What's The Verdict: How Disgust Dictates Jury Verdict and The Mitigating Role of Symbolic Cleansing

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A THESIS APPROVED FOR THE

MASTER OF SCIENCE IN FORENSIC PSYCHOLOGY

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ABSTRACT

Approximately 1% of the US prison population (about 20,000 individuals) is currently wrongfully convicted (The Innocence Project, 2023). Wrongful convictions are influenced by ambiguous evidence, cognitive heuristics, and moral emotions, which affect legal decision-making (Baldwin & McConville, 1979). The present study assessed the effect of disgust-inducing and cleansing images on mock jury guilt ratings. One hundred fifty-two participants were randomly assigned to one of four conditions: disgust-inducing and cleansing images, disgust-inducing images only, cleansing images only, and no images. Participants read an ambiguous vignette about a crime and battery charge, then rated the defendant's guilt on a 7-point Likert scale. The findings showed, in a marginal effect, that exposure to cleansing images following disgust-inducing images resulted in lower guilt ratings, indicating that moral cleansing mitigates heuristics formed by the vignette and disgust-inducing images. The decreased guilt ratings in the group exposed to both cleansing and disgust-inducing images demonstrate the role of symbolic cleansing in moral restoration and reaffirm the link between moral self-assessment restoration and reduced feelings of disgust (Schaefer, 2019). Future studies should explore the impact of more arousing media and different forms of symbolic cleansing to determine how moral cleansing might influence pathogen avoidance responses and lead to fairer sentencing in the criminal justice system.

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INTRODUCTION

Jury decision-making is an intricate process influenced by various factors. Although jurors are exposed to identical information, variations exist in individual perceptions and assessments. The interplay between the information jurors receive and the verdicts they ultimately select prompts an examination of cognitive mechanisms in both juror deliberation and everyday decision-making. These mechanisms include bottom-up perceptual processing (from external stimuli) and top-down perceptual processing (from pre-existing beliefs; Sterzer et al., 2018). Jurors, as argued by Devine (2012), must balance evidence assessment with emotions, personal experiences, and biases.

Approximately 1% of the US prison population (about 20,000 individuals) is currently wrongfully convicted (The Innocence Project, 2023). Wrongful convictions, influenced by ambiguous evidence and biases, question the validity of legal decision-making (Baldwin & McConville, 1979). The present study aimed to identify implicit methods to influence juror decision-making without introducing additional stimuli, considering the substantial volume of information and evidence jurors encounter during a trial. The potential to implicitly impact inherent sentiments, such as moral purity, and consequently verdict outcomes, predicted a valuable avenue for exploration and practical application.

Courts rely on various rules to determine the admissibility of evidence and which evidence is later presented to the jury (Williams, 2024). Under the Federal Rules of Evidence (FRE), a judge may opt to exclude relevant evidence if its potential for causing harm outweighs its utility. This rule outlines specific circumstances in which evidence

may be excluded, including situations where it might mislead the jury, cause unnecessary delay of time, or provide irrelevant evidence, among others. In assessing evidence, a trial judge considers its probative value - its capacity to make a fact more or less probable - while also weighing the risk of unfair prejudice (Williams, 2024). When jurors are exposed to evidence of a repulsive or disgusting nature, there is a risk that they may implicitly resort to heuristics or cognitive shortcuts when making decisions about that information. This can lead to biased decisions influenced by implicit attitudes towards the source of moral or physical disgust (Rozin et al., 2008). Studies have shown that presenting jurors with gruesome images related to the case or the autopsy has been linked to higher conviction rates due to increased bodily awareness and affect infusion (Salerno, 2017).

Disgust plays a major role in the verdicts that defendants receive from juries and in determining whether their cases even proceed to trial. The arousal levels of disgust can vary significantly: certain types of disgust are so strongly disapproved of by society that lawyers often settle before the case reaches the jury. For example, cases involving child pornography (both distribution and viewing) and child sexual abuse trigger such visceral disgust that they are often settled pre-trial (Ryder, 2003). In some U.S. states, starting with Louisiana in 1995, sex crime laws allow for death penalty sentencing for child rapists (Bell, 2007). As a result, guilty defendants frequently opt for plea deals to avoid facing a jury that might sentence them to execution. The effects of lesser or other types of disgust, such as those triggered by exposure to bodily fluids and unsettling imagery, and their implicit effect on jury decision-making has been less studied.

The existing research suggests that biases exist outside jurors' conscious awareness (Roberts, 2018). The assumption underlying a juror's ability to assure the court of their impartiality rests on the notion that they are aware of their own biases. However, studies in social psychology suggest that this assumption can be precarious, as biases are often unconscious, making them challenging to assess (Nisbett & Wilson, 1977). Such biases become problematic when they start affecting jury's judgment and verdicts, raising a question of how to address a bias that individuals are not fully aware of possessing, specifically one driven by feelings of anger, disgust, and fear.

To better understand jury verdicts, it is important to understand how decisions are made. Decisions frequently represent multifaceted interactions among numerous cognitive processes and revolve around achieving the most favorable cost-to-benefit outcome (Moutoussis et al., 2021). Choices pertaining to the stimuli in an individual's environment necessitate the engagement of cognitive functions, including memory, perception, behavior, attention, language, awareness, and affectivity, among others (Loureiro, 2020). Drawing upon these elements, jurors evaluate alternatives, analyze costs and benefits, weigh moral and social implications, and consider short-term and long-term consequences. However, this intricate process does not always guarantee a correct decision.

Decision-making is traditionally attributed to two systems: intuitive and deliberate (Kahneman, 2011). Deliberate processes are elaborate and error-detecting but slow, contrasting with the resource-efficient but error-prone nature of intuitive thinking. External stimuli, cognitive biases, heuristics, and personal emotions hinder jurors'

objectivity and affect decision-making, a concept that is expanded in Kahneman and Tversky's (1979) Prospect Theory.

Decision-Making Process

The initial theory of decision-making processes, proposed by von Neumann & Morgenstein (1944), was Expected Utility Theory (EUT). EUT posits that decisions are based on individual preferences and outcomes connected to available options. It relies on the assumption that decision-makers are rational, striving to maximize their utility - combining values with anticipated outcomes. Prospect Theory, built on EUT limitations and proposed by Kahneman and Tversky (1979), recognizes bounded rationality, explaining deviations from normative decisions. Prospect Theory, a cornerstone of behavioral economics, acknowledges human cognitive limitations and reliance on heuristics (cognitive shortcuts), leading to biases and systematic deviations in decision-making processes (Kahneman & Tversky, 1979).

