

Cruelty's rewards: The gratifications of perpetrators and spectators

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To the memory of Linda Mealey

Abstract: Cruelty is the deliberate infliction of physical or psychological pain on other living creatures, sometimes indifferently, but often with delight. Though cruelty is an overwhelming presence in the world, there is no neurobiological or psychological explanation for its ubiquity and reward value. This target article attempts to provide such explanations by describing three stages in the development of cruelty. *Stage 1* is the development of the predatory adaptation from the Palaeozoic to the ethology of predation in canids, felids, and primates. *Stage 2*, through palaeontological and anthropological evidence, traces the emergence of the hunting adaptation in the Pliocene, its development in early hominids, and its emotional loading in surviving forager societies. This adaptation provides an explanation for the powerful emotions – high arousal and strong affect – evoked by the pain-blood-death complex. *Stage 3* is the emergence of cruelty about 1.5 million years ago as a hominid behavioural repertoire that promoted fitness through the maintenance of personal and social power. The resulting cultural elaborations of cruelty in war, in sacrificial rites, and as entertainment are examined to show the historical and cross-cultural stability of the uses of cruelty for punishment, amusement, and social control.

Effective violence prevention must begin with perpetrators, not victims. If the upstream approaches to violence prevention advocated by the public-health model are to be effective, psychologists must be able to provide violence prevention workers with a fine-grained understanding of perpetrator gratifications. This is a distasteful task that will compel researchers to interact with torturers and abusers, and to acknowledge that their gratifications are rooted in a common human past. It is nonetheless an essential step in developing effective strategies for the primary prevention of violence.

Keywords: compassion; cruelty; entertainment industry; evolutionary psychology; intraspecific killing; pain; predation; punishment; torture; violence prevention

1. Introduction

Cruelty (from the Latin *crudelem*, “morally rough”) is the deliberate infliction of physical or psychological pain on a living creature; its most repugnant and puzzling feature is the frequently evident delight of the perpetrators. Cruelty has an overwhelming presence in the world – in wars and massacres, in the routine work of police and military interrogators, in children’s play, and in the dealings of men with women and of adults with children. Although the ease with which situations can overwhelm values and elicit cruelty in hitherto irreproachable individuals is empirically (Haney et al. 1973; Milgram 1969/1974; Zimbardo 2003) and observationally (Browning 1993; Grossman 1995; Tester 1997) well established, there is no motivational or neurobiological explanation for cruelty’s prevalence or the fascination it holds.

This target article argues that the reinforcement value of pain and bloodshed derives from the predatory adaptation from the Middle Cambrian to the Pleistocene. The argument is therefore as follows:

1. Cruelty is a behavioural by-product of predation.
2. Cruelty is driven by reinforcers that derive from this adaptation.

3. Because cruelty presupposes the intention to inflict pain and is therefore exclusively a hominid behaviour, it dates to no earlier than *H. erectus*, about 1.5 million years ago (Ma).

4. Cruelty has fitness benefits in solving problems of survival and reproduction in forager, pastoral, and urban societies.

5. The enjoyment of cruelty is a culturally elaborated manifestation of the predatory adaptation.

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These hypotheses generate a research agenda for affective neuroscience, for social psychology, and for violence prevention. They also provide a heuristic for understanding why media violence is attractive, why men find war beautiful, why homicide has been a fixed feature of human societies from prehistoric times to the present (Buss 2005; Daly & Wilson 1988), and why, despite the human capacity for compassion, atrocities continue.

1.1. Three stages in the emergence of cruelty

1.1.1. Predation. The predatory adaptation derives from resource competition between and within species, which, in the Cambrian, becomes predation, the killing and consumption of one living creature by another. Predation is hard work: the evidence reviewed in section 3 shows that it is powerfully reinforced in mammalian carnivores and in the hunting apes by a set of linked conditioned stimuli that are carried over to the hunting adaptation in hominids. The stimuli driving predation and hunting are the pain-blood-death (PBD) complex: the prey's terror and struggles to escape as it is brought down, the shedding of its blood, and its vocalisations as it is wounded and eaten, often while it is still alive. A range of anticipatory and consummatory reinforcers is triggered by the PBD complex, which is also active in intraspecific killing, and strikingly so in chimpanzees. The material in section 3 on the neurobiology of predation suggests that predation is dopaminergic, affectively positive, and distinct from rage.

1.1.2. Hunting. Nutritional killing by hominids is also hard work: the palaeontological and anthropological evidence reviewed below suggests that hunting in hominids, as with predation in canids, felids, and primates, is reinforced by the PBD complex and that the nonnutritional "other end" of hunting, for which anthropologists have sought, derives from these reinforcers.

1.1.3. Power. Cruelty requires a sufficient cognitive basis for intentionality and a sufficient social basis for its disciplinary elaboration (see sect. 5). Once these foundations have been laid, there are florid social and cultural elaborations of cruelty as punishment, for amusement, and for social control. Each of these modalities affirms the power of the perpetrator – this may be an individual acting alone or as the agent of a collective – over the victim. In hierarchical states with centralised power, cruelty becomes a vehicle for public entertainments that buttress the power of the state and heroic war. The affective loading of these elaborations is described in order to identify parallels between blood as a principal reinforcer of predators and hunters on the one hand, and, on the other, of the audiences that delight in spectacles of pain and bloodshed.

In Stage 3, the *use* of cruelty is a strongly male-gendered and contextually sensitive adaptation, which "could remain dormant for the entire life of an individual, if the relevant contexts are not encountered" (Buss 1999, p. 284), promoting inclusive fitness by augmenting the personal power, survival, and sexual access of cruel individuals. Historically, the *enjoyment* of cruelty has been sufficiently powerful to have led to huge social resources being channelled into cruel rites and spectacles, and this enjoyment remains a primary driver of the modern entertainment industry. The distinction between use and enjoyment has

behavioural and neurobehavioural implications that may have animal parallels with quiet-biting predation on the one hand and aggressive rage on the other. However, as with all behavioural states, the boundaries between instrumentality and affectivity are permeable: for example, hunters may inflict pain on the prey beyond that which is instrumentally necessary, and the hunt may slip into surplus killing that continues beyond the satisfaction of nutritional needs (as with Actaeon in Ovid's *Metamorphoses*, c. 8 AD/1997, p. 105). Violence is a significant by-product of cruelty (see sect. 6).

Evidence for the continued salience of the predatory adaptation for human behaviour is derived from palaeontology and taphonomy (Brain 1981); predator ethology; primatology, with special reference to chimpanzee predation and intraspecific killing; cognitive evolution with special reference to language; the psychology of motivation and learning; the anthropology of provisioning; societal evolution; cultural history; and the psychology of individual differences.

The reinforcers of cruelty feed into violence, defined by the World Health Organisation as the intentional use of physical force or power – against oneself, another individual, or a group – that causes injury, death, or psychological harm (Krug et al. 2002, p. 5): one of this target article's purposes is to show cruelty's relevance to the initiation and escalation of high-volume everyday violence such as drunken brawls, child beating, and sexual assault.

The study of cruelty, which is one of the manifestations of evil, is dangerous on three counts: first, because of the fear that evil is contagious, and that those who deal with it become tainted (as, for example, in "The Problem of Evil" in Coetzee 2003); second, because to probe the psychology of perpetrators fails to condemn, casting a shadow over the researcher's rectitude; and third, because rooting cruelty in the human evolutionary past appears to naturalise it, absolving perpetrators and their audiences of moral responsibility. The study of cruelty neither contaminates nor condones, and the purpose of this article is compassionate and preventive. Cruelty will not be contained through obscurantism. Its reinforcers must be understood, and if these have evolutionary origins, effective prevention requires that they be revealed.

2. A taxonomy of cruelty

The *preconditions* for cruelty are a mental state, namely the intention to inflict pain, which in turn presupposes a theory of mind (Premack 1988), as well as an action, which is the deliberate infliction of physical or psychological¹ pain on another living creature, or on the self.²

Punishment is cruel if its purpose is not to vanquish or disable the victim, but to inflict pain; if the victim has no control over the intensity or duration of the pain; and if the victim is physically restrained or otherwise rendered helpless. Punishment may also be used for *social control and discipline*: here, the preconditions are that the reason for the punishment is communicated to the victim, and that the punishment is derived from a penal code, is imposed by a higher authority, and is implemented by agents of that authority.

Affectivity. Cruelty's affective state is *ferocity* (from the Latin *ferox*, "fierce," now in the sense of savage violence).

Cruel acts arouse strong positive or negative emotions in the perpetrator and the audience, although habituation and instrumentality may attenuate them. Whether or not the conditions for punishment are met, an act is cruel if the perpetrator or the audience experiences physiological or psychological arousal triggered by the victim's pain. *Entertainment* is cruel if the audience is aroused by the intentional shedding of blood or infliction of pain; the infliction of pain for *amusement* is always cruel.

These definitions hold regardless of the perpetrator's position on a continuum ranging from *instrumental* cruelty, marked by the perpetrator's emotional coldness and distance from the victim, to *expressive* or *affective* cruelty, marked by the perpetrator's escalating arousal.

Exclusions. These definitions of cruelty exclude pain that results from fighting, killing, and war,³ in which the goal is not to inflict pain but to cause the adversary's flight, submission, or death, and also exclude pain that is a by-product of treatment intended to cure or heal.

