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Why We Disagree: Morality and Social Categorization

Nathan Christopher Carnes
University of Massachusetts Amherst

Why We Disagree: Morality and Social Categorization

A Thesis Presented

By

NATHAN CHRISTOPHER CARNES

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NATE C. CARNES

Approved as to style and content by:

_____
Ronnie Janoff-Bulman, Chair

_____
Nilanjana Dasgupta, Member

_____
Brian Lickel, Member

_____
Aline G. Sayer, Member

_____
Melinda Novak, Department Head
Department of Psychology

ABSTRACT

WHY WE DISAGREE: MORALITY AND SOCIAL CATEGORIZATION

MAY 2014

NATHAN CHRISTOPHER CARNES, B.A., HENDRIX COLLEGE

M.S., UNIVERSITY OF MASSACHUSETTS AMHERST

Directed by: Professor Ronnie Janoff-Bulman

Recent research has identified important functional differences between *Prescriptive* morality (based in approach motivation) and *Proscriptive* morality (based in avoidance motivation). The purpose of the present research was to understand the consequences of these moralities applied at the group level for social categorization, especially in response to threat. I measured social categorization with a novel method in which participants categorized same-race and cross-race morphed faces. *Social Justice* (which is Prescriptive morality applied to the group) was associated with more inclusive social categorization under conditions of threat compared to a control condition. *Social Order* (which is Proscriptive morality applied to the group) was not associated with social categorization. The implications of this work for social categorization, politics, and our understanding of moral diversity are discussed.

Keywords: Morality, Categorization, Social Justice, Social Order

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CHAPTER 1

INTRODUCTION

In a now classic paper, Hastorf and Cantril (1954) describe how students at Princeton and Dartmouth perceived a particularly contentious football game between the two schools quite differently. Interestingly, they argue that, "it is inaccurate and misleading to say that different people have different 'attitudes' concerning the same 'thing.' For the 'thing' simply is *not* the same for different people whether the 'thing' is a football game, a presidential candidate, Communism, or spinach… We do not simply 'react to' a happening… We behave according to what we bring to the occasion" (Hastorf & Cantril, 1954, p. 133). Perceptions are colored, sometimes overwhelmingly, by a litany of psychological and contextual factors that are relatively unique to each person. Insofar as our perceptions color the "thing" differently, we really are not experiencing the same "thing." This insight has informed and subsequently been expanded on by decades of research in categorization (e.g., Tajfel & Turner, 1986; Turner, 1985), cognition (e.g., Tversky & Kahneman, 1974), culture (e.g., Markus & Kitayama, 1991), development (e.g., Ainsworth et al., 1978; Bowlby, 1969), emotion (e.g., Johnson & Tversky, 1983; Lerner & Keltner, 2001), identity (e.g., Brewer, 1991), personality (e.g., Mischel & Shoda, 1995; Pervin, 1994), and morality (e.g., Haidt, 2007; Janoff-Bulman, 2009). The current research focuses on the ways in which morality shapes our social perceptions, because this relationship has a pervasive influence on daily life and yet is understudied in the literature.

There is evidence that the moral domain exerts a unique influence over our perceptions. For example, Aquino et al. (2009) showed that the centrality and current

accessibility of moral identity interacts with the situation to influence moral intentions and behaviors. Moral identity, in this general sense of thinking in moral terms, can shift how a person sees and interacts with the world compared to a non-moral identity. It is not just a matter of moral or non-moral, however, as certain domains of morality have domain-specific effects. Zhong and Liljenquist (2006) demonstrated that there is a relationship between moral purity and bodily purity. Threats to moral purity increase cleansing accessibility, intentions, and behavior; that is, the feeling we are somehow morally tainted changes our perception of physical cleanliness. Although this kind of research demonstrates an important link between morality and perception, it can treat morality as a monolithic construct and eschew the variation in how people think about and value morality.

Recent research suggests that morality is much broader than the traditional domains of justice and caring. Haidt (2007) argues that purity, authority, and loyalty are also intuitive moral domains for many people, especially in non-western cultures. For example, many people avoid specific kinds of foods and actions for religious and moral purposes. People care about what authority figures say, whether those figures lead the family, the community, or even nations. Furthermore, these social structures garner our loyalty and commitment. In fact, Rai and Fiske (2011) claim that all relationships are characterized by important moral obligations and prohibitions. They identify four moral motives, which are unity, hierarchy, equality, and proportionality that permeate our everyday relationships. In addition, Janoff-Bulman, Sheikh, and Hepp (2009) assert that self-regulation also plays an important role in morality. Many cultures and religions place moral value on self-reliance and warn against sloth and laziness. Ultimately, the

point is that morality is sufficiently broad to touch on nearly every aspect of our lives, and there is tremendous disagreement between people on what is and is not moral.

The present research investigates rather than ignores moral diversity and disagreement. The overarching questions this research relates to are: (1) What are some of the psychological mechanisms that might account for moral diversity? (2) How does moral diversity change our social perceptions of the world? And (3) why are these social perceptions important for social regulation? Although these big questions are too broad and multicausal to be answered fully here, the current research is a first step toward providing an empirical answer to these questions.

I will need to provide an overview of morality in order to hypothesize an answer to these questions. Each of the following three sections corresponds to one of the three research questions. First, I will describe the evolutionary basis for morality and propose a psychological framework that makes sense of moral diversity and disagreement. Second, I will explain how I think morality might influence social categorization. Third, I will explicate how moral regulation comes to influence social regulation and the realm of politics. Finally, I will describe a study that empirically tests the hypotheses in the sections to follow utilizing novel methods and analyses.

Psychological Mechanisms Underlying Moral Diversity

It is generally recognized that morality evolved in order to facilitate cooperation and coordinate social life (Darwin, 1998/1871; de Waal, 1996; Haidt, 2008; Wilson, 1975). The array of evolutionary mechanisms that have been theorized in order to help explain cooperation and altruism make clear that morality is a multifaceted and complex construct. The theories of kin selection (Hamilton, 1964), reciprocal altruism (Trivers,

1971), indirect reciprocity (Alexander, 1987), cultural evolution (Richerson & Boyd, 2005), and group selection (Kesebir, 2012; Nowak, Tarnita, & Wilson, 2010) are not mutually exclusive. In fact, Wilson (2012) states that both individual-level and group-level selection forces acted on us to form our unique psychology. He claims that individual-level selection forces shaped the self-interested side of our nature, whereas group-level selection forces shaped the more altruistic side of our nature (see also Haidt, 2012). Richerson & Boyd (2005) also argue that group selection shaped human nature, but they rely heavily on gene-culture coevolution. My interpretation of this literature is that cultural evolution is sufficient to explain much of the variation we observe in human behavior. Genetic evolution, cultural evolution, and coevolution all lead to the same maxim that morality is for social life, so I am more interested in that maxim and less concerned with which specific evolutionary forces shaped morality for group life.

This idea that we are both selfish and altruistic converges with the work of primatologist Frans de Waal, who calls us the bipolar ape because we have the capacity for both great cruelty and great kindness (1996, 2005, 2008). He too argues that morality may be the product of interactions between different systems with different evolutionary origins, if not the distal outcome of evolved tendencies and capacities (see Flack & de Waal, 2000). It also converges with a rich body of empirical work that suggests we are self-interested (Ariely, 2008, 2012; Baron, 2007; Bersoff, 1999; de Mesquita, Smith, Siverson, & Morrow, 2003; Haidt, 2012; Leary, 2005; Lerner & Tetlock, 2003), as well as genuinely altruistic (Batson, 1998; Bowles, 2006; Boyd, 2006; de Waal, 2008; Harbaugh, Mayr & Burghart, 2007; Keltner, 2009; Nowak, & Highfield, 2011; Rilling,

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Gutman, Zeh, Pagnoni, Berns, & Kilts, 2002; Sober & Wilson, 1998; Warneken & Tomasello, 2006; Wilson, 2012).

Following from this body of work on human nature, Janoff-Bulman and Carnes (2013) characterize morality as interlocking sets of cognitions, emotions, identities, institutions, motivations, norms, practices, and values that work together to both suppress self-interest and enable altruism in order to make social life possible (see also, Haidt, 2008; Haidt & Kesebir, 2010). Janoff-Bulman and Carnes (2013) provide a framework that fits with this definition of morality called the Model of Moral Motives (MMM). It organizes the moral domain according to approach versus avoidance or behavioral activation versus inhibition, which is the most fundamental distinction made in the motivation and self-regulation of behavior (Carver, 2006; Carver & Scheier, 1998; Gray, 1982, 1990; Higgins, 1997, 1998; for reviews, see Carver & Scheier, 2008, and Gable, Reis, & Elliot, 2003).