The first core premise of Prospect Theory challenges conventional economic rationality by emphasizing that decision-making hinges heavily on the frame of reference used to evaluate choices rather than their absolute value (Kahneman & Tversky, 1979). The second fundamental tenet of Prospect Theory centers around the concept of loss aversion. Loss aversion is a cognitive bias that reflects humans' heightened sensitivity to potential losses compared to potential gains of equal magnitude (Kahneman & Tversky, 1979). This pronounced aversion to losses introduces an asymmetry in how individuals perceive and respond to risks and rewards within decision-making contexts, shedding light on the intricate interplay of emotions and cognition in shaping choices (Molins & Serrano, 2019).

Experimental studies have revealed that decision-making unfolds in two distinct phases: the editing phase and the evaluation phase (Kahneman & Tversky, 1979). The editing phase serves as an initial step where individuals engage in preliminary analysis of the available prospects, streamlining the decision-making process. During this phase, individuals establish reference points, often referred to as framing effects, to guide their choices. Importantly, these framing effects are susceptible to implicit attitudes and external influences and can shift based on factors such as the variety of stimuli and the order of the options (Kahneman & Tversky, 1979).

Implicit attitudes are beliefs formed from past experiences that mediate thoughts, feelings or actions (Gawronski et al., 2006). They operate on a subconscious level and can influence the decision-making process and the perception of loss aversion without conscious awareness of their impact. Within the jury setting, research indicates that implicit attitudes may affect how individuals perceive and evaluate information, potentially influencing their interpretation of evidence and subsequent judgments (Sorby & Kehn, 2020). Furthermore, dual-process models propose that implicit attitudes, operating within System 1 or intuitive thinking, may interact with explicit cognitive processes, such as those involved in decision-making phases, in a synergistic or antagonistic manner (Strack & Deutsch, 2004), capitalizing on Prospect Theory's concept of bounded rationality and increasing the jury's reliance on heuristics and systemic deviations in decision-making, especially in the face of ambiguous or complicated cases.

Juror Decision-Making and Heuristics

As established, decision-making occurs both consciously and subconsciously and can be influenced by a plethora of factors. The jury, which plays a central role in the US

legal system, is a unique institution that is similarly susceptible to the same effects, attitudes, and phases of decision-making as the rest of the general population (Greene & Bornstein, 2003). Selected through fulfilling minimum requirements of citizenship, literacy, age, and residency, jurors are instructed to handle and process through complex evidence and decide on the appropriate resolution, which could be a recipe for jury incompetence and the need for jury reform. While the efforts to improve the accuracy and performance of the jury is important, empirical research suggests that juries are generally correct in the evaluation of the evidence and application of the law (Greene & Bornstein, 2003). The instances in which juries do err are most often credited to universal and well-established psychological principles, such as attribution errors and faulty heuristic reasoning.

Previous research has uncovered a multitude of factors that can exert an impact on jury judgments. For instance, exposure to negative pre-trial publicity has demonstrated an increased likelihood of conviction (Padawer-Singer & Barton, 1975), as has the introduction of expert testimony regarding eyewitness reliability (Loftus, 1980), the number of witnesses identifying the defendant (Leippe, 1985), and the speech style of child eyewitnesses (Nigro et al., 1989). While these influences may be attributed to various social phenomena, such as conformity or the bystander effect, it is essential to recognize that flawed heuristics and cognitive biases often wield significant control over decision-making, alongside social factors. In an investigation focused on the impact of victim stereotypes and biased heuristics on jury decision-making in rape trials, findings suggested that distorted stereotypical cues influenced the type of evidence attended to by jury participants (Nitschke et al., 2022).

Adding to the complexity of jury decision-making process, cases that proceed to jury trial are seldom straightforward in determining guilt or innocence. Frequently, these cases involve valid testimonies from both parties, inconclusive evidence, conflicting expert opinions, and various other factors that render reaching a fair and just verdict more challenging for juries. Facing complex cases, jurors have been found to grapple with the uncertainty effect, a concept of Prospect Theory, which posits that in complicated scenarios, people tend to be more risk-averse (Sunstein, 2002). In such cases with intricate or incomplete evidence, jurors have been reported to rely more heavily on heuristics and pre-existing attitudes, impacting how they perceive the evidence and the verdicts they make. Introducing stimuli triggering emotions of fear, disgust, or anger into a complex or ambiguous case can potentially lead to jury verdicts being heavily influenced by personal feelings and attitudes, undermining the fairness and justice of the outcome. This raises concerns about how to address these attitudes and assist jury members in restoring their focus on the critical details of the case, free from the influence of such emotions, in order to ensure a fair and impartial verdict.

Moral Foundations Theory

Theory

Moral Foundations Theory is mainly a product of Haidt's Social Intuitionist Model of moral judgment, which proposes that moral judgments primarily stem from the emotional and intuitive interpretation of moral stimuli. Reasoning and contemplation usually come into play subsequent to this initial processing (Simpson, 2017). The theory proposes five types of moral concern, upon which moral institutions are socially composed: Purity, Care, Authority, Loyalty, and Fairness (Haidt & Joseph, 2004). Care

and Fairness predominantly center around guaranteeing equitable treatment for individuals and are often labeled as “individualizing” foundations. The remaining three types prioritize the systems that encompass individuals into larger groups and institutions, aligning more closely with the “binding” category (Graham et al., 2012). These foundations can be conceptualized as cognitive modules that shape individuals’ perceptions of the world, contingent on their utilization (Niazi et al., 2020). Variances in the emphasis placed on specific foundations, combined with varying degrees of importance, yield distinct moral ideologies among both individuals and cultures.

The moral foundation of Purity, for one, revolves around notions of cleanliness, sacredness, and the avoidance of taboos (Haidt & Joseph, 2004), which can be frequently observed in religious practices. The purity foundation may include acts of worship or faith in invisible concepts, including sanctity and higher power, often associated with feelings of cleanness and revitalization (Douglas, 2003). This moral foundation lies at the center of striving to spend one’s life in a more noble and elevated way, while avoiding the carnal and immoral activities, which can often be found in religious narratives and writings (Haidt & Joseph, 2004).

According to MFT, moral foundations are more than just a collection of values; they are intuitions that are both cross-cultural and gradually developed over time (Simpson, 2017). However, even though moral foundations have cross-cultural relevance, the way a particular moral foundation functions may be shaped by ecological factors, which in turn affects how each foundation is triggered and subsequently strengthened. Individual variations in moral foundations might result in differing viewpoints regarding identical scenarios, consequently giving rise to moral disagreements (Simpson, 2017).

