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Pathogen Disgust and Perceptions of Attractiveness

Alec T. Beall
University of British Columbia, Vancouver, BC, Canada

Synonyms

Behavioral immune system; Disgust sensitivity; Immunocompetence; Pathogen prevalence

Definition

In humans, pathogen disgust is associated with an increased attraction to phenotypic markers of health and genetic fitness.

Introduction

Health and the ability to resist pathogen infection are key to maximizing survival and reproductive fitness, thus humans have evolved to be particularly attracted to phenotypic markers of good health in potential mates (Buss and Schmitt 1993; Rhodes et al. 2005). Some scholars have argued that under conditions of higher pathogen load (real or imagined), attraction to ostensibly healthy potential mates should be amplified and health-connoting characteristics should be preferred (Gangestad and Buss 1993). Mounting recent evidence in support of this increased preference for phenotypic markers of health and immunocompetence has been found at three separate levels of analysis: (1) individual differences in pathogen disgust, (2) temporary salience of pathogen threat, and (3) environmental variation in local ecological pathogen prevalence.

Health and Perceptions of Attractiveness

A wealth of past research points to a link between health and indices of sexual attractiveness. Some studies have found that subjective ratings of attractiveness are associated with judgements of apparent health (e.g., Jones et al. 2004), and other studies have noted a preferential attraction to phenotypic markers of health and immunocompetence such as averageness, symmetry, and gender dimorphism. For example, facial averageness (population-level prototypicality of the face) is associated with strong genetic defenses to pathogens (Thornhill and Gangestad 1993), and average faces (vs. distinctive faces) are consistently rated as relatively attractive (Langlois and Roggman 1990). Similarly, bilateral symmetry, which is associated with fewer in utero infections, and gender dimorphism (i.e., masculinity in men, femininity in women) which is associated with immunocompetence, are two features consistently found to be physically attractive as well (see

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Rhodes 2006; see also Nedelec and Beaver 2014). This work suggests that perceptions of attractiveness may be guided in part by phenotypic markers of good health and pathogen resistance.

The behavioral immune system is a suite of psychological mechanisms (including disgust) thought to have evolved in humans to inhibit the spread of disease by steering individuals away from parasitic infection (Schaller and Park 2011). For example, pathogen threat can lead to prejudicial responses against people who possess morphological abnormalities (who may be more vulnerable to pathogen infection), such as the obese (Park et al. 2007). These same cognitive processes may also lead to *approach*-oriented responses toward those who possess qualities of good health and immunocompetence. By seeking out and mating with a healthy partner, individuals may enjoy the direct fitness benefits of reduced risk of pathogen infection, as well as indirect fitness benefits of passing on immunocompetent genes to resultant offspring (Gangestad et al. 2006). Put together, this past work implies that the behavioral immune system may be a driving force guiding preferences for attractive faces and phenotypic markers of health and immunocompetence. If this is the case, then the extent to which perceivers feel vulnerable to pathogen transmission is likely to moderate these attitudinal preferences.

Researchers have investigated whether perceptions of attractiveness are influenced by pathogen disgust and threat of infection and evidence has been gathered at three separate levels of analysis: (1) individual differences in pathogen disgust, (2) temporary salience of pathogen threat, and (3) environmental variation in pathogen prevalence. This evidence is discussed in turn below.

Individual Differences in Pathogen Disgust

The behavioral immune system is not activated with identical frequency and intensity in all individuals; therefore, people vary in their sensitivity to pathogen disgust as well as their perceived susceptibility to infection; this can affect their perceptions of attractiveness and attitudinal preferences for ostensibly healthy individuals.

One prediction implied by this rationale then is that individuals who are more easily disgusted by pathogens or chronically perceive themselves to be more vulnerable to parasitic infection should hold more negative attitudes against unattractive people. Indeed, correlational evidence suggests that those who are more chronically disgusted by pathogens (but not moral violations or sexual acts) tend to judge relatively unattractive faces as especially unattractive (Park et al. 2012) and those who are more susceptible to pathogen infection during childhood tend to exhibit an exaggerated preference for attractive opposite-sex faces as adults (de Barra et al. 2013).

In addition to an exaggerated preference for attractiveness more broadly, those who are dispositionally more sensitive to pathogen infection may also exhibit a heightened attraction to phenotypic markers of good health and immunocompetence. Indeed, perceived vulnerability to disease is associated with greater attraction to healthy-looking faces and an increased preference for symmetrical faces (Welling et al. 2007; Young et al. 2011). Similarly, trait-level sensitivity to pathogen disgust is positively associated with men's and women's preferences for gender dimorphism (DeBruine et al. 2010; Jones et al. 2013a, b) as well as preferences for lower waist-to-hip ratios and facial cues of lower weight (both indicative of good health; Singh and Singh 2006; Tinlin et al. 2013) in men rating women (Lee et al. 2015; Fisher et al. 2013).

Put together, research suggests that dispositional concerns about pathogens positively predict an exaggerated preference for attractive targets as well as a heightened attraction to health-connoting features more broadly.

