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An orderly personality partially explains the link between trait disgust and political conservatism

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**ABSTRACT**

Individuals who are more easily disgusted tend to be more politically conservative. Individuals who have a preference for order also tend to be more politically conservative. In the present research, we hypothesised that these three variables are psychologically interrelated. Specifically, trait disgust encourages a generalised search for order, which, in turn, encourages the endorsement of political positions that aim to maintain societal order. Taking an individual differences approach, we operationalised the preference for order via Orderliness, one aspect of the Big Five trait Conscientiousness. Across six samples (total $N = 1485$), participants completed measures of trait disgust, aspect/trait personality, and political orientation. Analyses revealed that Orderliness was a consistent mediator of the association between trait disgust and conservatism. Analyses of subscales of disgust revealed preliminary evidence that Orderliness most consistently mediated the relationships between Contamination, Pathogen, and Sexual disgust and conservatism. These data suggest that disgust-sensitive people extend their preference for order in the physical environment (e.g. tidying up one’s room) to the sociopolitical environment (e.g. strengthening traditional norms). The present findings illustrate one way in which emotional, cognitive, and personality processes work together to influence political orientation.

Disgust is a powerful emotion generally elicited by potentially contaminating or contagious stimuli. It is considered to be one of the basic human emotions (Ekman & Friesen, 2003; Haidt, McCauley, & Rozin, 1994). Physically, disgust is defined by a distinct facial expression involving the constriction of the oral and nasal cavities (Ekman & Friesen, 2003; Susskind et al., 2008; Yrana, 1993). Beyond merely being a negative and arousing emotion, the contemporary view on disgust suggests that it is an evolutionary specialisation that helped early humans to avoid contact with contaminated or harmful foods (Haidt et al., 1994) and other potential sources of disease (Murray & Schaller, 2016; Oaten, Stevenson, & Case, 2009; Tybur, Lieberman, Kurzban, & DeScioli, 2013). Recent research suggests that disgust responses extend beyond physical contamination to symbolic forms of contamination. For example, moral transgressions are described as “disgusting” (Hutcherson & Gross, 2011) and elicit disgust-related facial expressions (Chapman, Kim, Susskind, & Anderson, 2009; Cannon, Schnall, & White, 2011). Moreover, individual differences in the tendency to experience disgust (i.e. trait disgust) are related to condemnation of moral transgressions (Chapman & Anderson, 2014; Horberg, Oveis, Keltner, & Cohen, 2009; Jones & Fitness, 2008; Karinen & Chapman, 2018).

Other research has documented a reliable association between trait disgust and political conservatism (e.g. Inbar, Pizarro, & Bloom, 2009; Inbar, Pizarro, Knobe, & Bloom, 2009; Terrizzi, Shook, & Ventis, 2010). In the present studies, we sought to unpack
this association by assessing the degree to which it might be partially explained by a preference for order. That is, trait disgust may be associated with the desire to organise one’s environment into familiar patterns, which, in turn, may promote a preference for status quo-affirming ideologies.

We also assessed an alternative model in which preference for order was the predictor and disgust was the mediator. That is, a dispositional tendency to prefer an orderly environment may lead people to avoid disgusting stimuli, which then may encourage people to endorse political positions that restrict exposure to potentially disgusting stimuli.

Disgust and political orientation

As noted, individuals who are higher in trait disgust have been found to endorse more politically conservative beliefs (Inbar, Pizarro, & Bloom, 2009; Inbar, Pizarro, Iyer, & Haidt, 2012). This link appears to be especially robust for social issues framed in terms of moral purity, such as abortion and gay marriage (Inbar, Pizarro, & Bloom, 2009; Inbar, Pizarro, Knobe, & Bloom, 2009; Terrizzi et al., 2010), and for measures of trait disgust that focus on interpersonal contamination (Inbar et al., 2012). The influence of disgust extends beyond generalised attitudes to more specific voting behaviour; higher trait disgust predicted higher voting intentions for John McCain over Barack Obama in the 2008 U.S. Presidential election (Inbar et al., 2012). Overall, then, it appears that there is a fairly consistent link between disgust and conservatism.

One potential explanation for this link is the motivation to avoid disease. Disgust is a key affective component of the behavioural immune system, a suite of psychological mechanisms that helps in the detection and avoidance of pathogens (Schaller & Park, 2011). Given that one major source of pathogen transmission is other people, the behavioural immune system has implications for social interactions (Schaller & Park, 2011). Specifically, the behavioural immune system may promote socially conservative values in order to avoid outgroup members who may harbour novel pathogens (Roberts, 1989; Thornhill, Fincher, & Aran, 2009), or to promote adherence to traditions and customs that limit pathogen exposure (Murray, Trudeau, & Schaller, 2011; Tybur et al., 2016). Consistent with this idea, one meta-analysis of 24 studies found a positive relationship between stronger behavioural immune tendencies (i.e. increased fear of contamination, higher trait disgust) and more conservative ideologies (r = 0.26) (Terrizzi, Shook, & McDaniel, 2013). Evidence for this model comes from cross-national studies, which have found that regions in the world with higher pathogen prevalence tend to endorse more authoritarian governance and increased sociosexual restrictions (Murray, Schaller, & Suedfeld, 2013; Schaller & Murray, 2008).

