Disgust Sensitivity Predicts Punitive Treatment of Juvenile Sex Offenders: The Role of Empathy, Dehumanization, and Fear

Margaret C. Stevenson*
University of Evansville

Sarah E. Malik
Arizona State University

Rebecca R. Totton
Ohio University

Rebecca D. Reeves
University of Evansville

We explore the possibility that disgust sensitivity predicts attitudes toward a stigmatized, yet vulnerable population: juvenile sex offenders. Participants were 125 undergraduates (66% women, M age = 19) who read a case depicting a 17-year-old boy convicted of aggravated child molestation for receiving oral sex from an intoxicated 15-year-old girl. Participants subsequently indicated the degree to which they supported registering the juvenile offender as a sex offender and completed a series of case judgments (i.e., belief the defendant is a threat, the dehumanizing belief the defendant is a superpredator, and defendant empathy). Finally, participants provided demographic information and completed the Disgust Sensitivity Scale. In line with our hypotheses, as disgust sensitivity increased, support for juvenile sex offender registration also increased. Yet, this relationship was explained by various mediating factors. Specifically, a series of models tested via path analysis showed that as disgust sensitivity increased, participants’ were more likely to dehumanize the offender as a “superpredator” and experience

*Correspondence concerning this article should be addressed to Margaret C. Stevenson, Department of Psychology, University of Evansville, 1800 Lincoln Ave., Evansville, IN 47722 [e-mail: ms446@evansville.edu].

Authors’ note: We thank Mallory Ermler for her invaluable research assistance.
diminished empathy. In turn, dehumanization and diminished empathy predicted the belief the defendant is a threat to society, which predicted greater registration support.

Societal fear that sex offenders are dangerous has been a driving force for both adult and juvenile sex offender registration policies (Caldwell, Ziemke, & Vitacco, 2008; SORNA; 42 U.S.C. § 16911, 2006). Despite the intention of these policies to protect people from dangerous sex offenders, research reveals no differences in recidivism rates between registered and nonregistered adult (Sandler, Freeman, & Socia, 2008) and adolescent (Adkins, Huff, & Stageberg, 2000) sex offenders, even when the offenders were matched on a variety of relevant characteristics (crime severity, age, race, prior offenses; Letourneau & Armstrong, 2008). Moreover, sex offender registration is likely to negatively impact offenders in ways that may actually increase recidivism by stigmatizing offenders and isolating them from their community (Levenson & Cotter, 2005; Levenson, D’Amora, & Hern, 2007; Salerno et al., 2010; Tewksbury, 2005; Tewksbury & Lees, 2006, 2007; for reviews, see Chaffin, 2008; Trivits & Reppucci, 2002). Yet, the legal system has failed to recognize that sex offender registration policies can harm society (e.g., Chaffin, 2008) or are at least unproductive (e.g., Letourneau & Armstrong, 2008). Registration is likely especially devastating for juvenile offenders because it often leads to harassment, rejection, and depression (Levenson, Brannon, Fortney, & Baker, 2007; Levenson & Cotter, 2005; Tewksbury, 2007; Tewksbury & Lees, 2006)—outcomes that predict a greater likelihood of committing suicide (Bridge, Goldstein, & Brent, 2006), the third leading cause of death among juveniles (Xu, Kochanek, & Tejada-Vera, 2009).

Why, then, has the tide toward more inclusive sex offender registration policies not yet stemmed? A primary reason such policies have not been considered a violation of sex offenders’ constitutional rights is because they presumably promote the state’s interest in maintaining public safety (Janicki, 2007). Yet, utilitarian concerns may not be the primary motivation for such policy (for a review, see Skinner, Farnum, & Stevenson, 2011). For instance, 73% of survey respondents agreed that they would still support registration policies even if there is no evidence that they reduce sex crime (Levenson et al., 2007). Although it is certainly possible that other reasons rooted in logic might, in part, be driving participants’ support for registration policies, our research explores the possibility that registration support is, at least in part, driven by motivational forces that fall outside of the legal impetus for such policy. That is, we explore the possible influence of emotions on support for registration policy. Specifically, in the present research, we examine evidence for an individual difference predictor of support for increased inclusiveness of sex offender registration policy: dispositional proneness to disgust (i.e., disgust sensitivity). Moreover, we test a theoretical model via path analysis designed to explain
the relationship between disgust sensitivity and registration support. In line with current research and theory, we hypothesize that the relationship between disgust sensitivity and increased registration support is explained by reduced empathy, the dehumanizing belief that the offender is a superpredator (i.e., animalistic, cold, callous, unlikely to rehabilitate), and the belief the offender is a threat to society.