The behavioral activation system is rooted in approach motivation, and is sensitive to rewards and positive outcomes. The behavioral inhibition system is rooted in avoidance motivation, and is sensitive to punishment and negative outcomes. The MMM distinguishes between *Prescriptive* morality, based in approach motivation, and *Proscriptive* morality, based in avoidance motivation (Janoff-Bulman, 2009; Janoff-Bulman and Carnes, 2013). Prescriptive morality focuses on what we should do and emphasizes *providing* for well-being, whereas Proscriptive morality focuses on what we should not do and emphasizes *protecting* from harm. Prescriptive morality requires engaging in helpful behaviors, and thus involves activation of the psychological mechanisms behind altruism in order to establish a motivation to do something good. On

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the other hand, Proscriptive morality requires inaction or overcoming temptation and desire, and thus involves inhibition of the psychological mechanisms behind self-interest in order to restrain a motivation to do something bad (Janoff-Bulman and Carnes, 2013).

Janoff-Bulman et al. (2009, seven studies are reported) found that Proscriptive morality is condemnatory and strict, whereas Prescriptive morality is commendatory and not strict; Proscriptive morality is represented in concrete terms linguistically, emphasizes transgressions, is responsive to threat, is mandatory, and focuses on blameworthiness, whereas Prescriptive morality is represented in abstract terms linguistically, emphasizes good deeds, is not responsive to threat, is discretionary, and focuses on credit-worthiness. Interestingly, this distinction reflects the negativity bias but in the moral domain (for reviews see Baumeister, Brataslavsky, Finkenauer, & Vohs, 2001; Rozin & Royzman, 2001; Vaish, Grossmann, & Woodward, 2008).

Broadly speaking, Prescriptive morality is the motivation to provide and Proscriptive morality is the motivation to protect. Proscriptive and Prescriptive moralities form the foundation for our moral motives; however, the nature of these moral motives changes depending on the context of what is being protected or provided for, or the foci of moral concern. Thus, Janoff-Bulman and Carnes (2013) present these moral motives at three levels of analysis: the self, the other, and the group (see figure 1). This range of foci should be viewed as a continuum, rather than three discrete categories, that implicates social relationships, social identity, and situational context in the substantiation of the moral motive.

The self-focused moral motives are proximally concerned with self-regulation, but have distal ramification for the group that help make social life possible. Prescriptive

morality directed toward the self manifests as industriousness or *Self-Reliance*, but this ethic of persistence ultimately contributes to the group's resources. Proscriptive morality directed toward the self manifests as moderation or *Self-Restraint*, but this ethic of self-control also protects the group's resources. Next, the other-focused moral motives regulate interpersonal relationships and facilitate social life in dyads and small bands. This moral context is focused on people as individuals that have close ties, reputation information, or past behavior to rely on. Prescriptive morality directed toward the other entails H*elping*, reciprocity, and fairness. Proscriptive morality directed toward the other entails *Not Harming* either physically or by taking advantage of another person. Finally, the group-focused moral motives regulate the group itself and render group life possible. This moral context is focused on people as de-individuated group members. Prescriptive morality directed toward the group involves communal responsibility, equality, and S*ocial Justice*. Proscriptive morality directed toward the group involves communal solidarity, conformity, and *Social Order* (Janoff-Bulman & Carnes, 2013; see figure 1).

The MMM predicts that there are diverse perspectives based in the six moral motives, but conceptually combines the approaches of other taxonomies of the moral domain to explain moral disagreement and conflict. For example, Moral Foundations Theory predicts that there are five moral intuitions that people can differentially prefer (e.g., Graham et al., 2011; Haidt & Joseph, 2004; Haidt, 2012). This approach emphasizes individual differences in preferences relatively detached from contextual and conditional considerations, as evinced by Haidt's (2012) metaphor of taste preference being equivalent to value preference. In contrast, Relational Models Theory predicts that there are four relationship schemas, each always accompanied by a specific moral motive

that people can differentially apply to a given relational context (Fiske, 1991; Rai & Fiske, 2011). This approach emphasizes conditional differences in the salient or operant schema people apply to a given situation. The MMM accounts for individual differences in preference for Proscriptive or Prescriptive morality, but also accounts for the conditional influence of context in the salient focus on the self, the other, or the group.

A fruitful theory about morality should help explain moral diversity. Dean (2012) argues that moral diversity should be selected for by evolutionary forces, either biological or cultural, because there is not one psychological solution that can solve the problem of cooperation across highly heterogeneous and variable social and physical environments; instead, evolution should favor a stable polymorphism in the population. Essentially, moral diversity is an evolutionarily stable strategy that maintains different ways of facilitating cooperation in society writ large. It is important to note that the approach of the MMM, by accounting for a broader range of mechanisms, may have greater explanatory power in understanding this diversity. Furthermore, the MMM is unique in that it is derived from past psychological theory on motivational processes.

The MMM could be a fruitful framework for understanding moral diversity and the psychological mechanisms underlying morality. Having identified a working framework for moral diversity, we turn now to the question of how moral differences come to have power over the social world. If the function of morality is for group life, as I have argued here, then there must be some way in which morality exercises its influence. One possibility is by coloring our perceptions of social categories. My hypothesis is that one way morality influences group life is by shaping the social categorization process that is intrinsic to how people think about the social world.

Moral Diversity and Social Perceptions

Morality serves a broader purpose than guiding preferences and values. The functionalist perspective suggests that morality serves the function of making social life possible (Ellemers & van den Bos, 2012; Haidt & Kesebir, 2010). Importantly, morality does so in many different ways consistent with the idea that moral diversity solves the problem of cooperation in diverse social and physical environments. Haidt and colleagues distinguish between moralities that are individualizing, because of their focus on the rights and welfare of individuals, and moralities that are binding, because, "they are about binding people into larger groups and institutions" (Graham, Nosek, Haidt, Iyer, Koleva, & Ditto, 2011, p. 369). Rai and Fiske (2011) too insist that morality helps ingroups maintain their integrity; their fundamental argument is that different moral motives are meant to regulate different kinds of relationships (see also Fiske, 1991). In a similar vein, the self-focused moral motives in the MMM involve self-regulation, the other-focused moral motives regulate interpersonal behavior, and the group-focused moral motives encompass the social regulation of the group or collective.

The self-focused and other-focused moral motives surely contribute to moral diversity and have important implications, but the proposed research examines the group-focused moral motives and their consequences for the group and perceived social categories. Ellemers and van den Bos (2012) argue that a group-level perspective on morality is important because morality serves an identity function that gives people information about what groups they belong to, what norms are important in those groups, and how those groups relate to other groups. Haidt and colleagues have only acknowledged one type of binding morality rooted in proscriptive morality that serves

this sort of identity function. Binding for Haidt and colleagues is only about restraining selfishness by tying people to roles, duties, and practices; obedience to authority and conformity to the group motivate moral behavior (Graham & Haidt, 2010). The MMM argues for the existence of two types of binding morality, one rooted in Proscription (Social Order) and the other rooted in Prescription (Social Justice). Social Order is primarily concerned with protecting the group and binding people via restrictiveness and solidarity, whereas Social Justice is primarily concerned with providing for the group and binding people via responsibility and interdependence. These represent two different ways of binding people into meaningful groups and maintaining the integrity of the ingroup (Janoff-Bulman and Carnes, 2013).

Past work has found that Social Justice is negatively related to Social Dominance Orientation but is not associated with Right-Wing Authoritarianism, whereas Social Order is positively associated with Right-Wing Authoritarianism but is not related to Social Dominance Orientation (Janoff-Bulman, Sheikh, and Baldacci, 2008). Given the differences in explained variance, Social Justice and Social Order share some theoretical overlap with SDO and RWA respectively, but also explain something unique specifically about the *moral* domain. In this research economic and resource issues (e.g., welfare programs, affirmative action) were significantly predicted by Social Justice and not Social Order, whereas social and lifestyle issues (e.g., gay marriage, abortion) were significantly predicted by Social Order and not Social Justice (Janoff-Bulman et al., 2008). It appears that Social Justice and Social Order are distinct constructs and not simply opposites of one another.

My prediction is that Social Order, based in avoidance motivation, may be particularly functional in environments with scarce resources, high rates of free-riders, and conflict. This fits with the finding that Proscriptive morality is responsive to threat (Janoff-Bulman et al., 2009). It is important to establish who is and is not in the group for purposes of protection and avoiding harm both from inside and outside the group, which necessitates the establishment of a common social identity for legitimate membership and is reflected in a relatively thick and impermeable intergroup boundary. Social Order morality places value on obedience, which promotes hierarchy within the group and facilitates action. In stressing absolute loyalty to the group and conformity to the traditions and beliefs of the group, Social Order also promotes what Richerson and Boyd (2005) call tribal marking; the group is defined by identifiable physical features as well as strict adherence to group norms, all of which encourages a common identity and a homogenous group bound up in communal solidarity (Janoff-Bulman and Carnes, 2013).