3. Stage 1: The predatory adaptation

3.1. Antecedents of predation

Predation's precursor is competitive aggression, which confers fitness by solving an animal's problems in relation to self-preservation, protection of the young, and resource competition (Archer 1988, p. ix); this competition began three billion years ago with the first primordial cell, a benthic procaryote, which, "outreproducing its competitors, took the lead in the process of cell division and evolution" and made the world we know (Alberts et al. 1989, p. 10). Organisms at a primitive level of neural organisation and without specialised effector organs are capable of aggression. For example, intertidal molluscs such as limpets and chitons show spatial aggression by crawling over a rival conspecific and trying to dislodge it from its rock crevice by backward and forward movements; and the nematocysts of the solitary anemone *Actinia equina* are used for offence against conspecifics, with the loser detaching from the substrate (Archer 1988, pp. 18–19).

The earliest evidence of predation in the fossil record is from the terminal Proterozoic, 600 Ma, from which *Clouдина* fossils with tiny rounded holes have been recovered, suggesting that the attacking organism was a predator, selecting its prey for size (Brain 2001). With the Middle Cambrian explosion of animal life, 540–23 Ma, the first effective predators emerged, with sense organs to locate prey and the ability to pursue and overpower it. The largest and most fearsome of these was *Anomalocaris*, an active swimmer growing up to 50 cm with two large eyes; *Opabinia*, another Burgess Shale organism, "had five large eyes at the front of the head and a long flexible proboscis that ended in an array of grasping spines" (Brain 2001, p. 23).

3.2. The ethology of predation

Predation is widespread in the animal kingdom. Salticids, the largest family of spiders, have elaborate, vision-mediated predatory behaviour that is prey-specific, with behavioural flexibility that includes conditional predatory strategies, trial-and-error to solve predatory problems, and detours to reach prey (Jackson & Pollard 1996);

there is similar flexibility in the predatory behaviour of Pacific white sharks (Klimley 1994) and electric rays (Lowe et al. 1994).

The ethology of mammalian predation is now reviewed in relation to the arousal level, sensory feedback, and biochemical neurobiological drivers of the search-swoop-kill-feed cycle. Photographic evidence and the field observations reported below show that this cycle is accompanied by a range of auditory, visual, olfactory, tactile, gustatory, and visceral stimuli which together make up the PBD complex.

3.2.1. Hyenas and lions. In his Serengeti notebook, Kruuk described an adult male wildebeest turning to confront four spotted hyenas who had pursued it at speeds of 40–50 kph over a 3 km distance:

The hyenas tried to bite him in the hindquarters, sides, and especially the testicles, while he in turn struggled to horn his attackers. . . . All four [hyenas] bit simultaneously at the loins, testicles, and anal region of the wildebeest, paying little attention to his horns. The mobility of the victim was much impaired by the four pursuers hanging onto his hindquarters. Another two minutes later the wildebeest had a large gash in the right loin, the testicles had been bitten off, and he stood as if in a state of shock. Occasionally he made some frantic movements and was able to struggle free from the hyenas, but then some member of the pack would renew the attack. . . . Eight minutes after the wildebeest had stopped running he went down and the hyenas stood over him pulling out his insides. Another two minutes later, the wildebeest died. (Kruuk 1972, p. 149)

Like wild dogs (Van Lawick 1977, pp. 242–43, 246–47), hyenas "kill the victim by eating it" (Kruuk 1972, p. 153), in that the animal may be struggling and vocalising as feeding begins and may die up to a quarter hour later. The belly and loins are torn open; the fetus is eaten if the prey is pregnant; the testicles or udder is eaten; the stomach is pulled out; and the stomach wall is eaten and the contents spilled on the ground (Kruuk 1972, p. 125). Mills's descriptions (1990, p. 103 and Fig. 3.25) and photographs (Mills & Harvey 2001, pp. 66–69) of spotted hyenas hunting and feeding in the Kalahari, and Van Lawick's (1977, pp. 186–87) for the Serengeti, show virtually identical behaviour.

Lions kill by slow strangulation, biting the throat of their prey: death is rapid for small prey but may take an hour for an adult wildebeest (Schaller 1973, p. 31) while it struggles to escape.

Auditory stimuli. Most prey species emit distress calls as they are wounded during the kill – zebras give a high, intense scream that is quite different from their bark or snort alarm calls; wildebeest and buffalo bleat or moan, like an intensified lowing (Mills, personal communication, November 22, 2001). Schaller (1973) describes the "wild . . . frenzied cry of a dying zebra" (p. 97), and Kruuk (1972) writes of wildebeest "moaning at the incessant . . . bites" inflicted by hyenas (pp. 27, 29). A Thomson's gazelle fawn pursued by a hyena "jumped, ran, bleated until the hyena's jaws closed around its shoulders" (Kruuk 1972, p. 25). Lions dig out a warthog burrow, the animal finally bolts, and, "amid screaming cries from the pig, the lions . . . tear it apart" (Mills & Harvey 2001, p. 46).

Olfactory stimuli are equally rich. Schaller arrived at a fresh zebra kill to find "the air heavy with the odors of blood and sour rumen contents" (Schaller 1973, p. 97).

Visceral reinforcers operate through gastric distention and satiation. Hyenas, for example, gorge themselves at great speed: Kruuk describes a pack of 25 hyenas completely consuming a zebra and her foal within 40 minutes (Kruuk 1972, p. 16). *Tactile* stimuli include proprioceptive feedback as the prey is clawed and bitten, and the prey's bucking, writhing, kicking, and goring as it attempts to escape.

Arousal level. The predatory cycle is highly energised. Schaller writes that "at no other time do animals convey such a high level of mental and physical tension" (1973, p. 25). Kruuk (1975) describes hyena hunts as "wild and exciting. . . there is the sudden action, the wild run, the gasps of the victim. . . Then the kill, steaming in the chill air, with a hyena cacophony over and around it" (pp. 23, 33). Lion hunts are attended by the same high arousal (Mills & Harvey 2001, pp. 44–45).

Arousal during feeding. High arousal is maintained during the feeding phase as the predators scan for scavengers, chase them off, and jostle one another (Schaller 1973, p. 83), while hyenas also feed in large competitive groups; a single hyena may be overwhelmed by vultures (Van Lawick 1977, pp. 188–89). For lions, scavenging from a hyena kill (and vice versa: Van Lawick 1977, pp. 98–99) is dangerous work accompanied by loud vocalisations.

3.2.2. Baboons and capuchins. One of the earliest authenticated cases of baboon predation is an eyewitness description with photographs in Dart 1957 (Figs. 11 and 12). The Gilgil baboons in Kenya hunt cooperatively and eat meat once a day – more often than any other non-human primate population (Strum 1981, in Stanford 1999). New World capuchins "hunt as avidly and successfully as chimpanzees" (Stanford 1999, p. 30), preying on squirrels, tamarin monkeys, and immature coatis. Like chimpanzees, they have a high brain-to-body-mass ratio.

3.2.3. Chimpanzees. At the Gombe, Taï, Mahale, and Kibale research sites, chimpanzees hunt red colobus monkeys as well as other primate and ungulate species (Mitani & Watts 1999). Hunting is coalitionary (Boesch 1994): for example, a group of Gombe chimpanzees locates a troop of red colobus and posts drivers and blockers; the trap closes, and the colobus retreat to the highest branches: "all the forest is screaming, meat is so rare and so special, there is huge excitement" (soundtrack, *National Geographic*, 1995). The prey is often an immature colobus "that is grasped by the hands, pinned to the branch, and bitten through the rear of the skull or the neck" (Stanford 1999, p. 96). Chimpanzees are highly successful hunters (Stanford 1999; Stanford et al. 1994; Wrangham & Peterson 1996, p. 216), and arousal during hunts is very high, with pant-hooting, screaming, whistling, piloerection to exaggerate body size, charge displays, and the shaking of tree branches (Michael L. Wilson, personal communication, April 24, 2001). At all the sites,

the chimpanzees' visceral reaction to a hunt and kill is intense excitement. The forest comes alive with the barks and hoots and cries of the apes, and aroused newcomers race in from several directions. The monkey may be eaten alive, shrieking as it is torn apart. Dominant males try to seize the prey, leading to fights and charges and screams of rage. For one or two hours or more, the thrilled apes tear apart and devour the monkey. This is blood lust in its rawest form (Wrangham & Peterson 1996, p. 216; see also pp. 10–11).

Bonobos, on the other hand, do not prey on monkeys and are socially more peaceable than their close relations, the chimpanzees: Wrangham and Peterson (1996, p. 219) speculate that as predation was suppressed, so was intraspecific violence.

3.3. Intraspecific killing

The array of sensory and autonomic reinforcers that operate during nutritional hunting is also activated when conspecifics are attacked, wounded, or killed, as with Norway rats (Blanchard et al. 1995) and wild rats (Niehoff 1999, p. 61). Hyenas and lions defend their home ranges vigorously. Kruuk records four sightings of hyenas dead near the site of a kill "with clear evidence that they were killed by other hyenas" (1972, p. 256); Schaller (1973, p. 76) documents territorial killing in Serengeti lions.

Among chimpanzees, alpha-male unseating can lead to life-threatening or fatal wounds (De Waal 1989; Wrangham & Peterson 1996), and territorial defence may involve lethal violence. As with colobus hunts, these interband confrontations are marked by intense excitement that appears indistinguishable from that during predation. Goodall's early account of such intergroup violence (Goodall 1990, p. 89) has now been supplemented by Wrangham and Peterson (1996) and by Wilson et al. (2001). Though rarer than nutritional hunting, chimpanzee intraspecific killing is frequent enough to account for between 24% and 52% of Gombe male mortality (Wrangham & Peterson 1996, pp. 271–72).