**Disgust Sensitivity as a Predictor of Registration Support**

Research suggests that sex crimes, more than any other type of crime, are perceived as especially heinous (e.g., Quinn, Forsyth, & Mullen-Quinn, 2004). Indeed, sexual crimes elicit biasing emotions, including fear, moral outrage, disdain, and notably, disgust (e.g., Bastian, Denson, & Haslam, 2013; Lynch, 2002; Quinn et al., 2004; Salerno et al., 2010). Disgust, in particular, is a unique emotion that can be elicited by simple encounters with unpleasant stimuli or even simply by a word (maggot, vomit, etc.). Such powerful reactions to disgusting stimuli likely represent evolved responses designed to encourage humans to avoid various contaminants (Rozin, Haidt, & McCauley, 1993). Yet, it is clear that the emotion of disgust also influences perceived morality of people and behavior (e.g., Eskine, Kacinik, & Prinz, 2011; Nussbaum, 2001; Schnall, Haidt, Clore, & Jordan, 2008). In fact, disgust may even exert a causal influence with regard to moral evaluations. Specifically, when randomly assigned to be hypnotized to experience disgust, participants rated a somewhat immoral behavior as significantly more immoral, compared to a control group (Wheatley & Haidt, 2005; see also Schnall et al., 2008). Research on dispositional proneness to disgust reveals a similar pattern. Disgust sensitivity predicts attitudes toward various groups of people, including negative attitudes toward homosexuals (Inbar, Pizarro, Knobe, & Bloom, 2009) and greater ethnocentrism (Navarrete & Fessler, 2006). We expect that these findings will extend to a sexual crime context such that greater disgust sensitivity will predict greater support for juvenile sex offender registration. Next, we review the underlying psychological constructs theorized to explain this hypothesized relationship, including the belief the juvenile is a superpredator, diminished empathy, and perceived threat to society.

**Psychological Constructs Theorized to Explain the Relationship between Disgust Sensitivity and Registration Support**

Just as disgust predicts moral condemnation of groups of people (Nussbaum, 2001), it also predicts dehumanization (the treatment of individuals as less than human; Haslam, 2006; Sherman & Haidt, 2011), and the treatment of people as objects who lack consciousness (Fiske, Harris, & Cuddy, 2004). For instance, disgust sensitivity predicts dehumanization of immigrants (Hodson & Costello, 2007). Neuroimaging research reveals that marginalized outgroups (i.e., drug
addicts and the homeless) activate brain areas associated with object recognition (not human recognition), as well as the insula and amygdala—neural indicators of disgust (Harris & Fiske, 2006).

Indeed, research suggests that sex offenders are frequently dehumanized (i.e., perceived as subhuman; Camman, 2012; Viki, Fullerton, Raggett, Tait, & Wiltshire, 2012). For instance, Viki et al. (2012) revealed that the more participants associated sex offenders with animals, the more they endorsed punitive treatment of sex offenders (i.e., castration, execution, community exclusion).

It is likely that increasingly punitive sex offender policy has proliferated largely because of the dehumanization of sex offenders. In support, sex offenders are generally lumped together into a single category and perceived as predatory and dangerous (Salerno et al., 2010). For instance, although only a minority of juvenile sex offenders commits forced rape (15%; Salerno et al., 2010), when asked to imagine a typical juvenile sex offender, most people described a violent rapist (76%; Salerno et al., 2010). Classifying sex offenders according to a violent and predatory subtype allows sex offenders to be dehumanized, and in turn, likened to objects or animals who are less emotionally complex, less sensitive to pain, more of a threat to society, and in turn, more deserving of severe punishment (Camman, 2012; Viki et al., 2012).

Archival analysis of newspaper articles’ descriptions of Black murder convicts further supports the link between dehumanization and punishment (Goff, Eberhardt, Williams, & Jackson, 2008). Specifically, when descriptions of Black convicts included animalistic and dehumanizing adjectives (i.e., ape, gorilla), those convicts were more likely to receive the death penalty (Goff et al., 2008). It appears that the punitive consequences of dehumanization extend to juvenile offenders as well. Bennett, Dillio, and Walters (1996) published a book in which they advanced the myth that most juvenile offenders are cold, calculating “superpredators.” Such negative media portrayals of juvenile offenders likely lead the public to form inaccurate representations of juvenile criminal activity. In fact, Haegerich, Salerno, and Bottoms (2013) demonstrated that people endorse two different juvenile offender stereotypes: (i) the “wayward youth” stereotype that juveniles are immature and rehabilitative, and (ii) the “superpredator” stereotype that juveniles are mature, cold, cruel, lack morals, are violent by nature, and cannot be rehabilitated. Haegerich et al. found that there are individual differences in jurors’ tendency to endorse one or the other stereotype, and that situational factors can influence whether jurors endorse one or the other. Further, they established that endorsement of either stereotype can predict juror decisions. Specifically, endorsement of the superpredator stereotype predicts greater likelihood to convict a juvenile offender. Notably, endorsement of the superpredator stereotype appears to encapsulate characteristics of dehumanization (e.g., wild, cold, corrupt, immoral, bestial) as reviewed by Haslam (2006). To illustrate, the unfortunate “Central Park Five”—five minority adolescents wrongly convicted of brutally
raping and beating a Central Park jogger—were labeled as superpredators and dehumanized by the media as wild animals (i.e., “wolf-pack,” “wilding,” “savage”; e.g., Singleton & Gentle, 1989, April 21). Thus, just as disgust sensitivity predicts dehumanization generally (e.g., Hodson & Costello, 2007), we expect that disgust sensitivity will predict the dehumanization of juvenile offenders, or in other words, the belief that the juvenile sex offender is a cold and callous superpredator.

In addition, dehumanization is strongly linked to diminished empathy (for a review, see Haslam, 2006). For instance, people with disorders like autism (Baron-Cohen, 1995; Preston & De Waal, 2002) and psychopathy (Blair, 1995; Blair, Jones, Clark, & Smith, 1997) not only have a hard time empathizing with others, but also have a harder time detecting the “humanness” of others. Experimental research reveals a causal link between diminished empathy and dehumanization of victims (Čehajić, Brown, & González, 2009). Indeed, disgust is theorized to nearly completely block one’s ability to experience empathy (Jones, 2007). Thus, although we expect that disgust sensitivity will predict diminished empathy for a juvenile sex offender, we also expect that juvenile dehumanization (i.e., the belief the juvenile is a superpredator) will be associated with diminished empathy.