The diversity in moral foundations is also evident in studies examining capital jurors and their decision-making processes. Jurors who prioritize the "binding" foundations displayed a stronger correlation with punitive sentencing and death qualification, whereas those emphasizing the "individualizing" foundations were linked to a leniency effect (Vaughan et al., 2019).

Purity and Pathogen Avoidance

Purity foundation, dictated by the psychology of contamination and disgust, plays a significant role in jury verdicts and sentencing. Evolutionary theories pertaining to pathogen avoidance posit that human beings have developed intricate psychological mechanisms as the result of the significant costs associated with exposure to pathogens (LoBue et al., 2022). These mechanisms serve the purpose of enhancing the detection of environmental cues indicative of pathogen presence. Upon detection, these mechanisms engage emotional as well as cognitive responses, notably the experience of disgust. This emotional response subsequently prompts individuals to engage in avoidance behaviors, thereby reducing the likelihood of exposure to potential sources of contagion (LoBue et al., 2022). As pathogen avoidance theories evolved beyond matters of ingestion, disgust began being implicated in aversion toward undesirable individuals, encompassing those who appear unwell as well as those perceived as immoral or in violation of moral principles (Haidt et al., 1994).

Groups of people who are heuristically linked with pathogens, such as older adults, immigrants, or individuals with physical deformities, often bear the brunt of these biases (Faulkner et al., 2004). Pathogen avoidance has also been linked to the detection and avoidance of moral pathogens (Haidt, 2001). Specific moral transgressions, such as

neglecting personal hygiene, engaging in inappropriate relationships with family members, or committing crimes, are often universally condemned across a multitude of cultures (Haidt, 2001). In the presence of moral transgressions, pathogen avoidance mechanism would, either consciously or subconsciously, take steps to isolate the pathogen from the rest of the population, or in-group members, to prevent potential instability, contamination, or threats to the functioning of the in-group (Wu et al., 2019).

Purity and Cleansing

Once the foundation of purity has been affected, whether physically or morally, individuals have been reported to have a strong urge to engage in cleansing rituals. The notion that cleansing can impact psychological aspects of well-being is not unexpected. Referred to as the "Macbeth effect" and inspired by Shakespeare's play Macbeth, this phenomenon originates from the scene where Lady Macbeth exhibits a compelling need to cleanse her hands after urging her spouse to commit regicide (Zhong & Liljenquist, 2006). The need for purification in response to immorality is further explained by moral cleansing theory, which builds upon a concept that immoral behavior is detrimental to one's moral self-worth, which prompts individuals to make attempts at restoring their lost sense of self-worth (Sachdeva et al., 2009). Moral cleansing theory posits that in response to experiencing or witnessing immoral acts, individuals feel the need to engage in moral practices, such as cleansing or purification, in order to find a balance. The format of restoring one's morality, purity, and self-worth often exhibits symmetry; each deviation from the typical behavior is balanced by an equivalent moral action or moral cleansing (Sachdeva et al., 2009).

Moral cleansing may manifest in different forms, each representing a different path to the restoration of moral self-worth, one of which is symbolic cleansing. Symbolic cleansing acknowledges the overlap between physical purity and morality, from the metaphors used in everyday language, such as "getting your hands dirty," to the same facial expressions triggered by both moral transgressions and physical injuries (Lakoff & Johnson, 2008). While acknowledging the ability of physical cleansing methods, like handwashing, hand-sanitizer use, or taking a shower, to act as a symbolic gesture of atonement, it also emphasizes the ability of metaphoric methods to equally act as cleansing methods of morality. More specifically, religious practices, like confessions, or exposure to stimuli which could be considered cleansing, may symbolically "purify" individuals of past wrongdoings, whether they were experienced or simply observed (West & Zhong, 2015).

Research on the effects of moral restoration on decision-making has been explored in a variety of areas, with less focus on its role in the jury decision-making process. In the Schaefer (2019) study, participants who used antiseptic wipes after discussing unethical behavior showed reduced willingness to participate in a subsequent experiment, suggesting a link between moral self-assessment restoration and diminished moral emotions (Schaefer, 2019). Moral emotions are representative of feelings like shame, guilt, righteousness, revenge, and disgust, among many others (Tangney & Dearing, 2003). As evident from the literature, the arousal of emotions such as guilt or disgust can trigger cognitive and psychodynamic processes like attribution, displacement, or projection, which transform the initial emotional arousal into feelings of anger and hatred (Turner, 2002). These emotional states are inherently linked to morality, despite

not always being fully recognized as such by individuals. Assisting juries in restoring their moral compass and reducing moral emotions after exposure to unsettling or disgust-inducing evidence can lead to a fairer judgment for all parties involved in the trial.

Present Study

As jurors, the magnitude of responsibility is substantial, as they hold another individual's life and well-being in their hands (Conley, 2015). The prospect of their exposure to unsettling or disgust-inducing images prompted an inquiry into how such exposure could influence their decisions. Research has previously focused on the restoration of morality and its effect on moral dilemmas, with less focus on jury verdicts. One particular experiment exposed its participants to a repulsive film clip before tasking them with providing input on various moral predicaments (Davis et al., 2012). Participants who were instructed to wash their hands after viewing the clip exhibited a reduced tendency to render harsh moral judgments in the presented dilemmas compared to those who did not receive this instruction.

In contrast to the study conducted by Davis et al. (2012), which investigated the impact of handwashing instructions on moral judgment following exposure to repulsive film clips, the present study focused on the influence of disgust-inducing images on degree of guilt ratings in mock juries. Comparable physiological and brain responses have been noted in both moral and biological disgust, indicating that physiological disgust influences moral judgment by enhancing feelings of aversion (Zhong et al., 2010). Moreover, exposure to unsettling or disgust-inducing information has been reported to trigger a natural inclination to distance oneself from the source of moral discomfort (Rozin et al., 2008), potentially resulting in the tendency to assign higher guilt

and impose harsher punishments within a jury context. Nussbaum (2009) emphasizes the role of disgust in decision-making processes, cautioning against the unchecked influence of disgust responses, particularly within the legal system, as they can lead to bias and discrimination.

To counteract the influence of disgust and its impact on morality, employing cleansing techniques may offer the potential for moral restoration and impartial judgments. As previously mentioned, moral cleansing emphasizes balance (Sachdeva et al., 2009). Thus, to counteract the effects of disgust-inducing images on decision-making, the symbolic presentation of cleansing, such as cleansing images, could be effective in facilitating moral purification. By reducing feelings of disgust, juries may objectively evaluate the evidence and determine guilt based on deliberate reasoning rather than intuition or heuristic shortcuts. Exploring alternative methods of moral restoration, including accessible cleansing practices, may help diminish other avenues of moral restoration within juries, such as bias towards assigning higher guilt or advocating for harsher punishments for the defendant.

