The role of embodied change in perceiving and processing facial expressions of others

doi:10.1017/S0140525X10001639

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Abstract: The embodied simulation of smiles involves motor activity that often changes the perceivers’ own emotional experience (e.g., smiling can make us feel happy). Although Niedenthal et al. mention this possibility, the psychological processes by which embodiment changes emotions and the consequences for processing other emotions are not discussed in the target article. We argue that understanding the processes initiated by embodiment is important for a complete understanding of the effects of embodiment on emotion perception. For example, smiling often makes us feel happier and can increase our liking of everything around us. In accord with multi-process theories of judgment, such as the elaboration likelihood model ( Petty & Cacioppo 1986), smiling and other positive behaviors, such as head nodding, can influence judgments and emotions by serving as a simple positive cue, or by affecting either the amount (less thought) or direction (biased positive thoughts) of thinking (for a review, see Brinol & Petty 2008). If smiling reduces thinking, then embodied mimicry could influence subsequent judgments by reducing the discrimination between true and false smiles or between different types of smiles. Mimicking a smile might also facilitate the processing of other smiles when it makes us feel happier by biasing our thoughts or serving as a positive cue, whereas the very same action might increase the difficulty in processing other, subsequent smiling faces when it operates by reducing our amount of thinking.

As these examples illustrate, understanding the processes underlying embodied perception and change are essential to fully understand whether, when, and how individuals process emotional information. Recently, we have proposed that embodiment can not only influence what people think, but can also impact what people think about their own thoughts (i.e., a meta-cognitive process called self-validation; Petty et al. 2002). Meta-cognition refers to thoughts about thoughts (see Brinol & DeMarree, in press, for a review). The main idea behind the concept of embodied validation is that people’s own behaviors can impact their judgments by affecting thought confidence. The confidence that emerges from behavior can magnify the effects of any available mental contents (Brinol & Petty 2003).

In a recent study of embodied validation, Brinol et al. (2009) asked participants to think about and write down their best or worst qualities while they were sitting with their back erect and while pushing their chest out (confident posture) or slouched forward with their back curved (doubt posture). Then participants reported their self-esteem. In line with the self-validation hypothesis, thoughts generated about the self only affected self-attitudes in the relatively high confidence posture. Conceptually similar, DeMarree et al. (2010) conducted research in which participants were presented with different facial expressions of emotion on a computer screen after generating positive or negative thoughts. Consistent with the notion that merely perceiving facial expressions of emotion can influence thought-confidence, people relied on their thoughts more when exposed to facial expressions depicting emotions associated with confidence (e.g., happiness, anger) than when exposed to facial expressions depicting emotions associated with doubt (e.g., sadness, surprise). Importantly, this research suggests that smiling can lead to negative feelings when it increases the confidence in previously generated negative thoughts. If smiling validates negative thoughts making people feel bad, it might produce a number of different consequences for processing subsequent smiles (e.g., introducing a negative bias, increasing attention and therefore discrimination between different types of smiles).

Furthermore, this research suggests that the confidence construal associated with smiles can be important, because happy and angry emotions produce similar outcomes by validating thoughts. Importantly, although the type of smiles discussed by Niedenthal and colleagues all have in common the presence of a positive valence, they might differ in their associated level of confidence, and these variations in confidence can also moderate some of the results described in the review. For example, smiles associated with more confidence (e.g., dominance smiles) might be perceived more easily than less confident smiles.