3.4. The neurobiology of predation

Three distinct aggressive circuits in the mammalian brain are evoked by electrical stimulation of the brain (ESB) of three slightly different brain areas, namely predatory aggression; intermale territorial and sex-related aggression; and angry aggression (RAGE in the terminology of Panksepp 1998, pp. 51, 188).

3.4.1. Predatory aggression. Predatory, quiet-biting aggression is mediated by the SEEKING system, a foraging, exploration, curiosity, and expectancy system "that leads organisms to eagerly pursue the fruits of their environment. . . . Energy is delight" (Panksepp 1998, pp. 145, 164), and SEEKING is its vehicle. Predatory aggression is quiet, with methodical stalking and well-directed pouncing.

ESB, in the ascending dopamine pathways from mid-brain nuclei through the extended lateral hypothalamic corridor from the ventral tegmental area to the nucleus accumbens, evokes the most highly energized exploratory and search behaviours of which the animal is capable (Panksepp 1998, p. 145). The emotional tone of affective attack is unpleasant (see sect. 3.4.2), but the hunt and kill are positive emotional experiences for the predator (Panksepp 1998, p. 188).

The most effective quiet-biting attack electrodes always evoke self-stimulation. . . . [Self-stimulation and predatory aggression] are two behavioural expressions of SEEKING tendencies that emerge from homologous systems in the brains of different species. The species-typical expressions of this system lead to foraging in some species and predatory stalking in others. (Panksepp 1998, p. 194)

Though SEEKING is dopaminergic, the pleasures of the consummatory processes (feeding, sex) diminish arousal in the SEEKING system (Panksepp 1998, p. 147) and are strongly linked to brain opioid systems which “may participate in every pleasure, serving as a general neurochemical signal that the body is returning to homeostasis” (Panksepp 1998, p. 184).

3.4.2. Affective aggression. RAGE circuits run from the medial areas of the amygdala through the hypothalamus and down to the dorsal periaqueductal grey (PAG). Affective attack sites yield escape behaviours (Panksepp 1998, p. 195), and most animals soon learn to turn off rage-inducing ESB (Panksepp 1998, p. 194). High testosterone, high MAO-A, and low serotonin potentiate aggression; in “tournament species,” testosterone is highest in the breeding season (Panksepp 1998, p. 189).

Affective attack, whether offensive or defensive (this latter is a mix of RAGE and FEAR), has marked display features – piloerection with noisy hissing and growling (the chimpanzee vocalisation during affective attack is the pant-hoot). Both quiet-biting attack and self-stimulation are evoked by ESB to the PAG of the midbrain, whereas the dorsal PAG evokes affective attack and aversive response.

3.4.3. Predation in relation to aggression. It has been customary to make a clear distinction between predation and aggression. Archer (1988) holds that “so-called predatory aggression is so motivationally and neurally different from other forms of aggression that it is most usefully considered as a separate form of behaviour” (p. 25; also Lorenz 1963/2002 and Niehoff 1999).

Panksepp's model accords more parsimoniously with the above behavioural accounts of predation and intra-specific killing, which suggest that predation and aggression are closely interwoven (see also Wilson 1975/2000, p. 243), with quiet stalking (felids) or observation (canids and hyenids) alternating with noisy defence of the kill. It also provides a neurobehavioural basis for predation's distinctiveness, in that, first, predation and affective attack have separate circuits in the brain; second, the RAGE and SEEKING circuits have mutually inhibitory interactions and cannot therefore co-occur; third, predatory attack is endogenously generated because the predatory cycle usually begins before the stimulus is present – unlike affective attack, which is triggered by the presence of the target; and fourth, it is accompanied by positive affect, even though the energising contribution made by hunger may be aversive, and, “from the animal's point of view, there is no apparent anger involved in this food-seeking response” (Panksepp 1998, p. 198).

3.4.4. Endogenous opioids. The literature on the role of the neuropeptides in predation, especially endorphins and enkephalins, is sparse and contradictory: for example, that microinjection of naloxone at PAG sites at which ESB evoked quiet-biting attack in cats blocked predatory behaviour (Weiner et al. 1991); a later study (Manchanda et al. 1995) showed, on the other hand, that microinjection of an enkephalin at excitatory PAG sites suppressed both the somatomotor and affective display components of predatory attack.

There is, however, a copious literature on opioid release under predatory threat, which entrains a sequence of defensive responses in prey that include hypoalgesia (in mice exposed to a cat, Kavaliers & Colwell 1994, and to insect stings, Kavaliers et al. 1998), and, as a final-stage response, tonic immobility (Gargaglioni et al. 2001). Predator odours are highly salient in eliciting innate defensive analgesia (Williams 1999). In humans, the release of endogenous opioids in acute traumatic injuries correlates significantly with physician pain ratings and scores on an injury severity scale (Bernstein et al. 1995), suggesting that anecdotal accounts of spontaneous analgesia in soldiers wounded in combat have a physiological basis.

The hunt and kill are a dangerous time for predators. The prey butts, kicks, and gores, and scavengers must be repulsed. If the predator is the scavenger – as often happens with hyenas and lions – the risk of injury increases. The known links between consummatory processes and brain opioid systems may therefore be augmented during the killing–feeding cycle by further opioid release in response to injuries: an aspect of the predatory adaptation may thus be an opioid “high” that is further augmented by injury.

3.4.5. Pain and pleasure in predation, hunting, and sexuality. The predatory cycle makes massive energy demands of the predator: among them, a sustained high level of autonomic arousal; the physical exertion of what may be a prolonged high-speed chase; the act of killing, during which the predator must overcome the last highly energised struggle of the prey and the close-in hazards of the kill; and scavenger threats. The aversive stimuli of physical exertion to the point of exhaustion are augmented by this final struggle. Yet the dopaminergic biochemistry of the predatory cycle and ESB evidence of its reward value indicate that far from being aversive, predation is a powerfully rewarding experience even before satiation occurs.

One may thus hypothesise that a necessary condition for the success of the predatory and hunting adaptations is the conjunction of pain – the stress of exertion and the pain of injury – with a high level of pleasurable reward intermixed with sexual arousal, and that this is also true of fighting in its various forms, including single combat, assaults by individuals or groups on rivals, and war: though fighting is by definition not cruel, pain is inseparable from combat.

It is incomprehensible that the infliction of pain on the self is both pleasurable and also sexually arousing. This unlikely conjunction has long puzzled moral philosophers and psychologists. In a famous passage, Freud wrote that “the existence of a masochistic trend in the instinctual life of human beings may justly be described as mysterious from an economic point of view” (Freud 1924/1985, p. 413). Yet, using functional magnetic resonance imaging (fMRI), Becerra et al. (2001) report that a pain stimulus (a probe heated to 46°C applied to the skin) activated the brain's reward circuitry, following a pathway similar to that of the pleasure response: protein from the *cfos* gene shows “that many neurons in the amygdala that are aroused by aggressive encounters are also aroused by sexual activity” (Panksepp 1998, p. 199): the underlying motivation may be the seeking of safety.

The intertwining of aggression and sexuality is linguistically and ethologically apparent. The term for the !Kung

hunting bow, *n!au*, is “a bawdy metaphor for the penis” (Lee 1979, p. 207), and !Kung hunters say that “when one’s heart is sweet with the thought of the kill, intercourse is particularly good” (Lee 1979, p. 220). In primates and humans, intermale territorial and dominance-seeking aggression is driven by reproductive-fitness needs, with females responding positively to aggressive success so that the most vigorous males get preferential access to reproductive opportunities (Panksepp 1998). Men with absolute power may father several hundred children (Ridley 1993; Wrangham & Peterson 1996, p. 234).

4. Stage 2: The hunting adaptation

Despite its high costs, the hunting adaptation mediates powerful social and psychological rewards and is “the most successful and persistent . . . man has ever achieved” (Lee & DeVore 1968, p. 3). It remains so in 58 surviving forager societies from the equator to latitudes above 60 degrees, in which the contribution of hunting to annual food intake converges on 35% (Lee 1968). The following sections review the emergence of hominid hunting and then, in two forager societies, the Dobe !Kung of Botswana (Lee 1979; 1984) and the Yanomamö of southern Venezuela (Chagnon 1983), consider the reinforcements that support the expenditure of large time and energy resources on meat procurement.

4.1. Early hominid hunting

As hominids moved into the dry savannahs of the Pliocene, the evolutionary shift from gathering to meat eating required major changes in sociality, brain size, and weapons (Stanford 1999). The nutritional accommodation of a big brain is shrinking of the gut, which can be done only if there has been a switch to easily digested and highly nutritious foods (Aiello & Wheeler 1995) such as meat and tubers, with preconsumption processing of chemically or mechanically protected tubers (O’Connell et al. 1999).

The earliest fossil evidence of hominid meat eating is the appearance of crude stone tools in east Africa in the mid-Pliocene about 2.5 Ma, probably representing an overlay of large mammal scavenging on a tradition of small mammal hunting (Plummer & Stanford 2000); killing or meat scavenging without tools may have occurred much earlier but would not have left fossil evidence (Stanford 1999). O’Connell et al. (1999) argue that the earliest hominid meat eating is considerably later, contemporaneous with the appearance of African *H. erectus* about 1.8 Ma. Changes driven by “grandmothering” – foraging by postmenopausal women – would have promoted larger group size, which in turn brought advantages in defending against predators and opened the way to aggressive scavenging (O’Connell et al. 1999). Isotope evidence shows that archaic *H. sapiens* were not only scavengers but also top-level carnivores, obtaining almost all of their dietary protein from animal sources (Richards et al. 2000; but see Binford 1987 on *H. erectus* as primarily an aggressive scavenger).

