena are closely connected is often referred to simply as "the Link." (For reviews, see Merz-Perez & Heide 2004; and Ascione 2001.) Scholarly discussions of animal cruelty are commonly sprinkled with grisly accounts of animal abuse by serial killers such as Albert DeSalvo, Jeffery Dahmer, and David Berkowitz. A number of studies have shown that animal abuse is related to antisocial behavior in children; indeed, in the DSM-IV-TR, animal cruelty is listed as a diagnostic criterion for conduct disorder (American Psychiatric Association 2000). There is also evidence that violent felons are more likely to have a history of animal abuse than non-violent offenders (e.g., Kellert & Felthous 1985; Merz-Perez & Heide 2004).

The causal nature of the relationship between animal abuse and violence directed toward humans, however, has not been established. Of particular interest is the "graduation hypothesis," which posits that an early history of animal cruelty leads to interpersonal violence. As Piper (2003) has pointed out, there are significant problems with much of the literature on this topic. These include reliance on anecdotal evidence, hazy definitions, and the use of small clinical samples. In addition, some studies have not found the predicted relationship between animal and human

violence. Arluke et al. (1999) compared the criminal records of convicted animal abusers and matched non-abusing controls. As expected, the animal abusers were much more likely to have been arrested for a variety of offences than the controls. They did not, however, commit a disproportionate number of violent offences as opposed to property or drug offences. In a large, 10-year longitudinal study of risk factors and adolescent delinquency, Becker et al. (2004) found that animal abuse was only weakly related to subsequent criminality.

Finally, childhood animal cruelty may be more common than is usually recognized, with most abusers developing into non-violent adults. Miller and Knutson (1997) reported that two-thirds of male undergraduates they surveyed had participated in animal abuse. Clearly, most of these individuals did not go on to a life of crime. We suggest that the relationship between animal cruelty and subsequent psychopathology may parallel findings on the consequences of child sexual abuse. An increased proportion of individuals in deviant groups show evidence of early sexual abuse; however, several studies have now shown that the majority of sexual abuse victims become psychologically healthy adults (Rind et al. 1998; Ulrich et al., in press). This pattern may well be characteristic of early exposure to animal abuse.

Conclusion. The predation theory of the evolution of cruelty will be difficult to test. Nell's idea, however, is provocative, and, hopefully, will pique interest in intentional cruelty among researchers. Anthrozoological studies of animal abuse can provide fundamental insights into this dark side of human nature, insights that shed light on human violence generally.

Considering the roles of affect and culture in the enactment and enjoyment of cruelty

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Abstract: Research on aggression and terror management theory suggests shortcomings in Nell's analysis of cruelty. Hostile aggression and exposure to aggressive cues are not inherently reinforcing, though they may be enjoyed if construed within a meaningful cultural framework. Terror management research suggests that human cruelty stems from the desire to defend one's cultural worldview and to participate in a heroic triumph over evil.

We applaud Nell for attempting to understand human cruelty in the hope of attenuating human destructiveness. However, his characterization of cruelty's universal reward value is at odds with research on human aggression (Geen 1990). Moreover, although Nell proposes that cruelty is a cultural elaboration on the predatory adaptation, he fails to explain adequately why and how this cultural elaboration may have occurred. We will offer an alternative view of the role of culture in cruelty.

Given that Nell's definition of cruelty and psychologists' definition of aggression (Geen 1990) are virtually identical, we were surprised to find few references to the vast literature on the psychology of human aggression (e.g., Geen 1990). A wide variety of findings in this literature appear inconsistent with Nell's central claim concerning the universal reward value of encounters with stimuli associated with cruelty.

First, research on the situational conditions that trigger aggression suggests that negative affect, which is hardly rewarding, mediates the expression of aggression. Affective aggression is evoked under conditions in which an aversive situation – for example, exposure to pain, heat, attack or insult, crowding, goal

blockage, relationship threat – elicits hostile thoughts, angry feelings, and arousal (see, e.g., Anderson et al. 1995). Second, cues that have been found to instigate aggressive reactions bear no resemblance to blood, pain, and death; rather these cues are stimuli that have become associated with violence through learning processes (see, e.g., Berkowitz 1968). Moreover, indicators of a victim's pain often decrease aggression; when victims wince, cry out, or groan, people are typically less aggressive in retaliation for prior provocation (Baron 1971b; Geen 1970). Even in modern predation, whether in traditional tribal cultures or modern technological ones, there are clear cultural rules for the hunt, transmitted from generation to generation, that are designed to limit the infliction of pain and prescribe the value of the clean, relatively merciful kill. If cultural elaboration of predation were the root source of cruelty, why would forms of contemporary human predation generally discourage unnecessary cruelty?

