

Interfacing With Faces: Perceptual Humanization and Dehumanization

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Abstract

This article links the visual perception of faces and social behavior. We argue that the ways in which people visually encode others' faces—a rapid-fire perceptual categorization—can result in either humanizing or dehumanizing modes of perception. Our model suggests that these perceptual pathways channel subsequent social inferences and behavior. We focus on the construct of perceptual dehumanization, which involves a shift from configural to featural processing of human faces and, in turn, enables hostile and aggressive behavior. We discuss visual attention as a possible mechanism of perceptual attenuations and the links between perceptual processes and the functions they serve in preserving the macrosocial order.

Keywords

face perception, social functionalism, perceptual dehumanization

You wake to the face of your spouse, walk to work through a sea of fellow pedestrians, look away from a homeless panhandler, and lock eyes with a coworker in a crowded elevator—and this is before the workday has even begun. But even if hundreds of fellow humans cross your path in a given day, you don't perceive all of them in their full humanity. What accounts for these qualitatively different modes of experiencing another person? This article argues that how people visually encode others' faces—a rapid-fire perceptual categorization—is shaped by social information and channels subsequent social inferences and behavior.

Sometimes, when you see a face, you perceive the person in his or her full humanity. In these instances, the person becomes an identified individual in your mind, whose emotions and interests are immediately apparent, and you feel empathy and desire to treat the person well. However, in other cases, although you might see the face, you do not perceive a person behind it. In these instances, when you look at a face, you process it as a collection of specific features. You do not sense the person's individuality, nor his or her thoughts, feelings, or desires. In these instances, you are likelier to treat the person callously—seeing him or her as an obstacle on the sidewalk to step around or as an “other” whose suffering you do not feel.

A humanizing mode of perception begins when the perceiver engages mechanisms of visual processing that

evolved to recognize human faces (Kanwisher, 2000). In this mode, the perceiver processes the face configurally—that is, as a gestalt—recognizing not just a nose and a mouth and eyes but a person's face (Maurer, Le Grand, & Mondloch, 2002). This configural mode employs brain regions dedicated to face detection, which enable us to individuate faces better than other kinds of stimuli. We can identify hundreds of faces and can do so instantaneously, even when they are pictured from different perspectives, in different lighting, with different hairstyles, or at different ages (Ellis, Bruce, & De Schonen, 1992). This mode is not just active when recognizing static photos; the face-processing system involves multiple neural areas that work in concert to extract both the static and the dynamic features of faces (Haxby, Hoffman, & Gobbini, 2000). Thus, when a face is recognized as a face, we are able to detect dynamic changes and see meaning in these changes. We can see a furrow of the brow and squinting of the eyes and understand these movements in musculature as communications of anger. Similarly, we can track other people's gazes (detecting even a 1.3-degree change)

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in order to identify the objects they are focused on, which enables us to unearth the motivations behind the gaze, whether they stem from physical hunger or sexual lust or even intellectual curiosity. Perceiving a face configurally can therefore increase ascriptions of humanness (Hugenberg et al., 2016).¹

However, we do not always see people in their full humanity—we sometimes engage in a dehumanizing mode of perception. This dehumanizing mode of perception begins when the perceiver focuses upon specific features such as lips or eyebrows rather than taking in the face as a whole (Fincher & Tetlock, 2016; Van Bavel, Packer, & Cunningham, 2011). This is the same piece-by-piece mode of processing that we use to distinguish objects, such as when you recognize your coat in a closet. In this piece-by-piece mode, we find it more difficult to distinguish individual human faces or detect changes in emotional expression or direction of gaze (Adolphs, 2002; Gallagher & Varga, 2014). In other words, in the jumble of features, the person, and what he or she wants and feels, is lost.

These two distinct ways of perceiving faces serve different social functions. The humanizing mode facilitates cohesion. It is triggered in cooperative contexts, and it functions to elicit individuation, empathy, and perspective taking, all of which have been shown to increase helping behavior and cooperation (Batson, 1995; Oswald, 1996; Small & Loewenstein, 2003). Thus, humanizing perceptions spur us toward actions that fulfill others' needs, even at a personal cost. By contrast, the dehumanizing mode gives rise to protective behaviors, even at a cost of harming others. It is triggered in threatening contexts, and it functions to evoke indifference, even callousness, leading us to ignore others' pain. These distinct modes of perception thus enable us to transition between two different behavioral orientations toward others, both of which are necessary for navigating our complex social environment.

