

Domain-specific variation in disgust sensitivity across the menstrual cycle

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Abstract

Disgust operates in many domains of behavior. On the presumption that facets of this emotion evince adaptive design, we conducted a cross-sectional study of 307 women, investigating changes in disgust sensitivity across the menstrual cycle. Two hypotheses were tested, namely (i) sexual disgust is an adaptation that serves to reduce participation in biologically suboptimal sexual behaviors, and (ii) many facets of disgust sensitivity compensate for cyclic changes in immunological robusticity via patterned alterations in behavioral prophylaxis against pathogens. Hypothesis (i) was supported, as disgust sensitivity in the sexual domain, and only in the sexual domain, was positively correlated with presumed conception risk as assessed on the basis of self-reported position in the menstrual cycle. Hypothesis (ii) was not supported, as no facet of disgust sensitivity changed as a function of the presumed level of immunosuppression assessed on the basis of self-reported position in the menstrual cycle. Results are discussed in light of published ethnographic evidence indicating that, in disparate cultures, disgust is elicited by aberrant sexual behaviors, and sex is equated with eating. Together with published findings on an animal model of sexual conditioning, this corpus suggests that sexual disgust may be a panmammalian adaptation.

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1. Introduction

Disgust is a multifaceted emotion spanning a variety of behavioral domains. While most investigators concur that this emotion originally evolved to protect the body from oral incorporation of pathogen- and toxin-bearing substances, there is disagreement as to whether adaptationist approaches explain the operation of disgust outside of the domain of dietary selectivity (compare Cosmides & Tooby, 2000; Curtis & Biran, 2001; Haidt, McCauley, & Rozin, 1994; Haidt, Rozin, McCauley, & Imada, 1997; Rozin, Haidt, & McCauley, 2000; Wronska, 1990). In this paper we employ an adaptationist perspective in exploring the operation of disgust across the menstrual cycle.

2. Menstrual cycle periodicity in the costs of disgust-relevant actions

2.1. Sexual selectivity and disgust

A variety of findings indicate that disgust is antithetical to sexual desire. Disgust is negatively correlated with subjective sexual arousal in response to erotic films (Koukounas & McCabe, 1997) and guided imagery (Vonderheide & Mosher, 1988). Descriptions of protagonists' disgust reactions decrease subjects' arousal to a variety of erotic stories (Malamuth & Check, 1980). Disgust sensitivity is negatively correlated with desire to engage in a variety of sexual behaviors (Rempel & Baumgartner, 2003), and disgust figures prominently in clinical sexual aversion disorder (Carnes, 1998). Cross-culturally, ethnographic examples reveal antipathy between sexual arousal and disgust among the Mangaians of Polynesia (Marshall, 1971, pp. 118, 121, 152), and the Bengkulu of Sumatra (first author's field notes).

Aberrant sexual behaviors such as bestiality, age-disparate unions, and sex with close kin elicit disgust in Western populations (Angyal, 1941; Barker & Davey, n.d. cited in Troop, Treasure, & Serpell, 2002; Haidt et al., 1994; 1997; Wronska, 1990). Incest and other deviant sexual behaviors are similarly considered disgusting cross-culturally (first author's fieldnotes [Bengkulu, Indonesia]; Bubandt, 1998 [Bali, Indonesia]; Roscoe, 1994, p. 51 [Yangoro Boiken, Melanesia]; J. Haidt, personal communication [urban Japan]; Gorer, 1938, pp. 152, 163 [Lepcha, Himalaya]; Shore, 1976, p. 280 [Samoa, Polynesia]; Labby, 1976, p. 171 [Yap, Micronesia]; Haidt, Koller, & Dias, 1993 [urban Brazil]; Gregor, 1985, p. 58 [Mehinaku, Amazonia]; Fortes, 1949, pp. 38, 251 [Tallensi, Subsaharan Africa]; Beidelman, 1971a, p. 183 [Kaguru, Subsaharan Africa]; Evans-Pritchard, 1951, p. 37 [Nuer, Subsaharan Africa]). Given that many aberrant sexual behaviors are fitness reducing, we propose that sexual disgust is an adaptation that functions to inhibit participation in biologically suboptimal sexual unions (see also Cosmides & Tooby, 2000).

Fitness costs of biologically suboptimal sexual behavior are a function of the likelihood of conception, since (a) inbreeding depression and other poor genes effects impact offspring conceived through such unions, and (b) fertility is time limited, hence time spent in

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