The Distinct Social Function of Emotion in Morality: Disgust and Anger Adaptively

Respond to Moral Character and Actions

A Thesis

Presented to

The Faculty of the Department of Psychology

Brooklyn College

In Partial Fulfillment

Of the Requirements for the Degree

Master of Arts

By

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Spring, 2019

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Abstract

There is considerable debate regarding the contextual antecedents and social functions of various moral emotions. Claims that disgust and anger are strictly elicited by violations of divinity and autonomy have recently been challenged. Instead, research suggests that disgust may be elicited by bad moral character and that anger may be elicited by moral transgressions. This theory draws upon evolutionary psychology, arguing that it is adaptive for individuals to experience disgust toward and withdraw from those with stable negative traits (bad moral character) and to experience anger towards and engage with those who do not have bad moral character, but who have transgressed nonetheless. The current research aimed to test this hypothesis by manipulating moral character, utilizing fabricated news articles to divulge the moral and immoral actions of a high school principal. The findings herein support the theoretical link between disgust and character judgments, and between anger and act judgments.

The Distinct Social Function of Emotion in the Morality: Disgust and Anger Adaptively

Respond to Moral Character and Actions

The conceptualization of morality has varied greatly over the course of history. Traditional theories of morality largely focused on moral reasoning (Kohlberg, 1969), and dissent mainly arose regarding whether such reasoning varied by culture (Shweder, Mahapatra, & Miller, 1987; Vasudev & Hummel, 1987) and gender (Gilligan & Attanucci, 1988; Bussey & Maughan, 1982). Contemporary theories, however, challenge the causal role of reasoning and instead emphasize emotion as the driving factor in moral judgment. One such theory is the Social Intuitionist Model, which posits that emotion and intuition cause moral judgment and that reasoning functions mainly as post-hoc justification for the conclusions reached by emotion (Haidt, 2001). Theories that implicate the causal role of emotion in moral judgment are supported by evidence of emotion better predicting moral judgment compared to perceptions of harm (Haidt, Bjorklund, and Murphy, 2000; Haidt & Hersh, 2001). Still, more cohesive theories of morality do not strictly emphasize the role of either reasoning or emotion, but rather outline a dual-process model that integrates the roles of both reasoning and emotion (Paxton & Greene, 2010). Helion and Pizarro (2015) further argue that even dual-process models inadequately explain the roles of emotion and reasoning in moral judgment, and instead suggest the need for a model that captures the dynamic interplay of the two processes. Regardless of the disagreement about its degree of impact, it is now widely acknowledged that emotion plays an important role in morality.

Social Function of Emotion

In order to better understand the function of emotion in moral judgment, it is important to first discuss the broader social functions of emotion. Social-functionalist accounts posit that

emotions have evolved to serve specific functions, coordinating cognitive and physiological processes to help us navigate the physical and social world (Keltner & Gross, 1999). Evidence that interpretations of emotional facial cues are universal across cultures (Ekman & Friesen, 1971; Ekman & Friesen, 1986) support the notion that emotions serve a common purpose irrespective of culture-specific norms. Among these purposes, emotion plays a critical role in facilitating communication in social interactions. Indeed, displays of emotion through both verbal and nonverbal cues are rich in communicative value (Hareli & Hess, 2012). Research focusing on dyadic emotion highlights the role of emotion in signaling social intentions and communicating information about the environment (Keltner & Haidt, 1999). The expression of emotion can also function to evoke reciprocal or complimentary emotion in others. For example, expressions of sadness evoke sympathy from others, which signals the need for help (Eisenberg et al., 1989). Studies show that shame can increase cooperation and reduce aggressive behavior in others (Kemeny, Gruenewald, & Dickerson, 2004). Most relevant to the current study, research has found that emotion plays a critical role in incentivizing and deterring the social behavior of others (Keltner & Haidt, 1999). In particular, anger has been shown to influence the degree of punishment towards non-cooperative others (Seip, Van Dijk, & Rotteveel, 2014).

These various social functions can be categorized as interpersonal, primarily signaling intentions to and eliciting desired behavior in others. In contrast, emotions can also serve intrapersonal functions, signaling social information to the self and preparing one for various social situations (for a review, see Keltner & Haidt, 1999). Examples of intrapersonal function include happiness, which is theorized to inform the individual of opportunities for reproduction; sadness, which deters behavior that leads to social rejection, loss of resources, and loss of life; and anxiety, which can deter behavior contrary to social expectations, protecting the self from

various social consequences (Nesse, 1990). Importantly, emotions can function both interpersonally and intrapersonally; as such, this distinction classifies the various *functions* of emotions, but not the emotions themselves.

A second framework distinguishes emotions based on their behavioral tendencies; emotions are classified by whether they motivate approach or avoidance behaviors (Higgins, 1997). This perspective can provide insight about how and why different emotions arise in response to similar contexts. Schmader and Lickel (2006) found that while guilt and shame are both evoked by self-caused wrongdoing, shame led to avoidance tendencies while guilt led to approach tendencies. The authors further posit that the approach behavior associated with guilt helps repair social relationships when an individual has transgressed, whereas the avoidance behavior of shame helps the individual avoid negative social evaluation. Fischer and Roseman (2007) suggest that anger incites behavioral change in others by motivating the individual to engage in aggressive, hostile behavior, including criticism and violence. The approach and avoidance behavioral tendencies are also adaptive outside of the social context. Disgust, for example, utilizes avoidance behavior tendencies to prevent contact with pathogens, parasites, and disease (Oaten, Stevenson, & Case, 2009).

Function of Emotion in Morality

The range of emotions implicated in morality is far narrower than in a broader social context. Morality can be conceptualized as a type of social cooperation (Tomasello & Vaish, 2013; Greene, 2015) in which a few key emotions play a central role. Haidt (2003) distinguishes these moral emotions on two orthogonal dimensions: valence (positive vs. negative) and focus (self vs. others). Within this framework, pride is identified as a positive self-focused emotion; elevation as a positive other-focused emotion; shame, guilt, and embarrassment as negative self-

focused emotions; and anger, disgust, and contempt as negative other-focused emotions. Each of these emotions plays an important role in reinforcing and punishing the moral behavior of the self and others.

Shame and Guilt in Morality

Shame and guilt are two emotions critically implicated in negative evaluations of the self. While these two emotions are similar in that they arise in the same context of social wrongdoings caused by the self (Schmader & Lickel, 2006), they critically differ in the subject of analysis. Shame occurs when an individual evaluates one's *self* as morally reprehensible, whereas guilt occurs when an individual evaluates one's *actions* as morally reprehensible (Tangney, Stuewig, & Mashek, 2007). Supporting the notion that shame responds to evaluations of one's "core-self" (i.e., character and dispositions) and that guilt responds to evaluations of one's actions, research has shown that shame is positively correlated with stable, uncontrollable attributes whereas guilt is positively correlated with unstable, controllable attributes (Tracy & Robins, 2006).

As previously mentioned, shame and guilt have different motivational tendencies that optimize behavior that is adaptive for these different circumstances. Shame is associated with avoidant tendencies, motivating withdrawal from social situations in which the individual can possibly incur further negative social evaluation from one's stable, uncontrollable antisocial traits. In contrast, guilt is associated with approach tendencies, which motivate the individual to engage a social situation in order to amend one's transgressions and repair social relationships (for a review, see Tangney et al., 2007). In this way, shame serves an intrapersonal function, reducing negative consequences for the self without impacting others, while guilt serves an interpersonal function, motivating the individual to rectify their errors, thus reducing negative emotions and promoting forgiveness in others.