Finally, we expect that the belief the juvenile is a superpredator and diminished empathy will both predict the belief that the defendant is a threat to society, which in turn, will predict greater support for registering the juvenile as a sex offender. Why? The belief that a juvenile is a cold and calculating, predatory offender is likely to trigger concern that the offender is a danger to society. In addition, because diminished empathy stems in part from dehumanization (e.g., Haslam, 2006), diminished empathy should also predict a greater belief that the offender is a threat to society. Moreover, substantial research has shown that support for sex offender registration policy stems from beliefs that such policy protects society from dangerous offenders who are likely to recidivate (Salerno et al., 2010). This is consistent with attribution theory, which suggests that utilitarian concerns to protect society predict punitive reactions to crimes (Weiner, 2006).

Study Overview

In the present research, participants completed the Disgust Scale developed by Haidt, McCauley, and Rozin (1994), read a scenario depicting a juvenile-perpetrated sexual offense, and completed a series of case-related judgments pertaining to the offense. Specifically, we assessed the extent to which participants (i) believed the juvenile sex offender was a cold and callous superpredator, (ii) felt empathy for the juvenile sex offender, (iii) believed the juvenile sex offender is a threat to society, and (iv) supported registering the juvenile as a sex offender. We test a series of competing models via path analysis, testing the hypothesized
relations between these variables. Specifically, in line with research and theory reviewed earlier (e.g., Hodson & Costello, 2007; Viki et al., 2012), we expect that disgust sensitivity will predict greater belief the juvenile is a superpredator and diminished empathy for the juvenile sex offender (variables that are expected to covary). In turn, we expect that the belief the juvenile offender is a superpredator and diminished empathy will predict a greater belief that the juvenile is a threat to society, which in turn, will predict greater registration support.

Method

Participants

Participants were 125 undergraduates recruited from a small Midwestern university (66% women, 23% men, 10% did not report gender; $M_{\text{age}} = 19, SD = 1.59$). Eighty percent of the participants were White, 2% were Black, 1% were Hispanic, 2% were Asian, 2% described their ethnicity as “Other,” and 11% did not report their ethnicity. In terms of political orientation, 34% of participants indicated they were liberal, 42% of participants indicated they were moderate, and 24% indicated they were conservative.

Materials

To ensure that all participants understood sex offender registration policy, all participants were asked to read a description of sex offender registration laws. The following description was modeled after materials from Salerno et al.’s (2010) study:

> Adults found guilty of a sex offense must be listed on a public sex offender registry. In various states, this registry includes information such as name, social security number, age, race, gender, birth date, physical description, address, place of employment, details about the offense(s), fingerprints, a photo, a blood sample, and a hair sample. This information is available to the public upon request, sometimes by being posted on the Internet. In some cases, the police directly notify the people who live in the same area as the registered sex offender. Sex offenders are required to register anywhere from a few years to their entire life, depending on the state.

> We are interested in your thoughts about applying these registration laws to juveniles (17 years old or younger) who have been adjudicated (found guilty in juvenile court) or convicted as sex offenders.

> Because registration policies vary from state to state, we felt that the best way to assess general support for registration policy was to provide participants with a general description of registration policy that represents such policy broadly. For this reason, we purposely describe registration policy in a way that gives the
participant a general overview of the federally mandated registry and also an idea of how states have chosen to implement the federally mandated registration policy.

Case vignette. Participants read a case involving a Caucasian 17-year-old boy, Jacob, convicted of aggravated child molestation for receiving oral sex from an intoxicated Caucasian 15-year-old girl.\(^1\) To increase ecological validity, this case was modeled after a real-world juvenile sexual crime (Wilson v. State of Georgia, 2006). Specifically, participants are told that “although the victim (Elizabeth) stated that the act was consensual, videotape evidence revealed that Elizabeth was only semiconscious at the time due to alcohol intoxication. Furthermore, because she was 15 years old, she could not legally provide consent.” The juvenile offender was portrayed as a male because 92% of convicted juvenile sex offenders are boys (Uniform Crime Report, 2007) and most juvenile crime is perpetrated by boy, rather than girl offenders (Snyder & Sickmund, 2006).

Measures

Registration support. Participants indicated their support for registering the juvenile by answering the following question on a scale including the response options 0 (strongly disagree), 1 (disagree), 2 (neutral), 3 (agree), and 4 (strongly agree): “Listing Jacob on the sex offender registry is an appropriate way to punish him for his offense.”