Moreover, studies suggest that the link between pathogen avoidance and conservatism may be partially accounted for by sociosexual strategies. Given that pathogens can be contracted through sexual activity, individuals who are more concerned with avoiding pathogens may be more likely to adopt monogamous and traditional sexual strategies as a means to avoid pathogens. Indeed, research has shown that when both pathogen and sexual disgust were entered simultaneously to predict conservatism, sexual (but not pathogen) disgust predicted higher conservatism (Tybur, Merriman, Hooper, McDonald, & Navarrete, 2010). This finding was replicated in a recent set of studies, which found that the link between contamination or pathogen disgust and conservatism was mediated by sexual disgust (Tybur et al., 2016). However, these data have also been challenged on statistical grounds (Shook, Terrizzi, Clay, & Oosterhoff, 2015).

Disgust, personality, and political orientation

The pathogen avoidance model, either via direct contamination avoidance or restrictive sexual strategies, provides insight into the link between disgust and conservatism. Here, we suggest a complementary explanation for this link. We propose that trait disgust is associated with the specific motivation to create and maintain order. This preference for order, in turn, increases the likelihood of endorsing conservative policies (which typically seek to strengthen traditional institutions and norms). Although the motivation for order has been operationalised in numerous ways (e.g. Webster & Kruglanski, 1994), in the present studies we adopted an individual differences approach, focusing on the trait of Orderliness, an aspect of Conscientiousness. We hypothesised that this relatively stable and reliable personality variable would at least partially account for the association between disgust and political orientation.

Our hypothesis was informed by research in personality psychology that has repeatedly demonstrated the impact of personality traits on important life
outcomes, e.g. workplace performance, relationship satisfaction, and well-being (Ozer & Benet-Martinez, 2006). Importantly, differences in Big Five personality traits have also been shown to predict political orientation. Political liberalism is generally associated with increased Openness to Experience, whereas conservatism is predicted by higher Conscientiousness (Carney, Jost, Gosling, & Potter, 2008; Hirsh, DeYoung, Xu, & Peterson, 2010; Sibley, Osborne, & Duckitt, 2012; Xu, Mar, & Peterson, 2013). These associations between personality traits and political orientation remain robust across different measures of personality (Burton, Plaks, & Peterson, 2015; Sibley et al., 2012) and political orientation (Hirsh et al., 2010; Kandler, Bleidorn, & Riemann, 2012; Mondak & Halperin, 2008; Van Hiel, Cornelis, & Roets, 2007). Importantly, these personality differences translate into voting patterns in national elections both in the US (Mondak & Canache, 2014; Rentfrow, Jost, Gosling, & Potter, 2009) and in Europe (Vecchione et al., 2011). (For a review, see Xu, Plaks, & Peterson, 2016.)

Previous research on personality and political orientation has largely adopted a trait-level model of personality. Recent work, however, has found that each of the Big Five traits can be conceptually and empirically subdivided into two distinct yet related aspects. These aspects often provide more independent predictive power than the Big Five traits do on their own (DeYoung, Quilty, & Peterson, 2007). DeYoung et al. (2007) empirically established the ten aspects as follows: Openness and Intellect (Openness to Experience), Orderliness and Industriousness (Conscientiousness), Compassion and Politeness (Agreeableness), Enthusiasm and Assertiveness (Extraversion), and Withdrawal and Volatility (Neuroticism).

A growing number of studies provide evidence that different aspects are separately associated with important behaviours and life outcomes (Soto & John, 2017), such as cognitive abilities (DeYoung, Quilty, Peterson, & Gray, 2014), response to novelty (Fayn, Tiliopoulos, & MacCann, 2015), and even proclivity for mood disorders (Quilty, Pelletier, DeYoung, & Bagby, 2013). Furthermore, neuroimaging studies have found that the two aspects of Neuroticism were associated with divergent patterns of amygdala responses to negative stimuli (Cunningham, Arbuckle, Jahn, Mowrer, & Abduljalil, 2010).