CAD Triad: Contempt, Anger, and Disgust

Disgust and anger are two other emotions critically implicated in moral judgment. Unlike shame and guilt, however, disgust and anger are conceptualized as negative other-focused emotions. Rozin, Lowery, Imada, and Haidt (1999) also posit that contempt is a central moral emotion. These authors propose the CAD Triad hypothesis, which claims that contempt is elicited by violations of community (moral norms and hierarchy), anger by violations of autonomy (individual rights), and disgust by violations of divinity (purity and sanctity). Rozin et al. (1999) define community violations as failure to carry out duties and disregard for hierarchy, and include considerations of duty, obligation, respect for authority, loyalty, group honor, interdependence, and preservation of community. The authors define autonomy violations as infringement upon personal rights or harm to another person, and include considerations of harm, rights, justice, freedom, fairness, individualism, individual choice and liberty. Lastly, they define divinity violations as disrespect of the sacredness of god and impurity or degradation of oneself or others, and includes considerations of sin, natural order, sanctity, protection of soul, and spiritual defilement.

Social-Functionalism: Contempt, Anger, and Disgust

While there is preliminary evidence for the CAD Triad hypothesis, some challenge the strict correspondence between contempt, anger, and disgust and community, autonomy, and divinity (Hutcherson & Gross, 2011; Giner-Sorolla & Chapman, 2017; Chapman, 2018). Hutcherson and Gross (2011) adopt a social-functionalist account of emotions, theorizing that contempt, anger, and disgust are elicited not by specific violations of principles, but by contexts in which these emotions should adaptively function. The approach tendencies of anger motivate the individual to engage in a situation in order to minimize the negative consequences on oneself

in some way. Directly engaging in precarious social situations through confrontation is costly; anger causes high energy expenditure (Levenson, Ekman, & Friesen, 1990) and leads to greater risk taking (Lerner & Keltner, 2001). Therefore, anger is theorized to respond to immediate social threats, motivating the individual to terminate the current harmful behaviors of others.

Anger also plays a critical role in deterring future harmful behavior, increasing the willingness to incur significant cost in order to punish unfair behavior (Seip et al., 2014; Fehr & Gächter, 2002). While punishment can deter immoral behavior of a non-cooperative other, it can also lead to retaliation, further increasing the cost of punishment. Hopfensitz and Reuben (2009) found that anger motivates altruistic punishment even when the threat of retaliation is possible. Additionally, research shows that third-parties are willing to incur costs in order to punish those who have displayed selfish behavior towards another, even when these third-parties can receive no potential benefit from doing so (Fehr & Fischbacher, 2004). Fehr and Fishbacher (2004) further found that although third-parties were willing to punish, second-parties (i.e., those directly involved in unfair treatment) showed even greater willingness to engage in costly punishment. The increased motivation to punish when directly involved supports the notion that, apart from the general tendency to punish selfish others, anger-motivated punishment plays an important role in regulating dyadic social relations. The behavioral changes caused by such punishment reduces the risk of becoming the target of immoral behavior in the future. The approach tendencies of anger thus serve an important interpersonal function by eliciting behavioral changes in others.

The avoidant tendencies of disgust and contempt are also adaptive each in their own ways. Disgust and contempt are theorized to motivate the individual to avoid others whose actions are not immediately or directly threatening, but who should be avoided nonetheless

(Hutcherson and Gross, 2011). There are various reasons why it would be advantageous to avoid certain people. People who have a history of immoral behavior—or, in other words, people who have bad moral character—are likely to behavior immorally in the future, and thus it is adaptive to avoid such people. Alternatively, people who do not intentionally behave immorally but who make abundant, costly mistakes should also be avoided in order to reduce the impact of those mistakes on the self. Hutcherson and Gross (2011) claim that disgust and contempt are thus distinct in that although they both have avoidant tendencies, disgust is elicited by and causes withdrawal from people with bad moral character whereas contempt is elicited by and causes withdrawal from incompetent people. As such, the social-functionalist account suggests that contempt is not a moral emotion, and that anger and disgust are the central negative other-focused moral emotions.

The avoidance tendency of disgust is particularly adaptive because it both reduces the likelihood of being the target of transgressions and preserves valuable cognitive, social, and economic resources. However, if both anger and disgust—each with contrasting action tendencies—reduce the likelihood of experiencing future transgressions, when is it adaptive to incur cost to punish and when is it adaptive to avoid the other person entirely? The adaptive benefit of punishment assumes the ability to influence another person's behavior. Consequently, when a transgressor has stable negative traits (i.e., bad moral character), the likelihood of influencing their behavior decreases. In this case, incurring cost to punish may be without benefit. Experiencing anger towards such a person with bad moral character would therefore be maladaptive, and the avoidance tendencies of disgust would instead be adaptive. By reducing potential harm to the self without influencing others, disgust serves an important intrapersonal function.

Component Process Model: Anger and Disgust

While social-functionalism well explains the social functions and contextual antecedents of anger and disgust, it is not without flaws. Social-functionalism fails to account for findings that moral disgust is elicited by purity violations (Chapman, 2018). Chapman (2018) proposes the Component Process Model, a comprehensive theory of the relationship between moral judgment and moral emotion. CPM incorporates components of various other models including the character-disgust/act-anger link from social-functionalism (Hutcherson and Gross, 2011); the necessity of perception of harm from the Dyadic Model (Gray, Young, & Waytz, 2012); the necessity of person-centered judgments (Uhlmann, Pizarro, & Diermeier, 2015); and the variability of informational assumptions of impure actions from Social Domain Theory (Turiel, Hildebrandt, Wainryb, & Saltzstein, 1991).

As a multi-process model, CPM posits that moral judgment is affected by both character judgments and consequence judgments. According to CPM, non-purity transgressions (e.g., unprovoked violence) cause negative consequence judgments, which in turn cause anger and affect overall moral judgment. In contrast, purity transgressions (e.g., consensual incest) cause negative character judgments (insofar as they are perceived to be harmful), which in turn cause disgust and affect overall moral judgment; however, non-purity transgressions can also cause negative character judgments, which can then cause disgust (for a review of CPM, see Chapman, 2018). *Figure 1* in Appendix A shows a visual model of CPM.

While CPM is a comprehensive theory that makes additional claims about how purity violations are related to moral judgment, it shares with social-functionalism the core idea that negative character judgments cause disgust and negative consequence judgments cause anger. This theoretical link is supported by evidence that domestic abuse is associated with greater

anger, and animal cruelty (signaling relatively worse moral character and less severe

transgression) is associated with greater disgust (Giner-Sorolla & Chapman, 2017). However,

empirical support for this link is sparse due to its relative novelty.

