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I feel bad and look worse than you: Social comparisons moderate the effect of mood on face health judgement

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ABSTRACT

Mood can bias the judgements people make about themselves and how people compare themselves to others. However, it is not yet clear whether mood also affects appearance-based self-evaluations and social comparisons. Given the importance of perceived health status for well-being, we investigated the effect of mood on self-image and social comparisons of healthiness during two versions of a face health judgement task. Thirty participants judged how they felt compared to healthy and unhealthy looking versions of their own (self version) and a stranger's face (stranger version), after a positive, negative and neutral mood induction. The effect of mood was dependent on self/stranger task order. Although mood did not affect face health judgement for participants who initially judged themselves against their own face, it did affect face health judgement for participants who initially judged themselves in comparison to a stranger's face. After the positive and negative mood inductions, these participants judged themselves as equivalent to healthier/unhealthier looking versions of their own and stranger's faces, respectively. Thus, social comparisons of facial healthiness could provide a perceptual measure of state well-being.

1. Introduction

Although we might think of ourselves as rational observers and decision makers, evidence suggests that the judgements that we make about ourselves, including our appearance, do not just depend on the visual information that comes in through our senses. Rather, higher level (or "top-down") factors can bias self-perceptions. For example, Epley and Whitchurch (2008) found that healthy people, particularly those with high self-esteem, perceive themselves to look more attractive than they do in reality. Mirams et al. (2014) also found that people can be biased in their perceptions of self-healthiness; compared to happy participants, those with dispositional tendencies to experience negative moods judged themselves as equivalent to less healthy looking versions of their own and another person's face. The purpose of the current study was to investigate whether experimentally induced, transient mood also moderates face health judgement and whether performing mood congruent social comparisons exacerbates the effect of mood on self-evaluations of healthiness.

Whereas the term emotion is often used to refer to intense, brief, differentiated states (e.g., fear, anger, joy, contentedness), moods are less intense, longer-lasting, and tend to be differentiated on valence and/or arousal (e.g., a good versus bad mood), rather than specific emotions (Sedikides, 1992; Winkielman, Knutson, Paulus, & Trujillo, 2007). The majority of evidence suggests that two dimensional models (e.g., Watson & Tellegen, 1985) best represent variations in emotional experience associated with mood states. According to Watson and Tellegen's two factor model, mood states can be represented along two independent dimensions of positive and negative affect (PA and NA). A state of high PA is characterised by pleasant feelings such as enthusiasm and alertness; with low PA associated with feelings of sadness and lethargy. A state of high NA, on the other hand, is characterised by feelings of psychological distress, such as nervousness and irritability, with low NA associated with feelings of calmness and serenity.

Mood states are thought to provide "a general, non-interruptive context for cognition" (Simon, 1982, p. 335), "gently colouring" and directing our ongoing thoughts and actions (Isen, 1984, p. 186–187). It has been argued that moods influence our judgements by priming mood congruent constructs in memory (e.g., Bower, 1981; M.S. Clark & Isen, 1982). According to these priming accounts, when we are feeling happy, positive thoughts about the self and others are more active and accessible in memory. When we are unhappy, negative thoughts are

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more active and accessible (Brown & Mankowski, 1993). Affect as Information theories (Clore, Schwarz, & Conway, 1994; Schwartz & Clore, 1988), on the other hand, suggest that we use current feeling states as information to inform our judgements; such that when we are feeling happy, we might misattribute positive affect to the target we are evaluating. These two explanations are considered to be complementary and have since been combined in the Affect Infusion Model (Forgas, 1995).

Moods can vary throughout the course of a day in response to small everyday occurrences (L.A. Clark & Watson, 1988; Isen, 1984) and vary from day to day within individuals (L.A. Clark & Watson, 1988). Although moods are transitory, they can lead to fluctuations in self-esteem and influence behaviour (Forgas, 2013). Moreover, the general propensity to experience more PA/NA in everyday life impacts on our more general sense of well-being and is considered to be a stable personality trait (Diener, Suh, Lucas, & Smith, 1999; Watson, Clark, & Tellegen, 1988). Most people in the general population experience more PA than NA (Crawford & Henry, 2004) and have a positive self-concept (Sinclair et al., 2010). Perhaps as a result, people are generally positively biased in their evaluations of self-related stimuli, such as the letters in their own name (Koole, Dijksterhuis, & van Knippenberg, 2001). Epley and Whitchurch (2008) investigated whether such positivity biases generalise to self-image. They morphed photographs of the participant's face with images of attractive and unattractive composite faces, resulting in a set of faces varying in attractiveness. Participants, (particularly those with high self-esteem) were more likely, and faster, to select an attractively enhanced version of their face as their own out of line-ups containing their original and morphed image. Verosky and Todorov (2010) found similar effects when trustworthiness, rather than attractiveness was altered.