This article focuses on dehumanizing modes of perception: when these perceptions occur and what their consequences are. It begins by examining perceptual dehumanization in the domain of punishment and summarizes studies that have documented its antecedents and consequences. It then explores two key questions: First, why do we perceptually dehumanize others? And second, can we control when we do and do not perceptually dehumanize?

Experimental Evidence

Unlike most other forms of harm, from which people typically recoil, collectively sanctioned punishment is met with surprising tolerance from people across a wide array of cultures (Pinker, 2011). Yet the question remains: How are normally empathetic people able to remain unaffected by the state-mandated imposition of pain? The Fincher

and Tetlock (2016) theory of perceptual dehumanization suggests that automatic changes in perceptual processing enable this duality. The theory makes two key assertions: People disengage face-typical processing of those they would benefit from harming, and these shifts in processing facilitate the infliction of harm. We tested these propositions in two complementary series of studies (see Fig. 1).

In our first series of studies, we tested Assertion 1 by examining whether learning that someone committed a serious norm violation attenuates face-typical processing. Participants viewed faces that were (randomly) associated with actions the target person had purportedly performed. We then tested whether believing that a face belonged to a norm violator was sufficient to change face processing. As predicted, we found a substantial reduction in face-typical processing for norm violators. To pinpoint the perceptual change, we used several methods of impairing face-typical processing. In one study, we impaired face-typical processing by inverting faces. In another, we increased reliance on face-typical processing by removing featural information from the face images using a high-spatial-frequency filter. As predicted, people were better at recognizing the inverted faces of norm violators than those of norm followers—and worse at recognizing the low-spatial-frequency faces of norm violators than those of norm followers. The opposing directions of these effects reduced the plausibility of floor, ceiling, and attentional counter-explanations.

The most rigorous measure of perceptual dehumanization is the Facial Composite Task, a perceptual matching task that isolates changes in configural processing (McKone & Robbins, 2011). In the Facial Composite Task, the top and bottom halves of faces are recombined to create new faces. Because people typically process faces configurally, they cannot process the top and bottom halves in isolation. Thus, they find it hard to identify whether the top halves of two faces are the same when the bottom halves have been changed; however, offsetting the two halves disrupts configural processing and makes it markedly easier to determine when the two top halves do not match. In our experiment, offsetting faces had less of an effect for the faces of norm violators than for those of norm followers, suggesting that people processed norm violators' faces less configurally.

Establishing that blameworthiness drives changes in face processing required another set of manipulations. To rule out valence as a confound, we held the norm violations constant and portrayed faces as belonging to either the victim or the perpetrator of each violation. Although the actions were identical across conditions, participants perceptually dehumanized perpetrators more than victims. We also manipulated blameworthiness—a precondition of punitiveness. In one study, the norm violation was described as either intentional or unintentional.