Past research into the role of disgust in decision-making informed the first hypothesis of this study, which is that disgust-inducing images would lead to higher verdicts of guilt rendered by mock jurors, compared to those not exposed to any images. It was expected that mock jurors who are exposed to the disgust-inducing images would rate the hypothetical defendant as more guilty compared to those not exposed to any images. The second hypothesis, based on the moral foundation of purity and moral cleansing, posited the mitigating effect of the cleansing images, which would only be seen in those exposed to the disgust-inducing images compared to those not exposed to

the disgust-inducing images. It was expected that the participants exposed to disgust-inducing images, followed by cleansing images, would rate the hypothetical defendant as less guilty than the participants that were exposed to disgust-inducing images but did not see the cleansing images afterwards. This approach demonstrated the potential to reveal the role that disgust plays in shaping guilt judgments and if exposure to cleansing images could mitigate or act as a buffer against the effects of the pathogen avoidance mechanism.

METHOD

Participants

In total, 225 participants were recruited from various social media platforms and from courses at the University of Central Oklahoma. Participants were excluded from the analysis if they did not complete the survey properly (spending too little time (under 2 minutes) or too much time (over 1 hour) reading the vignette), were under 18 years old, or partially completed the survey. Of 225 participants, 152 participants were retained and used for the analysis (n = 38 per group).

Materials

Images

The images were selected from the Open Affective Standardized Image Set (OASIS), which is an open-access standardized stimulus set, consisting of 900 affective images as stimuli from various semantic subjects, serving as a reliable tool for emotion elicitation (Kurdi et al., 2017). The developers of the OASIS normed images based on two criteria, valence and arousal. The valence scale assessed the direction of the emotion elicited by the image, determining whether it evokes a positive or a negative feeling,

without considering its intensity. The arousal scale measured the intensity of the emotional response provoked by the image, indicating whether the material is calming or stimulating, irrespective of its positive or negative content.

The dimensions were rated on a 7-point Likert scale.

The valence scale utilized in the OASIS database was defined by three significant anchor points: the low end representing highly negative images, the midpoint indicating completely neutral images, and the high end denoting highly positive images. For the arousal scale, there was no meaningful midpoint. Arousal ratings appeared to be the highest at the most negative and the most positive points of valence, with the remaining images settling at mid-high and mid-low arousal, including images that elicit feelings of disgust (Kurdi et al., 2017). Disgust was reported to correlate negatively with valence and arousal, demonstrating that one might report lower on valence when experiencing disgust, while not necessarily reporting high on the arousal scale. Cleansing images conversely have been reported to correlate high with valence but low with arousal (Stevenson & James, 2008), demonstrating that arousal is similar across both disgust-inducing and cleansing images.

The images selected for this study were chosen to elicit a feeling of disgust, with a focus on images rated moderately low in valence ($M = 2.067$, $SD = 1.0$) and more neutral in arousal ($M = 3.775$, $SD = 2.0$). Conversely, the images chosen for the cleansing/positive condition were characterized by high valence ($M = 5.48$, $SD = 1.027$) and more neutral arousal ratings ($M = 3.324$, $SD = 1.60$). To confirm that the images selected from the OASIS database elicited the same responses and feelings from the sample of the current study, participants were asked to rate the chosen images on the

valence and arousal scales. Similarly to the OASIS findings, the disgust-inducing images were rated moderately low in valence (M = 2.03, SD = 0.994) and more neutral in arousal (M = 4.18, SD = 1.846). The images chosen for the cleansing/positive condition were rated by the participants as higher in valence (M = 5.53, SD = 1.053) and more neutral in arousal (M = 4.42, SD = 1.433).

Vignette

Each participant was instructed to read a vignette detailing a crime of assault and battery with a deadly weapon (see Appendix C). The vignette was created to resemble an incident report that might be presented at a court to a jury. The vignette was created by the primary researcher to be ambiguous in guilt, who operationalized the ambiguity as valid evidence and testimony supporting both versions of events, resulting in justification for both sides, which highlighted the importance of thorough consideration of the details provided, as well as the need for impartiality in assessing the credibility of the testimonies. It also emphasized the inherent subjectivity in legal interpretation and the potential for multiple valid interpretations and justification of the same set of circumstances.

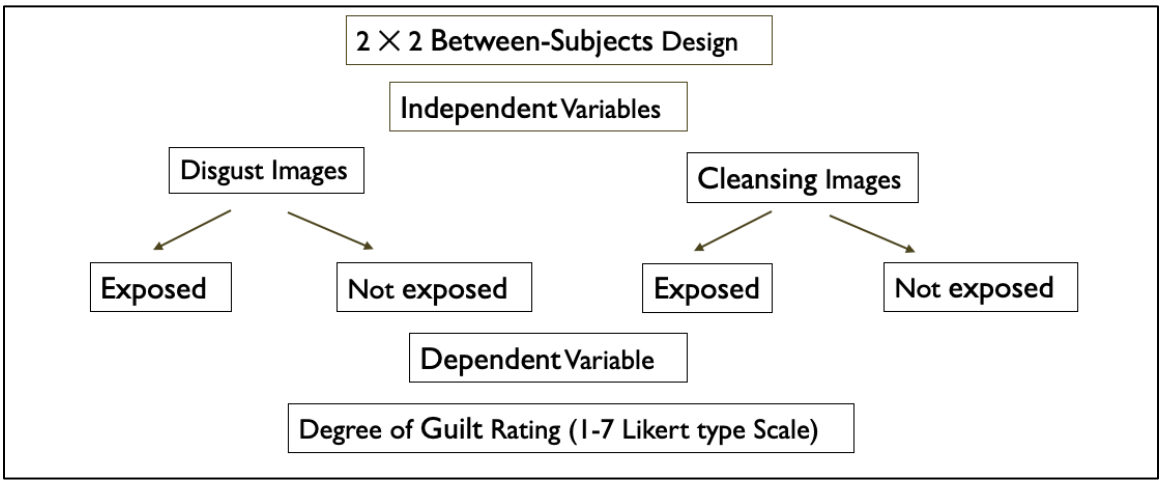
Design

The study was a 2 × 2 between-subjects factorial design, with two independent variables: disgust-inducing images (exposed/not exposed) and cleansing images (exposed/not exposed) (see Figure 1). Participants were randomly assigned to four experimental conditions: disgust-inducing images with cleansing images, disgust-inducing images only, cleansing images only, and no images at all. The degree of guilt

rating was the dependent variable and was measured using Likert scale from 1 to 7 (see Appendix D).