Temporary Salience of Pathogen Threat

Perceptual cues indicating the presence of pathogens may temporarily trigger a heightened activation of the behavioral immune system and facilitate situation-specific behavioral avoidance or derogation of those perceived to possess phenotypic markers of poorer health and immunocompetence. Thus, the temporary salience of a parasitic threat or induced feelings of disgust may also affect preferences for attractive targets

and phenotypic markers of good health and immunocompetence in ways similar to enduring trait-level perceptions of pathogen load. Existing research largely supports this prediction.

Burgeoning experimental work suggests that a temporarily heightened concern about pathogens may lead individuals to prefer more attractive targets. Cantú (2013) experimentally manipulated the temporary salience of pathogens (e.g., by having participants read a narrative suggesting incidence of parasitic infection was on the rise vs. reading a pathogen-irrelevant narrative) and examined subsequent preferences for subjectively attractive potential mates. Two experiments revealed that women (but not men) in the "pathogen salience" condition exhibited a stronger preference for physically attractive potential mates. A third experiment revealed that women's (but not men's) temporarily heightened concerns about pathogens subsequently lead to faster approach-oriented muscle movements in response to highly physically attractive opposite-sex targets. The effect of temporary pathogen salience may also extend beyond mate preferences into other domains more broadly; for example, following a pathogen threat (vs. a no-threat and a predatory threat condition) individuals were more likely to express intentions to vote for physically attractive rather than relatively unattractive political candidates (White et al. 2013).

Temporary pathogen salience may also play a role in moderating preferences for phenotypic markers of good health and immunocompetence. For example, individuals primed with pathogen threat tend to exhibit preferential attraction to symmetrical and gender dimorphic faces (Young et al. 2011; Little et al. 2011). Other work focusing on women's preferences has noted a similar pattern of results: The temporary salience of pathogen threat leads women to more strongly prefer masculine men and emphasize qualities indicative of "good genes" (including masculinity) in potential mates (Lee and Zietsch 2011; Watkins et al. 2012).

Put together, this experimental evidence furthers our understanding of how a heightened activation of the behavioral immune system affects perceptions of attractiveness and phenotypic markers of good health. Though these results suggest that temporarily heightened pathogen concern leads to an exaggerated preference for attractiveness, it is important to note that some experimental investigations have failed to support this prediction (see Park et al. 2012), and more work is needed in this area before firm conclusions can be drawn. Still, when the threat of parasitic infection is salient, a growing body of work suggests that individuals tend to exhibit an exaggerated preference for attractive targets and perceive phenotypic markers of good health and immunocompetence as particularly attractive.

Environmental Variation in Pathogen Prevalence

Especially strong or especially frequent activation of the behavioral immune system among a population of individuals over time could eventually lead to population-level variability in related psychological tendencies and preferences (Schaller 2016). Thus, ecological variability in the actual prevalence of disease-causing pathogens may help to explain cross-cultural differences in perceptions of attractiveness. Specifically, in regions characterized by higher levels of pathogen prevalence, people inhabiting those regions may place a higher value on physical attractiveness or preferentially prefer phenotypic markers of good health and immunocompetence.

Gangestad and Buss (1993) analyzed data from thousands of participants in 29 countries worldwide and found a link between the importance placed on physical attractiveness (i.e., "good looks") in potential mates and an index of parasite severity. Their results suggest that people in countries with a greater prevalence of pathogens value physical attractiveness in mates more than those in countries with lower pathogen prevalence. Recently this study was revisited, and, even when controlling for additional relevant variables (e.g., gender inequality), the same findings were noted (Gangestad et al. 2006). These results provide robust evidence that regional pathogen prevalence is positively associated with population-level emphasis on physical attractiveness in a mate. Regional variation in pathogen prevalence may also be associated with an exaggerated

preference for attractive targets in domains irrelevant to mating as well. For example, during the 2010 US congressional elections, physically attractive political candidates enjoyed greater success in elections held in districts with relatively poorer health outcomes (White et al. 2013).

Regional variation in pathogen prevalence may also play a moderating role in individuals' preferential attraction to phenotypic markers of good health and immunocompetence. Much of this work has focused on women's masculinity preferences and found that women in regions characterized by higher parasite stress and poorer national health more strongly prefer masculine men (DeBruine et al. 2012; Penton-Voak et al. 2004; DeBruine et al. 2010).

Though more work is needed in this area, extant cross-cultural studies suggest that regional variations in pathogen prevalence may also moderate the importance individuals place on attractiveness, as well as phenotypic markers of good health and immunocompetence.

Conclusion

Preferential attraction to phenotypic markers of good health and parasitic resistance appear to be exaggerated under conditions of higher pathogen load (real or imagined). This effect has been noted in (a) individuals who are highly sensitive to pathogens, (b) situations when the threat of pathogen infection is temporarily salient, and (c) regions characterized by high pathogen prevalence and poorer health. Although evidence supporting the link between pathogen disgust and perceptions of attractiveness is becoming increasingly well documented, additional work is needed to further elucidate the intricacies of this relationship.

Cross-References

- ▶ Disease Avoidance
- ▶ Disgust
- ▶ Facial Attractiveness
- ▶ Pathogen Load and Attractiveness
- ▶ Pathogen Resistance
- ▶ Pathogen Risk

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