The controlled use of fire, which Brain (2001) has dated from 1.42 Ma in East Africa, served both to make meat more palatable and to keep predators at bay: hominids were both hunters and hunted (Brain 1981; Frison

1998), with both life-threatening dangers and nutritional opportunities driving the development of hominid intelligence. Folded within this brain development were the emotional drivers of the predatory adaptation, responding powerfully then as now to any opportunity to pursue, butcher, and consume prey animals, whether as hunters making the kill or as scavengers drawn to the kills of other predators.

4.2. The high arousal of the hunt

4.2.1. Learning to hunt. The rough-and-tumble play of young predators – rats, puppies, kittens – mimics the techniques for tripping up, gripping, and biting prey (Van Lawick 1977, pp. 164–65; Panksepp 1998, Fig. 15.2). There are aspects of children’s play that are also a preparation for predation. Lee (1979, pp. 236–38) describes the predation games of !Kung children; and among the Yanomamö, young boys capture a live lizard, tie it to a stick in the village clearing, and gleefully shoot featherless arrows at it with their miniature bows: “since lizards are very quick and little boys are poor shots, the target practice can last for hours” (Chagnon 1983, p. 118).

4.2.2. The hunter’s arousal. The large antelope species and giraffe are hunted with bow and poisoned arrows. The hunt proceeds through a cycle of stalking, wounding, tracking, killing, and butchering. !Kung hunters, like felids, are intensely focussed and silent stalkers: when the prey is sighted, “one man moves forward, crouching at first, then crawling, then inching forward on his belly” (Lee 1979, p. 217). If the animal shows any signs of alarm, the hunter freezes for several minutes at a time; then, having reached bowshot range (10 m is the optimum distance), he looses the first arrow. The time for stealth now over, he breaks cover, running to intercept the fleeing animal and shooting his remaining arrows at it.

The hunting group now tracks the wounded animal until the poison takes effect and the animal collapses: “in all cases a spear is methodically worked in and out of the throat to ensure that the animal is dead” (Lee 1979, p. 221). The party immediately sets about butchering the animal, first skinning it, then removing the heart, liver, and lungs and emptying the stomach contents. The liver is cooked and eaten on the spot, and the long leg bones may be split for the marrow, which is rubbed onto the body. Blood from abdominal cavity is collected and carried home in an empty stomach sac; during the night after a kill, the hunter “is in a ritually heightened state” (Lee 1979, p. 220). The excitement of the pursuit and kill is no less for small game (Lee 1979, pp. 216–21).

4.3. The status of hunting and the hunter

Lexical and narrative elaboration are markers for the social salience of a phenomenon; similarly, elaborated memories of distant events are evidence both of its social significance and of high arousal at the time of the event: Rolls (1999) notes that if a powerful reinforcer accompanies a situation, many details will be stored, including memories of the emotional state that accompanied that situation. This storage may be implemented by nonspecific projecting systems to the cerebral cortex and hippocampus, including

cholinergic pathways in the basal forebrain and ascending noradrenergic pathways.

Lee writes that "hunting vocabulary has undergone a fantastic elaboration in !Kung speech . . . there are many dozens of synonyms, metaphors, and euphemisms" (1979, p. 207) for stalking, shooting, fleeing, finishing off the wounded animal, butchering, and so forth. Men tell the story of the hunt round the fire "until the sky rips open" [meaning until dawn breaks]. . . . Graphic descriptions of hunts, both recent and distant, constitute an almost nightly activity. . . . Men can portray a hunt, step-by-step, in microscopic and baroque detail" (Lee 1979, pp. 207, 205) and give lifetime retrospective hunting histories (pp. 230–31).

Hunting success confers direct *fitness benefits*: Among the Ache, "better hunters were more often named as lovers by Ache women and better hunters had more surviving children. . . . Better hunters had much higher fertility than other men" (Hawkes et al. 2001, p. 134; also Holmberg 1950).

4.4. The high costs of meat eating

The costs of meat eating are high for both predators and hunters.

4.4.1. Predators. The balance between the moose and wolves on Isle Royale in Lake Superior – there are 20–25 wolves and 600–1,000 moose – is maintained because "it is very hard work to trap and kill a moose" (Wilson 1975/2000, p. 86). The wolves travel an average of 25–30 km a day during the winter, and one set of field observations showed that on 131 separate moose hunts, 77 resulted in a confrontation, and in only 6 of these were moose killed. The kill success rate is 4.58%, and the meat yield is 4 kg of meat per wolf per day. The success rates for Kalahari spotted hyena are 63% for all encounters with gemsbok calves, 14% for gemsbok adults, 39% for wildebeest, and 31% for springbok (Mills 1990, pp. 94–110). For the Gombe chimpanzees, hunting is nutritionally uneconomic: a 1 kg baby monkey is the typical yield for a hunting party of up to 20, so that the effort expended "is enormously costly relative to the quantity of meat that is usually available" (Stanford 1999, p. 97).

4.4.2. Hunters. In human hunter-gatherer societies, the meat yield is high for the group, but successes for the individual hunter are sparse and unpredictable, with the daily failure rate for individual Hadza hunters at 97%, and a hunter may go days or weeks without a kill (Hawkes et al. 2001); the !Kung hunting yield is 1 hr/100 calories. Nonetheless, "the !Kung . . . are willing to devote considerable energy to the less reliable and more highly valued food sources such as medium and large mammals" (Lee 1968, p. 41).

Why do hunters make such large investments in a nonessential resource? O'Connell et al. (1999) argue that human paternal provisioning, a key aspect of the man-the-hunter hypothesis, is absent in primates and is not the purpose of human big-game hunting. If it were, hunters would spend more time on small game and plant foods, which are more reliable food sources: that they do not "strongly suggests that big game hunting serves some other end, unrelated to provisioning wives

and children" (p. 464). The material in this section, taken together with the cultural elaborations of cruelty (in sect. 5.2) suggest that this other end is the confirmation of male sexual desirability through shedding the blood and taking the life of big game, which is both scarce and dangerous.

4.5. Pain, blood, and death in predation and hunting

Although the predatory cycle is endogenously generated, usually beginning before the stimulus is present (Panksepp 1998), the predator is greatly energised by the prey's presence and its actual or attempted *flight*, which is a powerful trigger for pursuit and attack; by the prey's *pain* (ears, lips, and genitalia are ripped off, and the prey is disembowelled while alive; hunters snare, club, and stab living animals); and by the invariable nexus between the infliction of pain and release of the prey's *blood*, which is a signal for the prey's imminent *death*: the muzzles of two spotted hyenas tearing at a zebra's stomach are red with blood (Mills & Harvey 2001, p. 128; Van Lawick 1977, pp. 186–87); blood smears the teeth, mandibles, and snouts of feeding lions (Mills & Harvey 2001, p. 128; Schaller 1973, p. 21). It is possible that in forager societies, blood has become a principal conditioner of the reward system that drives predation, deriving its cultural weight (see sect. 5.2.6) from its centrality in predation, hunting, and intraspecific violence.

Stimuli regularly attached to a rewarding activity become conditioned reinforcers: During both mammalian and hominid evolution, the prey's flight and pain, and then the sight, smell, and taste of blood, were prominent among the reinforcers that shaped the predatory and hunting adaptations. For predators, pain and blood signal satiation; for humans, they are the harbingers not only of impending satiation and sexual access, but also of the animal's death, which was bound up with the precarious survival of Pleistocene hunters, who were also the hunted (Brain 1981).

4.6. The predatory transition

In historical context, these notions emerged in a largely forgotten and, in its time, much derided 1953 paper "The Predatory Transition from Ape to Man," in which the South African palaeontologist Raymond Dart characterised *Australopithecus africanus* as "carnivorous creatures that seized living quarries by violence, battered them to death, tore apart their broken bodies, dismembered them limb from limb, slaking their ravenous thirst with the hot blood of victims, and greedily devouring living writhing flesh" (Dart 1953, p. 209). Towards the end of the paper, Dart observed that "the taste for animal meat led inexorably . . . to unspeakable cruelties" (p. 219).

In the 1950s, Dart's thesis that the australopithecines were bloodthirsty murderers, and the suggestion that their bloodlust was the foundation of human cruelty, was ridiculed by palaeontologists. The orthodox and altogether more optimistic view was that of Richard Leakey – that early hominids were food-sharing foragers, and that violence emerged only "when we became psycho-social man probably 30 to 40,000 years ago" (in White 1985, p. 7). Dart writes of himself that because of this onslaught,

he was presumed to have retired “wounded or wroth. . . into some parochial tent to brood upon the unresponsive attitudes of my overseas colleagues” (1957, p. vii).

R. F. Ewer, Dart's colleague, once remarked that Dart was usually right – though sometimes for the wrong reasons. Bob Brain, Dart's student and collaborator, who described Dart as “this gentle, yet strangely bloodthirsty man” (Brain 1993, p. 4), has shown that most of the reasons Dart gave for his characterisation of the australopithecines were indeed wrong (Brain 1981). But if, as this paper has argued, there is a wide and accommodating passage from predation to cruelty, he was right, after all.

5. Stage 3: The social uses of cruelty

Section 5.1 considers the points in hominid evolution at which punitive and disciplinary cruelty could have emerged in relation to the preconditions set by the taxonomy of cruelty and examines its design features at these points. Section 5.2 reviews the fitness benefits of cruelty through its various social and cultural elaborations.