A smaller but growing body of research has investigated how the ten aspects relate to political orientation. The available data suggest that the aspects contribute important detail when predicting political orientation. For example, when both aspects of Conscientiousness were simultaneously entered to predict political orientation, the Orderliness aspect (but not the Industriousness aspect) predicted higher conservatism (Hirsh et al., 2010). For trait Agreeableness, the Compassion aspect predicted liberalism, whereas the Politeness aspect predicted conservatism (Hirsh et al., 2010). These patterns of aspect-level personality correlates of political orientation have been since replicated (e.g. Osborne, Wootton, & Sibley, 2013; Xu et al., 2013).

Orderliness, political orientation, and disgust

In the present studies, we investigated whether an aspect-level analysis of personality would shed further light on the relationship between trait disgust and political conservatism.

Specifically, we examined whether Orderliness would be helpful for understanding this link. Orderliness refers to a general desire to maintain structure, cleanliness, and organisation (e.g. “I don’t like to make a mess”) (DeYoung et al., 2007). Several studies have reported that, of the two aspects of Conscientiousness, Orderliness, but not Industriousness, significantly predicts political conservatism (Hirsh et al., 2010). As such, political conservatism may be more closely related to characteristics emphasised by Orderliness (i.e. maintaining structure and convention) than by Industriousness (i.e. working hard, goal pursuit) (Xu et al., 2016). Orderliness may predict conservatism because it is related to several of the defining goals and motivations of the political right, such as decreased tolerance of ambiguity and uncertainty, and increased need to maintain tradition (Jost, Glaser, Kruglanski, & Sulloway, 2003; Xu et al., 2016).

Orderliness also appears to be associated with higher trait disgust (Karinen & Chapman, 2018). One possible explanation for the relationship between Orderliness and trait disgust is that Orderliness contributes to a pathogen avoidance strategy. Maintaining physical order may facilitate pathogen avoidance by preventing bacterial growth and pest infestation; an orderly and neat environment also makes it easier to notice signs of contamination such as rodents and insects. Furthermore, an orderly environment fosters familiarity, and may reduce exposure to unexpected, potentially dangerous stimuli. In addition, the relationship between preference for order and disgust may be bi-directional. That is, people with
orderly dispositions may benefit from the fact that involuntary disgust responses help them to avoid stimuli that are messy and disorderly (e.g. open sores, insects and rodents).

In summary, previous work indicates that Orderliness is associated with both trait disgust and political conservatism. In the present paper, we propose that Orderliness may mediate the relationship between trait disgust and conservatism. We suggest that the desire to maintain order that is motivated by trait disgust may extend beyond the physical environment to maintaining an orderly social environment. This may lead to the endorsement of ideologies that emphasise societal structure and order. Thus, Orderliness and trait disgust may share variance in predicting conservatism. That is, Orderliness may predispose people to lean toward ideologies that emphasise societal structure and order. This may lead to the endorsement of ideologies that promote an orderly society; that is, those higher in Orderliness should be more conservative. Importantly, we expected that it would be Orderliness, but not Industriousness, that would mediate the relationship between disgust and conservatism.

Our primary hypothesis was that Orderliness would mediate the relationship between disgust and conservatism (Figure 1). We considered trait disgust as the predictor variable and Orderliness as the mediator, because from a lifespan development perspective, basic emotions such as disgust arrive very early (e.g. Ganchrow, Steiner, & Daher, 1983; Rosenstein & Oster, 1988) and precede the onset of more complex personality dispositions (i.e. Orderliness). Both emotions and personality characteristics, in turn, precede the development of political ideology.

We note, however, that although disgust precedes the development of personality in early life, as adults, individuals’ personalities can impact the types of emotion they experience. Therefore, this relationship may be bi-directional such that disgust mediates the link between Orderliness and conservatism. We do not view the two pathways as mutually exclusive; both processes may operate simultaneously. For this reason, the present research also tested a model in which disgust was the mediator.

**Present research**

Using data from six samples, we tested whether Orderliness would mediate the association between trait disgust and conservatism. Our primary hypothesis was that disgust sensitive individuals would be higher in Orderliness, which in turn, would predispose these individuals to endorse belief systems that promote an orderly society; that is, those higher in Orderliness should be more conservative. Importantly, we expected that it would be Orderliness, but not Industriousness, that would mediate the relationship between disgust and conservatism.

In addition, we examined the associations between Orderliness and more specific forms of disgust. Past research has proposed that overall trait disgust consists of specific subdomains that pertain to specific types of disgust-inducing stimuli. The Disgust Scale by Haidt et al. (1994), later modified by Olatunji et al. (2007), suggests that trait disgust consists of three subtypes: Core, Animal Reminder, and Contamination. Briefly, Core disgust is characterised by the rejection of stimuli that directly signal the presence of pathogens (e.g. rotting foods). Animal Reminder disgust pertains to aversion toward injuries or reminders that humans are animals (e.g. touching the ashes of a cremated person). Contamination disgust pertains to the threat of potential contamination (e.g. touching a toilet seat) (Olatunji et al., 2007).