Figure 1

2 × 2 Between-Subjects Experimental Design



Note. The design includes two independent variables (IVs) – disgust-inducing images (exposed vs. not exposed) and cleansing images (exposed vs. not exposed). The dependent variable is the degree of guilt rating, scored on a 7-point Likert scale.

Procedure

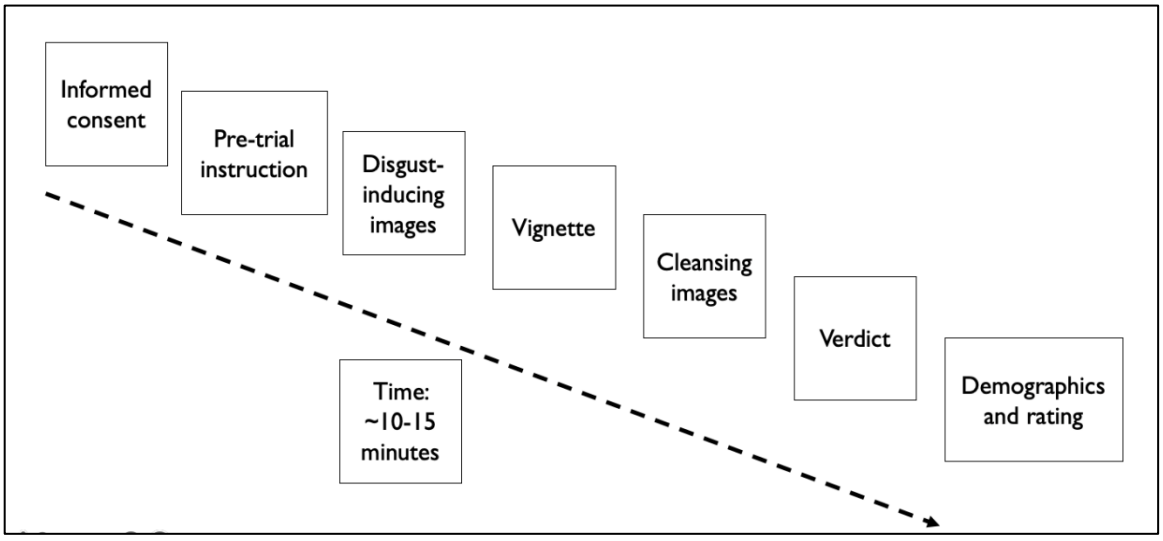
In total, the experiment took 10-15 minutes to complete (see Figure 2). After an informed consent form with a graphic content warning, participants received pre-trial instructions detailing their role in the study scenario (see Appendix A). Those assigned to the experimental group of disgust-inducing images/cleansing images were first exposed to the five pre-selected disgust-inducing images (first half of Appendix B). Following this, participants read the vignette presenting a case scenario (see Appendix C). Subsequent to the completion of the vignette, participants were presented with the remaining five cleansing images (second half of Appendix B). Upon viewing all images,

participants received the jury instructions for the verdict and were asked to indicate their perceived degree of guilt on a 7-point Likert scale (see Appendix D). After demographic information was collected (see Appendix E), participants rated the images on both valence and arousal levels using a 7-point Likert scale (see Appendix F). Participants were then thanked for their participations and were provided resources for any necessary support.

The remaining conditions differed from the disgust-inducing images/cleansing images condition in what images participants saw. Those randomly assigned to the experimental group of disgust-inducing images only were exposed to the five pre-selected disgust-inducing images (first half of Appendix B) but did not see the cleansing images. Those in the cleansing images only condition did not see the disgust-inducing images before but did see the cleansing images after the vignette. Those in the no images condition did not see any images.

Figure 2

Procedure Sequence



Note. The study followed the following sequence: informed consent, pre-trial instructions, disgust-inducing images (for applicable conditions), vignette, cleansing images (for applicable conditions), verdict, demographics, and rating of the images on valence and arousal. The entire procedure took approximately 10-15 minutes.

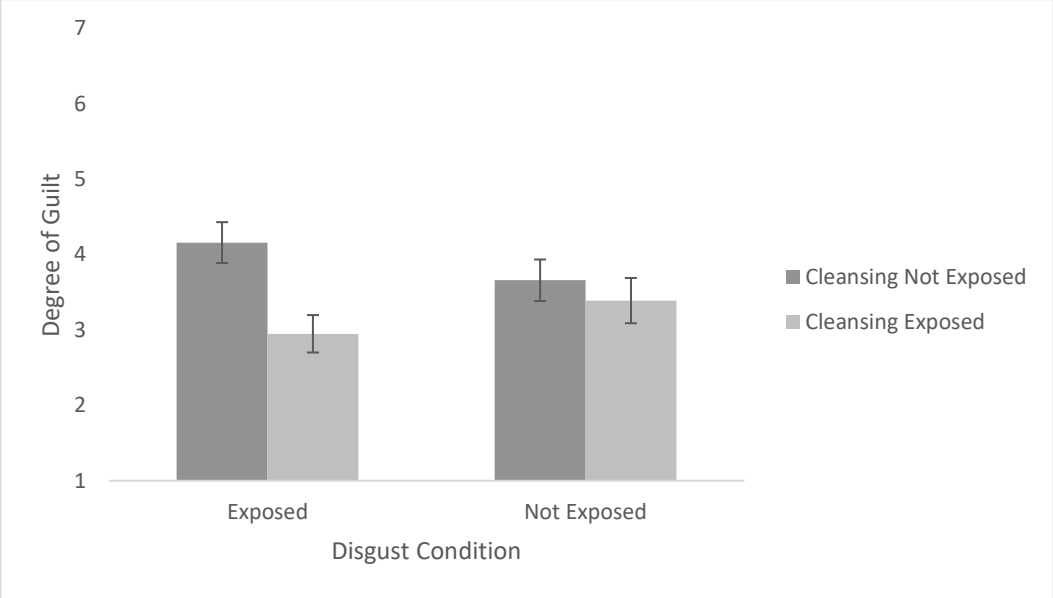
RESULTS

Mean degree of guilt ratings were submitted to a 2 × 2 between-subjects analysis of variance (ANOVA), with disgust-inducing images (exposed/not exposed) and cleansing images (exposed/not exposed) as the between-subjects factors. The main effect of disgust-inducing images rendered no significant effect, $F(1,148) = .009$, $p = .924$, $\eta_p^2 = .000$, with no difference between those exposed to disgust-inducing images ($M = 3.55$, $SD = 1.71$) and those not exposed to disgust-inducing images ($M = 3.53$, $SD = 1.77$). Exposure to cleansing images was found to be significant, $F(1, 148) = 7.192$, $p = .008$, $\eta_p^2 = .046$, with the significant difference between those exposed to cleansing images ($M = 3.17$, $SD = 1.71$), who rated the defendant as less guilty, and those not exposed to cleansing images ($M = 3.91$, $SD = 1.70$).

