Letter
'Moral Perception' Reflects Neither Morality Nor Perception

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Recently, Gantman and Van Bavel [1] introduced the notion of 'moral perception' – the claim that 'perception is preferentially attuned to moral content' (p. 631). This bold hypothesis aims to directly link vision science and social psychology, and promises exciting consequences for both fields. We explore here what it would take to demonstrate its existence. We suggest that moral perception does not exist, and that the evidence adduced in its favor fails to support it, in at least three ways.

That's Not Morality

Much of the work taken to support moral perception is not about morality at all – and a close investigation of the empirical research itself reveals clear demonstrations of this. For example, trait disgust (an emotion associated with dark rather than light colors) correlates with enhanced sensitivity to lighter shades [2], and this was taken as evidence for 'moral perception'. However, the researchers who discovered this phenomenon themselves empirically ruled out such a connection to morality: in follow-up experiments that isolated the particular type of disgust responsible for this effect, sensitivity to lighter shades was enhanced only for subjects high in physical disgust (e.g., towards pathogens) but not for those high in moral disgust (e.g., towards immoral actions) – exactly the opposite of the pattern predicted by an interpretation involving moral perception. Similarly, a fascinating study of binocular rivalry [3] reported that faces associated with negative social behaviors were more readily seen – a result interpreted in the present context as involving moral content. However, such effects also occurred with mere norm violations that do not invoke morality (e.g., indecent public behavior), while they failed to generalize to other clearly moral actions – leading to an explicit interpretation involving 'social affective learning' rather than morality [3].

That's Not Perception

Other studies cited in support of moral perception are clearly about morality, but do not reflect visual processing except in a trivial and unexciting sense. For example, it was noted that subjects who learn about a character's bad action will subsequently look more at depictions of bad outcomes, whereas subjects who learn about a character's good action will look more at depictions of good outcomes, apparently because they expect justice ([4]; see also [5]). These interesting findings surely reveal our moral expectations, but vis-à-vis moral perception they merely show that when people expect something, they look for it – and it can hardly be a new or bold claim that people look at what they expect. Importantly, this occurs no matter the content of the expectation: by analogy, if the character in this study's story had gone to the zoo, subjects' expectations might have led them to look more at depictions of animals than at depictions of plants – but clearly this would not amount to an emerging trend of 'zoological perception'!

Flawed Evidence

The one study highlighted in this context that is clearly about both morality and perception is the recent finding that moral words are easier to see than non-moral words [6]. In that study, subjects better identified briefly flashed words when the words were morally relevant than when they weren't – a finding dubbed 'moral pop-out'. However, this empirical bedrock of 'moral perception' has an alternative explanation: by virtue of being related to morality, the moral words (e.g., crime, guilty, convict) were also related to each other – whereas the non-moral words (e.g., steel, tired, confuse) were randomly chosen and were therefore entirely unrelated. Thus, the semantically related moral words may simply have primed each other in the manner of classical semantic priming [7], which – far from being revolutionary – simply reflects well-understood spreading activation in memory [8]. Just as 'nurse' is easier to detect when preceded by 'doctor' [7], so-called moral words (e.g., crime) may be easier to detect when presented in the context of other moral words (e.g., guilty) – whereas random nonmoral words (e.g., steel) are no easier to detect when presented in the context of other random words (e.g., tired).

This alternative is easily tested: if the results reflect semantic priming, then morality should play no role, and the effect should obtain with any arbitrary category. Indeed, when the very same methods are employed to contrast random words with words from clearly non-moral categories such as clothing (e.g., blouse, dress, cotton) or transportation (e.g., car, accelerate, route), the very same 'popout' effects occur [9]. Thus, if such experiments are taken to support 'moral popout', then by the same token there must also be exciting new phenomena of 'fashion popout' or 'transportation popout'. Instead, it seems clear that these results simply reflect semantic priming, rather than having anything to do with 'moral perception'.

