

# How Emotionally Valenced Properties Inform Perceptual Content

Abstract for ESPP

February 2026

## 1 Abstract

Whether we are capable of perceiving higher-level properties or not is one of the leading debates in the philosophy of perception [Siegel 2006, 2010]. It is in turn controversial whether we possess the ability to represent emotionally charged properties, i.e., properties that attribute emotional valence to objects. The aim of this paper is to argue that we are indeed capable of representing emotional properties at the perceptual level. Specifically, I will argue for this conclusion based on recent developments both in (i) neuroscience and (ii) cultural neuroscience.

These studies are meant to support the thesis by showing that the brain regions involved in perceptual processing show heightened activity when presented with emotionally valenced objects. Seeing a man with a balaclava running towards you elicits a stronger cerebral reaction compared to seeing a robin flying. This heightened activity is not only detected in the regions that are normally associated with emotional processing - such as the amygdala, the hypothalamus, the limbic system and some of its related subcortical areas - but can also be observed in a variety of large-scale networks of brain regions; some already known to contribute to emotional responses, and others not previously associated with this role. Similar insights have emerged regarding the relationship between sensory and emotional processing, suggesting that these domains are far more integrated than once believed [Murphy 1956, Shuler and Bear 2006, Pessoa and Adolphs 2010, Lebrecht et al. 2012, Chikazoe et al. 2014, Mentec, Ivanchei and Cleeremans forthcoming].

As far as cultural studies are concerned, this paper will examine a wide range of empirical studies on perception [Derntl et al. 2012, Chiao et al. 2016, Iidaka and Harada 2016, Clobert and Tsai 2019] which will be used to support the main claim of the paper. In this respect, cross-cultural studies provide a contrastive line of support for the thesis. They show that individuals from different cultural backgrounds process and, as a result, represent the same emotional stimuli in different ways. Regardless of whether these stimuli are ultimately represented as bearing a negative or positive emotional valence, they elicit remarkable neural responses in sensory cortices, once more confirming that emotional properties

are already represented at the perceptual level.

It could be reasonably argued that the enhanced activity detected in sensory areas of the brain can be fully accounted for by patterns of low-level perceptual properties, without requiring any appeal to higher-level ones. Returning to the previous example - the shape, light, speed and colors of the presumed assailant would be enough to elicit a distinctive response in our perceptual system; accordingly, appealing to higher-level properties would be, at best, unnecessary and, at worst, misleading. While this position has some intuitive appeal, I argue that low-level properties alone cannot adequately account for such cases.

Drawing on Kragel [2019], I propose two philosophical interpretations for cases like the one proposed. According to the first, it could be claimed that when we perceive objects that strike us, the brain regions deputed for sensory processing get triggered in a stronger manner. This sense of engagement consequently triggers other areas - those specialized for emotional processing - which actually form the emotionally valenced representation. In this case, emotionally valenced properties are primarily represented at the cognitive level, but top-down influences on lower-level perceptual states still inform us on the affective valence of the perceived object. On the second interpretation, emotionally valenced representations are directly formed within the perceptual system. When presented with an emotionally salient object, we immediately represent it as such instead of elaborating it at the cognitive level.

I argue that these accounts should not be treated as competing explanations but as complementary components of a single framework. Through repeated top-down modulation, perceptual systems can become increasingly sensitive to emotional properties, such that objects not initially recognized as emotionally valenced can, through experience, come to be directly represented as such at the perceptual level [see for example Stokes 2021]. When the empirical data are interpreted in this light, the most plausible explanation of the observed patterns is that emotional properties are attributed during perceptual processing itself. My argument will take the form of an inference to the best explanation.

In conclusion, this paper defends the thesis that emotional properties can be perceptually represented. The variety of studies addressed here seem to ground such claim. They also seem to point to a more general conclusion. If empirical evidence suggests that we are capable of representing emotional properties, and if emotional properties constitute a subset of high-level properties more generally, then it is reasonable to conclude that we can perceptually represent at least some high-level properties. This result strengthens the case for a richer conception of perceptual content and has important implications for ongoing debates in the philosophy of perception concerning the scope and structure of perceptual representation.

## 2 References

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