A Re-Examination of the Three Domain Disgust Scale
Joseph T. Pochedly, Grant T. Trouton, and Lee A. Kirkpatrick
Department of Psychology, The College of William & Mary

Introduction
The Three Domain Disgust Scale (TDDS; Tybur, Lieberman, & Griskevicius, 2009) represents a much improved measure of disgust sensitivity relative to other extant scales. However, it shares with its predecessors the potential problem that participants’ ratings of disgustingness are vulnerable to confounding with other constructs, such as perceptions of moral wrongness and/or general negative valence, because people often use the term “disgust” more loosely or broadly than researchers intend (Fessler & Gervais, 2010). Our study is designed to examine this issue empirically in two different ways.

TDDS Sample Items
Pathogen → Avoid disease
Seeing a cockroach run across the floor
Stepping on dog poop
Sexual → Avoid damaging mating partners
Performing oral sex
Watching a pornographic video
Moral → Avoid damaging social interactions
Shoplifting a candy bar from a convenience store
Intentionally lying during a business transaction

Overview and Rationale
Participants rated the 21 TDDS items three times, with respect to how “disgusting” each concept is – per the original TDDS – as well as how “morally wrong” and how “generally unpleasant” they perceived the concepts. Half of the participants rated disgust first; half rated it last. They then completed measures of Right-Wing Authoritarianism (RWA), political conservatism, and attitudes towards gays and lesbian (ATLG). In our analyses we examined:

(1) whether rating disgust last versus first would influence mean disgustingness ratings in the various domains, because participants might use the term “disgusting” more precisely after having already expressed their perceptions of wrongness and unpleasantness, and
(2) the degree to which unpleasantness and moral-wrongness ratings statistically predict our other variables vis-à-vis disgust ratings.

Method
Two-hundred and ninety-seven Introductory Psychology students (170 females, 127 males) completed an online survey for course credit. Participants first completed the TDDS variations, then the measures of RWA, ATLG, and conservatism. All responses were measured on a 7-point Likert scale, plus a “Don’t Know/No Answer” option.

Results and Discussion
As shown below, mean disgustingness ratings in the Moral domain were strikingly and significantly (p < .001) lower among participants who provided disgust ratings last, relative to those who rated disgust first. Disgustiness ratings in the Sexual domain were also slightly somewhat lower in the disgust-last condition, though not significantly so. Conversely, mean disgustingness ratings in the Pathogen domain were significantly higher (p < .01) in the disgust-last group. Viewed from a different angle, participants who rated disgust last reported much higher levels of disgust to the Pathogen items than to the Sexual and Moral items; mean disgust ratings were highly similar across domains among our disgust-first participants, consistent with the results reported by Tybur et al. (2009). This suggests that disgustingness ratings on the TDDS scale as typically administered may well be confounded with other negative perceptions and evaluations, and that allowing participants to express these other negative perceptions and evaluations first may increase the validity of the scale.

Consistent with the results of Tybur, Navarrete, McDonald, Caldwell-Hooper, and Merriman (in prep), disgust ratings in the Sexual domain (but not Pathogen or Moral domains) were significantly correlated with RWA, conservatism, and ATLG. When ATLG scores were regressed on ratings of disgust, moral wrongness, and unpleasantness in the Sexual domain, only moral wrongness emerged as a significant (p < .01) predictor. Results for RWA and conservatism showed a similar pattern. These results can be interpreted as evidence that it is the perceived moral wrongness of these sexual behaviors, rather than the degree to which they are perceived as disgusting per se, that drives the relationship between Sexual disgust sensitivity and these other variables.

However, other analyses suggest that these data are equally consistent with an alternative explanation: that perceptions of moral wrongness mediate the relationship between disgust sensitivity and ATLG as illustrated above. (Parallel analyses for predicting RWA and conservatism produced similar, though slightly more complex results.)

In addition, we were able to rule out one other alternative model: If the roles of disgust and moral wrongness are reversed in the mediation model above, the model fits the data fit very poorly. That is, we can strongly reject the hypothesis that perceptions of moral wrongness influence disgust ratings (rather than vice-versa), which in turn influence anti-gay attitudes.

Unfortunately, the relative validity of the first two models cannot be established statistically with these data; further research using different designs will be required to confirm the findings of the multiple regression model would raise questions about the validity of the Sexual subscale as a measure of disgust sensitivity per se, but confirmation of the mediation model would offer support for the measure’s validity.

References