Moral Character and Actions

The idea that disgust and anger uniquely map onto moral character and consequence

judgments truly is novel in that it is one of the first to link emotions to moral character. This is in

part due to the relatively recent inception of the study of moral character in psychology. Morality

has historically been studied as the distinction between the philosophical principles of

deontology and utilitarianism (Uhlmann et al., 2015). Deontology is the principle that an action

is immoral if it violates a rule or right, and utilitarianism is the principle that an action is moral if

it maximizes positive consequences (Kant & Schneewind, 2002). However, both of these

perspectives are limited in that they only consider the morality of the action itself and not that of

the actor. In reality, people are intrinsically motivated to make judgments about the moral

character of others (Uhlmann et al., 2015). People value trustworthiness, compassion, and

empathy in others (Walker & Hennig, 2004), as this informs the individual about the likely

future behavior of others, e.g., whether or not they will be cooperative and act morally. Studies

show that people engage in social gossip in order to share and attain this character information

(Foster, 2004), and that they develop independent judgments of others' moral character based on

patterns of cooperative/noncooperative behavior (Rand, Dreber, Ellingsen, Fudenberg, &

Nowak, 2009) and trustworthiness (Schweitzer, Hershey, & Bradlow, 2006).

Moral character is thus high in informational value. People remember the moral and

immoral actions of others, and the culmination of these actions serves as a sort of moral profile.

Moreover, it stands to reason that "bad people do bad things, and good people do good things."

Immoral actions thus lead to judgments of bad moral character, and judgments of bad moral character have been found to increase the severity of moral judgment of the transgressor's actions (Uhlmann, Zhu, & Diermeier, 2014). This inseparability of actions and character poses a significant challenge to researchers who wish to study the distinction between the two. In order to address this challenge, research has commonly employed scenarios that elicit act-person dissociations. While actions and character are inevitably intertwined, these dissociations elicit a differing degree of severity of judgments of actions and character. Tannenbaum, Uhlmann, and Diermeier (2011), for example, utilize two scenarios to achieve this goal: one in which an angry boyfriend beats his girlfriend for cheating on him, and one in which the angry boyfriend beats his girlfriend's cat. While both actions are morally wrong, the woman-beater is perceived as having committed the more severe transgression and the cat-beater is perceived as having the worse moral character of the two, presumably because the cat-beater must in theory lack a significant amount of empathy for attacking an innocent, defenseless animal.

Current Study

Despite the abundant work in moral psychology, there is still considerable debate regarding the contextual antecedents and social functions of moral emotions. Earlier models of moral emotion situated in the context of moral principles (CAD) are now being challenged by contemporary, comprehensive models (Social-Functionalism; CPM). These new models instead utilize evolutionary theory to identify the contexts in which these moral emotions should adaptively function. CPM implicates bad moral character and harmful consequence as the respective eliciting contexts for disgust and anger, and further posits that the avoidant and approach tendencies of these emotions are evolutionarily adaptive within these specific contexts. The purpose of the current research is to provide further empirical support for CPM. Albeit CPM

makes a complex set of claims about the relationship between moral emotion, moral judgment, and purity/non-purity transgressions, the goal of the current research is to provide evidence for the claims that most notably lack evidence. As such, the current research aims to evaluate whether negative character judgments indeed cause disgust, as well as to evaluate whether negative act judgments cause anger.

In order to test this hypothesis, an online Qualtrics survey was distributed on Amazon's Mechanical Turk. In this survey, participants were first asked to read one or two fabricated news articles describing a high-school principal's moral/immoral actions. These actions were either in the domain of sexual harassment or drug abuse. Participants either read about moral and immoral actions in the Same domain, moral and immoral actions in Different domains, or they read only an article describing immoral actions, serving as a Control condition. Following this, participants made character judgments, act judgments, hypocrisy judgments, and various emotion ratings of the principal in a randomized order. Broadly, it was hypothesized that negative character judgments would be associated with disgust and that negative act judgments would be associated with anger.

Methods

Participants

Prior to the start of the study, a power analysis was conducted using G*Power 3.1.9.3. This analysis indicated that 100 participants were needed to power a 2x2 interaction with partial eta squared of 0.02 (small effect size) at 80% power. Because Giner-Sorolla and Chapman (2017) found medium-large effects of the character manipulation on disgust, this is a conservative estimate. However, Fritz & MacKinnon (2007) recommend a sample of 148 for

80% power to detect a mediated effect with small to medium effects of X on M and M on Y. We

therefore aimed to collect data from 200 participants to allow for data cleaning.

212 participants were recruited from Amazon's Mechanical Turk. The survey was made

visible only to MTurk workers with a United States IP address, a completion record of at least

500 HITs, and at least 95% HIT approval rate. The posting specified an expected completion

time of 10 minutes and a maximum completion time of 60 minutes. In order to ensure the quality

of the data, several techniques were utilized to remove from the dataset participants who were

either inattentive or who likely completed the tasks without reading the required stimuli and

questions. The established criteria require participants to fully complete the survey, successfully

complete two attention checks, and complete the survey in greater than half of the median time

of completion, $Mdn = 376.5$ seconds. 12 participants were removed from the dataset because

they did not complete the survey, 13 were removed for failing at least one of the attention

checks, and 9 were removed for failing to complete the survey in at least half of the median time.

This leaves a final sample size of 178 participants. Participants each received $1.50 regardless of

whether or not they were later screened out of the final dataset.

The sample has an average age of $M = 35.38$, $SD = 10.46$. Of the sample, 56.7% (101)

participants were Male, 42.7% (76) were Female, and 0.6% (1) identified as Other. The sample

consisted of 75.3% (134) White, 9.0% (16) Black or African American, 9.0% (16) Asian, 1.1%

(2) American Indian or Alaskan Native, and 5.6% (10) multiple race participants. Of the sample,

17.2% (31) participants completed High School, 24.2% (43) completed some college, 12.9%

(23) completed an Associate's degree, 34.3% (61) completed a Bachelor's degree, 1.7% (3)

completed some graduate school (e.g., Master's, PhD), and 9.6% (17) completed graduate school

(e.g., Master's, PhD). 14.6% (26) participants identified as Very Liberal, 25.3% (45) identified

as Liberal, 11.8% (21) identified as Somewhat Liberal, 19.7% (35) identified as Moderate,

11.2% (20) identified as Somewhat Conservative, 14.6% (26) identified as Conservative, and

2.8% (5) identified as Very Conservative.

Design

This study utilized a 3 x 2 x 2 mixed-factorial design. One between-subjects independent

variable (Transgression Domain: Same domain vs. Control vs. Different domain) was used to

manipulate character; see below for details. This manipulation was adopted from literature

focusing on hypocrisy and moral judgment (Effron & Monin, 2010). Two within-subjects

independent variables were used to examine the distinction between character and act (Judgment

Type: Character vs. Act) and between disgust and anger (Emotion Type: Disgust vs. Anger).

Although CPM makes predictions about consequence judgments, there is not yet a standardized

scale to measure these judgments; as such, the current study adopted the act judgment scale used

in Giner-Sorolla and Chapman (2017).