Defendant perceived threat. Participants completed four items designed to assess the extent to which participants feel threatened by a sex offender. These items were developed based on items used in prior research (Salerno et al., 2010; \(M = 1.30; SD = .81\)). Response options to these items again ranged from 0 (strongly disagree) to 4 (strongly agree). The items included “Jacob poses a danger to society,” “Registry laws make the community safer by allowing people to keep track of the juvenile sex offenders like Jacob in their community,” “The public needs to be protected from Jacob,” and “Jacob can be rehabilitated (reformed).” The last item was reverse scored, thus, higher scores indicate a greater belief that

\(^1\) The explicitness of the sexual crime was experimentally manipulated such that the sexual act was described in a sexually explicit or nonsexually explicit way. Explicit sex crime details were manipulated as follows: “A videotape confirmed that ‘the sexual act took place between Jacob and Elizabeth’ (vs. ‘Jacob ejaculated into Elizabeth’s mouth’). Subsequent forensic evidence revealed that ‘Jacob’s DNA’ (vs. ‘semen’) was found on the hairband and shirt Elizabeth was wearing ‘in the videotape’ (vs. ‘while his penis was in her mouth’).” Because we were not interested in effects of sexual explicitness for the purposes of this study, we conducted all analyses collapsed across this variable. Although there were no significant main effects of sexual crime explicitness on any dependent variables, all \(F s < 3.00\), all ns, we nonetheless replicated our path analysis including sexual crime explicitness as a covariate. There were no differences in the results. Thus, we present analyses without including sexual crime explicitness as a covariate.
Jacob is a threat to society. All items were subjected to a confirmatory factor analysis (CFA), as reported in the results section.

**Belief the defendant was a superpredator.** Participants completed the following item, also on the same scale ranging from 0 (strongly disagree) to 4 (strongly agree) “Jacob is a cold and calculating `superpredator.’” This item was modified from an item originally developed by Haegerich et al. (2013) used to measure endorsement of the stereotype that juvenile offenders are superpredators.2

**Defendant empathy.** Perceived empathy toward the defendant was assessed using a six-item measure developed by Haegerich and Bottoms (2000) in which items were rated on a 7-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree). The items on this measure included: “I feel empathy for Jacob, the defendant,” “I feel like I can easily take the perspective of Jacob, the defendant,” “I can experience the same feelings that Jacob, the defendant, experienced,” “I can really imagine the thoughts running through Jacob’s, the defendant’s, head,” “I can take the perspective of Jacob, the defendant,” and “I can really see myself in Jacob’s, the defendant’s shoes.” Thus, higher scores on these items indicate greater perceived empathy for the defendant. These items were subjected to a CFA, as reported in the results section.

**Demographic information.** Participants were asked to indicate their age, gender, and ethnicity.

**Disgust sensitivity.** Participants completed the 25-item Disgust Sensitivity Scale developed by Haidt et al. (1994). The first 13 items on the Disgust Sensitivity Scale include “true” (scored as 100) or “false” (scored as 0) response options. Examples of the true/false items of the Disgust Sensitivity Scale include the following: “If I see someone vomit, it makes me sick to my stomach” and “I might be willing to try eating monkey.” The latter 12 items were answered on a scale with the following response options: “not at all disgusting” (scored as 0), “slightly disgusting” (scored as 50), and “very disgusting” (scored as 100). Examples of these items include “You accidentally touch the ashes of a person who has been cremated,” and “You see maggots on a piece of meat in an outdoor garbage pail.” Higher scores indicate greater sensitivity to disgust. These items were subjected to a second-order CFA, as reported in the results section. The four Disgust Sensitivity

---

2 Haegerich et al. (2013) established that participants can spontaneously and accurately describe the definition of a superpredator. Specifically, they coded participants’ open-ended responses to a prompt asking them to describe what comes to mind when thinking about the term “superpredators.” Because Haegerich et al. demonstrated that participants indeed have an accurate working knowledge of the term “superpredator,” we felt that the best way to measure endorsement of this belief was to include a direct question using the actual term “superpredator.”
Scale items related to sexuality (e.g., “I think homosexual activities are immoral”) were omitted from this study.³

Procedure

Undergraduate students from a small Midwestern university were recruited to participate in this study in exchange for course extra credit. Participants were told that their responses were completely anonymous, that participation was totally voluntary, and that they could stop participating at any time. After participants provided informed consent they read the description of the sex offender registration policy and that we were interested in their thoughts about applying registration laws to juveniles. Participants then read the vignette describing the sexual offense, followed by all case judgments (i.e., Defendant Empathy Scale, Perceived Threat Scale, the belief the defendant is a superpredator, and registration support). Participants next provided demographic information and completed the Disgust Sensitivity Scale. Finally, participants were thanked for their participation. Individual participation lasted approximately 15 minutes and data collection was completed within 6 months. This study complied with IRB-approved procedures.

Results

We used AMOS 21 for all analyses (Arbuckle & Wothke, 1999). We employed a two-step approach, as recommended by Anderson and Gerbing (1998) in which we first conducted a series of CFAs to test for the three latent variables of (i) disgust sensitivity, (ii) defendant empathy, and (iii) defendant perceived threat. Second, we included the newly created latent variables of defendant empathy and defendant perceived threat and our single item assessing the belief the defendant is a superpredator in a path analysis designed to explain the predicted relationship between disgust sensitivity and registration support. First, we present tests of normality, followed by the results of the CFA, and finally we present the results of the path analysis.

Tests of Normality

Inspection of frequency distributions revealed evidence of univariate outliers for 7 variables, according to Kline’s (2005) guidelines (scores were greater than 3.00 standard deviations beyond the mean). We conducted analyses both including

---

³ We eliminated items related to sexuality because we were interested in examining the relationship between general disgust sensitivity and attitudes toward a sexual offense. Including items related to disgust sensitivity toward sexuality has the potential to artificially drive or strengthen the relationship between disgust sensitivity and attitudes toward a sex crime.
and excluding all univariate outliers and found that there was no difference in model fit (RMSEA = .046; comparative fit index [CFI] = .860 without the outliers, and RMSEA = .045; CFI = .870 with the outliers). We also explored the possibility of multivariate outliers by inspecting the Mahalanobis distance (D) statistic and found evidence for three multivariate outliers. We replicated analyses omitting the three multivariate outliers and found no difference in model fit (RMSEA = .045; CFI = .870 without the outliers, and RMSEA = .045; CFI = .870 with the outliers). Thus, we report analyses including all univariate and multivariate outliers to preserve power and the integrity of the sample.

