



Defending human difference by raising the bar

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Commentary on [Chapman & Huffman](#) on *Human Difference*

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Abstract: Chapman & Huffman (C&H) offer a theory of why we humans want to believe that we are different: to justify our cruelty to animals. This commentary offers further supporting evidence of this and examines more closely what the claim that humans are 'different' amounts to. It also considers some methodological issues in animal psychology closely related to C&H's theory. These problems result from a common strategy for defending hypotheses about human difference.

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1. Justifying cruelty? In their target article, Chapman & Huffman (2018) (C&H) suggest that the reason humans want to believe that we are unique is to justify cruelty towards nonhuman animals. C&H also argue that humans are not unique, and that this cruelty is not justified. I will focus on C&H's theory of *why* we humans want to believe that we are unique, offering some further support from social psychology and the history of philosophy and animal psychology, and using C&H's account to identify and explain some key methodological problems in animal psychology.

In their commentaries, Zangwill (2021) and Lotchev and Costa (2019) both suggest that C&H overlook alternative hypotheses that might explain why we humans want to believe that we are unique. Lotchev and Costa (2019) suggest that "*it is more parsimonious to assume... [that] the main objective... [of the] glorification*" of humanity compared with animals was "*to elevate the value of human life and the standards of human interactions.*" Zangwill (2021) notes that C&H propose "*no rival hypotheses.*" Perhaps "*people just think it is true that there are significant differences.*"

There are at least three sources of evidence that support C&H's hypothesis. First, attributions of ethically insignificant psychological capacities to animals are hardly disputed at all, whereas those that are ethically significant are highly disputed. For example, there is significantly more controversy over the attribution of mindreading to chimpanzees than there is over the attribution of vision to bacteria (Schuergers et al. 2016).

Second, there is evidence from social psychology. Meat-eaters are more likely than vegetarians to deny that non-human animals have ethically significant psychological capacities, and people are more likely to deny that animals we eat have such features than they are to deny that animals we do not eat have such capacities (Bastian, Loughnan, Haslam, & Radke 2012; Bilewicz, Imhoff, & Drogosz 2011). Moreover, the denial of ethically significant capacities to animals seems to be post-hoc (*contra* Zangwill 2021). Loughnan, Haslam, and Bastian (2010) found that if one takes a random sample of meat-eaters, instructs one group to eat beef jerky, and another group to eat cashews, the group that ate beef jerky is then later

more likely to deny ethically significant capacities to cows than the group that ate cashews. Even on short time-scales, people adjust their beliefs in order to justify their behaviour.

The third is historical scholarship. Many of the contemporary scientific questions and concerns regarding animals and their psychological capacities are continuous with the questions and concerns of figures in the history of science and philosophy. The story begins with Aristotle, who denies that animals have reason, claiming it was a feature unique to humans (Sorabji 1993; Henry 2018). Why? Aristotle's "account in the *Nicomachean Ethics* of the happiest life for a human depends on finding something unique to humans" (Sorabji 1993, p.15), and Aristotle sees communal animal sacrifice as an important factor in "mak[ing] a city state as opposed to a mere conglomeration of people" (1993, p.171). As Sorabji argues, this kicked off a Western tradition of looking for a capacity that guaranteed human ethical exceptionalism by finding a single feature that distinguished humans from all other animals.

2. Do we humans want to believe that we are unique? C&H set out to explain why 'we humans' are so set on believing that we are 'different', 'unique', 'superior', or otherwise 'on a pedestal'. As many of the commentaries on C&H make clear, it matters precisely in what way humans are claimed to be unique, different, or special. There is a sense in which every species is guaranteed to be 'unique' – only humans are human, after all. It also matters a great deal how we assess 'superiority' in a biological context: if 'superiority' is superiority *by human standards* it may be both guaranteed and largely irrelevant; if 'superiority' is assessed with an evolutionary framework of fitness, it may not be possible to meaningfully compare different species. Finally, many commentaries have proposed important ways in which humans appear clearly to be special – our impact on the natural world is disproportionately large, and so is our corresponding responsibility as caretakers of the nature world, so the idea goes (Treves 2019).

