Evolution and Human Behavior xxx (2014) xxx–xxx

Contents lists available at ScienceDirect

Evolution and Human Behavior

journal homepage: www.ehbonline.org

Original Article

Disgust and mating strategy

Laith Al-Shawaf [a,*], David M.G. Lewis [b], David M. Buss [a]

[a] Department of Psychology, The University of Texas at Austin, 1 University Station A8000, Austin, TX 78712, USA
[b] Department of Psychology, Bilkent University, 06800 Bilkent, Ankara, Turkey

ARTICLE INFO

Article history:
Initial receipt 3 April 2014
Final revision received 6 November 2014
Available online xxxx

Keywords:
Disgust
Human mating
Sexual behavior
Mating strategies
SOI
Physical attractiveness

ABSTRACT

An evolutionary task analysis predicts a connection between disgust and human mating, two important but currently disconnected areas of psychology. Because short-term mating strategies involve sex with multiple partners after brief temporal durations, such a strategy should be difficult to pursue in conjunction with high levels of sexual disgust. On this basis, we hypothesized that individuals with a stronger proclivity for short-term mating would exhibit dispositionally lower levels of sexual disgust. Two independent studies provided strong support for this hypothesis: among both men and women, an orientation toward short-term mating was associated with reduced levels of sexual disgust, but not with suppressed moral or pathogen disgust. Our discussion highlights an unexpected finding and suggests important questions for future research.

1. Introduction

Research programs on the emotion of disgust and the psychology of mating have produced a wealth of empirical findings relevant to the study of cognition, emotion, individual differences, social relationships, and sexual behavior (Al-Shawaf & Lewis, 2013; Angyal, 1941; Buss, 2003, 2012; Curtis, de Barra, & Aunger, 2011; Fleischman & Fessler, 2011; Gangestad & Simpson, 2000; Haidt, McCauley, & Rozin, 1994; Navarrete & Fessler, 2006; Rozin & Fallon, 1987; Schaller, Miller, Gervais, Yager, & Chen, 2010; Tybur, Lieberman, Kurzban, & DeScioli, 2012). Despite successes in the fields of disgust and mating, these domains of research remain largely disconnected (for exceptions, see Borg & de Jong, 2012; Fleischman, 2014; Lee, Dubbs, Von Hippel, Brooks, & Zietsch, 2014; Tybur & Gangestad, 2011).

Extant research on the relationship between disgust and mating has made valuable contributions to understanding the relationship between disgust and the temporary state of sexual arousal (e.g. de Jong, van Overveld, & Borg, 2013; Fleischman, 2014; Stevenson, Case, & Oaten, 2011). This research has shown, for example, that sexually aroused individuals experience temporarily suppressed disgust in response to otherwise sexually repellent stimuli (Stevenson et al., 2011); that sexual arousal increases reported willingness to engage in sexual behaviors that might otherwise be disgusting (Ariely & Loewenstein, 2006), and that sexually aroused women are less disgusted by, and less avoidant of, typically disgust-inducing stimuli and tasks (Borg & de Jong, 2012). These studies have made important contributions to arousal and disgust research, but have focused almost exclusively on immediate, state-level disgust and state-level sexual arousal.

This paper seeks to complement this emphasis and fill this research gap by investigating the relationship between dispositional, trait-level aspects of disgust and human mating. This report provides a cogent theoretical rationale for an important link between these domains, advances a novel hypothesis about the relationship these two aspects of human psychology, and supports the hypothesized connection with two independent studies.

Early research by Haidt and colleagues made groundbreaking strides in studying the emotion of disgust, its elicitors, and individual differences in its thresholds, as well as constructing a scale with which to measure the emotion (Haidt et al., 1994; Rozin & Fallon, 1987). However, this important foundational work presented a statistically and conceptually problematic analysis of the different types of disgust, most notably by arguing for the existence of a subtype of disgust called “animal reminder” disgust (Haidt et al., 1994; for thorough discussions of the limitations of the Disgust Scale, see Al-Shawaf & Lewis, 2013; Fessler & Navarrete, 2005; Tybur, Lieberman, & Griskevicius, 2009, Tybur et al., 2012).

Recent research has identified three distinct types of disgust that are demarcated along different lines: pathogen, sexual, and moral disgust (Tybur et al., 2009, 2012). These forms of disgust are differentiated by the cues that elicit them, the behaviors that they motivate, and their distinct profiles of correlations with other psychological variables (Tybur et al., 2012). In this paper, we focus on sexual disgust, an emotion that has been hypothesized to "reduce participation in biologically suboptimal sexual behaviors" (Fessler & Navarrete, 2003, p. 406).

These pioneering researchers have emphasized this emotion's function in preventing individuals from making injudicious mating decisions with unsuitable sexual partners (Fessler & Navarrete, 2003; Tybur et al., 2012). Here, we further elaborate this valuable idea by

* Corresponding author. Tel.: +1 512 547 7735.
E-mail address: laith.alshawaf@mail.utexas.edu (L. Al-Shawaf).

http://dx.doi.org/10.1016/j.evolhumbehav.2014.11.003
1090-5138/

showing how this emotion may be adaptively calibrated in the opposite direction; sexual disgust may be strategically and functionally down-regulated to facilitate the successful pursuit of mating.

1.1. Mating strategy and sexual disgust

Individuals vary in mating strategy—their disposition toward long-term, committed mateships versus short-term, uncommitted mateships (Buss & Schmitt, 1993; Gangestad & Simpson, 1990, 2000). Different mating strategies present distinct adaptive challenges, which in turn lead to the evolution of strategy-specific psychological and behavioral solutions. A task analysis (Marr, 1982) of these distinct challenges identifies the problems individuals must solve to successfully implement different mating strategies and leads to hypotheses about the psychological solutions that could have evolved to solve these adaptive problems.