Inspection of a correlation table of all of the variables revealed no evidence of multicollinearity. Because the data were normally distributed, we used the maximum likelihood (ML) estimation technique. The ML estimation technique offers the advantage of allowing for the inclusion of cases with missing data, as long as they are missing at random (Kline, 2005). We have no reason to suspect that missing data in this sample is not missing at random (Kline, 2005). We have no reason to suspect that missing data in this sample is not missing at random for all of the variables.

**CFAs of Three Latent Variables**

We conducted three CFAs to establish the validity of three latent variables: Disgust Sensitivity, Defendant Empathy, and Belief the Defendant is a Threat. The standardized loading factors and model fit indices (CFIs, RMSEAs) revealed evidence of reasonably good model fit for all three latent factors.

---

4 A confirmatory factor analysis (CFA) was conducted to test a seven-factor second-order model in which responses to the individual items on the Disgust Sensitivity Scale can be explained by seven first-order factors (i.e., food, animals, body products, envelope violations, hygiene, death, and magic), and covariation among the seven first-order factors is explained fully by their regression on the second-order factor. According to the model chi-square statistic, the model was an adequate fit, $\chi^2(223) = 248.93$, ns. The comparative fit index (CFI) was .93, suggesting reasonably good model fit (Kline, 2005). The RMSEA was .03, with confidence intervals ranging from .00 to .05, indicating that the model was within a reasonable approximation of fit (Kline, 2005 suggests that values below .05 indicate a close approximation fit). A confirmatory factor analysis (CFA) was conducted to test a one-factor model in which defendant empathy was the proposed latent factor and was composed of six items assessing defendant empathy (see methods section for all six items). According to the model chi-square statistic, the model was not an adequate fit, $\chi^2(9) = 18.91, p < .05$. The chi-square statistic, however, is influenced by sample size and the size of the correlations and thus, might not be the best assessment of model fit (Kline, 2005). In contrast, the comparative fit index (CFI) was .98, indicating that the model was different from the null model (i.e., good model fit). The root mean square error of approximation (RMSEA) was .094, with confidence intervals ranging from .031 to .154, suggesting moderately reasonable fit. Kline (2005) suggests that RMSEA values equal to or greater than .10 indicate poor fit. Thus, it appears that there is relatively consistent evidence for good model fit. Because a model with only one latent variable requires at least three indicators whose errors are uncorrelated to be identified (Kenny, 2011), we do not report fit indices for this factor. Yet, the standardized factor loadings were greater than .49, indicating that all items adequately loaded onto the factor (see Table 3 for unstandardized and standardized factor loadings). All $R^2_{unc}$ values are greater than .59, indicating that the explained variance of the indicators (i.e., the magnitude of all the indicators) is acceptable.
Path Analyses

We conducted a series of path analyses to test our a priori hypotheses that disgust sensitivity will predict both a greater belief that the sex offender is a superpredator and diminished empathy for the sex offender, which in turn, will predict increased belief that the defendant is a threat to society. Finally, increased belief that the defendant is a threat to society is theorized to predict increased support for sex offender registration.

Specifically, we tested a series of models in AMOS allowing disgust sensitivity to predict the belief the defendant is a superpredator (this path is labeled “a”) and defendant empathy (path “b”; see Figure 1 for full model). We allowed the belief the juvenile is a superpredator to predict defendant empathy (path “c”) because this is consistent with theory and research showing how dehumanization predicts lack of empathy (Haslam, 2006). In the same model, the belief the defendant is a superpredator and defendant empathy predicted the belief the defendant is a threat to society (paths “d” and “e,” respectively), which in turn, predicted support for sex offender registration (path “f”). Finally, we allowed disgust sensitivity to directly predict support for sex offender registration (path “g”).

In a series of subsequent models, we constrained different paths to zero in a series of steps to determine the specific direct effects of the variables of interest. Specifically, as a first step, we determined whether there was a significant relationship between disgust sensitivity and registration support by constraining the following paths to zero: a, b, c, d, e, and f. Results reveal evidence for adequate model fit (see Table 1 for model fit indices for Model 1). In support of our hypotheses, as disgust sensitivity increased, so too did support for registering the juvenile sex offender, $B = .01, SE = .01, \beta = .23, p < .05$. Because the relationship between disgust sensitivity and registration support was significant, we continued testing subsequent models designed to explore possible underlying factors that explain the relationship between disgust sensitivity and registration support.