Previously, Mirams et al. (2014) investigated whether appearance-based enhancement effects also generalise to judgements of healthiness and whether dispositional tendencies to experience positive versus negative emotion moderate face health judgement. Other studies have found that unhappy participants lack enhancement effects, or even perceive themselves to look worse than they do in reality. Individuals with symptoms of body dysmorphia, for example, have shown reduced perceptions of self-attractiveness (Clerkin & Teachman, 2008). Mirams et al. (2014) developed a novel face health judgement task intended to measure 'healthiness of self-image' that is, whether people perceive themselves to look more or less healthy than they do in reality. Photographs of the participant's face were altered to look more/less healthy, by adding/subtracting greenness in their skin was then in the skin. Red skin colouration is associated with cardiovascular fitness and increasing redness in small amounts increases perceived healthiness and attractiveness of human faces (see Stephen, Coetzee, Smith, & Perrett, 2009). In addition to redness, the amount of yellowness and lightness in the skin (Stephen, Smith, Stirrat, & Perrett, 2009) impacts on judgements of health, as well as facial configuration (e.g., symmetry, Jones et al., 2001) and facial adiposity (Coetzee, Perrett, & Stephen, 2009). However, we chose to manipulate a single attribute of facial appearance due to our psychophysical method. During the face health judgement task, participants were asked to decide whether they currently felt more or less healthy than each face version (i.e., on each trial, participants decided "how do I feel compared to this version of my own face?"). Psychophysical methods were used to measure perceptual thresholds (i.e., to identify the face version that approximated participants' self-image). Compared to participants who self-reported high levels of PA, participants who self-reported high levels of NA, judged themselves as equivalent to greener, unhealthy looking face versions, suggesting that they saw themselves as looking less healthy (Mirams et al., 2014). This could lead unhappy participants to experience further NA, forming a vicious cycle (Mirams et al., 2014). Indeed, Zell and Balcetis (2012) note that higher level cognition and action are often based on lower-level, perceptual processes.

Although changing skin tone impacts on how attractive, as well as how healthy faces look (Stephen, Coetzee et al., 2009), in our current study, we were interested primarily in how mood affects judgements of healthiness, given the importance of subjective perceptions of health for individuals' more general sense of well-being (e.g., Diener et al., 1999) and because evaluations of current health status have implications for health behaviours, including health care utilization and treatment adherence (see Croyle & Uretsky, 1987; Salovey & Birnbaum, 1989). The face health judgement task also has methodological advantages, compared to paradigms used previously, for example Epley and Whitchurch's paradigm. Altering skin tone, rather than morphing the participant's face with attractive or unattractive composite faces, means that faces differ only in how healthy they look, but not in the degree to which they look similar/dissimilar to the participant. Furthermore, the face health judgement task has ecological validity, as people often use skin tone as a cue to health (e.g., Stephen, Coetzee et al., 2009).

Although previous findings are in line with the idea that mood might alter how people see themselves, there is a lack of direct experimental evidence. It is possible that variables other than mood (e.g., self-esteem, or other personality traits) accounted for individual differences in self-image in Mirams et al.'s (2014) study. Therefore, the first aim of the current study was to more stringently test the hypothesis that mood biases self-image, by investigating the effect of laboratory-induced, rather than pre-existing mood on face health judgement. As the same participants completed the face health judgement task under three mood conditions, we could be more confident that any differences in face health judgement were due to mood, rather than any individual difference variables. Although previous studies have found that transient moods impact on global, self-reported judgements of health-status (e.g. Croyle & Uretsky, 1987; Howren & Suls, 2011; Salovey & Birnbaum, 1989), the impact of mood on appearance-based judgements of healthiness has never been investigated.

Our second aim was to investigate how emotions affect social comparisons of face health. In Mirams et al.'s (2014) study, participants also completed a version of the face health judgement task in which they judged how they felt compared to healthy and unhealthy looking versions of a stranger, who was matched in age, gender and initial facial redness (i.e., "how do I feel compared to this version of a stranger's face?"). Participants who self-reported high levels of NA judged themselves as equivalent to less healthy looking versions of a stranger's face and high self-esteem was associated with more favourable social comparisons of health (Mirams et al., 2014).

This finding is in line with previous evidence suggesting that mood might affect social comparisons (for a review see Wheeler & Miyake, 1992). For example, depressed people frequently make upward social comparisons (compare themselves to people who are better off, e.g., Bäzner, Brömer, Hammelstein, & Meyer, 2006; Butzer & Kuiper, 2006). In turn, there is evidence that social comparisons affect our mood; experimentally manipulating upward social comparisons (comparing one's self to an attractive model) increases negative affect (Tiggemann & McGill, 2004), whereas downward social comparisons (comparing ones' self to a person who is worse off), increase positive affect (Gibbons & Gerrard, 1989).

Moreover, social comparisons are thought to shape our self-evaluations (e.g. Festinger, 1954; Tao, Zhang, Li, & Geng, 2012) and even shape our self-image (e.g., Zell & Balcetis, 2012). Using an adapted version of Epley and Whitchurch's paradigm, Zell and Balcetis (2012) found that after viewing same-gender attractive models, students rated themselves as less attractive and selected a less attractive version of their face as their own out of a line-up. It is possible, therefore, that mood congruent social comparisons (judging oneself favourably in comparison to a stranger when in a positive mood/judging ones' self unfavourably when in a negative mood) could exacerbate the effect of mood on self-image.

In the current study, we recruited participants who reported low to moderate levels of PA and NA (who did not have a dispositional tendency to experience high levels of PA or NA), so that we might more easily manipulate their mood, and measured their face health judgement after a positive, negative and neutral mood induction. We predicted that