Importantly, there is no justification for cruelty towards nonhuman animals to be found in many of these different accounts of what it is for humans to be put on a pedestal. Indeed, many of the commentaries offer views of humans and nonhuman animals such that humans are especially *culpable* among animals for their cruelty towards other animals. Indeed, this is a point that C&H make themselves, claiming that '[w]e should use the traits we are so proud of — our vaunted intellect, communication skills, and morality — to create positive change.'

I suspect that C&H have a more specific target than claims that humans are special. All of their examples of failed hypotheses about human uniqueness – reason, tool-use, medicine-taking, and the building of complex structures – identify a *single* all-or-nothing capacity that accounts for human specialness and is lacked by *all* nonhuman animals. Sorabji (1993) identifies this 'one-dimensionality' as the major problem of theories of human specialness in the Western philosophical and scientific tradition. It is possible to offer theories of human specialness which are *not* one dimensional: the feature that distinguishes humans from chimps might be different from that which distinguishes humans from termites, which might in turn be different than that which distinguishes humans from octopodes, and so on.

One-dimensional hypotheses about human specialness, where some single feature marks the difference between humans and all other animals, are often tied to one-dimensional views of ethics, whereby some single feature is also the be-all-and-end-all of moral status. If reason distinguishes humans from all other animals, *and* is the precondition for moral concern, then humans are the only proper objects of moral concern.

Carpenter (2018) argues that such one-dimensional hypotheses are a peculiarly Western concern. In particular, she shows that the Indian philosophical tradition has no analogous tendency toward such hypotheses. This is important, if we are to talk about what ‘we humans’ want or do not want to believe. If I am right that C&H’s real issue is with one-dimensional theories of human specialness, then they are mistaken in attributing a tendency to believe in such hypotheses to humanity as a whole. (For more on cross-cultural differences in moral reasoning, see Henrich, Heine, & Norenzayan 2010.)

3. How is human difference defended? C&H identify several one-dimensional hypotheses about human specialness. It is worth examining how some of these, and some other such hypotheses, have been defended. C&H attribute to Descartes the idea that humans are alone in possessing reason, but, as mentioned, this idea traces back to Aristotle some two thousand years earlier. The Stoics, Augustine, and Aquinas were all important in the transmission of Aristotle’s hypothesis to Descartes, and all offered their own versions and elaborations of Aristotle’s core idea.

As Sorabji argues at length, denying reason to animals was counterintuitive at the time and required a reanalysis and redescription of much animal behaviour and psychology. For example, Aristotle claims that *techne* (practical skill, craft) requires the possession of reason, and hence its presence was proof of reason. He dismisses the appearance of *techne* in animals as mere *as-if-techne*, which comes to be called ‘*techne*’ only by analogy. The difference between *techne* and *as-if-techne*, somewhat circularly, is merely that *as-if-techne* is the capacity that looks remarkably similar to *techne*, but does not require rationality. Here, Aristotle is perhaps the first to dismiss the description of animals in ordinary mental terms as a mere metaphor.

The Stoics dismissed counter-examples to the hypothesis that humans alone possessed reason by claiming that humans were alone in possessing language, and that language is necessary for *true* reason. When faced with supposed counter-examples to humans alone possessing language, purported instances of nonhuman animal speech such as birdsong and animal cries, the Stoics argued that syntax is a prerequisite for *true* language. According to Sorabji, the argument that syntax is essential for true language was offered by the linguist Marcus Terentius Varro [116-27 B.C] (Varro 1940), who incorrectly claimed that ‘[t]he Latin word for speaking (*loqui*) [...] is connected with *locus*, a place, and implies being able to put words in the right place’ (1993, p.81). Descartes later used human language and syntax as an argument for the immateriality of the mind and its possession solely by humans.