5.1. Emergence and design features of cruelty in relation to cognitive and societal evolution

Punishment in the sense of inflicting pain on another creature has no preconditions: in this sense, the behaviour of the rats, hyenas, lions, and chimpanzees described in section 3 is indeed punishment, but the great apes cannot meet the first of the criteria for disciplinary cruelty, that the reason for the punishment must be communicated to the victim: Donald (1993) argues that although the great apes are brilliant event perceivers, with the capacity for social attribution and insight, they are unable to communicate even their simplest intentions because they cannot “actively shape and modify their own actions or . . . voluntarily access their own stored representations” (p. 739; Tomasello et al. 1998 cite field evidence that apes cannot understand the communicative intentions of others).

5.1.1. Mimesis as a sufficient basis for intentionality.

Mimetic communication “broke the hold of the environment on hominid motor behaviour” (Donald 1993, p. 740). Using the whole body as a communication device, body actions can be retrieved from memory, replayed, stopped, and refined, allowing the development of toolmaking, social expressiveness, and extended competition, all with prosodic intonation of nonlinguistic vocalisations. The transition to a mimetic culture with *H. erectus* would therefore have increased the differences between individuals and groups in the capacity for social manipulation, fighting, physical dominance, and rewards for competitive success; it also would have provided a sufficient communicative basis for the emergence of the preconditions for cruelty and disciplinary cruelty.

5.1.2. Stages of societal evolution. Johnson and Earle (1987) identify three levels of socioeconomic integration, emerging in sequence as population density increases: the family-level group, the local group, and the regional polity.

5.1.3. Cruelty in the family-level and local group. Hominid forager societies, dating to no later than 1 Ma (Brain 2001), are organised as *family-level groups* of some 25–50 individuals, as for example the !Kung San. Leadership in most surviving forager societies is egalitarian, with consensual decision-making and a strict humility ethic that effectively blocks any aspirations to dominance and leadership that a high-status and physically powerful individual might have. In the *local group* (for example the Yanomamö) with aggregations of 300–500 people, a strong charismatic leader, the so-called big man, may emerge who maintains group cohesion and negotiates intergroup alliances – but in the absence of coercive social mechanisms, his power lasts only as long as supporters' loyalty. Disciplinary cruelty cannot occur at these levels, because the requisite hierarchical social structure with a penal code and judicial system is unavailable.

5.1.4. Design features of cruel punishment in the family-level and local group.

However, there is a sufficient linguistic and organisational basis to punish individuals who threaten group survival: for example, by deliberately frightening off game during a hunt or defecting from a war party. The offended individuals and their kin would have had the communicative and social resources to restrain the offender and flog, break bones, or inflict other exemplary pain. Since group disintegration would have created major survival threats in relation to food procurement, predator dangers, and attack by rival groups, public punishment would have been strongly adaptative by contributing to effective hunting, defence, mate guarding, and stable food sharing.

Trinkaus (1992) observes that “the difficult existence of the Neanderthals is reflected in their high frequency of traumatic injury. . . . The remains of all older individuals show signs of serious wounds, sprains, or breaks” (p. 838; see also Walker 1989). The palaeopathological evidence required to date the first emergence of cruel punishment would be to differentiate bone fracture caused by combat or accidental injury from the pre-mortem twisting or other manipulation of broken bones, which causes intense pain (Edgerton 1985, p. 135) and would leave identifiable pre-mortem traces in the fossil record (White 1985). The theory of mind requirement (sect. 5.1.1) suggests that such evidence would not be found earlier than *H. erectus* (c. 2 Ma).

Anthropological investigation of surviving forager and pastoral societies might determine whether violation of fundamental social norms elicits cruel punishment in the family-level group (sect. 5.1.3) and whether disciplinary cruelty is absent under big-man leadership (sect. 5.1.4), first appearing in regional polities.

5.1.5. Disciplinary cruelty: The regional polity and early state.

Regional polities, whether as chiefdoms of several thousand people or the empires that emerged in Egypt, China, and India in the third millennium BC, brought “not only dazzling advances in civilisation, but also the enormously powerful instrument of state power as a new moving force in history” (Heilbroner 1992, p. 907).

Disciplinary cruelty that meets the conditions in section 2 becomes a political imperative with the establishment of conscript armies requiring the immediate punishment of cowardice or desertion, the systematic slaughter of

rebels,⁴ and the creation of slave or serf populations: the costs of maintenance and subjugation are recovered through coerced labour, necessitating an escalation in the frequency and severity of punishment to maintain productivity (on slave penal codes, see Kiefer 1938; Hornblower & Spawforth 1999). Cruelty thus acquires an economic driver.

5.1.6. Design features of cruelty in the regional polity. Kings or emperors affirm their power as social regulators through carnivalesque public entertainments and punishments in which the social purpose of cruelty is manifest. The infliction of prolonged pain is an effective way to establish and maintain social dominance; the harsher or more painful the punishment, the greater the relative status advantage of the perpetrator in relation to the victim; and the more terrible the punishment, the more permanent its effects on the social system.

5.1.7. The retained design features of cruelty. The social-control functions of Roman and mediaeval carnivals of death continue to the present in public entertainments that are unwillingly stopped short of frank killing – boxing and kickboxing, college football, car and motorcycle racing. Animal baiting continues, in enclave groups in the west, and more openly in other cultures. The willingness of military establishments to develop technologies of cruelty as instruments of war flourishes globally, and the coercive forces of the state and its opponents use confessional and disciplinary cruelty for political ends.

Deliberate infliction of pain, as with any other decisive manifestation of interpersonal power, enhances the status of the perpetrator. Accordingly, the initiation and coordination of punishment in the family-level and local group would have facilitated the emergence of a leadership figure, whose willingness to injure would have created a reputation for ferocity with significant resource access benefits for that individual. Thus with Agathocles the Sicilian in the third century BC, whose “barbarous cruelty and inhumanity, together with his countless atrocities” are recounted with approval by Machiavelli (1513/1940, p. 32) and with gang life in Glasgow’s Gorbals district: describing the latter, Boyle (1977) tells how he slashed a boy in a fight, the first time a knife had been used in a gang fight in that area. Within days, Boyle was a force to be reckoned with and placed on a pedestal by his own gang. Today as in the past, aggression linked to a readiness to inflict pain is a route to prestige, leadership, and social mastery that entrains survival and reproductive benefits. Empirically, it might be shown that group hierarchy rankings are significantly altered by “cruelty rumours” – for example, that a low-ranking member had tortured and killed a rival. Cruelty attributions may elevate status, leadership, and sexual attraction ratings more, for example, than attributions of physical strength or intelligence.

5.2. Social and cultural elaborations of cruelty

The striking stability of the *social* uses of cruelty for punishment, amusement, and social control suggests that the underlying motivational structures have a species-wide evolutionary origin. Within the *cultural* sphere, “quite new kinds of evolution may occur” with great rapidity, spreading through a population or becoming extinct

within a single generation (Lea 1999, pp. 17–18; cf. Plotkin 1996). Whether a cultural innovation spreads or becomes extinct will be determined by its social utility and its contribution to individual fitness.

This section reviews evidence that throughout recorded history and in a diversity of cultures, cruel entertainments – which as a means of social control also have a fitness value – have attracted huge audiences. The attractions of war, the veneration of the warrior hero, and the symbolic weight of blood are further cultural manifestations of the predatory adaptation.

5.2.1. Cruel punishment. The strong routinely use pain as punishment (from the Latin *poena*, penalty) in their dealings with the weak – masters with slaves, adults with children, and men with women. When Sarai complained to Abram of Hagar’s contempt, he replied, “‘Your slave-girl is in your power, do with her as you please.’ Then Sarai dealt harshly with her, and she ran away from her” (Genesis 16.6). Corporal punishment of children and pupils was part of mediaeval and early modern life. From the fifteenth century, the birching of school pupils became increasingly common and brutal “for all offences and all ages” (Ariès 1960/1962, p. 259). If a Yanomamö woman is tardy in responding to her husband’s needs, “the husband is within his rights to beat her. . . . It is not uncommon for a man to injure his errant wife seriously” (Chagnon 1983, p. 112). This domestic cruelty has behavioural parallels among chimpanzees. When a young male attains the size of an adult female, he is “systematically brutal towards each female in turn”; a male can almost always coerce an unwilling female into copulation (Wrangham & Peterson 1996, pp. 143, 145; Stanford 1999).

5.2.2. Cruelty as amusement. The boundaries between punishment and amusement are permeable. Caligula (12–41 AD) tortured Roman senators, men he knew well, not to extract information, but for amusement (Kiefer 1938). Commodus (177–192 AD) was destructive even in his humorous moments (*Scriptores Historiae Augustae*, c. 500 AD/1960), and a chief delight of the emperor Augustus was to watch boxing matches, “and not merely professional bouts, in which he used to pit Italians against Greeks, but slogging matches between untrained roughs in city alleys” (Suetonius, *Augustus*, 45); the combatants wore gloves made of leather bands loaded with balls of lead or iron that often blinded the fighters (Tertullian 197 AD/1958, p. 97, note 7).

When the state’s official torturers believe that they will not be held accountable, the oscillation between instrumental and affective cruelty becomes apparent. Thus with surreptitiously videotaped scenes of South African police brutality – setting dogs on prisoners as a “training exercise” or burning an unconscious hijack suspect with a cigarette lighter: the perpetrators laugh uproariously. In one of his notebooks, the artist Francis Bacon wrote, “The reek of human blood, /it’s laughter to my heart.”