In contrast, I predict that Social Justice, based in approach motivation, may facilitate cooperation better in environments with abundant resources, low rates of free-riders, and peace. Unconstrained by threat and the need for solidarity, it becomes important to recognize intragroup differences and inequalities for purposes of providing for members and establishing equality between subgroups (Brickman, Folger, Goode, & Schul, 1981). This necessitates the establishment of a common goal or fate for membership and is reflected in a relatively permeable intergroup boundary. Social Justice places value on providing for the neediest and establishing equality between subgroups, which fosters interdependence and a heterogeneous group bound by communal responsibility (Janoff-Bulman et al., 2013). Interestingly, Fiske, Lin, and

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Neuberg (1999) note that increased interdependence between an ingroup and an outgroup leads people to view the outgroup as more heterogeneous; increased outgroup heterogeneity and variability is associated with reduced prejudice and discrimination (Errafi & Brauer, 2012). This appears to reflect how interdependence binds together groups, for an outgroup is less of an outgroup to the extent that people have less negative affective reactions and view members of that outgroup as differentiated individuals.

Based on the prediction that Social Order is functional for smaller impermeable groups and Social Justice is functional for larger interdependent groups, I hypothesize that morality shapes social perceptions in order to promote the social construction of the sorts of groups that Social Order and Social Justice are functional for. Thus, I predict that Social Justice morality will promote more inclusive social categorization while Social Order morality will promote more exclusive and less inclusive social categorization. Three very different lines of research, one rooted in processing styles and another in group perception and the last in culture, provide converging support for my predictions concerning morality and ingroup width.

Processing style refers to the ways in which people look at and think about perceptual and conceptual information (Förster & Dannenberg, 2010). *Global processing* involves looking at the big picture or the gestalt of a stimulus, whereas *local processing* involves looking at the details of a stimulus. Processing style influences categorization, because global processing has been linked to similarity judgments and assimilation effects while local processing has been linked to dissimilarity judgments and contrast effects (Förster, 2009; Förster, Liberman, & Kuschel, 2008). I would predict from this that global processing would promote inclusive categorization by increasing judgments of

similarity, while local processing would promote exclusive categorization by increasing judgments of dissimilarity. Global versus local processing has also been linked to self-fulfillment and growth motives versus security motives (Förster & Higgins, 2005), novelty versus familiarity perception (Förster, Marguc, & Gillebaart, 2010), and most notably approach versus avoidance motivation (Friedman & Förster, 2000) respectively. Growth motives, novelty perception, and approach motivation are consistent with Prescriptive morality. Security motives, familiarity perception, and avoidance motivation are consistent with Proscriptive morality. The connections between processing style, categorization, and motivation support my predictions concerning morality and social perception.

Entitativity refers to the degree to which a group is, or is perceived to be, a real thing or entity (Campbell, 1958). Importantly, there are different ways of seeing a group as entitative. Brewer, Hong, and Lee (2004) argue that people can possess different theories or construals about the commonalities that make a group an entity. *Essence theorists* focus on the innate traits of group members, emphasize similarities among group members and consistency of behavior, look for clear intergroup boundaries, and attend to a group's historical background or traditions. *Agency theorists* focus on a group's goals or values that can be sensitive to situational changes, emphasize ingroup heterogeneity and coordination, look for relationships and interdependence with outgroups, and attend to a group's development and fate (see also Ip, Chiu, & Wan, 2006; Rutchick, Hamilton, & Sack, 2008; Wilder & Simon, 1998). Social Order morality fits well with an essence theory of groups, whereas Social Justice morality is consistent with an agency theory of groups. A focus on loyalty, conformity, and tribal markings could

push people to construe groups as categorical entities that you either are or are not a part of. A focus on interdependence and equality, on the other hand, could push people to construe groups as dynamic entities that unite people from diverse backgrounds via shared goals. Again, the connections between entitativity, group features, and group binding support my predictions concerning morality and social perceptions.

Gelfand (2012) argues that cultures can vary in the degree to which they are *tight*, possessing strong norms and low tolerance for deviance or *loose*, possessing weak norms and high tolerance for deviance. In a 33 nation study, Gelfand et al. (2011) found that tight cultures encountered more ecological and historical threats, such as resource scarcity or territorial threats, than loose cultures. These threats "increase the need for strong norms and punishment of deviant behavior in the service of social coordination for survival" (Gelfand et al., 2011, p. 1101). Furthermore, Gelfand et al. (2011) found that members of tight cultures were more prevention focused in that they were more cautious, dutiful, had higher impulse control, a higher need for structure, and higher self-monitoring ability. Tight cultures are consistent with a Social Order morality because of their shared emphasis on restrictiveness and deviance, a shared focus on avoidance, and a similar responsiveness to threatening social and physical environments. This provides further support for my predictions concerning the distal functional goal of Social Order and Social Justice moralities to facilitate cooperation in different kinds of environments.

The hypothesis that the proposed research will test involves how Social Order and Social Justice moralities change our social perceptions of the ingroup. I began this paper by noting how perceptions have this pervasive influence over how we see and interact with the social world. Who we call ingroup members, or not, and how we define what

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the group is matters tremendously. One behavioral ramification is social regulation and

the realm of politics. We now turn to an examination of the relationships between

morality and politics, and extend further hypotheses for understanding the differences

between those on the political left and right.

<div align="center">**Social Perceptions and Social Regulation**</div>

Morality encompasses rules and standards for social regulation, and so it should

not be surprising that morality implicates politics. This is not to say that politics does not

involve power, coalitions, political survival, or serendipity (see de Mesquita & Smith,

2011), but moral values surely shape our political values. Janoff-Bulman (2009) argues

that liberals and conservatives have different motivational orientations, with

conservatives sensitive to avoidance motivation and liberals sensitive to approach

motivation. Indeed, a robust set of findings suggests that conservatives are more

sensitive to negative outcomes while liberals are more sensitive to positive outcomes

(Hibbing, Smith, & Alford, in press; Shook & Fazio, 2009; see also Lavine, Burgess,

Snyder, Transue, Sullivan, Haney, & Wagner, 1999), that conservatives are more

sensitive to threat than liberals (Jost, Glaser, Kruglanski, & Sulloway, 2003; Oxley,

Smith, Alford, et al., 2008), and that liberals are higher on openness to experience than

conservatives (McCare, 1996). In line with these findings, Janoff-Bulman et al. (2009)

found that liberalism was associated with Prescriptive morality and conservatism was

associated with Proscriptive morality.

Findings from my first year project provide further support that Proscriptive and

Prescriptive moralities underlie political ideology. Social Order was positively correlated

with conservatism (b = .21, p = .001) while Social Justice was positively correlated with

liberalism (b = .37, p < .001) on the other end of the scale. The same pattern of results emerged in a more representative online data set with Social Order positively correlated with conservatism (b = .35, p < .001) and Social Justice positively correlated with liberalism (b = .41, p < .001). In sum, this evidence suggests that there is a natural affinity between liberalism and Prescriptive morality and conservatism and Proscriptive morality. Therefore, the hypothesis that morality shapes social categorization may bear on political differences between liberals and conservatives.

Rock & Janoff-Bulman (2010) found that conservatives but not liberals categorized neutral objects more restrictively when primed with Proscriptive morality. Whether this effect carries over to the social realm is not known, but it may actually be stronger considering the social basis and function of morality. If this is the case, it may help us better understand the positions of liberals and conservatives. For example, liberals and conservatives may not always disagree on a moral value like fairness, but to whom that moral value applies based on who counts as a citizen or even as a person. This would be an important finding considering the provocative claims by Graham, Haidt, & Nosek (2009) that conservatives are more "groupish" than liberals, and that conservatives rely on a broader set of moral foundations than liberals. The implication that follows from this is that conservatives have a moral advantage over liberals and care about groups more than liberals. My prediction is that just as Social Order and Social Justice moralities will have diverging effects on social perception, liberalism and conservatism will have diverging effects on social perception.

The Current Research

I outlined three broad questions at the outset of this paper, and hypothesized some answers to each of them. To summarize, the first research question asked what some of the psychological mechanisms that might account for moral diversity are. I proposed that both the motivational orientation toward Proscriptive versus Prescriptive morality and the salient focus on the self, the other, or the group underlie moral diversity. The interaction of motivation and context is broadly integrated to form the six moral motives. The second research question asked how these moral disagreements change our social perceptions of the world. I argued that group morality shapes the inclusiveness of social categorization. The third research question asked why these social perceptions might be important for social regulation and politics. I asserted that liberals and conservatives can disagree with one another on different levels of analysis from the morality that they employ to the people they perceive to be group members.