Work by Tybur, Lieberman, and Griskevicius (2009) suggests a somewhat different makeup of trait disgust, with subdomains labelled Pathogen, Sexual, and Moral disgust. Pathogen disgust is characterised by the avoidance of contagions and infectious stimuli (Tybur et al., 2009). Sexual disgust deals with the avoidance of risky sexual partners and behaviours. Moral disgust pertains to avoidance of those who violate accepted social norms. Given that Orderliness is primarily concerned with maintaining an organised and neat environment, we predicted that Orderliness would especially relate to avoiding stimuli associated with disorderly environments. That is, one function of being orderly may be to limit exposure to pathogenic or contagious stimuli. As such, we predicted that Orderliness would be most likely to mediate the link between Orderliness and conservatism.
link between Core, Contamination, and Pathogen-related disgust and conservatism. Conceptually, Orderliness is not as clearly related to Animal Remin-der, Sexual, or Moral disgust. Therefore, we predicted that Orderliness would not mediate any observed relationships between these subtypes of disgust and conservatism.

**Method**

**Participants**

We report aggregated analyses of six datasets. Data from Samples 4–6 have been previously published as a portion of another article examining different variables than the present study (Karinen & Chapman, 2018). Samples 1–3 present new data, which have not been previously published.

Sample 1. A total of 223 (53 males) community members were recruited from the Toronto area using online advertisement during the summer of 2011. Participant ranged from 17 to 75 years in age (\(M = 29.37, SD = 11.81\)).

Sample 2. Participants in this sample consisted of 402 (212 males) United States residents recruited through Amazon’s Mechanical Turk (Mturk), an online crowdsourcing marketplace (www.mturk.com). This sample was collected during the summer of 2013. Participants’ ages ranged from 18 to 89 years old (\(M = 32.92, SD = 11.03\)).

Sample 3. Participants in this sample were also recruited from Mturk during the spring of 2015. The sample consisted of 413 United States residents (162 males), who ranged from 18 to 75 years in age (\(M = 35.10, SD = 12.18\)).

Sample 4. Participants in this sample were recruited from Mturk during the spring of 2015, and consisted of 128 United States residents (74 males, 1 other). Participants’ ages ranged from 19 to 63 years old (\(M = 34.05, SD = 10.08\)).

Sample 5. Participants in this sample consisted of 124 United States residents (70 males), who were also recruited from Mturk during the spring of 2015. Participants ranged from 19 to 66 years in age (\(M = 34.23, SD = 11.26\)).

Sample 6. Participants in this sample were recruited from Mturk during the fall of 2015. The sample consisted of 195 United States residents (109 males, 2 other), who ranged from 18 to 69 years in age (\(M = 34.93, SD = 10.15\)).

**Materials**

**Trait disgust**

In Samples 1–3, trait disgust was assessed using two measures: The revised Disgust Scale (DS-R; Haidt et al., 1994; Olatunji et al., 2007) and the Three-Domain Disgust Scale (TDDS; Tybur et al., 2009). In Samples 4–6, trait disgust was assessed using only the DS-R. The DS-R consists of 25 items that assess people’s attitudes (13 items; responses provided on a 5-point Likert scale ranging from “Strongly disagree” to “Strongly agree”) and responses (12 items; 5-point Likert scale from “Not disgusting at all” to “Extremely disgusting”) toward various disgust-inducing stimuli (e.g. “It would bother me tremendously to touch a dead body”). In addition to measuring overall trait disgust, the DS-R also measures the three trait disgust subscales: Core, Animal Reminder, and Contamination Disgust (as described earlier). The TDDS consists of 21 items that measure how disgusting people find various concepts, which participants rated on a 7-point Likert scale ranging from “Not disgusting at all” to “Extremely disgusting” (e.g. “Hearing two strangers having sex”). The TDDS is also divided into three subscales, measuring Moral, Sexual, and Pathogen Disgust (as described earlier).

**Big Five personality**

In all six samples, trait personality was assessed using the Big Five Aspect Scales (BFAS; DeYoung et al., 2007), which consists of 100 self-descriptive statements (e.g. “I keep things tidy”). Participants indicated their agreement with each statement using a 5-point Likert scale ranging from “Strongly disagree” to “Strongly agree.” In addition to measuring the broad Big Five personality traits, the BFAS divides each trait into two aspects, as described earlier. Ten items assessed Orderliness, one of the two aspects of trait Conscientiousness (the other being Industriousness). Sample items include “I follow a schedule” (Orderliness) and “I finish what I start” (Industriousness).