5.2.3. The escalation of cruelty. A hallmark of cruelty is its rapid escalation, from a slap to a punch to the smashing of bones and teeth, from teasing to murder: the closing scenes of Pasolini’s *Salò* illustrate the frenzy of the torturer inflamed by the terror and pain of his victims.

The underlying mechanisms appear to be, first, that the affective tone of bullies and mob killers is energised and exultant. Because RAGE and SEEKING are mutually inhibitory in animals (Panksepp 1998), it is possible that in humans, cruelty's escalation arises from the SEEKING rather than the affectively aversive RAGE-aggression circuits. A hypothesis worth investigating is whether the gratifications of perpetrators are dopaminergic and fuelled by opioid release. Second, though victims' distress can inhibit violence (Blair 1997), their fear and pain may also escalate the perpetrator's savagery, paralleling the predator's escalating ferocity in the prey's death struggle as its terror and its vocalisations mount.

5.2.4. Disciplinary cruelty. *Judicial punishment* to enforce laws and preserve discipline ranges from verbal reprimand, shaming, and ostracism (see Note 2), to death by execution or lethal mutilation. The agent of these punishments (sometimes formally appointed to this role: see Applbaum 1995) is emotionally cold. Herodotus (440 BC, 5:25) tells how the Persian king Cambyses ordered a corrupt judge to be flayed. Gerard David's *Justice of Cambyses* (1498) portrays the flaying in a scene as devoid of emotion as a coroner's autopsy: the ritualised severity of the executioners and the assembled court perfectly illustrate the emotional quality of instrumental cruelty. The contrast between this high sobriety and the laughing crowds portrayed in popular woodcuts of execution scenes (Puppi 1991, *passim*) is striking.

Mutilative punishments derive from the principle of *talion*, retaliation, first codified by Hammurabi (c. 1760 BC) and transmitted through Deuteronomy 19:19–21 (c. 600 BC), and the Roman Law of the Twelve tables (450 BC): its cruelty led Gibbon to remark that it is “written in characters of blood” (1776/1903, vol. 4, p. 587).

5.2.5. Social control. The worst cruelties were inflicted on slaves and the “inferior races” of the New World colonies. Spartan youths killed helots for sport (Plutarch, c.100 AD/1988, p. 28), and in Roman law, citizens freely used the power of life and death they had over their slaves (Kiefer 1938). Torture to inculcate terror was a favoured instrument of political control in Europe's African and South American colonies: 15 million Africans are reported to have perished in King Leopold's Congo (Kimbrough 1972); rubber traders on the Putumayo River, a tributary of the Amazon, were equally cruel (Mitchell 1997; Taussig 1986). In the late twentieth century, the Greek and Argentinian juntas adopted torture as an instrument of state policy (Haritos-Fatouros 2003; Timerman 1981).

5.2.6. Confessional cruelty. Pain bends the victim's will to the torturer's. Judicial torture in order to obtain evidentially admissible confessions was recognised by the Greek, Roman, and mediaeval European legal systems (Held 1985; Robbins 1960). Criminals torture to uncover loot: in early-fourteenth-century England, burglars placed a housewife on a trivet over a fire until she revealed the goods they sought (Hanawalt 1976).

5.2.7. Cruelty as entertainment.

5.2.7.1. The Roman arena. Cruelty as an instrument of social control in the form of elaborate, state-sponsored

entertainments (Coleman 1990; Wistrand 1992) reached its apogee in the late Roman Republic and early Empire. The elaborate and theatrically sophisticated arena ceremonial (Barton 1993; Lafaye 1896) had a twofold social purpose. It was educative, teaching the Romans “exactly what their leaders thought essential to the survival of Rome” (Wistrand 1992, p. 69): soldiers in training were obliged to witness the combats in order to harden them for war (Barton 1993). Second, the extravagant arena spectacles were an extension of the emperor's power and benevolence (Coleman 1990). Suetonius (100 AD/1984, *Jul* 39.3) records that Caesar, for his triumph in 46 BC, held five days of animal hunts in the arena and the first *naumachiae* (mock naval battles) in a specially excavated basin near the Tiber: these were mock battles in the sense that they were theatrical, but the deaths were real: “thousands of superfluous foreigners were despatched in a single extravagant display” (Coleman 1993, p. 74).

Gladiatorial shows in the amphitheatre were “the most prominent and most popular spectacle of all,” writes Tertullian (197 AD/1958, 12:1). One could not attend the arena spectacles, he continues, “without his mind being aroused and his soul being stirred by some unspoken agitation. No-one ever approaches a pleasure such as this without passion [and] violent agitation of the soul” (15:2–6). Even sober citizens demanded that “the man who has been slain be dragged back to feast [their] eyes on him, taking delight in scrutinising [his death] close at hand” (21:1–5). The allusion is to a platform in the middle of the arena to which wounded victims were dragged, “thus enabling the spectators to observe more closely their death struggle” (Tertullian 197 AD/1958, p. 94, note 3). In his *Confessions*, St. Augustine tells of his young friend Alypius, a Christian who had come to Rome to study law. Augustine's account captures the delirious contagion that swept over the arena audience: “some man fell; there was a great roar from the whole mass of spectators . . . [Alypius] saw the blood and he gulped savagery . . . he was drunk with the lust of blood” (vi, 8).

On occasion, this frenzy tipped spectators into active killing, as with Pothinus of Lyons (Musurillo 1979, *Martyrs of Lyons*, 5.35), and the Oriental monk Telemachus, who in 404 AD in Rome leaped from the stands into the arena demanding that the bloodshed cease: he was stoned to death (other versions say that he was torn limb from limb) by the enraged spectators (Durant 1950). Bullfights arouse similar passions: if a matador has been unsuccessful, writes Hemingway, the spectators may decide to kill the bull themselves, “swarming on him . . . with knives, daggers, butcher knives and rocks . . . cutting up at him until he sways and goes down” (1939/1994, p. 21).

As the neurobiology of predation predicts, blood and death have erotic force. Barton (1993) writes that the raging sexuality of the arena came to a focus in the gladiator's scarred body, and Rome's prostitutes gathered at the arena exits, where they did a brisk trade.

5.2.7.2. Mediaeval carnivals of death. Spectacles of pain and death were a fixed part of mediaeval life, and there is a rich popular art of execution scenes (Edgerton 1985; Puppi 1991). The route followed by the executioner's cart was planned so as to draw the whole of the urban fabric into these public demonstrations of the sovereign's

power (Foucault 1975/1986). Great crowds followed the wagon and gathered at the place of execution, as with the Catholic conspirator Guido Fawkes, who in 1606 was drawn backwards through the streets of London at a horse's tail with his head near the ground, "being not entitled to the common air" (Fraser 1996, p. 223).

5.2.7.3. Animal baiting. The conjunction between pleasure and the pain of animals is especially distressing to western sensibilities but is ubiquitous across time and cultures. The Romans scoured their African and Asian provinces for exotic beasts that were transported to Rome in huge numbers to be killed by a special class of gladiator called *bestiarii*. Indian palace paintings portray elephant fights, and in 1846 a traveller to Java reported that "one of the favourite amusements ... is a fight between a tiger and a native buffalo; the former has often to be urged on by ... pouring boiling water over it, or pelting it with lighted straw" (Friedländer 1871/1964, p. 189). In 1575, Queen Elizabeth attended a baiting of 13 bears, and in eighteenth-century England, bullbaiting and cockfighting drew excited crowds (Malcolmson 1973). In the southern United States, cockfighting continues (Herzog & Cheek 1979), and South Africans stage dogfights in empty swimming pools.

5.2.8. War. War may be the most significant social product of the predatory adaptation. The material that follows suggests that the emotional state of the warrior in combat mimics that of predators and hunters, with high arousal, positive affect, and heightened libido, which in turn raises the possibility that in the transition from predation to intraspecific, non-nutritional killing, the reinforcers of the pain-blood-death complex have become attached to combat and warfare.

5.2.8.1. The warrior hero. In mythology, ethnography, and contemporary culture, there are explicit links between hunting, war, and manhood. Because of the male gendering of hunting (Lee 1979; Lee & DeVore 1968; Hawkes et al. 2001; Stanford 1999, pp. 40–41), it becomes an affirmation of manhood: Croesus of Lydia dreamed that his son Atys would die by the blow of an iron weapon and accordingly forbade him to hunt a huge boar that troubled the people of Mysia. "What face meanwhile must I wear as I walk to the agora or return from it?" lamented Atys. "What must ... my young bride think of me? What sort of man will she suppose her husband to be? ... I pray you, therefore, let me go with them" (Herodotus, 440 BC, 1:34–39).

Reciprocally, the great warrior is a great predator, and combat, like hunting, is a high-risk activity. Warlike brutality may be invoked through the metaphors of predation, as in Yanomamö war-party preparations (Chagnon 1983); Achilles is "a soaring eagle / launching down from the dark clouds to earth / to snatch some helpless lamb or trembling hare" (Homer, 800 BC/1990, pp. 22:364–68). In the hominid past, young "warrior hawks" were highly prized because of violent interband rivalry that made it essential for a group to have a contingent of "dawn warriors ... healthy, adventurous, and potentially violent young men ... The most brutal ... have the advantage over their less 'sociopathic' adversaries" (Bailey 1995, p. 542). As in the arena, killing is erotic: a Vietnam

veteran says, "carrying a gun was like having a permanent hard-on. It was a pure sexual trip every time you got to pull the trigger" (Grossman 1995, p. 137). An American tank commander talks about his first killing of German soldiers: "The excitement was just fantastic ... the tremendous feeling of lift, of excitement, of exhilaration, it was like the first time you go deer hunting" (Grossman 1995, p. 235). A deer hunt is the central metaphor in Michael Cimino's brutal 1978 movie about Pennsylvania steelworkers serving in Vietnam.