The Disgust-Inducing Images × Cleansing Images interaction was found to be marginally significant, $F(1,148) = 2.972$, $p = .087$, $\eta_p^2 = .020$ (see Figure 3). Those exposed to cleansing images following disgust-inducing images demonstrated the cleansing effect (rating the defendant as less guilty) compared to those exposed to disgust-inducing images only (($M = 2.95$, $SD = 1.54$; $M = 4.16$, $SD = 1.67$, respectively). No cleansing effect was observed for the participants not exposed to disgust-inducing images ($M = 3.39$, $SD = 1.85$; $M = 3.66$ $SD = 1.70$, respectively).

Figure 3

Disgust-Inducing Images x Cleansing Images Interaction



Note. Mean degree of guilt ratings (7-point Likert scale) for the four groups (no images; cleansing images only; disgust-inducing images only; and disgust-inducing images/cleansing images; n = 38 per group). Error bars represent the standard error of the mean.

DISCUSSION

This study examined the impact of symbolic cleansing after exposure to disgust on juror decision making. I predicted that exposure to disgust-inducing images would result in higher guilt ratings, triggered by the engagement of the pathogen avoidance mechanism (Zhong et al., 2010). Previous research on the effect of disgust-inducing images on jury decision-making has demonstrated that such images can bias jurors' emotions, leading to more guilty verdicts (Feigenson & Park, 2006; Albarracin & Kumkale, 2003). Specifically, Oliver and Griffitt (1976) found that when jurors were exposed to gruesome images, they increased punitiveness when determining the damages

awarded by the defendant to the victim. Taken together, these results reliably show that disgusting images bias juror decision-making to a more intuitive decision instead of a logical one.

The present study did not replicate the results of previous research, which does not necessarily indicate the absence of an effect of disgust on decision-making. Instead, my ability to reproduce these findings may be attributed to the different types of images used in the current and previous studies. Prior research employed more graphic and visceral images of victims and crimes committed against them (Oliver & Griffitt, 1976), which were more likely to trigger the pathogen avoidance mechanism in participants. In contrast, the present study utilized more mundane and frequently encountered items, such as dog feces, dirty toilets, and trash. Thus, in order to observe a strong reaction, more arousing images might be necessary to elicit the same pathogen avoidance responses that jurors experience in actual court trials.

The Disgust-Inducing Images × Cleansing Images interaction was found to be marginally significant. However, the marginal effect was in the predicted direction, indicating that exposing individuals to disgust-inducing images followed by cleansing images had an effect in reducing guilt ratings. Consistent with moral cleansing theory and previous research (Yan et al., 2011), the exposure to physical disgust through images and moral disgust through the vignette triggered a psychological need for cleansing, which was then satisfied by the cleansing images. The cleansing effect was only effective following exposure to disgust-inducing stimuli; cleansing images without prior disgust exposure did not yield significantly different results from those not exposed to disgust-inducing imagery.

The findings also enhance our understanding of the effect of cleansing on emotionality and heuristics relevant to juror decision-making. Disgust elicitors, including witnessing physical representations of disgusting items or feeling disgust in response to moral violations, have been found to increase condemnation of various moral infractions (Schnall et al., 2008), supporting the idea that moral condemnation evolved from a disgust system (Rozin et al., 1999). Emotions, according to Prospect Theory, function similarly to heuristics; they serve as shortcuts in the decision-making process (Szigeti, 2013). Emotional responses are generally fast and unreflective, providing a basis for decisions without the individual's conscious awareness. The lower guilt ratings among participants exposed to both disgust-inducing and cleansing images suggest that the cleansing images not only reduced the moral emotion of disgust but also addressed the implicit heuristics and subsequent emotional response when seeing disgusting images and criminal activity.

These findings underscore the efficacy of symbolic cleansing in mitigating the impact of disgust on juror decision-making. According to moral cleansing theory, individuals exposed to moral or physical impurity are implicitly driven to engage in cleansing practices to restore their moral self-worth (Sachdeva et al., 2019). This study predicted this implicit need, and for the group whose need for symbolic cleansing was satisfied by cleansing images, the guilt rating was lower than in any other group. This reaffirms the established link between moral self-assessment restoration and reduced feelings of disgust (Schaefer, 2019).

The marginal effect observed in the Disgust-Inducing Images × Cleansing Images interaction suggest a balance between the disgust elicited by the disgust-inducing images

and the symbolic cleansing achieved through cleansing images. Moral cleansing theory emphasizes the need for symmetry between the threat to moral purity and the cleansing action (Sachdeva et al., 2009). If the disgust aroused had been more intense, the cleansing images might not have been sufficient to counteract the bias in decision-making. Thus, the specific level of disgust aroused by the images may have been optimal for achieving the cleansing effect.

Limitations and Future Directions

The exposure to disgust-inducing images in the present study did not yield the same results as those that informed our initial hypothesis. One possible explanation for this discrepancy is the number of participants included in the analysis. Although 225 participants engaged in the study, over 60 had to be excluded for not taking sufficient time to read the vignette. With only 152 participants included in the final analysis, the study may have lacked sufficient statistical power, resulting in lower observed significance. Future studies could benefit from presenting shorter vignettes or utilizing video content to enhance participant engagement.

Additionally, while the study aimed to investigate the effect of disgust and cleansing on jury decision-making, it did not replicate the conditions of a real court trial. Participants were virtually exposed to both cleansing and disgusting images and rated the degree of guilt online, which may limit the generalizability of the findings to the forensic and criminal justice fields. Since moral cleansing can be achieved both physically and symbolically, physical engagement in cleansing might yield stronger results than the vicarious manipulation of cleansing used in the current study (Earp et al., 2014). Methods

such as using hand sanitizer or hand-washing could enhance the ecological validity and replicability of these findings in real court settings.

Finally, another factor that may explain the discrepancy between the degree of guilt recorded in the present study and previous studies is the arousal level of the disgust-inducing images. Prior research relied on more visceral and arousing images of victims and crimes, which were highly effective in eliciting disgust responses (Feigenson & Park, 2006; Albarracin & Kumkale, 2003). In contrast, the current study employed more commonly encountered forms of disgust. To explore if jury decision-making would be equally affected by general images of disgust, the present study did not use the same highly arousing images observed in prior studies. The findings indicate that less arousing images do not have the same effect on jury verdicts. Future research could benefit from employing highly arousing disgust-inducing images to better understand the mitigating effect of moral cleansing on jury decision-making.