The current research tested whether group morality influences social categorization. In order to test my predictions concerning the inclusiveness of social categorization, I developed a novel variation of the facial morphing task. Human faces are a rich source of information about others that convey more than emotions and intentions (e.g., Parkinson, 2005), but also identification and social category membership (e.g., Hugenberg & Wilson, 2013; Zebrowitz & Montepare, 2008). The visual perception of faces can be influenced by beliefs, identity, and emotion just as individual and situational variables can influence other kinds of social perceptions (e.g., Eberhardt, Dasgupta, & Banaszynski, 2003; Hehman, Mania, & Gaertner, 2010; Niedenthal,

Halberstadt, Margolin, & Innes-Ker, 2000). Thus, examining the effect of morality on

the social perception of faces is an appropriate and meaningful test of my hypotheses.

The present research tested social categorization in the domain of race. One of

the most robust findings in the literature on social categorization and race is the Cross-

Race Effect, which is the tendency for people to possess more accurate recognition

memory for same-race faces over cross-race faces (e.g., Malpass & Kravitz, 1969;

Meissner & Brigham, 2001; Ng & Lindsay, 1994; Sporer, 2001a). Recently, Young,

Hugenberg, Bernstein, and Sacco (2012) argued that this effect is some combination of

perceptual expertise as well as social cognitive factors (see also, Hugenberg, Young,

Bernstein, & Sacco, 2010; Meissner, Brigham, & Butz, 2005; Sporer, 2001b). The social

cognitive explanation hinges on the tendency for people to see outgroup members as

categorical prototypes and ingroup members as individuals (e.g., Bodenhausen, Macrae,

& Hugenberg, 2003; Brewer, 1988; Fiske & Neuberg, 1990). For this reason, Young et

al. (2012) assert that the Cross-Race Effect is not a product of race per se, but about the

categorization of people into ingroups and outgroups. Thus, even though this research

was done in the domain of race, I argue that the same logic applies wherein social

categorization concerns ingroups and outgroups more so than race in of itself.

Facial morphing tasks involve the categorization of faces that have been morphed

between two anchor faces belonging to different stimulus categories in domains such as

race, gender, or emotion. Past research has attempted to identify a perceived midpoint or

boundary between the two stimulus categories in one of two ways. In the interleaving

staircase approach (Webster, Kaping, Mizokami, & Duhamel, 2004), a random face

morph is presented and the participant must categorize the face. A new face morph is

then presented that steps up or down in the morph interval depending on the participant's previous response until twelve reversals have occurred in order to estimate the boundary. In the ascending and descending limits approach (Ho, Sidanius, Levin, & Banaji, 2011), one of the anchor faces is presented (counterbalanced between subjects) and is gradually morphed toward the other anchor face until the participant categorizes the face as the end point category. The participant then completes the same trial with the same face beginning from the opposite anchor face in order to estimate the boundary or threshold.

In contrast, the following study attempted to measure *sensitivity* to the difference between the stimulus categories, which is a different kind of question. Greater ease of distinguishing one category from another would indicate greater sensitivity. This approach randomly presented the face morphs for the participant to categorize using two forced-choice responses, which yields richer distributions of categorizations rather than boundaries (see MacLin, Peterson, Hashman, & Flach, 2009). This is referred to as the method of constant stimuli and is a classic and commonly used method in psychophysics research on sensation and perception because it reduces errors of habituation and expectation (Gescheider, 1997). An advantage of this approach paired with Signal Detection Theory is that it controls for adaptation effects (Webster et al., 2004), perceptual history effects (Preminger, Sagi, & Tsodyks, 2007), and response bias effects (MacLin et al., 2009).

CHAPTER 2

THE STUDY

The primary purpose of this study was to gain a better understanding of how individual differences in Social Order and Social Justice moralities shape people's perceptions of social categories. I predicted that Social Order would be associated with a more exclusive ingroup category, especially under conditions of threat (Hypothesis 1). In contrast, I predicted that Social Justice would be associated with a more inclusive ingroup category and would be relatively unresponsive to threat (Hypothesis 2). Considering the respective associations between political conservatism and Social Order and political liberalism and Social Justice, I also predicted that conservatism would be associated with a more exclusive ingroup category while liberalism would be associated with a more inclusive ingroup category (Hypothesis 3).

The primary independent variables were Social Order, Social Justice, political orientation, and the Threat manipulation. The primary dependent variable was the inclusiveness of social categorization. This variable was measured using a novel method, the facial morphing task. This variable was operationalized as the degree of sensitivity to the difference between the ingroup category and the outgroup category using a Signal Detection Theory analysis approach. Participants completed scales measuring their attitudes toward Social Order, Social Justice, and trust in people. Participants were then randomly assigned to a threat priming condition in which they wrote a short essay response to an article or a control condition. Next, participants completed the facial morphing task in which they categorized cross-race faces in order to obtain the

inclusiveness dependent variable. After participants completed demographics, secondary measures of explicit prejudice were administered.

Method

Participants

A total of 177 undergraduates at the University of Massachusetts-Amherst participated in exchange for extra course credit. We excluded 19 participants on the basis of mean reaction time scores one standard deviation above the mean, producing an included sample of 158 participants. All participants identified as Caucasian. There were 24 males (15.2%) and 134 females (84.8%), and the median age of participants was 19.

Manipulations and Measures

Social Order and Social Justice Measures. The Social Order and Social Justice scales are separate 9 item Likert scales with items for each construct adapted from Janoff-Bulman, Sheikh, and Baldacci (2008). Each item is rated on a scale anchored from 1 (strongly disagree) to 9 (strongly agree). There were 3 reverse-scored items in each scale. An example of a Social Order item is, "There are good reasons why traditional ways of living have lasted for so long, even if people don't fully understand those reasons." An example of a Social Justice item is, "It is an obligation, not just a matter of personal preference, to provide for groups worse off in society." Many of these items were identified using a large sample (n = 818) and cross-validated with a separate large sample (n = 819). The nine item composite measures of both Social Justice (α = .84) and Social Order (α = .79) were reliable (see Appendices).

Threat Manipulation. Participants were randomly assigned to the Threat condition or the Control condition. The Threat condition was intended to manipulate realistic threat.

Participants in the Threat condition were asked to read and respond to a news article that presented U.S. economic news presumed to be of relevance to the college student sample. They read that "The non-partisan Economic Policy Institute called the U.S. labor market 'grim' and said that over the previous year, unemployment among college graduates younger than 25 had averaged 19.4%, with an additional 24.1% in jobs for which they were overqualified." The article also included other pessimistic economic reports, and related the poor job prospects in the current "Great Recession" to those of the Great Depression. Participants in the Economic Threat condition were given three minutes to write their reaction to the article. Participants in the Control condition neither read a news article nor wrote a response (see Appendices).

Trust in People Measure. The Trust in People Scale is an 8 item Likert scale that assesses the degree to which people have trust in other people to do what is right and not what is wrong. Each item is rated on a scale anchored from 1 (strongly disagree) to 9 (strongly agree). An example item is, "People can usually be trusted to do what's right, even if no one is watching." An example reverse-score item is, "If you don't watch out for yourself, people will take advantage of you." The 8 item composite measure of Trust in People ($\alpha = .75$) was reliable (see Appendices).

Facial Morphing Task. The facial morphing task was designed to measure the inclusiveness or exclusiveness of social categorization in the domain of race. The defining feature of facial morphing tasks is forced-choice categorization of racially ambiguous faces (see figure 2 for examples). Variations of this method have been used in research on the cross race effect (Malpass & Kravitz, 1969; Meissner & Brigham, 2001; for review see Young et al., 2012), facial affect and emotion (Adolphs, 2002; Haxby,

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Hoffman, & Gobbini, 2002), and hypodescent (Ho et al., 2010, 2011). Stimulus materials

for the morphing task were obtained from the Montreal Set of Facial Displays of Emotion

(Beaupré & Hess, 2005). The stimulus materials included female and male White, Black,

Hispanic, and Asian (Chinese) faces with a neutral expression. Faces were morphed

using Fantamorph 5 software (Abrosoft, 2008). As recommended, faces were set in gray-

scale (e.g., Webster et al., 2004) and were not cropped (e.g., MacLin et al., 2009).

Participants completed 4 critical blocks and 1 practice block of the morphing task.

Each critical block was composed of 51 trials, excluding the practice block of 10 trials.

The four critical blocks depicted faces morphing from a White male to a Black male, a

White female to a Black female, a White male to an Asian male, and a White female to

an Asian female. The practice block depicted faces morphing from a White female to a

Hispanic female. For each trial, participants were first presented with a focus image for

1000 ms in order to disrupt afterimage effects. A face image then appeared on the screen

until participants made a categorization judgment. Participants were instructed to

categorize the faces as quickly and accurately as they can using two specified keys on the

keyboard. Participants were told to use the categories of White and Black or White and

Asian for the White/Black and White/Asian trials respectively. Each of the 51 trial faces

represented a 2% morph in the interval from fully White (0%) to fully Black/Asian

(100%). The trial faces were fully randomized within block, and the blocks were

presented in a latin square design between subjects.