Aristotle’s idea has also been defended well into the twentieth century. It has been defended primarily by dismissing animal psychological capacities as resulting from merely ‘associative’ mechanisms and therefore not requiring ‘rational’ explanation in ordinary psychological terms. Associative explanations, however, re-entered psychology as behaviourists’ attempt to explain behaviour in animals *and humans* without using rational explanations (Skinner 1953; 1974; Watson 1930). It is inconsistent to apply such explanations solely to nonhuman animals, and incoherent to claim that associative explanations preclude rational explanations (Papineau & Heyes 2006).

The denial that there is nonhuman animal language has been notably defended by Chomsky, who regards himself as a Cartesian (Chomsky 2009), suggesting that language is the ‘human essence’, ‘inseparable from any critical phase of human existence, personal or social’ (2006,

p.81). Under the pressure of apparent examples of animal syntax, Chomsky argues that 'creativity' is a prerequisite for *true* syntax, where creativity requires the ability to produce a potential infinity of utterances.

Chomsky acknowledges that an *unidealized* human cannot produce infinite utterances: there are constraints (processing limits on supposedly recursive operations) on the length and kind of sentence that we can produce and understand (Karlsson 2007). Chomsky is explicit that human language's creativity is an idealization: human languages are creative only so long as one discounts the limitations of 'cognitive structure', eg, 'memory restrictions' (2006, p.102-103). The problem, then, is that Chomsky does not do animals the same service of idealizing away from all restrictions on their cognitive structures: animals are denied language because they do not implement an idealized system, whereas humans are granted language because they approximate that system. Nonhuman animals thus appear to be held to a higher standard than humans when it comes to counting their communication systems as 'language'. This is true outside the work of Chomsky as well. For example, neither animal nor human vocalizations count as language by the standards of evidence that are currently invoked (Prat 2019).

A more recent one-dimensional hypothesis about human uniqueness is that humans are alone among animals in possessing *mindreading*, the ability to attribute mental states to oneself and others. In some recent, influential defences of the claim that only humans naturally possess language, mindreading takes on a vital role (Aitchison 2008). Dennett (1976), who had a major influence on the direction of mindreading research, directly links mindreading, and the ability to have beliefs about one's own beliefs, to reason, reflectiveness, decision-making, and personhood. Lurz (2011, p.4-5) claims 'that of the attributes that define personhood, mindreading is the most central.'

After a period where little evidence of nonhuman animal mindreading accrued, compelling evidence began to emerge that nonhuman animals could in some sense be mindreaders (Premack & Wooduff 1978; Call & Tomasello 2008; Tomasello, Call, & Hare 2003a; 2003b). However, several authors, most notably Povinelli and Vonk (2003; 2004) and Penn and Povinelli (2007) argued that the evidence was not compelling because it did not rule out relevant alternative hypotheses (see Heyes 1998; Lurz 2011; 2018). This alternative hypothesis has been called 'behaviour-reading'.

According to those who reject the evidence for nonhuman mindreading, mindreading must involve a two-step inference: first, an inference from observable cues (eg, eyes-pointing-towards-food) to mental states (eg, seeing-that-there-is-food); second, an inference from mental states (seeing-that-there-is-food) to future behaviour (eg, approaching-the-food). However, it is argued that because previous experimental paradigms in mindreading research cannot rule out the possibility that nonhuman mindreaders are actually just behaviour-readers. Hence inferring mindreading is based only on a one-step inference, directly from observable cues (eyes-pointing-towards-food) to behaviour (approaching-the-food).

