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

Boris Kotchoubey

Institute of Medical Psychology and Behavioral Neurobiology, University of Tübingen, Tübingen 72074, Germany.

boris.kotchoubey@uni-tuebingen.de

www.mp.uni-tuebingen.de/mp/index.php?id = 96

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

https://doi.org/10.1017/S0140525X0631905X Published online by Cambridge University Press

philosophy, advertisement, or propaganda? From a scholarly article, one should expect weighing up of positive and negative evidence; use of quantitative data if available, rather than single-case descriptions; the lack of over-generalizations from one example; avoidance of emotional arguments and tacit insinuations. As suggested by Popper (1963), a scientific theory is supported not by supporting cases but by unsuccessful attempts to refute it. Platt (1964) contended that it is psychologically difficult for scientists to actively look for facts contradicting their own theoretical thinking. Therefore, he recommended that scientists at least compare alternative theories. As a minimum, a scholar should mention an alternative and argue why his or her view is better than the alternative.

How does the target article fulfill these criteria?

Discussing controversial topics. In the domain of human aggression, in particular, many alternative views are disputed. Even though the aim of the target article is the presentation of a new view, not a discussion of the existing views, any new approach can only be understood against the background of, and in comparison with, the extant controversy. Nell's list of references contains antique historians, poets, and religious texts, but not Fromm (1973) – a book that, though controversial, too, at least presents an overview of the plurality of alternative stances. Even if we remain within the ethological perspective, it is strange to quote from a popular book of Lorenz (who was a great scientist but never studied humans) but not cite the fundamental works of Lorenz's pupil, Eibl-Eibesfeld (1989; 1996) who devoted several decades to the ethology of human aggression. Nell does not mention any theory of violence except his own.

Generalization from single cases. Section 5.2 of the target article comprises a long list of single-case descriptions of murders and atrocities. We do not know whether these behaviours are typical or frequent. Caligula tortured his senators (5.2.2) – how many kings did this, and how many did not? Of those who did, what is the evidence that they did it "for amusement" and not, say, for fear of conspiracies, like the Russian tzar Ivan IV (Soloviev 2002)? Single cases do matter, but their role is logically limited. If a sociopath reports that killing people makes him "excited" or "exhilarated" (sect. 5.2.8), this only shows that *some* people *can* experience such feelings, but not that these feelings are usual or have any significance in human history, let alone that these feelings are "a human universal" (sect. 6.2.1).[1] But even very many examples do not constitute a scientific proof. Millions of ill people prayed for recovery and got healthy, but this does not prove the effect of the prayers. If one wants to make a conclusion from that issue, one should compare the numbers of those who prayed with those who did not, to find out how many among the prayers and non-prayers recovered and how many did not. Then one should build a 2×2 matrix and calculate a chi-square test.

Emotions. Section 3 starts with long descriptions of how predators (hyenas, lions, and primates) torment their victims, eating them alive and causing them unbelievable suffering. From the viewpoint of the author's definition of cruelty as the "deliberate infliction of pain," this behaviour is *not* cruel. It is not a deliberate torture but simply a way for predators to save energy. So what is this accumulation of horror for? That animals are not moral beings is a truism. Logically, this part of the text appears unnecessary. But psychologically, it plays an important role. It shocks the reader with a flood of blood, screams, and the pain of prey consciously perceiving how they are eaten and torn apart. This shock prepares the reader for the emotional atmosphere of the subsequent parts.

Ad hominen argument. At the end of section 1, that is, before starting the argumention, the author employs a technique previously used by Freud: "Surely you will not accept my ideas for ethical reasons." It is suggested that the present view would be rejected because of the fear of contact with the "contagious" evil, and because studying such "dirty" things as cruelty may damage the scientific reputation. Thereby, potential critics are devaluated from the very beginning, as their objections are assumed to be of purely psychological origin.

Therefore, there is not sense in discussing the content of the presented view. Its attractive power is not its content but the consistency of its emotional tone and the persuading energy of amassed examples of brutality, cruelty, barbarity, violence, pain, blood, cry, intestines, and so on. We are presented with an ideological article that skillfully uses a variety of propaganda techniques: emotional shock; appeal to identification; thorough selection of supporting, affectively impressive examples; careful denial of counterevidence; and implicit devaluation of future opponents as narrow-minded conservative moralists.

This does not imply that the article is uninteresting or useless. Myths are interesting, but they are not hypotheses. Thus psychoanalysis (whose many aspects the target article shares) contains many brilliant insights, but it is not a scientific theory. Likewise, the target article may contain interesting impulses for thinking about aggression; this is a well-composed mythology, a potential object of a cultural analysis, but not [this "of" is useful, meaning: "object of a cultural analysis but not an object of a scientific discussion"] a scientific discussion.

NOTE

1. The term "universal" appears six times in the text.

The cruelty of older infants and toddlers

Sebastian Kraemer

Child And Family Psychiatric Service, Jenner Building, Whittington Hospital, London N19 5NF, United Kingdom.

sebastian@kraemer-zurne.freeserve.co.uk

Abstract: Cruelty is evident in the play and interactions of quite small children. This is almost certainly normal, though it is more evident in children who have themselves been harshly treated (Amato & Fowler 2002; Luk et al. 1999).

This is a brilliant paper, crossing many learned boundaries. More could be made of the development of cruelty in the immature human individual. Though we cannot know what babies think, they clearly experience extremes of emotion from rage (and terror) to bliss.

Once they can coordinate intentional movements, infants and toddlers show in their play with toys, siblings, friends, and pets that they are readily capable of inflicting pain on others (mentioned only in passing by Nell in the Introduction). This is widely known by those who care for small children, and also by child psychotherapists who witness such demonstrations in the consulting room (Alvarez & Phillips 1998).

Curiosity may be one driver – a wish to find out how much damage the victim can stand, or simply to dismantle it and see what it is made of – but punishment is also a feature. The birth of a younger sibling can provoke cruelty both in play and in fact. That is, a child can express violent intentions without causing actual harm to his victim. The child may instead assault a toy or a pet.

Overt cruelty may be more obvious in little boys, because they tend to be more aggressive in their actions. Girls, however, are probably just as capable of having the same feelings and intentions but are less likely to act them out. Even as young as 6 months, girls are more able to express feelings in complex ways (Malatesta & Haviland 1982). Because of their greater sophistication with emotions, it is too easy for observers to assume that girls are less cruel. In purely behavioural terms this may be so, but the emotional and cognitive state of wishing harm on another, and taking some pleasure in it, is probably equally distributed between the sexes.

https://doi.org/10.1017/S0140525X0631905X Published online by Cambridge University Press