Domain: Character Manipulation

As mentioned above, this study adopted stimuli from research on hypocrisy. The stimuli

include four fabricated news articles describing the moral/immoral actions of a high school

principal in the domains of sexual harassment/drug abuse. The moral-sexual harassment article

described a principal who successfully campaigned against growing issues of sexual harassment

in the high school, working tirelessly for years and even risking his job to fight the problem. The

full moral-sexual harassment article used can be found in *Figure 2* in Appendix B. The moral-

drug abuse article described the same situation, but the principal instead tackled the issue of drug

abuse. The full moral-drug abuse article can be found in *Figure 3* in Appendix B. The immoral-

sexual harassment article described verified allegations of the principal sexually harassing a local

waitress by making sexually explicit remarks, soliciting sexual favors, and touching her on the buttocks. The full immoral-sexual harassment article can be found in *Figure 4* in Appendix B. The immoral-drug abuse article stated that the principal was pulled over while visibly intoxicated with three grams of cocaine in his possession. The full immoral-drug abuse article can be found in *Figure 5* in Appendix B.

The articles were presented in varying combinations, each signaling different levels of moral character. Participants in the Different domain condition first read a moral action article in a different domain than that of the immoral action. These participants would, for example, first read the moral-drug abuse followed by the immoral-sexual harassment, or they would first read the moral-sexual harassment followed by the immoral-drug abuse. Participants in the Same domain condition first read a moral action article in the same domain as the immoral action. These participants would first read the moral-sexual harassment article followed by immoral-sexual harassment article, or they would read the moral-drug abuse article followed by the immoral-drug abuse article. Participants in the Control condition did not read any moral action article, and only read either the immoral-sexual harassment article or the immoral-drug abuse article.

The moral action articles signal positive moral character. Because the Control condition does not include any moral actions of the principal, the Control condition should have worse moral character than the Different domain condition. However, when a moral action is in the Same domain as an immoral action, there is an additional potential effect of hypocrisy on the character and actions of the principal. Due to this potential effect, it is possible that character judgments are more negative than if the principal never acted morally to begin with. Because the effect of hypocrisy on character and act judgments is unknown, the Same domain condition was

included for exploratory purposes and the analyses for this condition are not included in this paper.

Character Judgments

Three questions were used to measure character judgments. In each of these questions, the name of the principal (Barry James) was used. One question asked, "Do you think that Barry James is mainly a good person or a bad person?" (1 – 7, extremely good to extremely bad). A second question asked, "Do you think that Barry James has good moral standards?" (1 – 5, not at all to extremely; reverse coded). A third question asked, "How trustworthy is Barry James?" (1 – 5, not at all to extremely; reverse coded). The questions regarding moral standards and trustworthiness were reverse coded, and the question regarding good/bad person was rescaled into a 5-point scale. This measure was thus oriented such that higher scores reflect more negative judgments of character. These questions were then averaged together to form a single, reliable measure of character judgment, Cronbach's standardized α = .87.

Act Judgments

Three questions were used to measure act judgments. Like in the character judgments, the name of the principal was used. Questions varied depending on which immoral action the participants read about. One question asked, "How wrong was it for Barry James to [sexually harass the waitress / use cocaine]?" (1 – 5, not at all wrong to extremely wrong). A second question asked, "How much blame does Barry James deserve for [sexually harassing the waitress / using cocaine]?" (1 – 5, no blame to extreme blame). The third question asked, "How much punishment does Barry James deserve for [sexually harassing the waitress / using cocaine]?" (1 – 5, no punishment to extreme punishment). These questions were averaged together to produce a

single measure of act judgment, with higher scores reflecting more negative judgment of act. The

three questions formed a reliable scale, Cronbach's α = .80.

Continuous Emotion Ratings

        Continuous ratings of disgust and anger were measured in two different ways.

Participants were shown 3 disgust words (repulsed, disgusted, sickened) and 3 anger words

(angered, infuriated, outraged), and were asked, "How strongly do you feel each of the following

emotions towards Barry James?" (1 – 5, not at all to extremely). Each set of these words were

then averaged together to produce a reliable scale of disgust (Cronbach's α = .96) and anger

(Cronbach's α = .95). However, research shows that there is often semantic confusion of these

emotion words among laypeople (Gutierrez, Giner-Sorolla, & Vasiljevic, 2012). The current

study therefore additionally utilized continuous ratings of disgusted faces and angry faces. These

sets of faces were adopted from Gutierrez et al. (2012). *Figure 6* in Appendix C shows the

disgusted faces used, and *Figure 7* in Appendix C shows the angry faces used. Participants were

shown each set of faces individually, and were asked, "How strongly do you feel this emotion

towards Barry James?" (1 – 5, not at all to extremely). Both continuous ratings of faces and

words were oriented such that higher scores reflect more intense emotion. In order to avoid the

potential effect of semantic confusion, it was planned to analyze only the continuous emotion

rating that produced the lower correlation between disgust and anger (Gutierrez et al., 2012).

Because disgust and anger were less correlated in ratings of faces (r = .532) than in ratings of

words (r = .844), only ratings of faces were used and ratings of words were omitted from the

analyses.

Discrete Emotion Endorsement

A second measure of emotion utilized discrete endorsement of either disgust or anger. Participants were shown both sets of faces together and were asked, "Which set of faces best expresses your feelings toward Barry James?"

Hypocrisy Judgments

Three questions were used to measure hypocrisy judgments. One question asked, "Is Barry James a hypocrite?" (1 – 5, not at all to extremely). A second question asked, "Is Barry James a phony?" (1 – 5, not at all to extremely). The third question asked, "Is Barry James a fake?" (1 – 5, not at all to extremely). These questions were averaged together to form a reliable measure of hypocrisy, Cronbach's α = .95. This measure was oriented such that higher scores indicated greater perceptions of hypocrisy.

Disgust Scale-Revised

Participants completed the Disgust Scale-Revised (Olatunji et al., 2007; Inbar, Pizarro, Iyer, & Haidt, 2012). This scale contains 25 items designed to measure trait disgust. Examples of items include: "I never let any part of my body touch the toilet seat in a public washroom" (true/false); "You are walking barefoot on concrete and step on an earthworm" (1 – 3, not disgusting to very disgusting); and "You take a sip of soda and realize that you drank from the glass that an acquaintance of yours had been drinking from" (1 – 3, not disgusting to very disgusting). The DS-R was included for exploratory analysis which are not reported in the this paper.

Procedure

Participants first read a consent form and agreed to participate in this study. Participants were randomly assigned to one of the six possible combinations of stimuli: moral-sexual harassment/immoral-sexual harassment (Same domain); moral-drug abuse/immoral-drug abuse

(Same domain); moral-sexual harassment/immoral-drug abuse (Different domain); moral-drug abuse/immoral-sexual harassment (Different domain); immoral-sexual harassment (Control); or immoral-drug abuse (Control). Participants first read the article(s), each presented individually. Participants then answered three filler questions: "How well written did you find [this article / these articles]?" (1 – 5, not at all to extremely); "How interesting did you find [this article / these articles]?" (1 – 5, not at all to extremely); and "How newsworthy did you think [this article was / these articles were]?" (1 – 5, not at all to extremely).

Participants then completed the character judgments, act judgments, continuous emotion face ratings, continuous emotion word ratings, discrete emotion endorsement, and hypocrisy judgments in a randomized order. Questions were randomized within each block. Following this, participants completed the DS-R and demographic questions. At the end of the demographic question block, participants were asked, "Did any part of this experiment seem familiar to you?", "Was any part of the study confusing or unclear?", and "If you have any other comments or suggestions about the study, please enter them here." Lastly, participants were debriefed about the purpose of the experiment.