Successful short-term mating strategies typically involve multiple sex partners, desire for sexual variety, and brief intervals of time before sexual intercourse (Buss, 2012). This strategy should be difficult to implement in the presence of high levels of sexual disgust: individuals with high levels of sexual disgust are less likely to be comfortable with casual sex, multiple partners, and sex that occurs before sufficient information can be acquired about the health and hygiene status of potential mates. Consequently, we propose that a crucial component of a successful short-term mating strategy is the downregulation of sexual disgust sensitivity. On this hypothesis, suppressed levels of sexual disgust may be a previously undiscovered design feature of short-term mating strategies.

In contrast, down-regulated sexual disgust is not necessary for the successful pursuit of a monogamous strategy. In fact, higher levels of sexual disgust may facilitate the implementation of committed mating strategies by inhibiting short-term mating and deterring those in committed relationships from sexual infidelity.

This reasoning suggests that sexual disgust should be dispositionally lower among individuals pursuing a short-term mating strategy relative to those pursuing committed mating. We therefore hypothesized that mating strategy calibrates sexual disgust. Specifically, we predicted that a stronger disposition toward short-term mating is associated with reduced sexual disgust sensitivity.

1.2. Mating strategy and physical attractiveness

This task analysis suggests a link between mating strategy and sexual disgust, but leaves a different question unanswered: Why do some individuals exhibit a stronger orientation toward short-term mating than others? Theory and research suggest that the answer lies partly in individual differences in physical attractiveness (Gangestad & Simpson, 2000; Rhodes, Simmons, & Peters, 2005).

Women shoulder the greater minimum obligatory investment in offspring and thereby incur more severe costs from injudicious mating decisions (Trivers, 1972). Consequently, women have evolved more discriminating mate preferences (Buss, 2003; Trivers, 1972). This sex difference in choosiness is particularly pronounced in the context of short-term mating, which carries greater potential costs for women than for men (Symons, 1979; Trivers, 1972). For example, women face the potential of a costly nine-month pregnancy (Trivers, 1972), are at greater risk of contracting sexually transmitted diseases, and suffer more severe reproductive consequences as a result of these diseases (National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention, 2011).

A female-biased sex difference in the costs of short-term mating is mirrored by a male-biased sex difference in the benefits: ancestrally, success in short-term mating paid greater fitness dividends to men than to women. A large body of research demonstrates that both sexes share a complex repertoire of evolved mating strategies (Buss & Schmitt, 1993), and that there is substantial within-sex variability in mating strategies (Gangestad & Simpson, 1990, 2000). Nonetheless, abundant empirical evidence from dozens of data sources shows that short-term mating looms larger in men's than in women's mating psychology (Buss, 2012; Buss & Schmitt, 1993) and is pursued more vigorously by men (Lippa, 2009).

Because physical attractiveness is desirable in a mate (Sugiyama, 2005; Symons, 1979, 1995) and enhances one's mate value (Buss, 2003), physically attractive individuals should be better able to implement their preferred mating strategy. And because successful short-term mating strategies were more reproductively beneficial for men than women during human evolution (Buss, 2003; Symons, 1979), evolutionary reasoning suggests that physical attractiveness should lead men—but not women—to pursue uncommitted mating.

Researchers have shown that in men, but not women, physical attractiveness and related indices such as fluctuating asymmetry predict number of sex partners, number of affair partners, and other measures of short-term mating (Gangestad & Simpson, 2000; Rhodes et al., 2005). This pattern is mirrored in other species: more attractive male birds devote less effort to parenting when they can translate their physical attractiveness into extra-pair copulations (Johnsen, Delhey, Schlicht, Peters, & Kempenaers, 2005; Møller, 1994; Møller & Thornhill, 1998).

Precisely how physical attractiveness leads to larger numbers of short-term mates remains unknown, however. Extant findings link physical attractiveness to behavioral outcomes such as number of sex partners, but have not assessed whether physically attractive men experience greater activation of underlying short-term mating psychology. The link between physical attractiveness and mating could, in principle, occur via a change in behavior alone or via a shift in both behavior and psychology. Consequently, we sought to replicate this link between male physical attractiveness and short-term mating and investigate whether it applies to underlying psychology as well as manifest behavior.

1.3. The current study

We propose a two-step process in which physical attractiveness calibrates mating strategy and mating strategy calibrates sexual disgust. The first part of this model is sex-differentiated, with physical attractiveness leading to uncommitted mating in men but not women. The second part of this model posits the same relationship for both sexes, with a disposition toward short-term mating leading to reduced levels of sexual disgust sensitivity in both men and women.

2. Study 1

2.1. Methods

2.1.1. Participants and procedure

One hundred forty-four women and 103 men (M_{age} = 19.49 years, SD_{age} = 2.56, age range = 18–51) were recruited from the psychology subject pool at The University of Texas at Austin. Participants arrived at the laboratory, provided informed consent to participate in the study, and were escorted by a researcher to a private room where they completed an online survey hosted by Qualtrics. Participants received partial course credit for their participation and were debriefed upon completion.

2.1.2. Measures

As part of a larger study on individual differences in disgust sensitivity, participants completed a set of inventories designed to measure mating strategy, physical attractiveness, and disgust.

2.1.2.1. Mating strategy. We operationalized mating strategy with the Revised Sociosexual Orientation Inventory (SOI-R; Penke & Asendorpf, 2008). This enabled us to measure both psychological and behavioral facets of short-term mating; the SOI-R is a nine-item measure of an

Please cite this article as: Al-Shawaf, L., et al., Disgust and mating strategy, *Evolution and Human Behavior* (2014), http://dx.doi.org/10.1016/j.evolhumbehav.2014.11.003