Demographic Measure. The demographics questionnaire included information

about gender, age, class year, race, religion, and politics. Participants rated the extent to

which they are a religious person on a 9 point Likert scale anchored from 1 (Not at all

Religious) to 9 (Extremely Religious), and how important a role religion plays in their life anchored from 1 (Not at all Important) to 9 (Extremely Important). Participants also rated themselves politically on two 9 point Likert scale anchored from 1 (Very Liberal) to 9 (Very Conservative) on the first scale, and 1 (Strong Democrat) to 9 (Strong Republican) on the second scale. Higher values indicate greater political conservatism.

Feeling Thermometer Measure. Participants rated how warm they felt toward Black people, White people, and Asian people on three feeling thermometer items placed on separate pages. The feeling thermometers were anchored from 0 (Cold/Unfavorable) to 100 (Warm/Favorable). Lower values indicate greater explicit prejudice.

Procedure

Participants were run in groups ranging from 1 to 6 persons per experimental session. Participants were seated at a computer and told that this this is a two-part study on the mechanisms of face recognition. After completing the consent form, participants were given a questionnaire packet containing the Social Order Scale, the Social Justice Scale, the Threat manipulation if participants were randomly assigned to the Threat condition, and the Trust in People Scale in that order. The order of the Social Order and Social Justice scales was fully counterbalanced. Participants in the economic threat condition were given 3 minutes to read and write a response to the article. Participants in the control condition neither read an article nor wrote a response.

The experimenter then instructed participants to use the computer to complete the face recognition task (i.e., the facial morphing task). Participants were told to follow the directions on the screen, but to ask any questions if they are unsure about the task. At the conclusion of the face recognition task, participants completed the demographic

questionnaire and feeling thermometers in that order. Finally, participants were fully

debriefed and thanked for their participation.

Results

I conducted the following analyses using a Signal Detection Theory framework.

This approach was used in order to assess differences in sensitivity to the distinction

between the ingroup and outgroup categories. For the purposes of this analysis, White

responses were labeled as the ingroup category and Black or Asian responses were

labeled as the outgroup category. Signal Detection Theory is widely applied and is

appropriate whenever participants must perceptually distinguish between two possible

stimulus types, in this case White versus Black stimuli or White versus Asian stimuli

(Stanislaw & Todorov, 1999). The use of Signal Detection Theory in psychology

originated from research on sensation and perception (Stanislaw & Todorov, 1999). For

example, psychophysics researchers interested in an auditory difference threshold, which

is the magnitude of the minimal difference between two stimuli necessary for participants

to discriminate between the stimuli, may repeatedly present two auditory stimuli of

differing intensities to a participant who must then describe which stimulus is more

intense (Gescheider, 1997).

The present research applies a similar paradigm. Each face morph in the facial

morphing task is a composite of two categorical stimuli of differing intensities which

participants must then discriminate between in order to describe which stimulus type is

more intense. Any face morph that is composed of more than 50% of one stimulus type

has an objectively more "intense" signal of that stimulus type compared to the other

stimulus type. For example, a face morph that is 60% White and 40% Black has a more

"intense" White categorical stimulus compared to the Black categorical stimulus. It is important to note here that the subjective categorical membership of a single face is different from the objective categorical intensity. A participant may subjectively perceive a face that is 40% Black to be Black while another participant may subjectively perceive the same face to be White. The objective intensity of each category (e.g., that it is 40% Black and 60% White) is comparative or relational and draws its objectivity from the proportional relationship between the two categories.

When participants are subjectively categorizing the stimulus faces, they are judging the prototypicality of each of these faces in correspondence to different racial categories. I am using Signal Detection Theory to measure the sensitivity of participants' prototypes to these racial categories. In other words, I am trying to capture or measure the inherently subjective fuzzy categories that people use to parse the world in relation to an objective criterion that would be the same for everyone. This criterion was validated by the morph percentages of real racial faces and its reliability was increased by conducting four trials with eight completely different faces and three different racial categories.

The technical definition of sensitivity is the degree of overlap between two probability distributions corresponding to the two possible stimulus types; one probability distribution represents the likelihood of participants responding with the first stimulus type while the other probability distribution represents the likelihood of participants responding with the second stimulus type (Macmillan & Creelman, 1991). Greater overlap between these two probability distributions suggests that participants are worse at distinguishing between the two stimulus types, and thus are less sensitive to the distinction between the two stimulus types.

In this analysis, sensitivity is the degree of overlap between the probability distribution of responding White and the probability distribution of responding Black or Asian during the facial morphing task (see figure 3). Note in figure 3 that the degree of overlap between the two probability distributions is a function of the hit rate and false alarm rate to the right of the criterion, and the miss rate and correct rejection rate to the left of the criterion. Since correct rejections and misses are simply the inverse of false alarms and hits respectively, the latter are sufficient to explain the degree of overlap. The hit rate reflects the probability of participants responding with "Black" or "Asian" to the trials that have a more intense Black or Asian signal than White signal (i.e., the majority Black/Asian morphs that are at least 52% to 100% Black/Asian), while the false alarm rate reflects the probability of participants responding with either "Black" or "Asian" to the trials that have a more intense White signal than Black or Asian signal (i.e., the majority White morphs that are at least 52% to 100% White). When converted to z scores, the difference between these probabilities can be used to calculate *d'* which is the distance between the mean of the ingroup and outgroup distributions in standard deviation units. As *d'* increases in magnitude, participants' are distancing the ingroup and outgroup categories from one another reflecting their increased sensitivity to the differences between the ingroup and outgroup categories.

The advantage of this approach is that it can disentangle the influence of sensitivity from the influence of response bias, which is a general tendency to respond one way or another in general (Stanislaw & Todorov, 1999). I conducted alternative methods of analysis such as using Hierarchical Linear Modeling to assess the total probability of categorizing faces as part of the ingroup or outgroup and using regression

to assess the total number of ingroup or outgroup categorizations; however, among other problems with coding and violating statistical assumptions, these different methods confound sensitivity and response bias with each other and will not be discussed further[1,2].

Political Orientation and Trust in People

I first tested whether individual differences in Social Justice, Social Order, political orientation, or trust differed by priming condition. A one-way ANOVA did not reveal any significant differences between conditions on any of the individual difference variables, all p ≥ .204. Descriptive statistics suggest that the sample was relatively high in Social Justice (*M* = 6.15, *SD* = 1.27), low in Social Order (*M* = 3.88, *SD* = 1.13), liberal (*M* = 3.20, *SD* = 1.09), and trusting of others (*M* = 5.21, *SD* = 1.02). Next, I assessed the relationships between Social Justice, Social Order, political orientation, and trust. As found in past research, Social Justice and Social Order were negatively correlated with each other, $r(156) = -.352$, $p < .001$. Political orientation, with higher values indicating conservatism and lower values indicating liberalism, was negatively correlated with Social Justice ($r(156) = -.490$, $p < .001$) and positively correlated with Social Order ($r(156) = .339$, $p < .001$). Trust in people was positively associated with Social Justice ($r(156) = .270$, $p < .001$), but was not related to either Social Order (p = .381) or politics (p = .755). This analysis suggests that the sample was skewed toward being relatively liberal and high in Social Justice, but the relationships between individual difference variables were consistent with past research and relatively robust.

Sensitivity to the Ingroup/Outgroup Distinction

The hit rate was calculated by summing the number of correct Black/Asian categorizations within each block and dividing the sum by the number of Black/Asian trials. The false alarm rate was calculated by summing the number of incorrect Black/Asian categorizations within each block and dividing the sum by the number of White trials. The loglinear approach was applied to correct for perfect scores (see Hautus, 1995), and then d' was calculated for each critical block. Sensitivity was computed by creating a composite d' score from the four critical blocks (i.e., White/Black females, White/Black males, White/Asian females, and White/Asian males; $\alpha = .51$). I first assessed the effect of Social Justice, Social Order, Threat, the Social Justice x Threat interaction, and the Social Order x Threat interaction on sensitivity using the General Linear Model. Neither the main effect of Social Order ($p = .221$) nor the Social Order x Threat interaction ($p = .298$) were significantly related to sensitivity. The Social Justice x Threat interaction was significantly related to sensitivity to the ingroup/outgroup distinction, $B = .105$, $SE = .042$, $t(152) = 2.46$, $p = .015$, $\eta_p^2 = .038$. This interaction qualified the non-significant main effects of Social Justice ($p = .179$) and the Threat manipulation ($p = .202$).