It is possible that in combat and in cruel acts, the intensity of wounding and killing activity is escalated by pain, just as the dopaminergic biochemistry of predation, in itself powerfully rewarding, may be augmented by endorphin release in response to exertion and pain (4.4–4.5). If so, this dopaminergic escalation could be experimentally demonstrated.

5.2.8.2. The beauty of war. In *Dispatches* (Herr 1978), Michael Herr describes the nights at Khe Sanh: "Even the incoming was beautiful at night, beautiful and deeply dreadful. I remembered the way a Phantom pilot had talked about how beautiful the surface-to-air missiles looked as they drifted up towards his plane to kill him." A reviewer of Herr's book wrote that he had returned from Vietnam "with the worst imaginable news: war thrives because enough men still love it." Why? The novelist John Coetzee suggests an answer: The gun is "the only copula we knew of between ourselves and our objects. ... The gun saves us from the fear that all life is within us. It does so by laying at our feet all the evidence we need of a dying and therefore a living world" (Coetzee 1974, pp. 17, 79).

5.2.9. The weight of blood. If war is predation's most significant *social* product, its principal *cultural* product is the emotional weight of blood in mythology, religion, literature, and the graphic arts. A fixed feature of early religions is the gods' thirst for animal and human blood: "for the life of the flesh is in the blood: ... for it is the blood that maketh an atonement for the soul" (Leviticus 17:11). It is the wasting life of the sacrificial victim that gives the words their power: The Neoplatonist Sallustius writes, "Prayers divorced from sacrifice are only words, prayers with sacrifices are animated words, the word giving power to the life and the life to the word" (Sallustius 361 AD/1926). A Yanomamö creation myth tells that warriors were created from the moon's blood (Chagnon 1983, p. 95).

Blood feeds frenzy, and frenzy demands blood. In Euripides' *Bacchae* (c. 406 BC/1970), the ecstatic women, bare-handed, attack grazing cattle, "tearing full-grown cows to pieces" and hurling body parts to and fro in a scene of bloodlust that parallels the Wrangham and Peterson description in section 3 of chimpanzees dismembering red colobus monkeys (Wrangham & Peterson 1996).

5.3. The walls of shame

Given that the human appetite for cruel spectacles is unabated and that arousal by scenes of cruelty remains part of the human condition, it is remarkable that punishment and killing, once openly displayed in amphitheatres and

city streets, have for the past two centuries been banished from public view and hidden behind prison walls.

What psychosocial mechanisms have operated to achieve this great shift from the permitted to the taboo? Part of the answer is given by Norbert Elias (1939/2000), who writes that the history of western civilisation is of "an advance in the frontiers of shame, in the threshold of repugnance"⁵ (p. 172). No shame attached to the public torment of humans and animals in ancient or mediaeval times (sect. 5.2.4); the warrior had "extraordinary freedom in living out his feelings and passions, it allows savage joys ... [and] hatred in destroying and tormenting anything hostile or belonging to an enemy [and] a particular pleasure ... in the mutilation of prisoners" (Elias 1939/2000, pp. 162–63, 371).⁶ But in the seventeenth and eighteenth centuries, knights became courtiers, so that "a warrior nobility [was] replaced by a tamed nobility with more muted affects" (Elias 1939/2000, p. 389). Soon after, centralised state power created pacified social spaces, the restraint of aggressive instincts was internalised, and "an automatic, blindly functioning apparatus of self-control [was] established ... [protected] by a wall of deep-rooted fears" (Elias 1939/2000, p. 368). Regrettably, these barriers are permeable and crumble as opportunity and situation allow: the challenge for violence prevention is to anchor them more deeply in the life of the instincts.

6. The problem of violence prevention

Though treatment of the victims of cruelty (Basoglu 1992; De Jong 2002) remains a moral imperative, effective prevention must begin with perpetrators. How might the foregoing analysis of cruelty's reward systems relate to the prevention of violence, defined by the World Health Organisation as the intentional use of physical force or power against oneself or others that threatens or causes injury, death, or psychological harm (Krug et al. 2002, p. 5)? Put differently, the question is how many of the 1,659,000 violence-related deaths in the year 2000 (Krug et al. 2002, p. 270) were driven by delight in pain and bloodshed, and might therefore have been prevented if the public health upstream initiatives advocated by Krug et al. (2002, p. 243) had, however imperfectly, acknowledged and found ways to address the power of cruelty to inflame violence?

6.1. The voice of the perpetrator

To begin developing answers to these questions would in the first place require an understanding of the large individual differences in cruelty's eliciting triggers and behavioural expressions on the one hand, and an understanding of the needs and gratifications of perpetrators on the other: if so, the perpetrator's voice must be heard. Repugnant though this may be, violence-prevention workers will need to gather affectively rich descriptions of the inner experience of police and military torturers and interrogators. These cannot be affectively bland public confessions, with amnesty and social rehabilitation in mind (Gardo 1987; Huggins 2000; Victor 1981), but clinical data elicited by skilled interviewers under conditions that guarantee confidentiality

(Fanon 1968; Haritos-Fatouros 2003). Some elements of the required analysis are given below.

6.2. Universal potentials

6.2.1. The potential for cruelty. Current evidence is that under situational press, readiness to commit cruel acts is a human universal. In the 1970s, Milgram's (1969/1974) "Eichmann experiment" and the Stanford prison experiment (Haney et al. 1973) demonstrated the "enormous power of situations" (Haney & Zimbardo 1998, p. 709) to shape and transform the behaviour of perfectly ordinary people, whose actions are facilitated by a stance of moral disengagement (Bandura 1990). Obedience makes moral idiots of otherwise admirable individuals: the men of Charlie Company who massacred 350 civilians at My Lai in 1968 are described as "a typical cross section of American youth assigned to most combat units throughout the Army... most would regard [William Calley] as coming close to the American ideal" (Tester 1997, pp. 84–85). It is resistance to situations that makes moral heroes.

6.2.2. The potential for compassion. Common wisdom holds human nature to be fundamentally compassionate: "Nature hath implanted in our breasts a love of others, a sense of duty to them, a moral instinct ... which prompts us irresistibly to feed and succour their distresses" (Thomas Jefferson 1814, in Fiering 1976, p. 195; Nell 2004). The universal instinct for compassion derives from genetically based kinship bonds (Blair 1997; Panksepp 1998).

6.3. Gendering of cruelty

The gendering of hunting and the links between testosterone and aggression suggest that active cruelty would be strongly male-gendered. Mealey (1995) notes that boys with high sensation-seeking and high testosterone are more likely to initiate aggressive behaviour and be successful in dominance interactions, which in turn triggers further testosterone release.

6.4. Fascination and horror

These universal potentials cause an oscillation between fascination and horror (see sect. 2.4.1). *Fascination* may be dopaminergic, originating in the proximate and distal rewards of the predatory/hunting adaptations. The *horror* is compassionate, "a certain pain at an apparently destructive or painful evil happening to one who does not deserve it and which a person might expect himself or one of his own to suffer" (Aristotle, *Rhetoric*, c. 330 BC, p. 1385b). This inward-turning, narcissistic quality is captured by Darwin: "Almost every one would experience [horror] in the highest degree in witnessing a man being tortured or going to be tortured" (Darwin 1872/1965, p. 304).

If there is indeed an oscillation between cruelty and compassion, experienced by the subject as a switch from fascinated gratification to horror, the reversal (Apter 1979) might be neurally detectable. One would further predict that high- and low-readiness individuals would differ in the location of this reversal on the cruelty continuum. This location could be determined by construction

and validation of a Cruelty Readiness Questionnaire (CRQ), generated through content analysis of experiential material gathered from perpetrators telling of their responses to the pain and terror of their victims. The theoretical prediction is that high scorers would be individuals at the high-readiness end of the cruelty continuum, with a low optimal level of arousal, and therefore have a higher reversal threshold than low scorers. If high CRQ scores do indeed correlate with high readiness and pleasurable arousal at cruelty that continues beyond the point at which low scorers experience a reversal, they might have utility in the prediction of dangerousness.

6.5. *Passive and active cruelty*

The actualisation of this universal potential to use and enjoy cruelty may vary along a continuum from low to high readiness. At the low-readiness end are those who *passively* enjoy media cruelty but refrain from cruel acts; moving along the continuum are those who respond to situational cues, inflicting pain if social inhibitions are removed and role triggers are present, and following a pathway into affective cruelty through a reversal from cruelty inhibition to cruelty potentiation, in which the victim's cries and pleading activate the PBD complex, augmenting the perpetrator's arousal and escalating cruelty. At the high-readiness end of the continuum are *active sadists*: the crazed monks in *Juliette* (Sade 1798/1968), blood-crazed Fritz Haarman and Karl Denke in Weimar Germany (Tatar 1995), the 1960s Yorkshire Moors murderers Ian Brady and Myra Hindley, and the protagonist of *American Psycho* (Ellis 1991): these are the monsters of history and the most spectacular members of the criminal class, for whose atrocities there is an endless public appetite. Mealey (1995, p. 526) notes that criminality and sociopathy have a substantial and overlapping heritable component, which suggests that a common factor may underlie the various expressions of social deviance, including active sadism.

Behaviourally, individuals with a high readiness for cruelty are likely to have a predatory, victim-seeking style, with homologies between predator self-stimulation in animals, and the behavioural sequence of victim stalking, capture, and wounding in humans: this novelty- and harm-seeking sequence may be found to map to the dopaminergic SEEKING circuit.