**Political orientation**

Participants’ political orientation was assessed using a variety of measures. In Samples 1–3, participants completed the IPIP Liberalism scale (Goldberg, 1999), which consists of 10 items (e.g. “I believe that we should be tough on crime”), which participants rated using a 5-point Likert scale (“Strongly disagree” to “Strongly agree”). In Samples 2 and 3, participants also completed the Right-Wing Authoritarianism
Scale (RWA; Altemeyer, 2006), Social Dominance Orientation Scale (SDO; Pratto, Sidanius, Stallworth, & Malle, 1994), and a 7-point one-item measure of overall political orientation ranging from “Very conservative” to “Very liberal.” The RWA Scale consists of 22 statements (e.g. “What our country really needs is a strong, determined leader who will crush evil, and take us back to our true path”), for which participants indicated their agreement on an 8-point Likert scale ranging from “Very strongly disagree” to “Very strongly agree.” The SDO Scale consists of 16 items (e.g. “Inferior groups should stay in their place”), which participants rated on a 7-point scale ranging from “Very negative” to “Very positive.” In Sample 3, participants also completed the Authoritarianism-Conservatism-Traditionalism Scale (ACT; Duckitt, Bizumic, Krauss, & Heled, 2010). This scale consists of 36 statements (“Our leaders should be obeyed without question”), for which participants indicated their agreement using a 7-point Likert scale ranging from “Strongly disagree” to “Strongly agree.” Finally, in Samples 4–6, participants completed a 7-point one-item measure of political orientation considering social issues, ranging from “Extremely conservative” to “Extremely liberal.”

**Procedure**

For all six samples, interested participants were directed to the study materials online. Participants completed an online consent form, followed by the study questionnaires. At the end of the study, participants were debriefed and compensated.

**Sample aggregation**

Given the various degrees of overlap in measures collected across the six samples, and to increase statistical power by increasing our analysis sample sizes, we aggregated the samples together where appropriate. First, similar to past work (e.g. Xu et al., 2013; Xu & Peterson, 2017), we created a standardised political orientation score by z-scoring the political orientation measure for each sample (i.e. IPIP Liberalism in Sample 1, and the one-item measure in Samples 4–6).

For Samples 2 and 3, which contained multiple measures of political orientation (IPIP Liberalism, RWA, SDO, one-item political orientation), we created a composite political orientation score by taking the mean of the z-scores. The reliability for the political orientation measures was $\alpha = .82$ in Sample 2 and $\alpha = .87$ in Sample 3. All other relevant variables for the analyses were also z-scored within each sample. These z-scores were then pooled together prior to conducting the analyses.

Our main analyses, as described below, were therefore conducted with the composite political orientation scores. In our results, however, we also provide the unique analyses conducted with the individual measures within each individual sample.

Pooled Aggregate 1. We pooled together Samples 1–6, which all contained the Revised Disgust Scale ($N = 1485$).

Pooled Aggregate 2. Samples 1–3, which contained the Three Domain Disgust Scale, were pooled together ($N = 1038$).

**Results**

Correlation analyses examined the bivariate relationships among the two measures of trait disgust, Orderliness, Industriousness, and measures of political orientation (see Supplemental Table 1 for descriptive). Tables 1 and 2 depict the zero-order correlations for the aggregated samples (see Supplemental Table 2 for correlations for Samples 1–6). Overall, both measures of trait disgust and their subscales were correlated with Orderliness but not with Industriousness. Both trait disgust and Orderliness were correlated with higher levels of conservatism, as measured by the composite scores, as well as the individual measures. One exception is that, for the most part, trait disgust and Orderliness was unrelated to social dominance orientation. This is consistent with previous findings suggesting that trait disgust relates more strongly to right-wing authoritarianism measures than to social dominance measures (Tybur et al., 2016).

**Regression analyses**

Hierarchical regression analyses examined the degree to which the three subscales of the DS-R and TDDS predicted Orderliness and political orientation. Separate analyses were conducted for the DS-R and the TDDS. In all analyses, we controlled for age and gender in Step 1, and entered the three trait disgust subscales in Step 2. We controlled for age and gender because past work has found that both are reliably associated with political orientation (e.g. Xu
Predicting orderliness from trait disgust

Data from Pooled Aggregate 1 was used to examine how the DS-R subscales predicted Orderliness. Our analyses revealed that Orderliness was predicted by the Core ($\beta = 0.13$, $p < 0.001$) and Contamination ($\beta = 0.15$, $p < 0.001$) subscales of the DS-R. Data from Pooled Aggregate 2 was used to examine how the TDDS subscales predicted Orderliness. Orderliness was predicted by the Pathogen ($\beta = 0.15$, $p < 0.001$) and Sexual disgust subscales ($\beta = 0.08$, $p = 0.04$) of the TDDS.