A simple slopes analysis revealed that Social Justice was not associated with sensitivity in the Control condition ($p = .416$), but was negatively associated with sensitivity in the Threat condition ($B = -.081$, $SE = .031$, $t(152) = -2.60$, $p = .010$, $\eta_p^2 = .043$). This suggests that individual differences in Social Justice were negatively associated with how perceptually differentiated the ingroup and outgroup categories were in the Threat condition but not in the Control condition (see figure 4). Interestingly, it

appears that the Threat manipulation itself can lead to lesser sensitivity when Social Justice is high. A simple slopes analysis revealed that the Threat manipulation was not significantly related to sensitivity when Social Justice was at one standard deviation below the mean or anywhere below this point (p = .356) or at the mean (p = .202), but Threat was negatively associated with sensitivity when Social Justice was one standard deviation above the mean (B = -.197, SE = .074, t(152) = -2.67, p = .008, η_p^2 = .045). The Threat condition promoted more inclusive social categorization compared to the control condition only for participants whom endorsed Social Justice, and did not affect participants who did not endorse Social Justice.

Interestingly, the same pattern of effects in the same direction emerged for all of the morphing trials. I conducted four sets of analyses using the General Linear Model testing the effect of Social Justice, Social Order, Threat, and all relevant interactions on sensitivity for Black, Asian, Male, and Female trials. The interaction between Social Justice and Threat was significant for the Black trials (B = .095, SE = .047, t(152) = 2.04, p = .043, η_p^2 = .027), Asian trials (B = .114, SE = .057, t(152) = 2.01, p = .047, η_p^2 = .026), Male trials (B = .123, SE = .052, t(152) = 2.36, p = .02, η_p^2 = .035), and marginally significant for the Female trials (B = .086, SE = .051, t(152) = 1.69, p = .094, η_p^2 = .018). This consistency of these results supports my argument that this effect is better explained by a general social categorization phenomenon and not necessarily by gender or race in of themselves. The next analysis further bolsters this claim.

I ran a similar model but included the three feeling thermometer measures as covariates. While neither the Asian (p = .680) nor the White (p = .899) feeling thermometers predicted sensitivity, the Black feeling thermometer was negatively

associated with sensitivity, $B = -.004$, $SE = .002$, $t(149) = -1.98$, $p = .050$, $\eta_p^2 = .026$.

Despite this, the Social Justice x Threat interaction was still significant controlling for

explicit prejudice, $B = .094$, $SE = .042$, $t(149) = 2.23$, $p = .027$, $\eta_p^2 = .032$. This suggests

that explicit prejudice toward Black people was positively associated with sensitivity, but

this explicit prejudice effect did not explain the interaction between Social Justice and

Threat. Finally, I ran a similar model but removed the feeling thermometer measures and

added political orientation as a covariate. Politics was not a significant predictor of

sensitivity ($p = .607$), and the Social Justice x Threat interaction was still significant, $B =$

$.109$, $SE = .043$, $t(151) = 2.51$, $p = .013$, $\eta_p^2 = .040$. This last model seems to suggest that

politics does not explain the interaction between Social Justice and Threat either.

Discussion

I found that Social Justice was associated with decreased sensitivity to the

ingroup/outgroup categorical distinction in the Threat condition but not in the Control

condition. My second hypothesis was that Social Justice would be associated with more

inclusive social categorization and would be relatively unresponsive to threat. Although

Social Justice was responsive to the threat manipulation, my findings are consistent with

the prediction that Social Justice leads to more inclusive social categorization at least

under certain conditions. I did not find support for either my first hypothesis, that Social

Order would be associated with social categorization, or my third hypothesis, that politics

would be associated with social categorization.

CHAPTER 3

GENERAL DISCUSSION

This study provides some preliminary evidence that morality can influence social categorization. Specifically, Social Justice is negatively associated with sensitivity under conditions of threat but not under control conditions, suggesting that Social Justice may promote more inclusive social categorization. Neither Social Order nor politics appear to be associated with sensitivity. These findings raise a number of important questions that merit further review. First, what is the theoretical difference between categorical sensitivity and categorical boundaries? Second, why might Social Justice be responsive to threat? And third, what might explain the null findings concerning Social Order and politics? Finally, limitations and future directions will be discussed.

Studies investigating categorical boundaries with a facial morphing task attempt to identify the morphed face that is perceived to be intermediate between the anchor categories. For example, if the categories are Black and White, then the intermediate face is the face that is perceived to be half Black and half White. Two conclusions can be drawn if, in this example, the perceived intermediate face is objectively more Black than White (i.e., a hypodescent effect). First, only a small proportion of Black features are required to belong in the perceived category for Black. Second, members of the category for Black are perceived to be more homogenous than members of the category for White. The theoretical interpretation of these two conclusions is that ingroup members are thought of more as individuals while outgroup members are thought of more as interchangeable categorical prototypes (see Ho et al., 2010, 2011), which is consistent with the social cognitive interpretation of the Cross-Race Effect (see Young et al., 2012).

In contrast, investigating sensitivity with a facial morphing task attempts to assess the inclusivity of the criterion people use to categorize the morphed faces. The inclusiveness of the criterion here is in reference to an objective criterion as determined by the facial morphing software. As depicted in figure 3, the probability distributions for the two anchor categories overlap more as sensitivity decreases. For example, if the categories are Black and White, then sensitivity indicates how inclusive the subjective criterion people use to categorize Black faces as Black and White faces as White are. The conclusion that can be drawn if sensitivity is high, meaning that people use more exclusive criterion in order to categorize the morphed faces, is that Black faces and White faces fit into neat prototypical categories that do not overlap. The conclusion that can be drawn if sensitivity is low, meaning that people use more inclusive criterion in order to categorize the morphed faces, is that Black faces and White faces do not fit into neat prototypical categories and instead overlap. In other words, sensitivity is measuring the use of social categories in general. High sensitivity indicates that both the ingroup and the outgroup are thought of categorically whereas low sensitivity indicates that both the ingroup and the outgroup are thought of in a more individuated sense, as if there is little to no ingroup or outgroup category distinction at all.

From this perspective, Social Justice decreases the use of social categories in general. When presented with a threat, Social Justice is associated with less of a distinction between the ingroup category and the outgroup category. Although the finding that Social Justice is responsive to threat is inconsistent with my original hypotheses, recent work by Carnes & Janoff-Bulman (in prep) suggests that group morality is most motivationally relevant when there is an adaptive challenge to the group because the

function of group moralities is to make social life possible in a group context (also see Eitam & Higgins, 2010). From this perspective, Social Justice is an individual difference that is elicited and accessible only when the context is some sort of adaptive challenge to the group; Social Justice is both dispositional and situational. In response to a group challenge, Social Justice may facilitate *cooperation* to achieve common goals while Social Order may facilitate *coordination* around common problems. Trust promotes social problem-solving (see Parks, Joireman, & Van Lange, 2013), and increases cooperation (Ishii & Kurzban, 2008). In the absence of trust, assurance through strict norms and hierarchy also promotes social problem-solving (see Yamagishi & Yamagishi, 1994), and increases coordination (Cartwright, Gillet, & Van Vugt, 2013). In preliminary support of this, Carnes & Janoff-Bulman (in prep) found that Social Order and Social Justice are weakly related to general trust under neutral conditions, but Social Justice becomes positively associated with trust and Social Order becomes negatively associated with trust when a challenge to the group is present.

This finding is consistent with the finding that Social Justice is negatively associated with sensitivity under threat. Both increased trust in people and decreased sensitivity to categorical distinctions fit with the theoretical concept of inclusive social categorization. Believing that other people are basically good and trustworthy while not putting outgroups in a distinct and separate category from the ingroup suggests greater inclusion of the outgroup in the ingroup. My interpretation of this finding is that inclusiveness is an approach-oriented solution to group challenges, and Social Justice is an approach based moral motive focused on the group. An important direction for future

work will be to replicate these effects together and test whether the effect of Social Justice on trust is mediated by sensitivity.

I did not find support for a relationship between Social Order and sensitivity. There are a number of reasons why this might be the case, none of which can truly be resolved without further research. One possibility is that a restricted range of Social Order values paired with a restricted range of d' values made it impossible to detect an effect. An interesting possibility if the null finding is real is that Social Order may shape the nature of social categories but not the propensity to categorize in general. If this is the case, it would be interesting to test the effect of Social Order on the categorical boundary version of the facial morphing task. Perhaps Social Order will be associated with a stronger hypodescent type effect, meaning that the outgroup is seen as more homogenous and the ingroup is seen as more individuated.

Considering that politics is strongly associated with both Social Order and Social Justice, it is plausible that the effect of politics on sensitivity was not found for the same reasons that Social Order did not have an effect on sensitivity. Nonetheless, Social Justice was associated with sensitivity and liberals strongly endorse Social Justice. It is still possible that why liberals and conservatives disagree has to do with more than what moral values they employ. These moral values, such as Social Justice, may have perceptual influences on social categorization; thus, part of why liberals and conservatives disagree on so many moral and political positions may involve the social categories people employ for who counts as an ingroup member or an outgroup member and the degree to which membership in the ingroup or the outgroup is even a relevant

question. At this point, however, this is still an unresolved hypothesis that requires empirical evidence to push any further.