As Halina (2015) argues at length, this is not a legitimate way of dismissing the evidence of animal mindreading. It is a much more general problem in the philosophy of science that experimental evidence does not force us to posit unobservable phenomena in accounting for that evidence, even though we systematically do so across all areas of scientific practice and scientific explanation. As Halina argues, if an animal responds in the very same way to a wide

range of observable cues (*being-in-smelling-distance-of-food; eyes-towards-food; face-towards-food*, etc) this is the best evidence that we can have that they are classing those observable cues under some abstract concept (eg, *noticing-food*).

The evidence of animal mindreading is also associated with a definition of mindreading such that behaviour-reading grades into mindreading as it gets 'smarter', i.e., more sensitive to the 'right' abstract classes of behaviour (Whiten 1996). This definition is widely acknowledged as consistent with "common, contemporary usage of the term" (Heyes 2015, p.317). Povinelli and collaborators insist that this therefore *cannot* be the right definition. Although they do not specify what it is, they insist that there must be some 'unique causal work' which a mindreading system does and which a behaviour-reading system cannot do (Povinelli and Vonk 2003, p.159; 2004, p.10; Penn and Povinelli 2007, p.731, p.735). This must be an 'additional cognitive step' which does 'additional explanatory work' (Povinelli and Vonk 2004, p.9). However, if Halina (2015) is right, then there is no extra 'unique causal work' to be done, and their definition renders mindreading impossible.

One-dimensional ethical theories can have deleterious methodological effects in animal psychology even when they are not associated with theories of human uniqueness. Several commentators have argued that all that matters to our treatment of nonhumans is their capacity to suffer (see Shackelford 2018; Woodruff 2019). In many areas of animal psychology, traditional views of a natural hierarchy or *scala naturae* appear still to be operative. This is evident also in the overweighting of evidence from apes (Ross 2018; Kaplan 2019). Even when it is acknowledged that animals than other humans can suffer, there remains a strong tendency to look for a one-dimensional divide *somewhere* on the *scala naturae* – a feature lacking from every system 'below' the line and present in every system 'above' the line. This is part of the reason the debate over fish pain has taken on such significance.

Recently there has been much discussion between those who do not believe that fish feel pain (eg, Browman et al. 2019; Diggles 2019; Diggles & Browman 2018; Key 2015; 2016; Key et al. 2017; Rose 2002; Rose et al. 2014), and those who believe that there is sufficient evidence of fish pain (eg, Broom 2014; 2016; Sneddon, Elwood, Adamo, & Leach 2014; Sneddon et al. 2018). Those who believe we have the evidence already have recently tended to draw on a set of criteria that focus on functional aspects of pain – the role pain plays in relation to motivation, learning, physiological responses, and behaviour. They attempt to demonstrate pain as opposed to mere reflex or damage-avoidance partly by testing how fish interact with anaesthetics and analgesia. Their criteria are not solely functional, however, in that nociceptive processing must be done centrally, and by the same areas of the central nervous system that regulate motivated behaviour (see, eg, Sneddon et al. 2014; Broom 2014; 2016).

Those who deny fish pain tend to offer a version of an argument first found in modern form in Rose's (2002) article on the topic. Basically the same objection to fish pain features in and Key (2016) and Diggles (2019). Rose (2002, p.1) offers a neat summary of the basis of his argument resisting primarily behavioural/functional criteria for pain attribution:

- (1) behavioral responses to noxious stimuli are separate from the psychological experience of pain,

- (2) awareness of pain in humans depends on functions of specific regions of cerebral cortex, and
- (3) fishes lack these essential brain regions or any functional equivalent, making them unable to experience pain.

The first premise relies on distinguishing, in humans, between unconscious reflexes in response to harmful stimulation and feeling pain. The second is based on evidence about the neural basis of conscious sensations of pain, and the workings of anaesthesia in humans. The final premise is derived from a study of the details of fishes' nervous systems, where the brain stem and spinal column deals with many of the complex responses to harmful stimuli which are dealt with by the cortex in humans. The cortex in humans has higher interconnectivity and a greater diversity of function localization than any aspect of fishes' nervous systems, hence the lack of 'functional' equivalence. Conversely, the spinal column and brain stem in humans deal primarily with reflexive damage-avoidance behaviours. Rose concludes that fish have an extremely sophisticated set of unconscious reflexes to deal with damage (and to integrate damage-avoidance with motivation, learning, etc); Rose contrasts fish with humans, whose highly interconnected and diversely localized cortex allows them to feel pain.

