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**Further evidence for associations between short-term mating strategy and sexual disgust**

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**Data and analysis codes publicly available at <https://osf.io/n2dmy/>**

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**This paper is now in press at *Personality and Individual Differences*.**

## **Further evidence for associations between short-term mating strategy and sexual disgust**

### **Abstract**

Al-Shawaf et al. (2015 *Evolution & Human Behavior*, 36, 199-205) found that people who were more interested in pursuing a short-term mating strategy (indexed by higher total scores on the Revised Sociosexual Orientation Inventory) reported less sexual disgust (indexed by lower scores on the sexual disgust subscale of the Three Domain Disgust Scale). By contrast with these results for sexual disgust, Al-Shawaf et al. (2015) observed no significant associations between interest in pursuing a short-term mating strategy and moral or pathogen disgust. This pattern of results, wherein sociosexuality correlates with lower sexual disgust but is unconnected to disgust more generally, may indicate specific cognitive adaptations that counter the possible disgust responses associated with engaging in short-term mating. Here we replicated Al-Shawaf et al.'s (2015) findings for sexual disgust and sociosexual orientation in a large sample (N=7166). Although we found that individuals who were more interested in pursuing a short-term mating strategy reported significantly lower moral disgust, these relationships were very weak. Together, these results suggest a robust relationship between disgust and short-term mating that is relatively specific to sexual disgust.

## Introduction

Short-term mating strategies typically involve engaging with multiple sexual partners, often with brief intervals of time between sexual encounters (Buss & Schmitt, 2018). Such mating strategies can be beneficial under some circumstances (e.g., when there is a low requirement for investment from partners, Gangestad & Simpson, 2000). However, short-term relationships tend to involve casual sex and frequent sexual activity with partners for whom little information is available (Al-Shawaf et al. 2015). To facilitate short-term mating, Al-Shawaf et al. (2015) proposed that short-term strategies would be associated with lower levels of sexual disgust (Al-Shawaf et al. 2017).

In a test of this proposal, Al-Shawaf et al. (2015) found that interest in short-term mating (assessed via the Revised Sociosexual Orientation Inventory, SOI-R, Penke and Asendorpf, 2008) and sexual disgust (assessed via the Three Domain Disgust Scale, Tybur et al., 2009) were negatively correlated (total N=530). By contrast, Al-Shawaf et al. (2015) observed no significant relationships between interest in short-term mating and either moral or pathogen disgust. Al-Shawaf et al. (2015) interpreted these results as evidence for specific cognitive adaptations that function to counter the high level of sexual disgust that would otherwise prevent individuals from adopting a short-term mating strategy.

Gruijters et al. (2016) previously reported that people scoring high on the pathogen disgust scored lower on behavior subscale of the SOI-R. Tybur et al. (2015) previously reported that people scoring high on the pathogen

disgust scored lower on attitude subscale of the SOI-R. Thus, evidence for a relationship between mating strategy and disgust sensitivity that is specific to the domain of sexual disgust is equivocal. Consequently, we attempted to replicate Al-Shawaf et al's (2015) findings for short-term mating strategy and disgust sensitivity in a large online sample (total N=7166).

## **Methods**

Participants in our study (5087 women; mean age=22.8 years, SD=4.6 years; 2079 men; mean age=24.7 years, SD=5.5 years) completed the questionnaires online at facresearch.org. Participants were recruited by following links to an online study of social behavior and were not compensated for their time. Data on sexual orientation were recorded before participants completed the questionnaires. Participants were asked for their preferred sex for relationships and were given the following options; I prefer men, I prefer women, I prefer any (e.g., bisexual), or I prefer none (e.g., asexual). Participants completed both Tybur et al's (2009) Three Domain Disgust Scale (TDDS) and Penke and Asendorpf's (2008) Revised Sociosexual Orientation Index (SOI-R). Questionnaire order was randomized.

Tybur et al's (2009) TDDS is a 21-item measure that asks participants to rate each of 21 actions from not at all disgusting (0) to extremely disgusting (6). The actions are divided into three domains: pathogen disgust (e.g., stepping on dog poop), sexual disgust (e.g., hearing two strangers having sex), and moral disgust (e.g., deceiving a friend). Scores for each subscale are calculated by summing the individual scores for the seven relevant items.

Penke and Asendorpf's (2008) SOI-R is a nine-item questionnaire that assesses openness to uncommitted sexual relationships. Each item is answered using a 1 to 5 scale. The SOI-R has three components (desire, attitude, and behavior). The desire component consists of three items (e.g., "In everyday life, how often do you have spontaneous fantasies about having sex with someone you have just met?"), for which 1 on the response scale corresponds to "never" and 5 corresponds to "nearly every day". The attitude component consists of three items (e.g., "Sex without love is OK"), for which 1 on the response scale corresponds to "totally disagree" and 5 corresponds to "totally agree". The behavior component consists of three items (e.g., "With how many different partners have you had sex within the past 12 months?"), for which 1 on the response scale corresponds to "0 sexual partners" and 5 corresponds to "8 or more sexual partners". Scores for each component are calculated by summing the individual scores for the three relevant items. A global (i.e., overall) SOI-R score can be calculated by summing the scores for each subscale.