Hypotheses

The following two hypotheses functioned as manipulation checks: 1a) Control condition should have worse character than Different domain condition, and 1b) Domain (Control vs. Different) should have a stronger effect on character judgments compared to act judgments. The remaining five hypotheses address the theoretical questions at hand. It was hypothesized that 2) Domain (Control vs. Different) should have a stronger effect on disgust compared to anger, and that 3) there should be greater endorsement of disgust for the Control condition compared to the Different domain condition. CPM posits that negative character judgments cause disgust, and

that non-purity transgression cause both negative character judgments and negative consequence judgments, which would in turn cause disgust and anger, respectively. Therefore, it was further predicted that 4a) disgust should predict character judgments better than anger; 4b) both disgust and anger should predict act judgments; and 5) the effect of Domain on disgust (controlling for anger) should be mediated by character judgments.

Results

Manipulation Check

All analyses for this study were conducted in a reproducible script using R software, version 3.5.2. In order to ensure that the character manipulation functioned as intended, manipulation checks were first conducted. A planned contrast showed that, as predicted (H_{1a}), the Control condition ($M = 4.09$, $SD = .67$) was judged to have worse character than the Different domain condition ($M = 3.11$, $SD = 1.00$), $F_c(1,118) = 44.86$, $p < .001$. A significant 2 (Domain: Different vs. Control) x 2 (Judgment Type: Character vs. Act) mixed ANOVA interaction effect showed that, as predicted (H_{1b}), Domain had a stronger effect on character judgments ($M_{diff} = .98$) compared to act judgments ($M_{diff} = .16$), $F(1, 114) = 25.83$, $p < .001$. *Figure 8* in Appendix D depicts a bar graph of these character judgment and act judgment means by Domain condition.

Domain and Emotion

The first hypothesis of theoretical interest was not supported by the data, as a non-significant interaction effect of a 2 (Domain: Different vs. Control) x 2 (Emotion Type: Disgust vs. Anger) mixed ANOVA showed that, contrary to prediction (H_2), Domain did not have a stronger effect on disgust ($M_{diff} = .16$) compared to anger ($M_{diff} = .40$), $F(1, 114) = 1.44$, $p = .232$. *Figure 9* in Appendix D depicts a bar graph of these disgust and anger means by Domain

condition. Further, a chi-square test showed that, contrary to prediction (H$_3$), there was not greater endorsement of disgust for the Control condition ($N = 39$) compared to the Different domain condition ($N = 42$), $\chi^2(1, N = 116) = .16$, $p = .686$.

Judgment and Emotion

A whole sample multiple regression analysis with disgust and anger as predictors and character judgment as the criterion variable showed that, as predicted (H$_{4a}$), disgust ($\beta = .234$, $p = .007$) significantly predicted character judgments, but anger ($\beta = .137$, $p = .137$) did not, $F(1, 117) = 10.68$, $p < .001$, $R^2 = .159$. A second whole sample multiple regression analysis with disgust and anger as predictors and act judgment as the criterion variable showed that, as predicted (H$_{4b}$), both disgust ($\beta = .305$, $p = < .001$) and anger ($\beta = .219$, $p = .002$) significantly predicted act judgments, $F(1, 117) = 36.89$, $p < .001$, $R^2 = .395$. Lastly, a bootstrapped mediation analysis with 5000 resamples showed that, as predicted (H$_5$), the effect of Domain on disgust (controlling for anger) was mediated by character evaluations. This analysis showed that while there was a non-significant total effect, $c = .155$, 95% CI [-.286, .600], there was a significant indirect effect, $ab = .559$, 95% CI [.294, .860], and a marginally significant direct effect, $c' = -.404$, 95% CI [-.862, .060]. This analysis further showed that there was a significant relationship between Domain and character judgments, $a = .985$, $p < .001$, as well as a significant relationship between character judgments and disgust, $b = .463$, $p < .001$. *Figure 10* in Appendix D depicts this mediation analysis.

Discussion

The successful manipulation checks indicate that moral character was manipulated as intended. The first manipulation check (H$_{1a}$) showed that the Control condition was judged to have worse moral character than the Different domain condition, and the second manipulation

check (H_{1b}) showed that the Domain manipulation had a stronger effect on character judgments compared to act judgments. However, there are mixed findings for the theoretically important analyses. The hypotheses that focus on the effect of Domain on emotion (H_2 and H_3) produce null findings, while the hypotheses that directly focus on the relationship between judgment and emotion (H_{4a}, H_{4b}, and H_5) are supported. The results showed that contrary to predictions, Domain did not have a stronger effect on disgust compared to anger (H_2), and there was not greater endorsement of disgust for the Control condition compared to the Different domain condition (H_3). In contrast, the result showed that, as hypothesized, disgust predicted character judgments while anger did not (H_{4a}), both disgust and anger predicted act judgments (H_{4b}), and character judgments mediated the effect of Domain on disgust (H_5).

A close examination of the mediation analysis (H_5) can provide useful insight for explaining this disparity. A significant indirect effect of Domain on disgust through character was observed, supporting the theoretical link between character and disgust. However, the total effect of Domain on disgust was non-significant, and the direct effect of Domain on disgust was marginally significant. Importantly, the observed direct effect was negative, indicating that with the effect of character removed, there was greater disgust in the Different domain condition than in the Control condition. It is therefore likely that the Different domain condition is a unique source of disgust. There are multiple reasons why this might be the case.

In order to understand this source of disgust, it is important to examine what features of the Different domain context are unique from the Control context. One salient difference is the notable inconsistency of the principal's actions in the Different domain. The moral article describes the principal going to great personal lengths to protect students from threatening social issues; in contrast, the immoral articles describe the principal's blatant disregard for others'

security and wellbeing, either in the case of sexually harassing a waitress or endangering the

lives of others on the road by driving under the influence. As previously mentioned, disgust is

elicited by the stable, negative traits that make up bad moral character. However, wild instability

in the form of actions that may have severe repercussions for others may also be a context in

which disgust adaptively functions. Disgust may therefore be elicited by those who have

generally good character but who still pose a serious, unpredictable threat to the self. It is further

possible that such instability is indicative of moral character in a way that the character measures

did not capture. In this case, participants could rate a transgressor as high in trustworthiness,

moral standards, and as a generally good person while their actual judgments of character

include more nuance, involving judgments of stability and other traits that have not traditionally

been used to measure judgments of character. Because the study of moral character in

psychology is relatively new and character judgment and act judgment scales are still in

development, this is a distinct possibility. This explanation would be consistent with the idea that

disgust is strictly elicited by character judgments.

      Alternatively, there may be other features unique to this context that implicate the

adaptability of disgust. One such feature may be perceptions of leadership or authority. The

moral articles describe the principal as a social crusader instituting zero-tolerance policies. The

articles further detail how the principal risked losing his job for defying a former superintendent.

The articles feature glowing testimonials from other teachers, and the mere fact that the principal

is the subject of a praiseworthy news article implies his role as a community leader. Community

leaders have at their command greater social and physical resources, and may use these resources

to exact more effective and damaging retaliation when challenged. Thus, experiencing the

approach motivations of anger towards leaders may be particularly maladaptive. Instead, the

withdrawal tendencies of disgust should reduce the risk of retaliation.