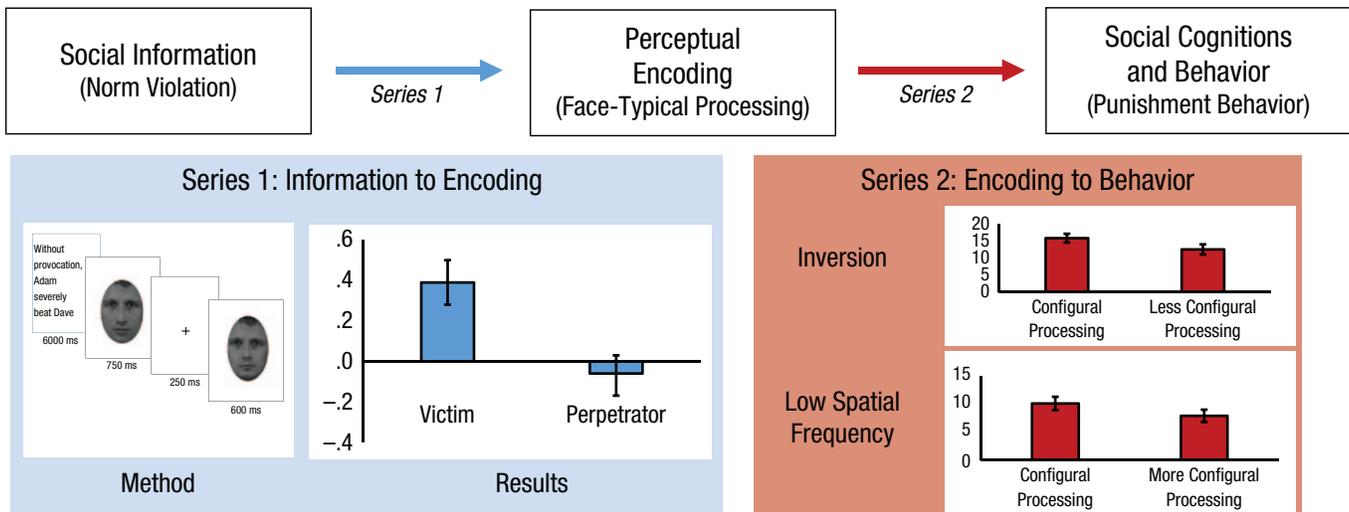


Fig. 1. An overview of two series of studies based on the Fincher and Tetlock (2016) theory of perceptual dehumanization, which links information that someone is a norm violator to reductions in face-typical processing and then to changes in punitive behavior. Series 1 linked social information to changes in perceptual encoding using multiple methodologies of impairing face processing (e.g., alignment, manipulated by offsetting the top and bottom halves of faces) and multiple manipulations of social information (e.g., whether a norm violation was intentional or accidental). Results, shown in the left-hand panel, indicated that intentional harmdoers showed a reduced effect of offsetting (e.g., less configural processing) relative to accidental harmdoers. Series 2 linked perceptual dehumanization, which was manipulated through face images' inversion (which impairs face-typical processing) and reduced spatial frequency (which increases reliance on face-typical processing), to an increased willingness to punish. Results, shown in the right-hand panel, revealed that inversion increased punitiveness and low spatial frequency reduced punitiveness. (The face images used as stimuli were drawn from the Chicago Face Database; Ma, Correll, & Wittenbrink, 2015.)

In another study, the perpetrator's commission of the act was described as genetically predetermined. Across studies, participants perceptually dehumanized only those perpetrators whom they saw as morally culpable (Alicke, 2000). Taken together, the results suggested that attenuations in face-typical processing were specifically triggered by the desire to punish intentional wrongdoers.

Our model argues that different modes of face perception can lead to changes in social behavior. Therefore, in our second series of studies, we tested whether the configural processing of faces inhibits punitive behavior. We manipulated face processing by presenting faces in ways that varied how much participants were able to engage configural processing. We again impaired configural processing by presenting faces as inverted and increased reliance on configural processing by presenting low-spatial-frequency faces. Participants viewed individual faces and descriptions of actions on a computer screen and then recommended a punishment for each individual. Consistent with our predictions, our results showed that less configural processing led to more severe punishments, whereas more configural processing led to more lenient punishments. Again, using complementary manipulations of face-typical processing let us rule out measurement and demand artifacts. These two series of studies bring into focus a basic perceptual mechanism that removes roadblocks to harming fellow human beings that are normally in place.

Why Do We Perceptually Dehumanize Others?

Dehumanizing perceptions occur in many contexts other than punishment, and the present work provides a framework through which to integrate and understand similar attenuations in face processing. Other labs have documented attenuations of configural processing in a wide variety of contexts, in which the processing of faces has differed based on factors ranging from income disparity to university affiliation (Bernstein, Young, & Hugenberg, 2007; Hugenberg & Corneille, 2009; MacLin & Malpass, 2001; Van Bavel et al., 2011). In line with the theory of perceptual dehumanization, these changes in perceptual processing correspond to changes in social behavior; individuals who are perceptually dehumanized are also the most common targets of harmful behavior.