Third, viewing cruelly aggressive acts often does not elicit aggressive behavior and, in fact, may inhibit it. If, as Nell claims, stimuli associated with cruelty elicit endogenous reinforcement, cruel behavior should increase rather than decrease in the presence of such cues. Yet viewing aggressive acts has been shown to decrease subsequent aggression if the aggression seems excessive or gratuitous. For instance, when media violence is framed as morally unjustified because the victim does not deserve the attack, viewing it may have no effect on subsequent aggression or may in fact lead to inhibition (Goranson 1970). Observed morally justified violence, on the other hand, will increase aggression (e.g., Berkowitz & Geen 1966). This body of work shows that the culturally mediated meaning of the aggressive act greatly affects the viewer's reactions to it – actions that do go beyond what is deemed justified or beyond the culturally prescribed rules for appropriate behavior elicit negative reactions rather than enjoyment (e.g., when boxer Mike Tyson bit Evander Holyfield during a heavyweight championship fight).

These and other research findings on the social conditions for aggression and the vicarious enjoyment of it (see, e.g., Geen & Stonner 1973; Zimbardo 1972) also suggest that understanding human cruelty requires explaining why humans are so motivated to follow symbolic, culturally prescribed standards of conduct. Many thinkers have stressed that an account of human cruelty that will aid in its abatement must *explain* how the motivation to create and maintain culture contributes to the human propensity for cruelty and destructiveness (Becker 1975; Bertalanffy 1958; Burkert 1983; Fromm 1973).

Terror management theory (TMT; Greenberg et al. 1986; Solomon et al. 1991) provides an empirically corroborated explanation of the functions of culture. Based on the work of Ernest Becker (1973; 1975), TMT contends that with the advent of self-awareness in hominid evolution came cognizance of mortality, an awareness which, in juxtaposition with basic biological systems promoting self-preservation, engendered a potential to experience overwhelming dread. To manage concerns with this potentially debilitating terror, humans have created and maintained beliefs about the nature of reality (cultural worldviews), which function to provide individuals with the hope of symbolic or literal immortality through perception of themselves as valuable contributors within a meaningful social world. This analysis suggests that accepting and abiding by culturally sanctioned standards of conduct enables humans to manage existential concerns with death.

More than 200 published experiments have supported hypotheses derived from TMT, many finding that individuals confronted with reminders of their own mortality express intensified reverence for validators and intensified derogation or aggression against threateners of their cultural worldview (Greenberg et al. 1990; McGregor et al. 1998). These findings support the contention that the defense of cultural worldviews serves to mitigate the anxiety associated with death, and that such defenses contribute substantially to human aggression. Recent work also

shows that reminders of mortality make leaders and ideologies focused on the heroic triumph over those designated as evil (scapegoats) especially appealing (Landau et al. 2004; Pyszczynski et al. 2006).

This work can help to explain the appeal of human cruelty. Nell identifies cruelty's cultural elaboration in political imperatives to sustain social control, but a readiness to inflict pain affords no more than temporary instrumental command unless leaders also speak to individual needs for a sense of broader significance in a triumph over evil. For example, Hitler's rise to power was accomplished not only by intimidating the German people, but also by confidently offering a worldview built upon ancient Germanic traditions that could both blame problems on outsiders and provide deep feelings of self-worth to the Aryan majority (Becker 1973; 1975). Social control is often a critical element in the rise to power, but TMT suggests that the psychological mechanisms that render such political ascension possible stem from followers' needs for a death-transcending ideology more so than from the herding effect of threats rained down from above.

Finally, consider the experience of an audience member at the Roman arena, for whom "maximum excitement is the confrontation of death and the skillful defiance of it by watching others fed to it as he survives transfixed with rapture" (Becker 1975, p. 111). As this psycho-historical example illustrates, individuals may enjoy contextualized displays of blood and death that allow them to feel part of a heroic instantiation of their culture's success in thwarting death.

Despite our alternative view, we welcome Nell's article as an addition to discussion of the psychological underpinnings of cruelty; an addition that, along with the associated commentaries, we hope will stimulate advances on these issues.

Signifying nothing? Myth and science of cruelty

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It is ... full of sound and fury, signifying nothing.

Macbeth, Act 5, Scene 5

Abstract: Nell proposes another myth about human aggression, following thousands of old myths from Homer to Lorenz. Like all myths, this one might be partially true and partially false. However, the use of emotional and propagandistic effects, rather than evaluation of empirical results, obscures any attempt to describe the truth about cruelty.

Nell opens with the citations of Haney et al. (1973), Milgram (1974), and Zimbardo (2003) as examples of empirical work on cruelty. Only Haney et al. (1973) can be interpreted in this vein, but this early experiment suffered from numerous methodological flaws vastly discussed since its publication. Zimbardo (2003) is not an empirical study, and Milgram (1974) was devoted not to cruelty but to the quite different phenomenon of obedience. The target article ends with a list of references, about half of which are works of art, moral philosophy, anecdotes, essays, and novels, and only about 20% are empirical studies on brain and behaviour, some of them (like Milgram 1974) unrelated to the theme of the article. The biological basis of aggression is presently intensively studied at the empirical level (e.g., reviews in Bufkin & Luttrell 2005; Moll et al. 2005), but only a few such studies are mentioned in the target article.

This raises some basic questions. What kind of text are we confronted with in the target article? Does it belong to science? What distinguishes scientific texts from *belles lettres*, armchair