Despite this unexpected source of disgust, the analyses herein support the predictions

made by CPM. The negative direct effect in the mediation analysis explains why H_2 and H_3 were

not supported. If not for the mitigating influence of this negative direct effect, the total effect of

Domain on disgust would likely be significant. If this were the case, we would still expect that

(H_2) Domain would have a stronger effect on disgust than on anger, and that (H_3) there would be

greater endorsement of disgust for the Control condition compared to the Different domain

condition. Still, H_{4a} and H_{4b} provide direct support for CPM. Disgust did indeed predict character

judgments, while anger did not. This finding further supports the link between disgust and

character. Additionally, both disgust and anger predicted act judgments, supporting the claim of

CPM that non-purity transgressions can cause both character and consequence judgments.

Limitations

This study contained a number of limitations. Most notably, the current study lacked a

reliable manipulation of bad moral character. The manipulation of Domain functioned by

introducing positive moral actions, and relied upon this additional information to then affect

character. In this way, the Different domain, Control, and Same domain conditions can be

considered proxies for Good Character, Neutral Character, and Bad Character conditions,

respectively. The indirect nature of this manipulation is problematic in that it allows for other

unprecedented variables to affect what might otherwise be a direct, straightforward relationship

between disgust and character. Further, without a reliable Bad Character condition, it is difficult

to examine judgments on the other end of the spectrum, which are typically the judgments of

interest. Individuals with particularly bad moral character are, by definition of the current theory, the exact context in which moral disgust should most adaptively function.

A second important limitation concerns the nature of the manipulated information itself. This study used moral and immoral actions to manipulate character. Although actions contribute to character, it is still an indirect method of manipulating character. Manipulating actions has specific implications in the context of the current theory, which predicts distinct downstream effects of actions on consequence judgments, character judgments, anger, and disgust. It is thus difficult to disentangle judgments of actions used to manipulate character and actions used as the focal point of desired act judgments.

Follow-Up Study

In order to address the shortcomings of the current research, a second study was designed but has yet to collect data. Because this follow-up study was designed to surmount the aforementioned limitations, it shares with the first study its core hypotheses and much of its dependent measures, as well as the independent variables Judgment Type and Emotion Type. The follow-up study will further manipulate one within-subjects independent variable (Character: Bad Character vs. Neutral Character vs. Good Character), counterbalanced via Latin square. The purpose of this variable is to directly manipulate character by means of trait information. To do so, three different scenarios were developed. Each of these scenarios describe a person with various traits (manipulated by condition) who commits a transgression after provocation. The Apartment scenario reads as follows:

John was moving to a new town and applied to rent an apartment. As part of a required background check, the landlord discovered that John [G: volunteered at a

local soup kitchen / N: worked at a local soup and sandwich shop / B: worked at a

local soup kitchen as part of a probation sentence]. When contacted, John's

personal reference said that in his former community, John [G: was known for

being a role model / N: mainly kept to himself / B: was known for being a

delinquent]. John's previous landlord reported that John [G: was considerate of

other tenants in the building / N: did not usually interact much with the other

tenants of the building / B: was inconsiderate of other tenants in the building].

From this, the landlord determines that John is a [G: kind person / N: quiet person /

B: cruel person]. Because John has great savings and a well-paying job, the

landlord decides to approve him for the apartment. Three months later, the

landlord gets a call from a police officer telling him that there was an incident

within the apartment. According to the officer, John got into a heated argument

with his roommate over who should be taking out the trash. John wanted to rotate

duties daily, while his roommate wanted to rotate the duties weekly. After just

minutes of heated argument, John punched his roommate in the face.

The College scenario reads as follows:

The admissions committee at a university has been reviewing applications for the

next school year. The committee takes particular interest in the application of

Kevin Smith. In one of Kevin's letters of recommendation, his former mentor

noted that apart from his great school work, Kevin [G: was very kind to his fellow

classmates / N: was very quiet around his fellow classmates / B: was very mean to

his fellow classmates]. In addition to this, Kevin's permanent record showed that

he [G: had served on a student judiciary team in effort to help students who had

incidents with the school's disciplinary system / N: had never had any incidents

with the school's disciplinary system / B: had several incidents with the school's

disciplinary system]. After an interview with Kevin, one of the committee

members reported that he seemed [G: warm and friendly / N: soft-spoken and

reserved / B: cold and unfriendly]. Based on this information, the committee

concludes that in his former school, Kevin had a [G: good reputation / N:

reputation for being shy / B: bad reputation]. Based on his excellent academic

record and high SAT scores, the committee decides to admit Kevin into their

program. During his first semester at the university, Kevin gets in trouble with the

authorities. According to the campus police report, Kevin was waiting for a

parking spot, and before he could pull into the spot, another student swooped in

and stole the spot. Infuriated, Kevin hit the back of the student's car and drove

away, but his license plate was caught on a security camera. Kevin was charged

with reckless endangerment.

The Dating scenario reads as follows:

One of Sarah's friends set her up on a blind date with a guy named Eric. Another

of Sarah's friends knew Eric, and told her that he was a [G: selfless, caring person

/ N: quiet person / B: selfish, callous person]. During their bind date, Eric seemed

[G: courteous and generous / N: timid and reserved / B: conceited and self-

centered]. One day when Sarah went to visit Eric at work, she met his coworkers.

They told her that Eric [G: had a lot of great qualities that made most people like

him / N: was very shy, and did not get to know most people / B: had a lot of issues

that made most people dislike him]. From all of this, Sarah thinks that Eric is [G:

empathetic to others / N: cautious around others / B: unempathetic to others].

Because Eric is very attractive, Sarah decides to date him for a short while. One

day while waiting for Sarah to get ready for a date, Eric gets into an argument with

Sarah's brother, Nick. Nick warns Eric that he should treat her right, and Eric

answers that it's none of his business. After trading insults, Eric becomes enraged,

and tells Nick that he's a loser and that's why he doesn't have any friends.

Participants all read a Good Character scenario, a Neutral Character scenario, and a Bad

Character scenario. The conditions were counterbalanced via Latin square such that one

participant would read Good-Apartment, Neutral-College, and Bad-Dating, another participant

would read Neutral-Apartment, Bad-College, and Good-Dating, and so on and so forth. Each of

the analyses that were used in the first study will be conducted on the resulting dataset for study

2.

Future Directions

While the proposed follow-up study accounts for the limitations of manipulating

character through actions and a lack of bad character manipulation, it does not account for the

potential explanations of the mediation analysis in Study 1; rather, the follow-up study aims to

test the hypotheses made by CPM in a more direct way. In order to test these potential

explanations, further studies should utilize exploratory and confirmatory factor analysis to

examine whether there are other important features of moral character that are not being captured by the current measures. Because CPM predicts that purity transgressions cause more negative character judgments when harm is perceived, these studies should also analyze judgments of desire to harm and willingness to harm, in addition to judgments of instability. Research should also test the idea that disgust can be uniquely elicited by leaders and authority figures because anger should be maladaptive in this context.

Due to the relative novelty of CPM, further studies should be conducted to test the other predictions that it makes. These studies should employ designs that can test specific differences between CPM, social-functionalism, CAD, and other competing hypotheses. In particular, studies should examine the predictions that CPM makes about the relationship between purity violations and character judgments. Future work can experimentally manipulate the duration of moral threat, severity of moral threat, ability to influence a transgressor, and cost to influence transgressor in order to integrate these various factors into the current models. Because much of the relevant literature relies on self-report methods, it would also be valuable to employ methods from neuroscience and biology, utilizing equipment such as ECG and skin conductance to better understand the underlying physiological mechanisms that characterize the relationship between moral judgment and emotion. This will further refine the comprehensive models that incorporate multidisciplinary perspectives.