Table 1 lays out these potential parallels between attenuation in configural processing and propensity to engage in harmful behavior. The results of the studies presented suggest that the faces of African Americans and members of out-groups and low-status groups are processed less configurally and that these individuals are more often subject to harm and mistreatment. Although this does not provide a direct causal test, it suggests a link between perceptual processes and social behavior. Finally, recent work by Krosch and Amodio (2017) has suggested that attenuations in configural

Table 1. Convergent Evidence for Perceptual Dehumanization: Findings Suggesting the Co-occurrence of Perceptual Attenuation and Harmful Behavior

Target Social Group	Studies Showing Reduced Configural Processing of the Target Group	Studies Showing Harmful Behavior Toward the Target Group
Low-status group	Shriver, Young, Hugenberg, Bernstein, and Lanter (2008) showed that low social class among targets was linked to reduced face recognition by perceivers.	Sidanius and Pratto (2001) reviewed how low-status groups are targets of discriminatory behavior.
Racial minority group	Michel, Rossion, Han, Chung, and Caldara (2006) demonstrated that same-race faces are processed more holistically than other-race faces.	Milkman, Akinola, and Chugh (2012) conducted a field experiment that demonstrated reduced professor responsiveness to minority students in academia.
Minimal out-group	Hugenberg and Corneille (2009) found that holistic processing of faces was reduced for individuals categorized as out-group members, including same-race individuals.	Lemyre and Smith (1985) found evidence that social categorization drives comparisons that favor one's in-group over one's out-group.

processing can be motivated by conditions of scarcity and that this change in processing facilitates a more selfish allocation of resources. This work raises interesting questions about the motivational underpinnings of perceptual dehumanization and suggests that conscious desires may play a role in activating this perceptual mechanism.

The Meso Nature of Perceptual Dehumanization

One complexity of our model is that it incorporates both macro and micro factors; perceptual dehumanization is a meso-level phenomenon (see House, Rousseau, & Thomashunt, 1995, for a discussion of meso-level effects). While the process involves changes occurring within individuals' minds, the motives driving perceptual attenuations are likely driven by macro societal forces, such as social class, stigma, or even demarcations of group boundaries.

Moreover, there might be unique psychological consequences of this perceptual change. Given the inherent subtlety of perceptual changes, relative to explicit forms of dehumanization, these changes might support motives that exist outside of conscious awareness. Thus, processes of social change might be facilitated through these less conscious denials of humanity. These less conscious processes might contribute to the historical pliability in representations of personhood—as seen most strikingly in instances of genocide, in which cultures have often redrawn the boundaries of personhood, sometimes more inclusively, other times brutally exclusively (Haslam, 2006; Haslam & Loughnan, 2014). The meso nature of the phenomenon mandates that we need to understand perceptual dehumanization both as it affects individuals' justification of their moral actions and as it involves groups' demarcations between right and wrong, insiders and outsiders.

Can We Control When We Do and Do Not Perceptually Dehumanize?

Moving forward, if face processing has social consequences, it is important to understand what underlies these changes in face processing. A growing body of evidence suggests that social information influences the perceptual organization of sensory input, but these results might be complicated and driven by multiple mechanisms (see Fincher & Morris, 2016, for a full discussion). It is important for social-perceptual researchers to acknowledge that these may not be bottom-up changes. Attention influences perceptual processing both before and after perceptual organization processes. Even in the earliest stages of perceptual organization, selective attention modulates the processing that transforms sensory information into meaningful percepts (Moran & Desimone, 1985). Increasingly, neural measures have indicated that attentional effects are truly perceptual, in that they affect perceptual markers such as fusiform face area activation and the N170 response in the same way that stimulus features do (Sreenivasan, Goldstein, Lustig, Rivas, & Jha, 2009).