Alternatively, individual differences in purity foundation may moderate juror decision making. Two common frameworks for understanding purity-related states and behaviors are pathogen avoidance, an antipathogen defense system (van Leeuwen et al., 2012), and self-control, which involves restraining selfish desires and impulses, including refraining from committing crimes when alternatives are available (Preston & Ritter, 2012). Physical representations of disgust, such as feces, are expected to trigger the pathogen avoidance aspect of purity, focusing attention on avoiding contaminants (Sheskin & Santos, 2012) and leading to biased decisions based on the emotional response to disgust. Reading about a case where an individual failed to control or resolve a heated situation civilly and resorted to shooting a firearm might alternatively challenge

the participants' expectations for the general public to suppress their impulses and desires (Weber & Federico, 2013), thereby affecting decisions regarding the defendant. Both threats to the foundation of purity may have a different amount of influence on the juror decision-making, depending on their sensitivity and predisposition to the purity foundation. Future studies could benefit from utilizing the Moral Foundations Questionnaire, to measure and account for the individual differences in the purity foundation and how these differences moderate decisions when the participants' purity is threatened, either morally or physically. Additionally, while the primary researcher did not directly address whether the images chosen elicited disgust in the participants, it was inferred that the sample of this study experienced similar emotional responses to disgust-inducing stimuli as the OASIS sample. Future studies could benefit from directly addressing the disgust elicited by asking participants if the images they viewed evoked feelings of disgust and to what extent.

Conclusion

The findings of this study underscore the significant impact of disgust-inducing images on jury decision-making, highlighting the mitigating effect of moral cleansing and how the arousal level of the content is closely tied to the pathogen avoidance mechanism. While the present study employed symbolic cleansing through images, moral cleansing can similarly be achieved through physical actions. Providing juries with an opportunity to engage in moral cleansing, such as using hand sanitizer or washing their hands, prior to delivering a verdict or following exposure to particularly gruesome content, could allow them to restore their moral character and mitigate the moral emotions of disgust elicited by the information presented during the trial. This insight could be critical for the

criminal justice system, as understanding the influence of disgust on jury decision-making and the potential for moral cleansing to promote more objective and fair verdicts can enhance the judicial process.

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APPENDIX A

You have been chosen as juror in a case of Assault and Battery with a Deadly Weapon. Read the case descriptions carefully. Under Oklahoma law, assault is defined as the intentional attempt to cause harm or injury to another person. Assault and Battery with a Deadly Weapon in the State of Oklahoma involves the use of a weapon in an attempt to kill another individual(s). This charge is a felony and can result in a life sentence in prison.

During your review of the case, you may be exposed to some triggering, unsettling, or disgusting images. Please be informed of the graphic content warning.

You will now be given instructions on how to proceed.

APPENDIX B

The disgust-inducing images

ID: Garbage dump 4

Valence mean: 1.639

Valence SD: 0.814

Arousal mean: 3.788

Arousal SD: 1.949

ID: Cockroach 1

Valence mean: 2.059

Valence SD: 1.176

Arousal mean: 4.347

Arousal SD: 2.175

ID: Injury 2

Valence mean: 2.093

Valence SD: 0.768

Arousal mean: 4.058

Arousal SD: 2.042

ID: Feces 2

Valence mean: 2.01

Valence SD: 1.029

Arousal mean: 3.525

Arousal SD: 2.057

ID: Toilet 4

Valence mean: 2.535

Valence SD: 1.213

Arousal mean: 3.155

Arousal SD: 1.764

The cleansing (positive) images

ID: Wedding 2

Valence mean: 5.784

Valence SD: 1.166

Arousal mean: 3.842

Arousal SD: 1.629

ID: Snow 1

Valence mean: 4.627

Valence SD: 0.855

Arousal mean: 2.287

Arousal SD: 1.438

ID: Lake 15

Valence mean: 6.248

Valence SD: 0.921

Arousal mean: 4.631

Arousal SD: 1.749

ID: Clean 1

Valence mean: 5.046

Valence SD: 1.08

Arousal mean: 2.365

Arousal SD: 1.488

ID: Flower 7

Valence mean: 5.683

Valence SD: 1.113

Arousal mean: 3.495

Arousal SD: 1.703

APPENDIX C

The Vignette

Police Incident Report

Date: 02/02/2022

Time: 2:15pm

Location: 7-11 Convenience Store

Offense: Assault and Battery with a Deadly Weapon

Subject: Adam Rogers

Victim: Brian Falls

FACTS:

On February 2nd, 2022, at 2:15 pm, Officer David Jeffords arrived at the 7-11 convenience store located at 634 NW 28thStreet in response to a reported shooting. Upon arrival, he was met by Adam Rogers who was cooperative and advised that he shot the victim after the victim threatened him and reached for a gun. Falls was lying in the parking lot being attended to by bystanders and EMTs. Rogers surrendered his weapon and was handcuffed and placed in the back of Officer Jeffords' police car while Officer Jeffords and other officers began interviewing witnesses. The victim was identified as Brian Falls. EMT advised that he suffered several gunshot wounds but was stable and expected to live. Falls' wife, Amanda Falls, was present when the shooting occurred and was among the first interviewed as investigators arrived.

According to witnesses and the video footage obtained by security cameras, it

appears that at 2:00 pm Rogers pulled into the parking lot of the 7-11 and passed in front of a vehicle occupied by Brian Falls (driver) and his wife Amanda Falls (passenger). Rogers proceeded to park in an open parking space facing the front of the store. Brian Falls made an aggressive turn and pulled into the parking spot on the right side of Rogers' vehicle. Brain Falls quickly exited his vehicle and approached Rogers who had opened his door but not fully exited the vehicle. According to witnesses, Falls shouted, “What the fuck” and repeatedly called Rogers a “motherfucker.” Falls reportedly accused Rogers of cutting him off on purpose and said, “I’ll show you, asshole!” Rogers attempted to retreat inside his vehicle and close his door, but Falls had taken ahold of it and continued to shout at Rogers. Witnesses reported they then heard as many as six gunshots in quick succession and saw Falls fall backward onto the pavement. When interviewed, Rogers stated that as he tried to retreat to his car and close the door, Falls held the door open and said “I’ll show you asshole!” and with his free hand reached behind his back. Rogers said at that point he believed Falls was reaching for a gun, so he grabbed his from the console and shot Falls. Rogers admitted he never saw a gun but that he feared for his life, so he fired in self-defense and continued to fire until Falls fell to the ground. Witnesses could not confirm Falls reaching for anything because their view and the view of the cameras were blocked by the vehicle. It was determined that Falls was not armed.

