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Too sweet to eat: Exploring the effects of cuteness on meat consumption

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ABSTRACT

Although daily meat consumption is a widespread habit, many individuals at the same time put a high value on the welfare of animals. While different psychological mechanisms have been identified to resolve this cognitive tension, such as dissociating the animal from the consumed meat or denying the animal's moral status, few studies have investigated the effects of the animal's appearance on the willingness to consume its meat. The present article explored how the perception of *cuteness* influences hypothetical meat consumption. We hypothesized that cuter animals would reduce the willingness to consume meat, and that this relationship would be mediated by empathy felt towards the animal. Across four pre-registered studies sampling 1074 US and Norwegian participants, we obtained some support for this prediction in the US but to a lesser degree in Norway. However, in all studies an indirect mediation effect of cuteness on meat consumption going through empathy towards the animal was observed. We also explored possible moderating and additional mediating mechanisms of trait pro-social orientation, caretaking intentions and sex effects for which we found mixed evidence. Theoretical and practical implications of the findings are discussed.

1. Too sweet to eat: exploring the effects of cuteness on meat consumption

Many individuals, in general, disapprove of actions harming animals, but simultaneously enjoy meat consumption on a daily basis. Empirical research has put forward a number of theories accounting for this so-called *meat paradox* (Loughnan, Haslam, & Bastian, 2010). One way to solve such cognitive dissonance might be denying the moral status or mental capacity of the animal (Bratanova, Loughnan, & Bastian, 2011; Loughnan et al., 2010). Other arguments have involved nutritional, evolutionary or merely hedonic justifications for meat consumption (Bohm, Lindblom, Åbacka, Bengs, & Hörnell, 2015; Piazza et al., 2015; Rothgerber, 2013b). Finally, another perspective has argued that consumers often dissociate meat from its animal origins (e.g., Adams, 2015; Rothgerber, 2013a). In fact, recent findings manipulating the context of meat presentation support this idea by highlighting the role of dissociation, empathy and disgust (Kunst & Hohle, 2016). In one study, the authors varied the display of a lamb in a meat advertisement, resulting in less self-reported willingness to consume the product when the animal was present. This path was mediated by self-reported dissociation and, subsequently, empathy towards the target animal. Yet, as the authors noted, the study was limited because it did not measure an alternative, probable pathway that may lead to lowered hypothetical meat consumption, namely the degree to which consumers perceived the animal displayed in the advertisement as *cute*.

Cuteness responses are evoked by objects that have infant-like features (so-called *Kindchenschema*, Lorenz, 1943; e.g., Borgi, Cogliati-Dezza, Brelsford, Meints, & Cirulli, 2014). Studies have linked cuteness to increased empathy, compassion (Aragón, Clark, Dyer, & Bargh, 2015; Kringelbach, Stark, Alexander, Bornstein, & Stein, 2016; Lishner, Oceja, Stocks, & Zaspel, 2008; Sherman & Haidt, 2011), and caretaking (Glocker et al., 2009; Keating, Randall, Kendrick, & Gutshall, 2003; Nittono, Fukushima, Yano, & Moriya, 2012), arguably highlighting responses to cuteness as

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adaptive evolution (Leitão & Castelo-Branco, 2010; Preston, 2013). Evidence for the relation between cuteness and meat consumption comes from a correlational study in which participants reported more disgust about eating meat from animals that looked cuter than normal (Ruby & Heine, 2012). However, although a number of attempts have been made to explore the general nature of cuteness responses, no study to date has systematically tested the effect of cuteness on meat consumption. In the present paper, we aimed to fill this gap, exploring the effects of cuteness responses through pathways of empathy, humanization, and caretaking responses using correlational and experimental designs.

1.1. The nature of cuteness

Different terms such as *cuteness, the cute-emotion,* or *aww* (Buckley, 2016) have been used to refer to a specific perception of, or responses to, infant-like features in the social-scientific literature. A number of studies have experimentally tested whether altering such infant-like aspects results in cuteness perceptions and responses (Borgi et al., 2014; Glocker et al., 2009; Little, 2012). For instance, Little (2012) manipulated human adult or infant faces as well as faces of non-human animals (i.e., cats). Results suggested that infant-like characteristics made both human and animal faces cuter. Another study presented similar evidence using dog and cat stimuli (Borgi et al., 2014). Throughout the manuscript, the term *cuteness* is used to denote responses to such perceptions of infant-like or baby schema traits of non-human animals. Although some scholars have suggested that the cuteness concept should also include aspects such as infant smells or sounds (Kringelbach et al., 2016), we merely focus on the visual domain here.