Predicting political orientation from trait disgust

Analyses predicting political orientation from the DS-R subscales were conducted using Pooled Aggregate 1. We found that higher conservatism was only predicted by the Contamination subscale ($\beta = 0.25$, $p < 0.001$). This pattern was also found using Pooled Aggregate 2 (Contamination: $\beta = 0.26$, $p < 0.001$). Pooled Aggregate 2 was used to examine how the TDDS subscales predicted political orientation. Higher conservatism was predicted by the Sexual subscale ($\beta = 0.40$, $p < 0.001$), and marginally by the Pathogen subscale ($\beta = 0.06$, $p = 0.07$).

Mediation analyses: does orderliness mediate the link between trait disgust and conservatism?

We conducted bootstrapped mediation analyses (Preacher & Hayes, 2008) to examine our main question of whether Orderliness mediated the association between trait disgust and political conservatism. In our models, the independent variables consisted of overall trait disgust, as well as subscale-level disgust (entered simultaneously), for both the DS-R and the TDDS. Separate analyses were run for overall and subscale levels, as well as for the DS-R and the TDDS. The composite political orientation score was entered as the dependent variable. We included both Orderliness and Industriousness as the mediators, to examine our hypothesis that it is Orderliness, but not Industriousness, that mediates the link between trait disgust and conservatism. Age and gender were entered as covariates in all analyses. We used 5000 bootstrap resamples for each analysis, and examined the indirect effect ($ab$ path) of trait disgust on conservatism through the two mediators Orderliness and Industriousness. The results described below were obtained et al., 2013). Table 3 lists the regression results for the aggregates (see Supplemental Table 3 for individual sample results).

Table 3. Correlation matrix for trait disgust, orderliness, industriousness, and political orientation in Pooled Aggregate 1.

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Note: *$p < 0.05$, **$p < 0.01$, ***$p < 0.001$. The Composite PO Scores are scored in a way such that higher values indicate higher conservatism.
using the Pooled Aggregates (results for the individual samples are presented in Supplemental Table 4).

Mediation analyses involving the DS-R were conducted using Pooled Aggregate 1 (Figure 2). First, we found that Orderliness ($ab = 0.03, SE = 0.007, 95\% CI \{0.02, 0.04\}$), but not Industriousness ($ab = 0.0006, SE = 0.002, 95\% CI \{-0.003, 0.01\}$), mediated the link between overall trait disgust and conservatism (Figure 2a). Trait disgust still maintained a significant direct effect on conservatism ($c' = 0.18, SE = 0.02, t(1473) = 7.44, p < 0.001$), in addition to the significant indirect effect through Orderliness.

For the subscales of the DS-R, both Orderliness ($ab = 0.02, SE = 0.006, 95\% CI \{0.008, 0.03\}$) and Industriousness ($ab = 0.01, SE = 0.004, 95\% CI \{0.001, 0.02\}$) mediated the link between Contamination disgust and political conservatism (Figure 2b), but not Core or Animal Reminder disgust. A direct effect on political conservatism was still observed for Contamination disgust ($c' = 0.20, SE = 0.03, t(1471) = 7.24, p < 0.001$), even with Orderliness included in the model.

For the TDDS, Orderliness ($ab = 0.03, SE = 0.008, 95\% CI \{0.01, 0.04\}$), but not Industriousness ($ab = 0.005, SE = 0.003, 95\% CI \{-0.0001, 0.01\}$), mediated the link between overall disgust and conservatism (Figure 2c). Trait disgust still maintained a significant direct effect on conservatism ($c' = 0.30, SE = 0.03, t(1031) = 11.05, p < 0.001$), in addition to the indirect effect through Orderliness.

As for the subscales of the TDDS, Orderliness ($ab = 0.01, SE = 0.005, 95\% CI \{0.004, 0.02\}$), but not Industriousness ($ab = 0.0005, SE = 0.003, 95\% CI \{-0.006, 0.007\}$), mediated the link between Sexual disgust and conservatism (Figure 2d). Orderliness ($ab = 0.02, SE = 0.007, 95\% CI \{0.007, 0.03\}$) also marginally mediated the link between Pathogen disgust and conservatism, but Industriousness did not ($ab = 0.003, SE = 0.003, 95\% CI \{-0.003, 0.01\}$). Sexual disgust still had a significant direct effect on conservatism ($c' = 0.34, SE = 0.03, t(1029) = 10.51, p < 0.001$), but Pathogen disgust did not ($c' = 0.03, SE = 0.03, t(1029) = 1.11, p = 0.27$).

Although our theoretical model states that Orderliness mediates the link between disgust and conservatism, we wished to examine the possibility that trait disgust mediates the link between Orderliness and conservatism. Therefore, we also tested a model in which the predictor variable and mediator were switched. These analyses revealed that the alternative model was also significant. (See the Supplemental Materials for a more detailed discussion of these results).