The embodied simulation of smiles not only involves motor activity, but often changes the perceivers’ own emotional (positive) experience. Although Niedenthal et al. mention this possibility, the psychological processes by which embodiment changes emotions and the consequences for processing other emotions are not discussed in the target article. We argue that understanding the processes initiated by embodiment is important for a complete understanding of the effects of embodiment on emotion perception. For example, smiling often makes us feel happier and can increase our liking of everything around us. In accord with multi-process theories of judgment, such as the elaboration likelihood model (Petty & Cacioppo 1986), smiling and other positive behaviors, such as head nodding, can influence judgments and emotions by serving as a simple positive cue, or by affecting either the amount (less thought) or direction (biased positive thoughts) of thinking (for a review, see Brinol & Petty 2008). If smiling reduces thinking, then embodied mimicry could influence subsequent judgments by reducing the discrimination between true and false smiles or between different types of smiles. Mimicking a smile might also facilitate the processing of other smiles when it makes us feel happier by biasing our thoughts or serving as a positive cue, whereas the very same action might increase the difficulty in processing other, subsequent smiling faces when it operates by reducing our amount of thinking.

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Abstract: Understanding the very nature of the smile with an integrative approach and a novel model is a fertile ground for a new theoretical mechanism and insights. However, from this perspective, I challenge the authors to integrate culture and race in their model, because both factors would impact upon the embodying and decoding of facial expressions.

The central idea of this stimulating target article is that embodied simulation represents a critical feature to effectively decode the nature of a smile. I endorse the argument and also agree with Niedenthal et al. that the integrative approach they propose is timely and necessary to understand the decoding of smiles (and facial expressions). The model posited here by the authors summarizes their view, offering a novel vision and prompting many questions for future research. Niedenthal et al. state that:

“The SIMS model has been largely developed using data collected in Western countries. Nevertheless, it is essential to note that cultural differences may modulate our account. Some clear predictions across cultures can be imagined and have been articulated elsewhere. (sect. 6, para. 18)"  
The authors cite their ongoing work in this regard (Niedenthal et al., in preparation). However, I think it is necessary that they clarify their view regarding the impact of culture and race from their theoretical position in the target article.

Human populations are marked by a variety of practices, beliefs, norms, and forms of organization. The term “culture” is typically used to describe the particular behaviors and beliefs that characterize a social or ethnic group, often located in a particular geographical location. Thus, by definition, culture represents a powerful deterministic and invisible force, which is responsible for shaping the way people think and behave. Importantly, culture also shapes the way people express their emotion. Westerners live in individualistic societies and tend to express their emotions explicitly. By contrast, Easterners live in collectivist societies and tend to suppress their emotions to maintain harmony amongst the group (Markus & Kitayama 1991). More importantly, it has recently been shown that culture impacts not only upon visual perception, but also, critically, upon the extraction of information from faces.

My colleagues and I (Blais et al. 2008) have recently shown that culture shapes how people deploy eye movements to sample information from the facial input space. Western Caucasian adults employ a well-established triangular fixation pattern during face learning, recognition, and categorization by race (Blais et al. 2008). Contrary to intuition, East Asians direct fixations to the central area of the face, around the nose, for the very same visual categorization tasks, while reaching a comparable behavioral performance. The eye movement strategy deployed by the East Asian observers might not straightforwardly relate to gaze avoidance, since this cultural contrast in eye movement generalizes to other visually homogenous categories (Kelly et al. 2010) and is abolished in constrained viewing conditions (Caldara et al. 2010). However, these observations do not rule out the possibility that the eye movement strategy used by Easterners to process visually homogenous objects, might arise from facing a continuous pressure from the Eastern cultural norm promoting gaze avoidance during human face-to-face interactions (Knapp & Hall 2005).

In stark contrast with those previous findings in face recognition, East Asian observers, compared to Western Caucasian observers, oversample information from the eye region during the categorization of facial expressions (Jack et al. 2006), ignoring information from the mouth region, even for the “happy” expression. Besides showing that the eye movement strategies deployed to decode facial expressions are culturally specific, our data also suggest that the transmission of facial expressions is not universal. Easterners focus uniquely on the eye region to decode signals, as they might expect expressive diagnostic signals coming from this facial region. Indirect evidence for this position is provided by the emoticons. While Westerners use a change in the mouth to convey a change from “sad” to “happy” through co-movement of the eyebrows or mouth corners, Easterners do so through changes in the eyes, in the case of “happy” (Knapp & Hall 2005).