The second step is one of the most crucial because it will be used to determine the presence of mediating variables that explain the relationship between disgust sensitivity and registration support. Specifically, we tested a model in which none of the paths were constrained to zero and found evidence for adequate model fit (see Table 1 for fit indices for Model 2 and Table 2 for all direct and indirect effects). As hypothesized, disgust sensitivity significantly predicts greater belief that the juvenile is a superpredator and diminished empathy for the juvenile offender (see Table 2 for model standardized path coefficients). Also as expected, greater belief that the juvenile is a superpredator significantly predicts less defendant empathy. Further in line with hypotheses, greater belief that the juvenile is a superpredator

---

5 When covarying for gender and ethnicity (coded as 0 = White, 1 = non-White), Model 3’s chi-square changed from 549.97, ns to 677.77, $p = .004$ and the RMSEA changed from .02 (.00–.04) to .04 (.02–.05), illustrating worse model fit. Thus, we have presented analyses without covarying for gender and ethnicity.
and diminished empathy significantly predicts greater belief that the juvenile is a threat to society. Finally, the belief that the defendant is a threat significantly predicts greater registration support. As expected, the direct effect between disgust sensitivity and registration support is not significant.
Disgust Sensitivity and Attitudes Toward Sex Offenders  

Table 1. Fit Indices for all Models

<table>
<thead>
<tr>
<th></th>
<th>$\chi^2$(df)</th>
<th>CFI</th>
<th>RMSEA (Confidence Intervals)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model 1</td>
<td>766.46(521)</td>
<td>.80</td>
<td>.06 (.05–.07)</td>
</tr>
<tr>
<td>Model 2</td>
<td>549.96(515)</td>
<td>.97</td>
<td>.02 (.00–.04)</td>
</tr>
<tr>
<td>Model 3</td>
<td>549.97(516)</td>
<td>.97</td>
<td>.02 (.00–.04)</td>
</tr>
<tr>
<td>Alternative model</td>
<td>549.97(516)</td>
<td>.97</td>
<td>.02 (.00–.04)</td>
</tr>
</tbody>
</table>

Note. *Denotes significance at $p < .01$.

Table 2. Direct and Indirect Effects of Model 2 (Step Two)

<table>
<thead>
<tr>
<th>Relation</th>
<th>Direct Effect</th>
<th>Indirect Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disgust sensitivity + superpredator</td>
<td>.28*</td>
<td>–</td>
</tr>
<tr>
<td>Disgust sensitivity + defendant empathy</td>
<td>-.26*</td>
<td>-.07</td>
</tr>
<tr>
<td>Superpredator + defendant empathy</td>
<td>-.27**</td>
<td>–</td>
</tr>
<tr>
<td>Superpredator + defendant threat</td>
<td>.66***</td>
<td>–</td>
</tr>
<tr>
<td>Defendant empathy + defendant threat</td>
<td>-.35***</td>
<td>–</td>
</tr>
<tr>
<td>Disgust sensitivity + defendant threat</td>
<td>–</td>
<td>.30</td>
</tr>
<tr>
<td>Defendant threat + registration support</td>
<td>.71***</td>
<td>–</td>
</tr>
<tr>
<td>Disgust sensitivity + registration support</td>
<td>-.00</td>
<td>.21</td>
</tr>
</tbody>
</table>

Note. Dashes denote relationships not tested in the model. Statistical significance of direct effects is indicated as follows: *$p < .05$, **$p < .01$, ***$p < .001$. When there is missing data, AMOS does not indicate statistical significance of indirect effects.

Table 3. Direct and Indirect Effects of Model 3 (Step Three)

<table>
<thead>
<tr>
<th>Relation</th>
<th>Direct Effect</th>
<th>Indirect Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disgust Sensitivity + superpredator</td>
<td>.28*</td>
<td>–</td>
</tr>
<tr>
<td>Disgust sensitivity + defendant empathy</td>
<td>-.28*</td>
<td>-.07</td>
</tr>
<tr>
<td>Superpredator + defendant empathy</td>
<td>-.27**</td>
<td>–</td>
</tr>
<tr>
<td>Superpredator + defendant threat</td>
<td>.66***</td>
<td>–</td>
</tr>
<tr>
<td>Defendant empathy + defendant threat</td>
<td>-.35***</td>
<td>–</td>
</tr>
<tr>
<td>Disgust sensitivity + defendant threat</td>
<td>–</td>
<td>.30</td>
</tr>
<tr>
<td>Defendant threat + registration support</td>
<td>.71***</td>
<td>–</td>
</tr>
</tbody>
</table>

Note. Dashes denote relationships not tested in the model. Statistical significance of direct effects is indicated as follows: *$p < .05$, **$p < .01$, ***$p < .001$. When there is missing data, AMOS does not indicate statistical significance of indirect effects.

In the third and final step, we tested a model in which only path g (the path between disgust sensitivity and registration support) was constrained to zero and also found evidence for adequate model fit (see Table 1 for fit indices for Model 3 and see Table 3 for direct and indirect effects).

To determine evidence for mediation, we compared the model fits of the second and third models (see Table 1). If the third model (in which the direct effect of disgust sensitivity on registration support was constrained to zero) does not fit
significantly worse than the second model (in which no paths were constrained to zero), then this would provide evidence for mediation (MacKinnon, Lockwood, Hoffman, West, & Sheets, 2002). Inspection of fit indices revealed that the CFI and the RMSEA for Model 2 and Model 3 were identical (both CFIs = .97; and RMSEAs = .02; see Table 1), indicating no evidence of worse model fit of Model 3. Because Model 2 and Model 3 are nested models, we performed a chi-square difference test (as recommended by Kline, 2005) to determine whether the models were statistically different from one another. Results revealed that the models were not statistically different from one another, $\chi^2(1) = .01$, ns, thus, providing further evidence of mediation. That is, a comparison of these models provides evidence that the indirect effects of disgust sensitivity on registration support (as mediated by the belief the juvenile is a superpredator, defendant empathy, and the belief the defendant is a threat) is not significantly worse than both the direct effect and the indirect effect combined.