The primary limitation of this work is that the facial morphing task with a randomized presentation order is a novel method, and the use of Signal Detection Theory to analyze this task is just as novel. Considering that the methodology and analyses are relatively new, it will be important for future work to replicate and extend these findings in order to establish that this method is both reliable and valid. Replication would also increase my confidence in the findings of this study. The first step will involve finalizing a method for the facial morphing task, thus demonstrating that the measure is reliable. The second step will involve testing the assumptions of Signal Detection Theory, thus demonstrating that the analyses are appropriate. The third step will involve testing the generalizability of this task with different samples, thus demonstrating that the measure is valid. Then this method can be applied to the remaining unresolved questions and compared to other methods.

The facial morphing task still needs modification. Signal Detection methods rely on difficulty so that there is a range of hit and false alarm rates to predict. If the task is either too difficult or too easy, there will be either a floor effect or a ceiling effect respectively. Although the pilot study for the facial morphing task had the same forced-choice response format, meaning that participants pressed one key if they thought the face was White and a different key if they thought the face was Black or Asian, the pilot also had a one second response window on each trial. The result of this was that the task was too difficult for participants and there was too much missing data. The current study removed the response window and required a response to each trial, which removed the

missing data problem but made the task too easy for participants. I am planning a follow-up study that will return the response window to each trial, but will change the response format to a go/no-go response format. In a go/no-go response format, participants would press a key if they thought the face was Black or Asian and would not press any key if they thought the face was White (counterbalanced between participants). This would still remove the missing data problem, but could conceivably strike a balance between being too difficult and being too easy.

Once the method for the facial morphing task has been finalized, the assumptions of Signal Detection Theory can be tested by using a rating task response format. The assumptions of Signal Detection Theory can only be tested by using a rating task response format and comparing those results to the results using a forced-choice format (Stanislaw & Todorov, 1999). Using this response format, participants would rate each trial on a six-point scale ranging from one (completely White) to six (completely Black/Asian). Obviously the response window on each trial would need to be removed in order for this to be possible. The primary assumptions of Signal Detection Theory are that both probability distributions are normally distributed, and that both probability distributions have the same standard deviation. If either assumption is violated, there are other nonparametric measures of sensitivity that can be calculated instead.

Once the assumptions of Signal Detection Theory have been tested, the generalizability of the facial morphing task can be tested. One advantage of designing this study on Qualtrics is that it can easily be implemented online using Amazon mechanical turk. Amazon mechanical turk can be used to reach a much broader sample of participants. For example, it would be feasible to access a broader age range, a broader

range of people of different racial or ethnic backgrounds, and a broader range of people across the political spectrum. One limitation of online samples, however, is that they will not be willing to complete four blocks of the facial morphing task. It will be necessary to reduce the number of trials, the number of blocks, or some combination of the two. Another way that the generalizability of the facial morphing task can be tested will be to use groups in a different domain than race. Two promising options are gender and age because these groups can be identified by their facial features.

I opened this paper with three broad questions. The present research raised more questions than answers in many ways. Moral diversity is important, as Social Order and Social Justice appear to predict sensitivity differently; yet, despite the strong negative correlation between Social Order and Social Justice, they simply are not two sides of the same coin. Morality, and specifically Social Justice, appears to influence social perception and social categorization at even a basic visual perception level; however, the nature of this influence seems to be conditional on factors such as threat, rather than being simply a main effect. Last, morality is clearly important to understanding politics and political disagreements, but the reasons why morality predicts things that politics does not are unclear. If nothing else, the relationships between morality and social categorization are ripe for future research.
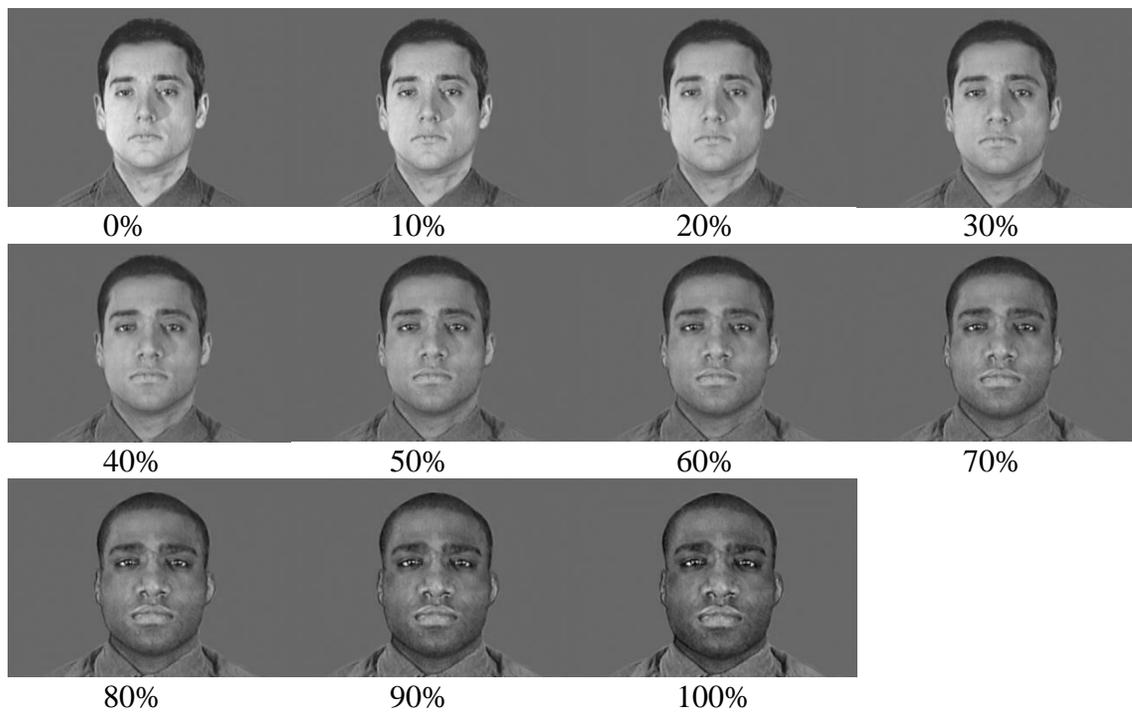
Figure 1

Model of Moral Motives

	Self **(personal)**	**Other** **(interpersonal)**	**Group** **(collective)**
Protect/ **Inhibition** **(proscriptive** **regulation)**	self-restraint/ moderation	not harming	social order/ communal solidarity
Provide/ **Activation** **(prescriptive** **regulation)**	industriousness	helping/ fairness	social justice/ communal responsibility