Officers who accompanied the ambulance to the hospital reported that two of the six shots that were fired damaged Falls' spinal cord, leading to a full-body paralysis.

DISPOSITION:

Trial in this matter commenced on October 7, 2022. Throughout the trial, both

parties presented compelling arguments supported by witness testimonies and physical evidence. The following instructions were given to the jury at the conclusion of all evidence:

Jury Instruction #1: As a member of an impartial jury, you are tasked with determining the state of mind of the defendant and the reasonableness of his decision to use deadly force, and thereafter decide the appropriate level of culpability for his actions. Your verdict should reflect a just and impartial decision based on the available evidence in this case.

APPENDIX D

Jury Instructions for Verdict (Taken from Oklahoma Court of Criminal Appeals)

OUJI-CR 10-13

RETURN OF VERDICT -- BASIC INSTRUCTION

If you find beyond a reasonable doubt that the defendant committed the crime of Assault and Battery with a Deadly Weapon, you shall return a verdict of guilty by marking the Verdict Form [for the crime of Assault and Battery with a Deadly Weapon] appropriately.

If you have a reasonable doubt of the defendant's guilt of the charge of Assault and Battery with a Deadly Weapon, or you find that the State has failed to prove each element of Assault and Battery with a Deadly Weapon beyond a reasonable doubt, you shall return a verdict of not guilty by marking the Verdict Form [for the crime of Assault and Battery with Deadly Weapon] appropriately.

1. Based on the testimony so far, how guilty do you think Mr. Rogers is of assault and battery with a deadly weapon on a scale of 1 to 7?

Not Guilty - 1

Slightly Guilty -2

Somewhat Guilty - 3

Moderately Guilty - 4

Mostly Guilty - 5

Very Guilty - 6

Extremely Guilty - 7

APPENDIX E

Demographics

What is your age? _____

Identify your gender identity._____

Are you a US citizen?

Yes

No

Are you registered to vote?

Yes

No

Have you ever been a juror?

Yes

No

If yes, when was it?

_____

What is your religious affiliation?

_____

How important is personal hygiene to you?

Important

Somewhat important

Neutral

Somewhat unimportant

Unimportant

APPENDIX F

You will now be presented with a set of images that you are asked to rate on valence and arousal scales.

The valence scale assesses the direction of the emotion elicited by the image and if it evokes a positive or a negative feeling, regardless of its intensity. The arousal scale measures the intensity of the emotional response provoked by the image and if it is calming or stimulating, regardless of its positive or negative content.

Please choose how the following images make you feel on a Valence and Arousal scale from 1 to 7.

How positive or negative is this image?

1- Very negative

2 - Moderately negative

3 - Somewhat negative

4 - Neutral

5 - Somewhat positive

6 - Moderately positive

7 - Very positive

How stimulating is this image?

1- Very low

2 - Moderately low

3 - Somewhat low

4 - Neither low nor high

5 - Somewhat high

6 - Moderately high

7 - Very high

How positive or negative is this image?

1- Very negative

2 - Moderately negative

3 - Somewhat negative

4 - Neutral

5 - Somewhat positive

6 - Moderately positive

7 - Very positive

How stimulating is this image?

1- Very low

2 - Moderately low

3 - Somewhat low

4 - Neither low nor high

5 - Somewhat high

6 - Moderately high

7 - Very high

How positive or negative is this image?

1- Very negative

2 - Moderately negative

3 - Somewhat negative

4 - Neutral

5 - Somewhat positive

6 - Moderately positive

7 - Very positive

How stimulating is this image?

1- Very low

2 - Moderately low

3 - Somewhat low

4 - Neither low nor high

5 - Somewhat high

6 - Moderately high

7 - Very high

How positive or negative is this image?

1- Very negative

2 - Moderately negative

3 - Somewhat negative

4 - Neutral

5 - Somewhat positive

6 - Moderately positive

7 - Very positive

How stimulating is this image?

1- Very low

2 - Moderately low

3 - Somewhat low

4 - Neither low nor high

5 - Somewhat high

6 - Moderately high

7 - Very high

How positive or negative is this image?

1- Very negative

2 - Moderately negative

3 - Somewhat negative

4 - Neutral

5 - Somewhat positive

6 - Moderately positive

7 - Very positive

How stimulating is this image?

1- Very low

2 - Moderately low

3 - Somewhat low

4 - Neither low nor high

5 - Somewhat high

6 - Moderately high

7 - Very high

How positive or negative is this image?

1- Very negative

2 - Moderately negative

3 - Somewhat negative

4 - Neutral

5 - Somewhat positive

6 - Moderately positive

7 - Very positive

How stimulating is this image?

1- Very low

2 - Moderately low

3 - Somewhat low

4 - Neither low nor high

5 - Somewhat high

6 - Moderately high

7 - Very high

How positive or negative is this image?

1- Very negative

2 - Moderately negative

3 - Somewhat negative

4 - Neutral

5 - Somewhat positive

6 - Moderately positive

7 - Very positive

How stimulating is this image?

1- Very low

2 - Moderately low

3 - Somewhat low

4 - Neither low nor high

5 - Somewhat high

6 - Moderately high

7 - Very high

How positive or negative is this image?

1- Very negative

2 - Moderately negative

3 - Somewhat negative

4 - Neutral

5 - Somewhat positive

6 - Moderately positive

7 - Very positive

How stimulating is this image?

1- Very low

2 - Moderately low

3 - Somewhat low

4 - Neither low nor high

5 - Somewhat high

6 - Moderately high

7 - Very high

How positive or negative is this image?

1- Very negative

2 - Moderately negative

3 - Somewhat negative

4 - Neutral

5 - Somewhat positive

6 - Moderately positive

7 - Very positive

How stimulating is this image?

1- Very low

2 - Moderately low

3 - Somewhat low

4 - Neither low nor high

5 - Somewhat high

6 - Moderately high

7 - Very high

How positive or negative is this image?

1- Very negative

2 - Moderately negative

3 - Somewhat negative

4 - Neutral

5 - Somewhat positive

6 - Moderately positive

7 - Very positive

How stimulating is this image?

1- Very low

2 - Moderately low

3 - Somewhat low

4 - Neither low nor high

5 - Somewhat high

6 - Moderately high

7 - Very high