**Estimation of an Alternative Model**

Finally, we tested an alternative model in which directionality of all of Model 3’s paths were reversed. Specifically, we tested the possibility that registration support predicts the belief the defendant is a threat, which predicts defendant empathy and the belief the defendant is a superpredator, which in turn both predict disgust sensitivity. The belief the defendant is a superpredator and defendant empathy still covaried, but the direction was reversed such that defendant empathy predicts the belief the defendant was a superpredator. Although these models are equivalent (see Table 1 for fit indices), there is little reason to believe that one’s actions (registration support) and attitudes toward a specific offender (perceived threat, empathy, and the belief he is a superpredator) would determine one’s dispositional proneness toward disgust. That is, both theory (as reviewed earlier) and logic suggest that one’s dispositional sensitivity to disgust—a relatively stable individual difference variable (Haidt et al., 1994)—will influence attitudes, emotions, and, in turn, registration support, not vice versa.

**Discussion**

We have provided evidence that disgust sensitivity predicts increased support for juvenile sex offender registration. Moreover, a series of path analyses supported our theoretically-derived model depicting the underlying psychological constructs that explain the relationship between disgust sensitivity and increased juvenile sex offender registration support. Specifically, participants with greater disgust sensitivity believed that the juvenile defendant was more of a cold and calculating superpredator and had less empathy for him. Diminished empathy and the belief the defendant was a superpredator both covaried (as expected; see Jones, 2007) and
predicted increased belief that the defendant was a threat to society. Finally, the belief the defendant was a threat to society predicted greater registration support, as predicted (Salerno et al., 2010).

Our results support and extend existing research linking disgust sensitivity to dehumanization (e.g., Hodson & Costello, 2007) and moral condemnation of outgroups (e.g., Inbar et al., 2009). We have found that disgust sensitivity also appears to predict more severe treatment of an extreme outgroup—sex offenders—a phenomenon driven by dehumanized beliefs and emotions, which translate into greater fear of the outgroup. These results are also consistent with Viki et al.’s (2012) research revealing that the more people dehumanize sex offenders, the more punitively they treat them.

These findings provide insight into the theoretical and practical consequences of disgust. Disgust reactions may have evolved to protect humans from various environmental threats to survival (Curtis, Aunger, & Rabie, 2004). Indeed, disgust is considered to be a universal emotion in humans (Darwin, 1872; Ekman & Friesen, 1986; Mesquita & Frijda, 1992) that accompanies various automatic physiological and behavioral reactions (Rozin et al., 1993). Although arguably evolutionarily adaptive, our research shows that disgust responses may, in some cases, undermine effective decision-making, resulting in dysfunctional policy (i.e., increased support for adolescent sex offender registration policies). Yet, myriad evidence suggests that registration policies exert iatrogenic consequences by stigmatizing offenders, interfering with offender community reintegration, and increasing offender homelessness and joblessness—all consequences that ironically have the potential to increase offender recidivism (Levenson & Cotter, 2005; Levenson, D’Amora, & Hern, 2007; Salerno et al., 2010; Tewksbury, 2005; Tewksbury & Lees, 2006, 2007; for reviews, see Chaffin, 2008; Trivits & Reppucci, 2002).

This study also offers important practical implications for attorneys defending alleged sex offenders. Our results suggest that people who are sensitive to disgust are likely to react negatively toward sexual crimes and are thus likely to be biased against defendants accused of sexual crimes. Attorneys might consider assessing disgust sensitivity during voir dire to help identify jurors likely to be particularly biased in trials involving sex offenders. To the extent that disgust sensitivity influences support for sex offender registration policy, an obvious next step in research is to examine whether this effect can be “reversed.” That is, can educating the public about the biasing influence of disgust reduce support for maladaptive sex offender policies? In support, calling jurors’ attention to their own racial biases by, for instance, asking questions about racial biases during voir dire, reduces jurors’ likelihood to make racially biased case decisions (Sommers, 2006). The practical implications applied to this study are intriguing: Perhaps simply asking jurors about their own emotional reactions of disgust toward sex offenders during voir dire will reduce the impact of those emotions on subsequent juror decisions.
Another avenue for future research includes exploring the possibility that educating jurors about myths associated with sex offenders and the ineffectiveness of sex offender policy might reduce the impact of disgust on support for registration policy. Indeed, as education level increases, support for juvenile sex offender registration decreases—an effect driven by educated participants’ greater knowledge of developmental limitations of adolescents and the ineffectiveness of registration policies (Stevenson, Smith, Sekely, & Farnum, 2013). Developing public awareness programs or educational interventions designed to dispel myths about sex offenders and to highlight the unintended, negative direct and collateral consequences of sex offender registration policies might help reduce the impact of disgust on public support for such policies. Educating the public regarding the impact of disgust on registration support might encourage people to reevaluate their support for registration policy and steer people toward thinking more critically about such policy. Mitigating public support for maladaptive sex offender policy is the first step toward implementing sex offender policy with empirically supported effectiveness. Indeed, research shows that juvenile sex offenders are amenable to treatment (for reviews, see Chaffin, 2008; Trivits & Reppucci, 2002). For instance, therapeutic treatments that address family-level dynamics have successfully reduced juveniles’ sexual recidivism rates (St. Amand, Bard, & Silovsky, 2008). Policy and practice should be aimed at facilitating treatments for juvenile sex offenders that are rooted in empirical support. Yet, until politicians and policy makers no longer face inordinate pressure from their constituents to promote increasingly inclusive yet ineffective sex offender registration policy, such policy will likely continue to proliferate.