## **Results**

We used global SOI-R score in our analyses (rather than the individual SOI-R subscales) following Al-Shawaf et al. (2015). Table 1 shows descriptive statistics for each TDDS subscale and global SOI-R separately for men and women. Table 1 also shows results of t-tests indicating that women reported significantly greater disgust sensitivity, but less interest in short-term mating,

than men did. Data and analysis code for all analyses below are available on our OSF page (<https://osf.io/n2dmy/>) and in our Supplemental Materials.

	Women (N=5087)			Men (N=2079)			t-test (df=7164)		
	alpha	M	SD	alpha	M	SD	t	p	d
sexual disgust	.76	19.5	8.6	.73	11.5	7.6	37.1	<0.001	.97
sexual disgust (reduced)	.75	8.7	5.8	.64	5.6	4.6	21.5	<0.001	.56
pathogen disgust	.73	27.0	7.1	.74	24.4	7.4	13.8	<0.001	.36
moral disgust	.84	27.3	8.4	.84	26.6	9.1	3.1	0.002	.08
global SOI-R	.85	23.4	7.7	.83	27.2	7.6	-18.8	<0.001	-.49

**Table 1.** Cronbach's alphas, means, and standard deviations for each TDDS subscale and global SOI-R. The table also shows results of independent sample t-tests for sex differences in these measures.

Following Al-Shawaf et al. (2015), we also calculated scores for a reduced version of the sexual disgust subscale, in which we removed three items (TDDS-items 11, 14, and 17) with substantial conceptual overlap with specific items on the SOI-R. This reduced sexual disgust subscale score was calculated in Al-Shawaf et al. (2015) to check that correlations between short-term mating strategy and sexual disgust were not driven solely by conceptual overlap between specific items on these questionnaires.

Results of tests for correlations between global SOI-R and scores on the different subscales of the TDDS (including the score for Al-Shawaf et al.'s reduced version of the sexual disgust subscale) are shown in Table 2. Our results show significant correlations between SOI-R and sexual disgust, but also suggest SOI-R and moral disgust are significantly correlated, albeit much more weakly.

	Women (N=5087)				Men (N=2079)			
	sexual disgust	sexual disgust (reduced)	pathogen disgust	moral disgust	sexual disgust	sexual disgust (reduced)	pathogen disgust	moral disgust
r	-0.57	-0.47	-0.03	-0.16	-0.52	-0.43	0.04	-0.12
p	<0.001	<0.001	0.07	<0.001	<0.001	<0.001	0.07	<0.001

**Table 2.** Correlations between global SOI-R and TDDS subscales for all men and women.

Although Al-Shawaf et al. (2015) did not report the sexual orientation of the men and women in their studies, we repeated our analyses for the 3870 women and 1523 men in our sample who reported being heterosexual. The results of these analyses are given in Table 3 and show the same pattern of significant results that we saw in our initial analyses.

	Women (N=3870)				Men (N=1523)			
	sexual disgust	sexual disgust (reduced)	pathogen disgust	moral disgust	sexual disgust	sexual disgust (reduced)	pathogen disgust	moral disgust
r	-0.57	-0.48	-0.02	-0.15	-0.55	-0.44	0.03	-0.15
p	<0.001	<0.001	0.14	<0.001	<0.001	<0.001	0.26	<0.001

**Table 3.** Correlations between global SOI-R and TDDS subscales for heterosexual men and heterosexual women only.

Despite having very large sample sizes, we did not consistently replicate the significant correlations between pathogen disgust and SOI-R subscales previously reported by Gruijters et al. (2016) and Tybur et al. (2015) (see Supplemental Materials). Equivalence tests (Lakens et al., 2018) showed that the effects in our study were significantly smaller than the effect sizes that the original studies had 33% power to detect (all  $p$ s < .001, except men's behavior subscale with  $p = .039$ ; see Supplemental Materials), suggesting

further work is needed to determine if the correlations between SOI-R subscales and pathogen disgust reported by Gruijters et al. (2016) and Tybur et al. (2015) are reliable.

## **Discussion**

We replicated Al-Shawaf et al's (2015) finding that individuals who score higher on sexual disgust report less interest in short-term mating. As in Al-Shawaf et al. (2015), this relationship between mating strategy and sexual disgust was not simply a byproduct of substantial conceptual overlap between items on the SOI-R and the sexual disgust subscale of the TDDS. Although we found some evidence for very weak associations between moral disgust and mating strategy, these associations were consistently substantially weaker than those that we observed for sexual disgust. They appear to be significant only because of our very large sample size. Consequently, we conclude that the relationship between mating strategy and disgust sensitivity is relatively specific to sexual disgust.

Unlike Gruijters et al. (2016) and Tybur et al. (2015), we did not find consistent evidence for associations between pathogen disgust and scores on the SOI-R (or its subscales, see supplemental materials). This discrepancy could be due to context sensitivity in these relationships; Murray et al. (2013) found that the negative correlation between germ aversion and mating strategy occurred primarily when disease threat was made salient. It is possible that participants in our study had had less recent exposure to disease than had participants in Gruijters et al. (2016) and Tybur et al. (2015).

In summary, we replicated Al-Shawaf et al.'s (2015) findings of correlations between interest in short-term mating and sexual disgust. Although we also found that people who scored higher on the SOI-R reported significantly less moral disgust, the strength of these relationships was similar to those reported by Al-Shawaf et al. (2015). Thus, our results support Al-Shawaf et al.'s (2015) claim of an association between mating strategy and sexual disgust that is relatively specific to sexual disgust. Further work is needed to clarify whether sexual disgust influences mating strategy, mating strategy influences sexual disgust, or both.

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