To understand the argument, it is necessary to distinguish two senses of functional equivalence. In one sense, fishes' nervous systems contain no functional equivalent to the human cortex – at a fine-grained level of description, there are significant differences between the functional organization of the human cortex and any part of the fish nervous system. However, in another sense of functional equivalence, fishes' nervous systems contain a functional equivalent to the human cortex – the brain stem and spinal column in fish do the job that the cortex does in humans, dealing with damage in relation to motivation, learning, etc. It is this functional equivalence which is relevant to the criteria on pain attribution adopted by the proponents of fish pain (see Meyers-Manor 2018).

For Rose's argument, he must reject the criteria used by the proponents of fish pain. A key part of Rose's attack on those criteria is to introduce the notion of a highly complex reflex – a form of nociception which looks, behaviourally, just like pain, but which is not in fact conscious, and which his opponents' criteria could not distinguish from pain (see Broom 2016). Rose rejects the criteria because they cannot distinguish between such highly complex reflexes, and conscious pain.

Rose's use of the notion of a highly complex unconscious reflex is a form of scepticism which applies just as much to pain in humans as pain in fish. It generalizes to humans because Rose places no limitations on how complex this reflex is allowed to be. One might be inclined to think that a reflex has to conform to the mould of a simple reflex arc; this is not consistent with Rose's use of the term 'reflex', since the reflexes Rose assigns to fish can play a role in systems of long-term motivation and learning. If all the behaviours, even long-term ones relating to motivation and learning, which we would normally take as evidence of pain can be dismissed as resulting from unconscious reflex processes, there is no principled reason not to dismiss supposed manifestations of pain in humans as resulting from unconscious reflex processes.

All of these examples exhibit the same basic pattern. When reasonable standards of evidence for the relevant capacity, often explicitly set at the outset of inquiry, are met by another species, the bar is raised, and more stringent standards of evidence are adopted. There are

several common tactics used to enact this strategy. The first is to apply general sceptical problems to supposed instances of the capacity in animals but not in humans. This often goes hand in hand with overestimating human capacities, idealizing away from their limitations but not those of animals. There are also tactics for redescribing the capacities of the animals in question: one involves the claim that our description of animals in ordinary psychological terms is merely 'metaphorical' (see also Figdor 2018; Schwitzgebel 2020); the other involves arbitrarily positing new capacities (behaviour-reading; indefinitely complex reflexes) that *look* just like the old capacities (mindreading; pain), but are distinct in some often-unspecified way.

Through this strategy, the bar is raised in a manner that is *ad hoc* and arbitrary. As Sorabji (1993, p.2) wryly puts it,

It all sounded rather grand when Aristotle said that we [humans] have reason and [non-human animals] don't. But under pressure, the Stoics retreated to the position that at least they don't have syntax. The moral conclusion was meant to be 'They don't have syntax, so we can eat them.'

I believe that C&H are right to focus on the influence of people wanting to believe that humans are unique. There are many methodological problems in animal psychology that arise from this desire: standards of evidence that are unreasonably high and unreasonably variable, general sceptical problems applied unevenly, and an under-examination of what the capacity amounts to in humans.

This methodological critique tells us nothing about what kinds of evidence *are* relevant, what the standards of evidence *ought* to be, or how scientists can make valid judgements by studying complex mechanisms, systems, and capacities that vary in many ways, often along many continuous scales (de Waal & Ferrari 2010). These further problems can only be solved on a case-by-case basis, but this will be easier if the above strategy is detected, exposed, and rejected.

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