The phenomenon of cuteness has been observed across a number of cultures, with some having evolved more profound societal implementations such as the Japanese *kawaii*, which is roughly translated as *cute* (Nittono et al., 2012). Moreover, empirical research has identified several inter-individual and biological differences in cuteness responses. First of all, adult participants who had siblings reported more cuteness in response to children's faces than those without siblings (Luo, Kendrick, Li, & Lee, 2015). Further research has pointed at sex differences in perceiving cuteness (Lobmaier, Sprengelmeyer, Wiffen, & Perrett, 2010; Sprengelmeyer et al., 2009). While participants of both sexes performed similarly in accurately reporting an infant's emotion and age, females were more likely to reliably detect the cuter infant (Lobmaier et al., 2010). These sex differences have been suggested to be based on evolutionary and biological aspects. Providing support for this notion, females reported a better discrimination of cute and non-cute infant faces during ovulation (Lobmaier, Probst, Perrett, & Heinrichs, 2015). In addition, young women and premenopausal females performed better at detecting cuteness differences than older women or men did (Sprengelmeyer et al., 2009). The authors concluded that female reproductive hormones play a crucial role in cuteness perception. Some research has replicated sex differences regarding cuteness perception, but not its motivational components (i.e., caretaking; Parsons, Young, Kumari, Stein, & Kringelbach, 2011).

In line with an evolutionary perspective, it has been argued that traits evoking cuteness are vital in conveying neonatal vulnerability (Leitão & Castelo-Branco, 2010; Preston, 2013). In light of this evolutionary account, it makes sense that cuteness should result in higher empathy with the elicitor and increased attentiveness or nurturing behavior. Taking care and feeling compassion for infants or young children enhances their adaptive fitness and chances for survival. A similar account has been proposed in order to explain empathy or caretaking behavior towards animals (Bradshaw & Paul, 2010).

1.2. The effects of cuteness

A number of studies have addressed the effects of perceiving cuteness and related responses to infant-like traits. Exploring affective, cognitive and motivational aspects, the majority of these studies has identified the importance of empathy, humanization and caretaking behavior. Most studies on cuteness and empathy have defined empathy in the context of *empathic concern* or *sympathy*, that is, a positive compassionate or tender response to vulnerable targets or others in need (Davis, 1980). Hence, throughout this research, we will refer to these concepts or definitions when employing the term *empathy*.

Various theories have linked cuteness responses to empathy. For instance, cuteness has been conceptualized as a moral emotion leading to empathy or compassion as part of a moral circle (Sherman & Haidt, 2011). In a first empirical attempt to test this association, Batson, Lishner, Cook, and Sawyer (2005) investigated whether variation in empathy is mostly due to perceived similarity with the target or the idea of nurturance. Their findings suggested that nurturance (i.e., taking care of vulnerable others) was associated with empathy, while similarity was not. Testing the direct effect of cuteness on empathy, another study manipulated infant-like traits in adult photographs (Lishner et al., 2008). Results suggested that participants reported more empathic concern towards cuter images, providing experimental support for such a relationship.

From a more cognitive viewpoint, Sherman and Haidt (2011) argued that cuteness responses result in humanizing the target: that is, ascribing more human-like traits to them. To date we are not aware of any empirical account trying to test this prediction.

Much emphasis regarding the effects of cuteness has been put on testing consequential motivations, such as caretaking and helping, or cognitive functions including attention allocation (Sherman, Haidt, & Coan, 2009). A number of theoretical accounts have argued that such motivations are direct and causal outcomes of cuteness responses (Kringelbach et al., 2016; Sherman & Haidt, 2011). Extensive experimental evidence has been provided on this proposition (Glocker et al., 2009; Nittono et al., 2012; Sherman et al., 2009). In one study, viewing cute puppies or kittens in contrast to more neutral cats and dogs led participants to act more carefully, making fewer errors in a fine motor task (Sherman et al., 2009). In a similar paradigm, the effects of cuteness responses on physical care in a precision task were moderated by the pro-social orientation of female participants (Sherman, Haidt, Iyer, & Coan, 2013). Specifically, female participants scoring high on a pro-social orientation measure showed more physical care by making fewer errors in the task after watching cute stimuli than less pro-social participants did. Similar results were observed with Japanese participants, suggesting some cross-cultural validity of the relationship (Nittono et al., 2012). Further evidence is provided by an experimental study employing cute and non-cute infant pictures and assessing motivations to take care of these infants (Glocker et al., 2009). Participants viewing cute infants reported increased intentions to take care of them compared to those viewing non-cute faces. Finally, one study with high ecologic validity used the 'lost letter technique' to test the effects of cuteness on helping behavior (Keating et al., 2003). Stamped fictional resumes depicting cute or non-cute European or African American male or female adults were distributed in the US and Kenya. Results indicated that resumes including cute European and African American females were posted more often than their non-cute counterparts. The same effect was observed for European American males, but not for African American males. Posting of the resumes was an operationalization of helping behavior by delivering the resume on behalf of the fictional candidate.