Concluding Remarks

We conclude that 'moral perception' is not an emerging empirical trend. To make it more than a fascinating speculation will require supporting evidence that clearly involves visual processing, and that cannot be explained by well-understood cognitive processes (such as semantic priming) that have nothing to do with morality.

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Letter

See for Yourself: Perception Is Attuned to Morality

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Perception appears preferentially attuned to moral content [1]. Despite the centrality of both morality and perception in cognitive science, little work has attempted to bridge these fields. Research on moral perception has the potential to inform our understanding of morality and perception, and may have important consequences for policy.

Firestone and Scholl recently argued that moral perception does not exist [2]. They claimed that moral perception is not about morality, that evidence of moral perception reflects visual processing 'in a trivial and unexciting sense', or does not pertain to perception [2]. We list the evidence for their claims below and invite you, the reader, to be the judge.

Isn't that Morality?

The stimuli from previous research that Firestone and Scholl claim 'do not invoke morality', include hitting a small child, making a racist comment, and defecating on a crowded street [3]. Extensive evidence suggests that actions such as these shape judgments of moral character [4], but perhaps we have to agree to disagree with Firestone and Scholl.

Isn't that Interesting?

Firestone and Scholl assert that it is 'unexciting' to know that people who learn about a character's bad actions subsequently attend to depictions of bad outcomes because they expect justice [5]. They asserted 'it can hardly be a new or bold claim that people look at what they expect'. While we agree that the relation between moral concerns and attention is mediated by basic cognitive processes, such as expectations, we disagree that this is 'trivial and unexciting'.

The goal of cognitive science is building process-oriented models. Instead of dismissing this research, we humbly submit that more work should focus on the processes underlying morality. This approach seems especially important in domains such as conflict resolution and legal decision-making [6,7].

Are These Phenomena Analogous?

We also disagree with Firestone and Scholl's [2] interpretation of the moral pop-out effect. We found that people correctly detect moral words (e.g., kill) more frequently than non-moral words [e.g., die; matched for length and frequency (http://corpus.byu.edu/coca/)], but only when the words were presented near the threshold for awareness (~40–60 ms; [8]). Moreover, the moral pop-out effect remained after adjusting for ratings of word valence, emotionality, and intensity. We suggested that moral words more readily reached perceptual awareness compared with non-moral words.

Firestone and Scholl [9] recently successfully reproduced the moral pop-out effect, and allegedly similar fashion and transportation pop-out effects. They argued that moral pop-out can be fully explained by semantic priming because 'relatedness is the key factor in such effects, and thus that memory, not perception, improves detection of morally related words' ([12] p. 43). Their claim hinges on similarities between morality and fashion and/or transportation pop-out effects. However, they did not randomly assign participants to detect moral versus fashion and/or transportation words; neither did they obtain sufficient power to test their claim that these other semantic categories show 'entirely analogous' effects to morality ([9] p. 411). As such, any comparisons they made between moral versus fashion and/or transportation effects seem speculative.

To test for semantic priming, they predicted that 'moral words (e.g., crime) may be easier to detect when presented in the context of other moral words (e.g., guilty)–whereas random non-moral words (e.g., steel) are no easier to detect in the context of other random words (e.g., tired)' [2]. The authors predicted that fashion and/or transportation words were easier to detect when presented in the context of repeated fashion and/or transportation words ($M = 81.3$%) compared with nonrepeated fashion and/or transportation words ($M = 76.0$%), whereas random control words were no easier to detect in the context of other control words ($M = 74.8$%) compared with nonrepeated control words ($M = 72.7$%) [9]. Thus, fashion and/or transportation words do appear more related to one another than do control words.

Curiously, however, Firestone and Scholl did not report the analogous means for their morality study, despite the fact that it was central to their hypothesis (which we quoted above). We are keen to see these values in print.

It is trivially true that semantic memory is implicated in moral word detection as humans learn what stimuli are relevant to the moral domain via acculturation