One clear limitation with the current research is that the participants were racially homogeneous and undergraduates, who are younger and more educated than the average U.S. citizen. Moreover, this study assessed attitudes toward only one type of adolescent sexual offense. Future research is needed to address the limitations of the current research by exploring the effects of disgust sensitivity in relation to a range of sexual crimes and by assessing responses to diverse offenders and victims (e.g., race, ethnicity, sexual orientation). Indeed, research shows that registration support is higher when a juvenile sex offender and victim are different races (Black and White) than when they are the same race (Stevenson et al., 2009). In addition, it would be interesting to examine the effects of disgust sensitivity on conviction rates of an alleged sex offender in the context of an ecologically valid mock trial paradigm with realistic videotaped trial transcripts. Future studies should recruit prospective jurors or community members who are more representative of actual jurors in terms of age and demographics. Even so, research shows that community members and undergraduates share similar attitudes toward juvenile sex offender registration policy (Salerno et al., 2010), and so this study likely represents a good first step.
Of course, jurors are just one example of many relevant decision-makers in sexual crime contexts. Probation officers, police, judges, and attorneys all have the potential to make important decisions that may affect the lives of alleged or convicted sex offenders. Future research should explore the effects of disgust sensitivity on the treatment of sex offenders within these populations. It is also possible that disgust sensitivity predicts attitudes toward various other types of crimes including, for instance, violent murder, torture, child abuse, and physical assault. Disgust sensitivity might predict attitudes and behaviors that fall outside the scope of sexual crime, including topics such as ageism, homelessness, heteronormativity, etc. Moreover, sexual crime victims’ disgust sensitivity might be interesting to explore from a clinical psychological perspective. Individuals with high disgust sensitivity might be particularly affected by sexual crime victimization—a potential effect with practical implications. That is, disgust sensitivity might become a useful screening measurement designed to identify victims of sexual assault who are likely to experience a unique set of symptoms. Finally, although we have found that individual differences in dispositional proneness toward disgust predict reactions toward a juvenile sex offender, the next step is to explore the possibility that disgust exerts a causal effect by experimentally manipulating disgust in a sex crime context.

Conclusion

Even though sex offender registration policies are ineffective at reducing sex crimes (e.g., Letourneau & Armstrong, 2008) and harm offenders in ways that ironically might increase recidivism (for a review, see Chaffin, 2008), these policies have proliferated and now extend even to juveniles, who are much less likely than adult sex offenders to recidivate (Caldwell, 2002; Letourneau & Miner, 2005; Trivits & Reppucci, 2002). Although the legal impetus behind the tide of expanding sexual registration policies is to protect society from dangerous sex offenders (e.g., Williams, 2009), emerging research suggests that utilitarian concerns for society are not the sole psychological force driving these policies (for a review, see Skinner, Farnum, & Stevenson, 2013). In fact, most people (73%) would still support registration policies even if there is no evidence that they reduce sex crimes (Levenson et al., 2007). Because support for sex offender registration policy is not always based in logic, our study explores the possible influence of emotions on support for such policy. We have found that the emotion of disgust—a dehumanizing emotion (e.g., Hodson & Costello, 2007)—predicts negative reactions toward sex offenders. Of course, not all emotions are considered inappropriate in legal decision-making contexts, but in many cases, relying on emotions is strictly forbidden, and in fact, illegal (e.g., Bandes, 1996). We have uncovered one instance of the maladaptive influence of emotion on policy trends. That is, the dehumanizing emotion of disgust might, in part, explain the trend
toward increasingly severe sex offender policy, despite its harmful consequences. Yet, society stands to gain a great deal by supporting sex offender policy that stems from empirically supported research rather than the biasing emotion of disgust.

References


Camman, C. M. (2012). The role of dehumanization in understanding responses to sex offenders in the community. (Unpublished master’s thesis). University of Saskatchewan, Saskatoon, Canada.


MARGARET C. STEVENSON received her PhD in psychology from the University of Illinois at Chicago. She is currently Associate Professor of psychology at the University of Evansville and her research interests focus on the intersection of children, psychology, and the law. She has published peer-reviewed articles and book chapters related to perceptions of children who enter the legal system, either as victims of crime or perpetrators of crime. Most recently, her research efforts have been aimed at exploring extra-legal biases and stigma that shape support for sex offender registration policy as it is applied to adolescent sex offenders.

SARAH E. MALIK obtained her BS from the University of Evansville in Evansville, IN and is now a MS Psychology student at Arizona State University in Glendale, AZ. Her research interests include legal decision-making as it relates to members of the LBGT community. Sarah has received competitive grants and awards in recognition of her work and has published her work in academic journals.

REBECCA R. TOTTON is currently pursuing her PhD in psychology from Ohio University. She received her undergraduate degree in psychology from the University of Evansville, and her Master’s in social sciences from The University of Chicago. Her research efforts have been focused on stereotypes, stereotype threat, and negative attitudes against stigmatized groups.

REBECCA D. REEVES obtained her BS from the University of Evansville in Evansville, IN. She was a double major in psychology and sociology and pursued research at the intersection of social psychology and the law.