Although we propose that the disgust-Orderliness-conservatism pathway is more theoretically plausible, the significance of both pathways suggests that the relationship between disgust and Orderliness goes both ways. Disgust sensitive people prefer orderly environments and orderly people prefer non-disgusting environments. In other words, as we note below in the Discussion, the relationship between disgust and Orderliness may, in fact, be best characterised as a bidirectional loop.

Table 3. Regression results for analyses predicting orderliness and political orientation from the subscales of the DS-R and the TDDS in pooled aggregates 1 and 2.

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<th></th>
<th>Pooled Aggregate 1</th>
<th>Pooled Aggregate 2</th>
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<td>.119</td>
</tr>
<tr>
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<td>-.027</td>
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<td>.130</td>
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<td>Composite PO Score</td>
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Note: The Composite PO Scores are scored in a way such that higher values indicate higher conservatism. Significant results are boldfaced.

Discussion

Individuals who are more easily disgusted also tend to be more politically conservative. The goal of the present research was to increase our understanding of this connection by examining whether this link would be mediated by the aspect-level personality variable Orderliness. First, across large pooled samples, we replicated past work (e.g. Inbar, Pizarro, & Bloom, 2009) showing a positive association between overall trait disgust and conservative attitudes. More specifically, at the subscale level, we found that Contamination, Pathogen, and Sexual disgust were most consistently associated with political conservatism. These results
support the idea that conservatism may function as a disease avoidance strategy, perhaps by promoting avoidance of outgroups that may carry novel pathogens (Terrizzi, et al., 2013), promoting traditions and customs that limit pathogen exposure (Murray et al., 2011; Tybur et al., 2016), or by promoting restrictive sexual strategies that reduce the risk of sexually transmitted disease (Tybur et al., 2016). It is possible that sexual disgust is a more salient form of general contamination or pathogen disgust. That is, one of the stimuli that individuals who are higher in trait disgust may find particularly aversive is the transmission of pathogens through sexual contact. In other words, although adopting more conservative sexual strategies is not the only strategy for pathogen avoidance (e.g. Shook et al., 2015), it may be one of the most salient strategies.

Second, extending beyond past work, we found a consistent, positive link between trait disgust and Orderliness. That is, individuals who experience more disgust also tend to show a higher dispositional preference for order and structure. This link was specific to disgust toward common pathogen-bearing substances and potential contamination, as well as...
sexual inappropriateness (i.e. Core, Contamination, Sexual, and Pathogen disgust). These findings suggest that an aversion to stimuli that are potentially contaminating, rather than an aversion to stimuli that are, say, morally disgusting, may play a more important role in disgust sensitive individuals’ orderly disposition. This theoretical model suggests that one potential function of being orderly may be to reduce exposure to pathogens or diseases (including sexually transmitted ones). An orderly environment provides fewer hiding places for bacteria or contaminating animals, such as insects and rodents.

Third, our analyses indicated that Orderliness, but not Industriousness (the other aspect of trait Conscientiousness), in part mediated the link between trait disgust and political conservatism. We also found preliminary evidence suggesting that, at the subscale level, Orderliness (but not Industriousness) partially mediated the links between Pathogen and Sexual disgust and conservatism. Although both Orderliness and Industriousness mediated the association between Contamination disgust and conservatism, overall, it appeared that Orderliness was the more consistent mediator of the link between disgust and political conservatism.

Taken together, these findings suggest that higher levels of trait disgust promote the motivation to maintain order, which contributes to the endorsement of Figure 2. Continued
political ideologies that promote societal order. Thus, Orderliness provides an additional possible mechanism through which trait disgust may influence political conservatism. Its role as a potential mediator of the link between Contamination, Sexual, and Pathogen disgust and conservatism complements both the pathogen avoidance model and the sexual strategies model of political orientation (Terrizzi, et al., 2013; Tybur et al., 2016). Importantly, the pathway appears to operate predominantly through the preference for order, rather than through the preference for efficiency and goal-pursuit (which are characteristic of Industriousness).

The present research contributes to a more comprehensive understanding of how emotions and traits are related to political orientation, by integrating heretofore largely separate literatures on (a) disgust and conservatism and (b) preference for order and conservatism. Importantly, these results suggest that basic personality traits, which are characterised as general predispositions that are not specific to disgust or politics per se, can exert important influence in explaining the association between basic emotions and political orientation.