The evolutionary perspective encapsulated by social-functionalism is also rich in explanatory power. Analyzing the contexts in which disgust and anger adaptively function can be a critical tool for understanding in which situations these emotions occur, what effects they have on our social decision making process, and whether these emotions aid or hinder our ability to respond to moral transgressions in an age when people may or may not have the ability to control

and understand their emotions. These moral emotions may have played a critical role in allowing

humans to cooperate on a scale that no other animal has yet achieved. However, these emotions

are often taxing, requiring high levels of energy or terminating relationships that may have other

important social benefits. Instead, reason can help us logically evaluate the best course of action

when someone has transgressed, rather than relying on instinctive motivational-tendencies that

can cause further detriment.

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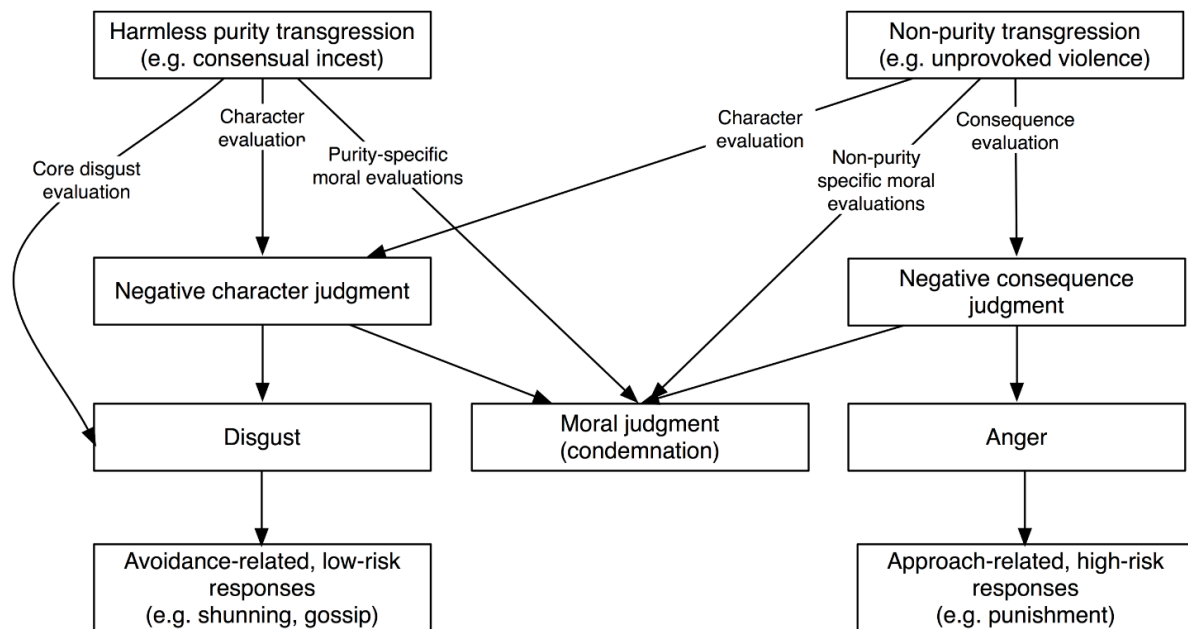
Appendix A

Figure 1. The Component Process Model of moral judgment and emotion (CPM).

Appendix B

The Mercury News
MercuryNews.com

East High Principal Crusades Against Sexual Harassment

By Joshua Molina
Mercury News

Article launched: 5/8/2008 0:5:31:33 AM PDT

Incidents of students sexually harassing one another have been on the rise at high schools nationwide, prompting concern among teachers and parents. But Barry James, who has held the job of principal at East High in San Jose for the past ten years, has helped his school buck that trend.

James has tackled the issue of sexual harassment head–on by educating students about how to identify, avoid, and respond to sexual harassment, and implementing a zero–tolerance policy for committing such harassment. Indeed, from the time he accepted his position at East High – a time before public awareness of sexual harassment in schools had emerged – he has made it his personal crusade to eliminate sexual harassment from his school.

James' crusade has been an enormous success: sexual harassment at East High has declined by 20% since he was hired, even though it has risen at high schools in neighboring districts.

Yet school administrators were initially reluctant to allow James to fight sexual harassment among students. According to sources in the San Jose school district, former superintendent Robert Marakian was concerned that James' policies and programs would amount to a public admission that sexual harassment was a problem at East High. By implementing the policies and programs despite Marakian's objections, James reportedly risked losing his job.

Sharon Douglas, a 10th grade science teacher, said that James had developed East High's strategies for fighting harassment by working tirelessly for years. "I'm impressed with the success of these programs," she said. "Barry spends hours and hours each week tweaking and refining them. Whenever I come in on weekends or stay late, Barry's always here, working to develop better and better anti–harassment programs. I don't think he's taken a vacation in five years."

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Figure 2. Fabricated news article used to manipulate moral character; describes the moral actions of the principal in the domain of sexual harassment.

The Mercury News
MercuryNews.com

East High Principal Crusades Against Drug Use

By Joshua Molina
Mercury News

Article launched: 5/8/2008 0:5:31:33 AM PDT

Drug use among students has been on the rise at schools nationwide, prompting concern among teachers and parents. But Barry James, who has held the job of principal at East High in San Jose for the past ten years, has helped his school buck that trend.

James has tackled the issue of drug use head–on by keeping dealers out of the school, implementing a zero–tolerance policy for drug possession, and increasing the school's extracurricular budget to give students a healthy alternative to drug use. Indeed, from the time he accepted his position at East High – a time before the drug problems in San Jose schools had reached public awareness – he has made it his personal crusade to eliminate drugs from his school.

James' crusade has been an enormous success: drug use at East High has declined by 20% since he was hired, even though it has risen at high schools in neighboring districts.

Yet school administrators were initially reluctant to allow James to fight student drug use. According to sources in the San Jose school district, former superintendent Robert Marakian was concerned that James' policies and programs would amount to a public admission that student drug use was a problem at East High. By implementing the policies and programs despite Marakian's objections, James reportedly risked losing his job.

Sharon Douglas, a 10th grade science teacher, said that James had developed East High's strategies for fighting drugs by working tirelessly for years. "I'm impressed with the success of these programs," she said. "Barry spends hours and hours each week tweaking and refining them. Whenever I come in on weekends or stay late, Barry's always here, working to develop better and better anti–drug programs. I don't think he's taken a vacation in five years."

Figure 3. Fabricated news article used to manipulate moral character; describes the moral actions of the principal in the domain of drug abuse.

The Mercury News
MercuryNews.com

East High Principal May Face Charges

By Joshua Molina
Mercury News

Article launched: 5/14/2008 0:8:29:03 PM PDT

Barry James, the principal of East High School in San Jose, has been accused of sexual harassment.

Carolyn Scherer, a 33-year-old waitress at a local restaurant, came forward on Wednesday with allegations that James, who frequents the restaurant where Scherer works, had made unwelcome sexually explicit remarks to her, offered her money to perform sexual acts with him, and touched her on the buttocks.