One interesting possibility that emerging work in social cognition has raised is that visual attention to faces may qualitatively, not just quantitatively, influence face processing. Consider your perception of a given face. How are you engaging with it? Do you maintain eye contact, or do your eyes flit across facial features? Many perception studies have shown that the eyes are critical in face perception (Baron-Cohen, Wheelwright, Hill, Raste, & Plumb, 2001). Therefore, avoiding eye contact may provide one pathway through which changes in perceptual encoding occur. Some promising work from our laboratory using eye tracking has shown that people avoid eye contact more with intentional wrongdoers than with unintentional wrongdoers.

Consistently, at a macro societal level, cultural artifacts redirect visual attention toward or away from faces or

individuals who are recipients of societal harm. For example, nation-states often blindfold the recipients of corporal and capital punishment, tribal groups that engage in close-range warfare have often painted their faces for battle, and modern street gangs often require members to have facial tattoos. To different functional ends, makeup, hairstyles, and jewelry may similarly objectify female faces, given that these adornments often change visual attention. All of this suggests that attention to people's eyes may trigger a humanizing mode of face perception, reaffirming that "eyes are the windows to the soul."

So What?

Seeing each other's faces—and looking into each other's eyes—are the first steps in almost all human encounters, within and across groups. Humanizing perceptions allow us to see others as identified individuals with distinct emotions and interests. Dehumanizing perceptions can switch off that human connection—that tendency to attribute personhood to fellow human beings. Perceptions of personhood are contingent, and those contingencies connect psychological to sociological systems.

Beyond investigating the specific effects, these studies sought to shed a new light on the old meta-theoretical questions: Why is it useful to ask "how" questions—and how should we be asking "why" questions? We suggest that the parable of the drunkard's search—in which a drunk man searches under a streetlight for keys lost elsewhere because the light would allow him to clearly see them, if they were there—applies: We should not confine our search to the area around the streetlight just because that is where it is easiest to see. Our theories are like streetlights. They selectively illuminate some aspects of reality but leave others in the dark. In this case, rigorous perceptual research has uncovered a distinctive and developed cognitive architecture that enables people to individuate and understand others. The breadth and depth of this skill underscore how central face perception is to human sociality. And yet this work has not explored the wider social functions of perception; meso and macro hypotheses have been out of bounds. Conversely, meso and macro thinkers had their own blind spots. Abstract frameworks that portrayed people as intuitive prosecutors (Tetlock, 2002), perpetrators of dehumanization (Staub, 1989), or endorsers of discrimination (Whitley & Kite, 2009) failed to provide the necessary details on the perceptual-cognitive implementation of these mind-sets.

In this article, we have highlighted the deep complementarity of microcognitive and macrosocial lines of research. Social functionalism focuses on "why" questions concerning the adaptive challenges of coping with an extraordinary array of cultural-historical settings, and microcognitive research focuses on "how" questions

concerning the workings of complex neurocomputational systems. Whereas social functionalism highlights the larger context within which perceptual-cognitive processes unfold, it has failed to specify these processes in the detail necessary to solve recurring adaptive problems. The meso-level synthesis of these two perspectives makes it possible to pose new questions and find new tools to answer them.

Recommended Reading

- Fincher, K. M., & Tetlock, P. E. (2016). (See References). A resource for readers who want to learn about perceptual dehumanization.
- Haslam, N., & Loughnan, S. (2014). (See References). An overview of current work on dehumanization.
- Maurer, D., Le Grand, R., & Mondloch, C. J. (2002). (See References). An accessible review of configural processing.

Declaration of Conflicting Interests

The authors declared that they had no conflicts of interest with respect to their authorship or the publication of this article.

Note

- For readers unfamiliar with the face-processing literature, it is useful to note that there are two competing modular accounts that explain the marked skills associated with face processing. The *specific or encapsulated modularity account* suggests that holistic processing developed to facilitate the processing of faces and that only face stimuli elicit holistic processing (Haxby et al., 2000; Kanwisher, Downing, Epstein, & Kourtzi, 2001; Treisman & Kanwisher, 1998). The *domain-general or unencapsulated modularity account* (also known as *expertise theory*) suggests that holistic processing represents a more general strategy (Bukach, Gauthier, & Tarr, 2006). Although the domain-general account suggests that face-typical processing may occur for more stimuli than just faces, both accounts maintain that faces should elicit face-typical processing.

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