**Limitations and future directions**

One key limitation of the present research is that all of the analyses were correlational in nature. Thus, we cannot make firm statements about the causal directions of our effects. In addition, some readers may be unaccustomed to considering a personality trait as a mediator. In typical, social psychological uses of mediation, the mediator is assumed to be a dynamic process that is both an effect of the independent variable and a cause of the dependent variable. However, mediation need not imply such a dynamic causal model (Judd, Yzerbyt, & Muller, 2014). A significant mediational test merely indicates that a portion of the direct effect between the predictor and dependent variables may be partially accounted for by the mediating variable. Thus, trait disgust and Orderliness may both develop at different points of the lifespan, before becoming relatively fixed in place. Although we hypothesise that Orderliness mediates the relationship between trait disgust and conservatism, operationalising these variables as individual differences prevents us from drawing firm causal inferences (e.g. trait disgust causes preference for order, which causes conservatism) from a significant mediational pathway. From a theoretical standpoint, it is reasonable to assume that the development of basic affective responses (i.e. the emotion of disgust) should precede that of personality traits (or even childhood temperament). Furthermore, personality traits should develop prior to more cognitively complex political ideologies. For these reasons, we find plausible a model in which Orderliness (a personality variable) mediates the link between disgust and conservatism.

However, additional analyses revealed that trait disgust also mediated the link between Orderliness and conservatism (see Supplemental Materials for more detailed discussion). We do not consider the two models to be mutually exclusive. Indeed, more complex, bidirectional pathways most likely exist between these variables. For example, although higher trait disgust may predispose an individual to become more orderly and conservative, chronic activation of a trait-relevant behaviour (e.g. being preoccupied with order) may also lead to even higher levels of disgust, creating a type of feedback loop. Future research would benefit from adopting experimental designs (e.g. manipulating perceived levels of disgust or Orderliness) or longitudinal designs to shed light on the causal directions among these variables.

Although the present research cannot make causal claims, it highlights the role that personality plays in the relationship between basic emotions and political orientation. While broad emotional and personality dispositions may on the surface appear to be rather removed from political content, they may increase the likelihood of activation of goals that are more closely tied to political positions (Xu et al., 2016). For example, high trait Orderliness may foster a desire to strengthen national boundaries (in order to limit immigration). Future research should examine such possible links among disgust, Orderliness, and endorsement of specific policies. Such work would help to integrate disparate variables across disparate levels of analysis (traits, goals, norms) that impact political orientation. As such, it may contribute to a more comprehensive model of political orientation.

The present results indicate that Orderliness partially mediates the link between trait disgust and conservatism. It is important to note, however, that our studies operated under the Big Five aspects model of the subordinate levels of the Big Five traits (DeYoung et al., 2007). Other models of personality have subdivided the traits into different numbers of facets with different psychological meanings (e.g.
Soto & John, 2017; Roberts, Bogg, Walton, Chernyshenko, & Stark, 2004). For example, some of these models propose that Conscientiousness is comprised of facets that are similar to Orderliness (e.g. the Organisation facet from the BFI-2; Soto & John, 2017). Future work would benefit from replicating the present research with other personality measures that operationalise the Conscientiousness facets in different manners, to test whether similar results can be obtained specifically for the “order”-related facets. It will also be important to examine how the other Conscientiousness facets (e.g. Productiveness, Responsibility, etc., (e.g. Soto & John, 2017) may be related to disgust and conservatism.

Another issue worth noting is that in the present mediational analyses, the direct effect of trait disgust on conservatism remained larger than the indirect pathway through Orderliness. That is, although Orderliness was a consistent and reliable partial mediator, it still only accounted for a small portion of the covariance between disgust and conservatism. Orderliness may therefore only reflect one of many possible mechanisms through which disgust comes to influence conservatism. One possible reason for this smaller effect size may be that although the various measures of political orientation used were robustly correlated, each captures somewhat different facets of a complex construct. This heterogeneity may contribute to the relatively small effect sizes observed. Nonetheless, it is important to note that even small effects may have important practical implications. For example, given that elections outcomes are often determined by narrow margins, even a small (but reliable) influence on political conservatism may play a crucial role.

**Conclusion**

The present data represent evidence that Orderliness in part mediates the link between trait disgust (especially Contamination, Sexual, and Pathogen disgust) and political conservatism. At the same time, further analyses suggest that disgust and Orderliness may operate on one another in the form of a bidirectional loop. Taken together, these results provide insight into how affective and personality processes work together to shape political orientation. We commend that future researchers use the present findings as a starting point for further examination of the dynamic interplay of such variables as the field progresses toward more detailed models of political orientation.

**Note**

1. It is somewhat surprising that DS-R Core disgust was not significantly correlated with conservatism, given that the construct of Core disgust is very similar to Contamination and Pathogen disgust. One possible explanation for this finding is that these three subscales may tap into subtly different constructs. However, little is known about whether such differences exist, so future research is needed to explain the discrepant findings regarding conservatism.

**Disclosure statement**

No potential conflict of interest was reported by the authors.

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**References**