Several customers interviewed for this article were able to verify Scherer's allegations.

Scherer said that she was considering bringing charges against James. James'

lawyer, Shauna Parker, indicated in a prepared statement that her client would not dispute the charges against him.

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Figure 4. Fabricated news article used to manipulate moral character; describes the immoral actions of the principal in the domain of sexual harassment.

The Mercury News
MercuryNews.com

East High Principal May Face Charges

By Joshua Molina
Mercury News

Article launched: 5/14/2008 0:8:29:03 PM PDT

Barry James, the principal of East High School in San Jose, has been arrested on charges of drug possession.

According to police reports filed on Wednesday, an officer pulled over James' car for speeding. James appeared intoxicated or high, and the officer asked him to step out of the car. At the officer's request, James emptied his pockets, revealing a bag containing white powder.

Police later confirmed that the bag contained approximately 3 grams of cocaine.

State prosecutors said they were considering bringing charges against James for drug possession. James'

lawyer, Shauna Parker, indicated in a prepared statement that her client would not dispute the charges against him.

Figure 5. Fabricated news article used to manipulate moral character; describes the immoral actions of the principal in the domain of drug abuse.

Appendix C

Figure 6. A set of faces used to measure continuous ratings of disgust.

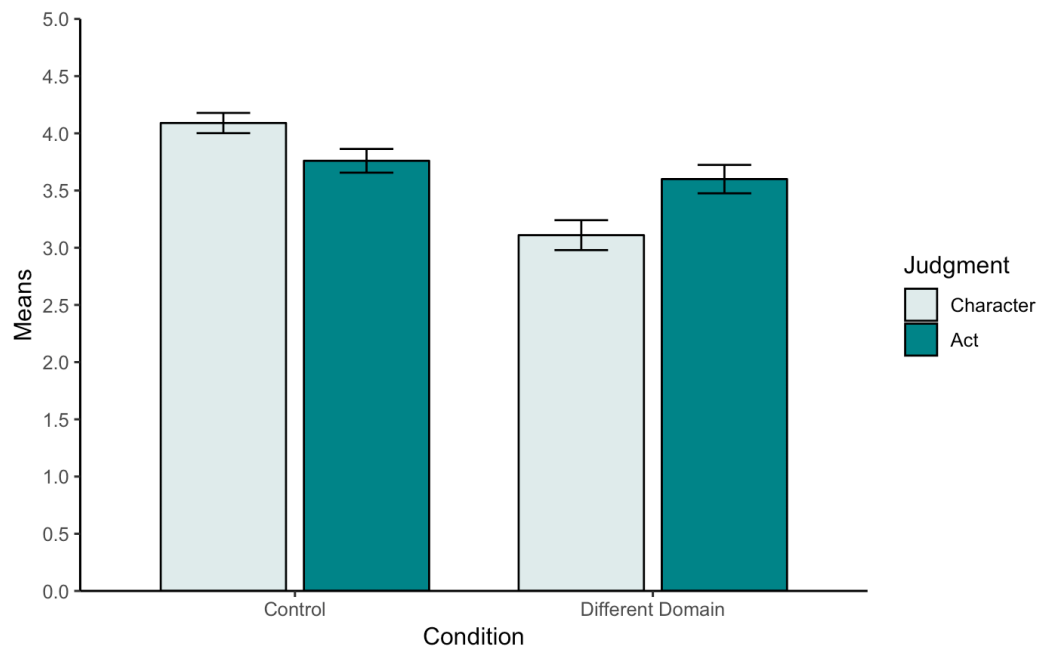*Figure 7.* A set of faces used to measure continuous ratings of anger.

Appendix D

Figure 8. Means of character and act judgments by Domain condition. Error bars represent
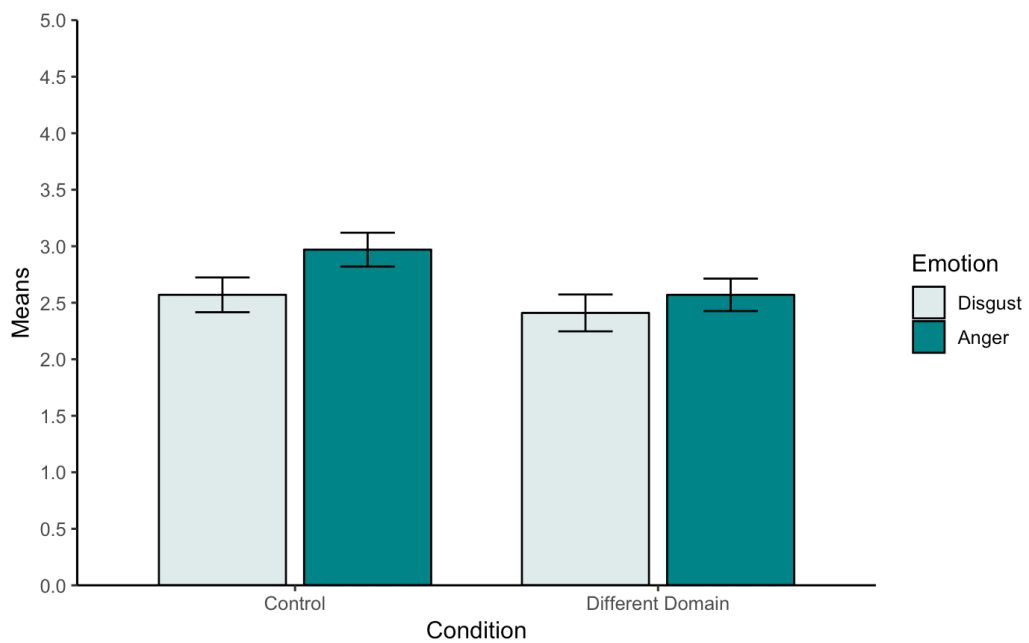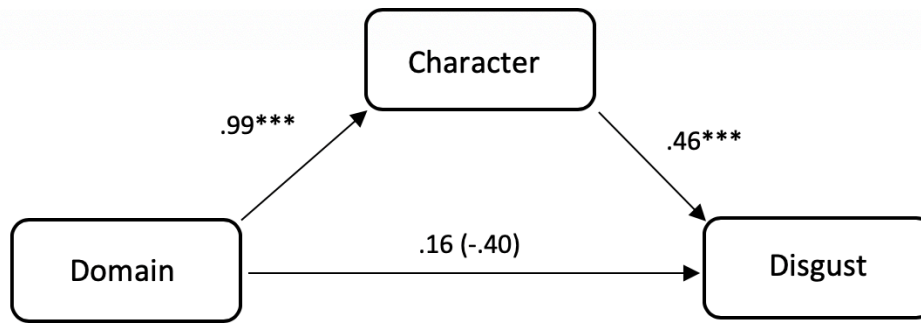
standard error of the mean.

Figure 9. Means of disgust and anger ratings by Domain condition. Error bars represent standard

error of the mean.

Figure 10. Bootstrapped mediation analysis with Disgust (Y) predicted by Domain (X) and Character (M). Coefficients significant at the *p* < .001 level are indicated by the *** notation; significance at the *p* < .01 level are indicated by the ** notation; and significance at the *p* < .05 levels are indicated by the * notation.