6.6. *Neurologies of cruelty*

"Psychologically, when different states feel different, they are different" (Klinger 1971, p. 7). If so, there will not be a single neurology of cruelty, but many, with different points on the active-passive continuum that may be marked by the activation of distinctive patterns of neural drivers: mapping these is a cardinal prevention challenge. Is the passion of the street-fighter neurally distinct from the cold interest of the cigarette burner? Can the rapt, immobile spectator be distinguished from Alypius' friends, howling as the gladiators fall? Can perpetrators be distinguished from spectators? Is recall for portrayals of torture and painful punishment, and rumination on such scenes, more intense in low- or high-readiness individuals, and does this recall covary with optimal level of arousal (Eysenck & Gudjonsson 1989)? As noted above,

this differential affective neuroscience should begin by gathering affectively rich descriptions of the inner experience of perpetrators.

7. Is cruelty an adaptation?

Ferocity is a prerequisite for successful competition and aggression, predation, hunting, and affective cruelty. The behavioural commonalities between competitive aggression and early predation, the ferocity of predators, and the high arousal of hunters, perpetrators, and spectators suggest that common neural pathways dating to the Cambrian subserve this cascade of behaviours that begins with primordial competition and may end with human cruelty. The symbolic weight of blood and death, and their retained power to arouse powerful emotions, may derive from an endlessly repeated scene in early hominid history: at the kill, the hunting party is flooded with the fresh blood of the prey, smeared with its bone marrow, and exposed to its stomach contents. These conditioned stimuli are preceded by a multitude of sensations associated with the prey's pain and death, followed by proximate physiological rewards and deferred reproductive advantages. These stimuli make up the pain-blood-death complex, which continued to have survival and reproductive benefits at successively more recent stages of societal evolution.

With appropriate contextual judgment, the use of cruelty leads to the accretion of social power and its maintenance; contextually inappropriate or excessive use will result in social ostracism and punishment. The former has survival and fitness advantages, especially if male violence is under stabilising sexual selection, whereas the latter will limit or prevent reproductive access.

However, despite its ancient provenance, it is unlikely that cruelty is an adaptation that emerges through the activation of a special-purpose evolutionary module hard-wired in the cortex. A more parsimonious view that would account for the striking homologies between predation, hunting, and human fascination with pain, blood, and death is that all have a common origin in "the archetypal emotional-motivational processes that all mammals share" (Panksepp & Panksepp 2000, p. 112): biogenic amines, present in the nervous systems of many animal groups, from molluscs through to mammals, provide the cortical foundation for these processes. Projections from the neurons that produce these amines "stretch over large areas of neural tissue and release chemical messages diffusely, rather than through information-specific synaptic transmissions" (Panksepp & Panksepp 2000, p. 120). These hypothesised continuities between predation and cruelty would be confirmed if fMRI demonstrated cerebral pathways, homologous to those that evoke predatory gratification in canid, felid, and primate predators, in human males exposed to scenes of pursuit, mutilation, and killing of human victims, and their pain vocalisations: there is no lack of graphic stimulus material, as, for example, in films such as *Last Exit to Brooklyn* (Uli Edel, Germany, 1989) and *Salo* (Pier Paolo Pasolini, Italy, 1975). The male gendering of cruelty could be confirmed by comparison of male-female responses to these stimuli.

It is therefore plausible that the wide range of behaviours linked to the pain-blood-death complex, from the

passive enjoyment of media violence and blood sports to the activities of interrogators and abusers, is reinforced by these diffuse and very old emotional circuits that humans share with animals, that "are able to imbue 'cold' perceptions with a 'hot' affective charge" (Panksepp & Panksepp 2000, p. 115). This would in turn account for the apparent universality of these emotions, which erupt as powerfully in the educated and morally exemplary citizens of the twenty-first century as in the monsters of history.

NOTES

1. Though not further considered in this paper, psychological punishments that inflict no physical pain are also cruel, as in solitary confinement, public shaming, or social ostracism. The *pittura infamanti* (defaming portraits) of mediaeval Florence had "fearsome potency as an instrument of official state punishment" (Edgerton 1985, p. 60; see also Miller 1993).

2. Self-inflicted pain is not the preserve of masochists, but a pervasive social phenomenon in contests and sports, especially contact, endurance, and "extreme" sports. Humour and the mutual vulnerability of lovers also hold cruelty in tension. A life without reflexive pain would be dull and colourless, but again, as with psychological pain, and except in passing, I have excluded this domain from the argument.

3. I have dealt with war and massacres from the perspective of the individual actors, and not in their political context: the exhilaration of the machine gunner is relevant, but, in this target article, the military command structures that control these events are not.

4. A wall carving in the north palace at Nineveh shows King Ashurbanipal and his commanders walking over headless enemy bodies, with a beheading still in progress (Bersani & Dutoit 1985, fig. 26). Roman commanders summarily executed rebels: a stone relief (Andreae 1978, Fig. 536) shows the beheading of rebellious barbarians under Marcus Aurelius in about 170 AD.

5. Ariès (1981) chronicles a similar process, within a similar time frame, that has displaced natural deaths from the public to the private domain.

6. This condition recapitulates the famous passage in Hobbes' *Leviathan*: in war, "every man is enemy to every man . . . in such condition, there is no place for industry, because the fruit thereof is uncertain. . . ; no account of time, no arts, no letters, no society; and which is worst of all, continual fear, and danger of violent death; and the life of man, solitary, poor, nasty, brutish, and short" (Hobbes 1651/1996, p. 84)

Victor Nell presents plausible hypotheses about how human cruelty may have evolutionary roots in carnivores' emotional preparedness to hunt. However, humans' greater mental capacity can be expected to add unique properties to cruelty, as it does to most other motives. Nell himself suggests that there is a kind of cruelty that "presupposes a theory of mind" (sect. 2), henceforth ToM, a condition that would limit it to humans and a small number of other species with advanced mental development. He initially speaks of this condition as necessary for all cruelty, but much of his subsequent discussion covers species without ToM. It is not clear whether a cat plays with a mouse partially in order to savor the distress of the victim, or merely since it is an optimally challenging game. The common human projection onto this activity certainly includes the savoring, as in *Tom & Jerry*, but since a real Tom has no ToM, he is presumably not imagining his victim's suffering, much less trying to induce it.

I doubt if many human hunters are rewarded by evidence that their prey is suffering. In the television show *Northern Exposure*, the protagonist was introduced to bird hunting, and said afterwards, "I loved the shooting; it was the dying I couldn't stand." Habitual hunters can obviously stand the dying more, but there is little evidence that they glory in it. Primitive Amerindian hunters were not necessarily any more sadistic. Sometimes they would perform ceremonies before a hunt to apologize to the spirits of the intended quarry. On the other hand, their enjoyment of torturing captives was clearly on a par with that of the ancient Roman mobs at the Coliseum (Adair 1736/2005). My point is that the urge to do injurious things while disregarding or actively avoiding attention to the suffering of victims is different from the urge to seek out and even enhance this suffering – although the disregarding might sometimes be a reaction against the latter urge. Killing in war can be intensely pleasurable (Bourke 1999, pp. 1–31; Grossman 1995, p. 115) and is more apt than killing in hunting to intentionally inflict suffering, but most infantrymen throughout history never even fired their weapons at the enemy (Grossman, pp. 17–39). Even in the euphoria of combat, the thrill is not usually that of cruelty but of winning a mortal contest or of the power of wielding a "magic sword . . . all you do is move the finger so imperceptibly, just a wish flashing across your mind . . . and poof! In a blast of sound and energy and light a truck or a house or even people disappear" (William Broyles, quoted in Bourke 1999, p. 2). The simultaneous perception that the "mutilated and dead [are] sad and beastly" (Bourke 1999, p. 21) does not enhance the high for most soldiers, and indeed soon spoils it.

The puzzle for motivational science is Nell's "affective cruelty," as opposed to the kind that is incidental to hunting or war, or the workmanlike "instrumental" kind practiced dispassionately for extrinsic reasons, which probably includes that of the obedient subjects in Milgram-type experiments (sect. 6.2.1). The point of affective cruelty is to let yourself experience the suffering of the victim vicariously, but with the kind of attitude that yields net pleasure rather than pain, an attitude perhaps best called negative empathy. Intended physical injury and intended suffering are entirely dissociable. Medea killed her children not to be cruel to them, but to be cruel to their father, Jason.¹ The crucial question is how this attitude works, that is, how negative empathy rewards. To discuss this, I need to include the psychological cruelty that Nell does not cover, which is the only kind seen in everyday life.

I have argued elsewhere that empathy, the exercise of your ToM, is itself rewarding (Ainslie 2001, pp. 161–86; 2005; 2006). My basic argument is that emotion is a goal-directed (rather than conditioned) process that largely serves as its own reward, but that entertaining emotions at will attenuates them into daydreams, because the urge to anticipate the high points undermines any longing or suspense that might make them even moderately intense. You therefore learn to make adequately rare and surprising external events the occasions for emotions.

Open Peer Commentary

Cruelty may be a self-control device against sympathy

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Abstract: Dispassionate cruelty and the euphoria of hunting or battle should be distinguished from the emotional savoring of victims' suffering. Such savoring, best called *negative empathy*, is what puzzles motivational theory. Hyperbolic discounting theory suggests that sympathy with people who have unwanted but seductive traits creates a threat to self-control. Cruelty to those people may often be the least effortful way of countering this threat.