Figure 2

Facial Morph Example: White to Black Males

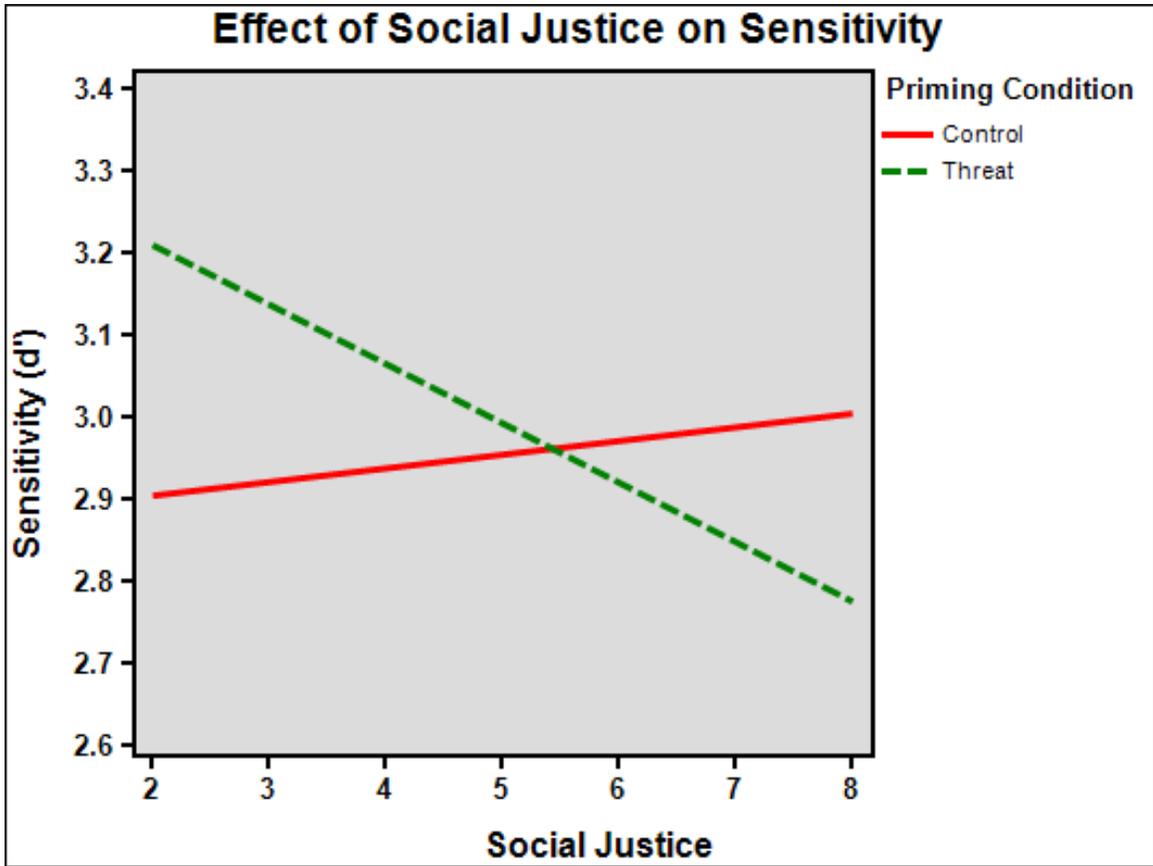| 0% | 10% | 20% | 30% |

| 40% | 50% | 60% | 70% |

| 80% | 90% | 100% |

Figure 3

Signal Detection Theory Diagram
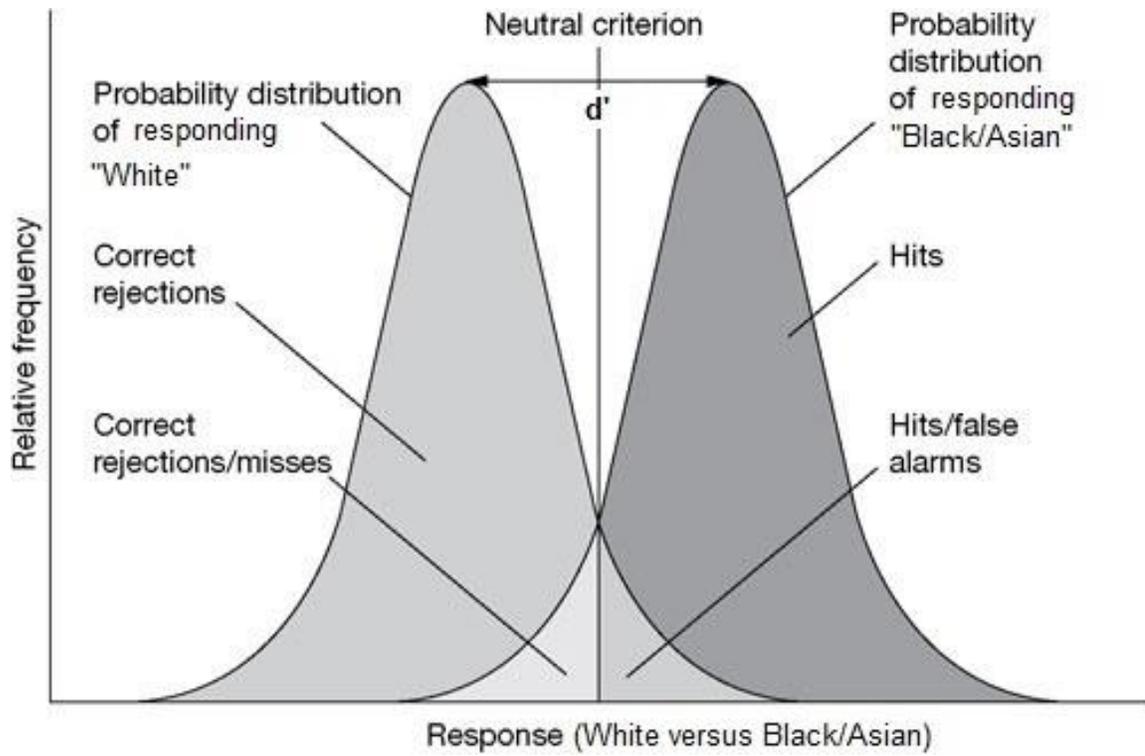
Figure 4

Effect of Social Justice on Sensitivity

A. GENERAL NOTES

1. HLM analysis:

I tested whether Social Justice, Social Order, Threat, and the relevant interactions moderated the overall likelihood of making outgroup categorizations. I created a conditional random-intercepts model containing only the intercept at level-1. Threat, Social Justice, Social Order, the Social Justice x Threat interaction, and the Social Order x Threat interaction were included at level-2 as predictors of the level-1 intercept parameter. Neither Social Order ($p = .969$) nor the Social Order x Threat interaction ($p = .313$) were significant. However, the analysis revealed a significant Social Justice x Threat interaction, $\gamma_{03} = .052$, $SE = .024$, $t(152) = 2.13$, $p = .034$. This interaction qualified the estimated effect of Social Justice and the Threat manipulation.

A simple slopes analysis of this interaction revealed that Social Justice did not significantly moderate the likelihood of making outgroup categorizations in the Control condition ($p = .296$), but was a marginally significant moderator of the likelihood of making outgroup categorizations in the Threat condition ($\gamma_{02} = .035$, $SE = .018$, $t(152) = 1.94$, $p = .055$). Specifically, Social Justice is actually estimated to increase the likelihood of making outgroup categorizations in the Threat condition but not in the Control condition. I conducted a model comparison test between the unconditional model and the conditional model in order to reinforce the importance of this effect. The conditional model explained significantly more variance in the data, $\chi^2(5) = 11.94$, p = .035.

2. Frequency analysis:

I tested whether Social Justice, Social Order, Threat, the Social Justice x Threat interaction, and the Social Order x Threat interaction predicted the total frequency of outgroup categorizations. Neither the main effect of Social Order ($p = .291$) nor the interaction between Social Order and Threat ($p = .291$) were significant. However, there was a significant interaction between Social Justice and Threat ($B = .650$, $SE = .316$, $t(152) = 2.05$, $p = .042$, $\eta_p^2 = .027$). This interaction qualified the non-significant main effects of Social Justice ($p = .498$) and Threat ($p = .095$).

A simple slopes analysis of this interaction revealed that Social Justice was not significantly associated with the frequency of outgroup categorizations in the Control condition ($p = .453$), but was a marginally significant predictor in the Threat condition ($B = .432$, $SE = .250$, $t(152) = 1.87$, $p = .064$, $\eta_p^2 = .022$). Specifically, Social Justice was positively associated with the frequency of outgroup categorizations in the Threat condition but not in the Control condition.

B. STUDY MATERIALS

Social Justice Scale

Directions: We are interested in the extent to which you agree or disagree with the statements below. When answering, we would like you to think about society in a general sense. Using the following scale, indicate the extent of your agreement by placing the number that best represents your response on the line preceding each statement. There are no correct or incorrect reactions, so please respond with how you really feel.

Strongly Disagree								**Strongly Agree**
1	2	3	4	5	6	7	8	9

_____ 1. The best societies try to ensure that the gap between the richest and the poorest is as small as possible.

_____ 2. It is an obligation, not just a matter of personal preference, to provide for groups worse off in society.

_____ 3. Increased economic equality is ultimately beneficial to everyone in society.

_____ 4. Giving to those at the bottom of society will discourage them from working harder. (Reverse)

_____ 5. It is important for those who are better off to help provide resources for the most vulnerable members of society.

_____ 6. Increasing economic equality in society will unfairly punish those at the top. (Reverse)

_____ 7. Giving to groups worse off in society makes those groups overly dependent on help. (Reverse)

_____ 8. In the healthiest societies, those at the top should feel responsible for improving the well-being of those at the bottom.

_____ 9. A just society must be committed to the sharing of public goods.

Social Order Scale

Directions: We are interested in the extent to which you agree or disagree with the statements below. When answering, we would like you to think about society in a general sense. Using the following scale, indicate the extent of your agreement by placing the number that best represents your response on the line preceding each statement. There are no correct or incorrect reactions, so please respond with how you really feel.

Strongly Disagree								**Strongly Agree**
1	2	3	4	5	6	7	8	9

_____ 1. It is harmful to society when people choose radically new lifestyles and ways of living.

_____ 2. In a good society, there must be very little deviation from behaviors viewed as appropriate.

_____ 3. Civil disobedience does not threaten society, but rather empowers it. (Reverse)

_____ 4. There are good reasons why traditional ways of living have lasted for so long, even if people don't fully understand those reasons.

_____ 5. The strongest societies are usually the least permissive societies.

_____ 6. People should be completely free to disregard societal norms and instead make their own choices about how to live their lives. (Reverse)

_____ 7. Nonconformists are a healthy element of society. (Reverse)

_____ 8. In a decent society, people should strictly attend to the values and practices of the larger community.

_____ 9. Severe punishment is called for when people don't obey society's rules and

standards.

Priming Manipulation

Directions: We would like for you to read and respond to a news article. You will have 3 minutes to complete this task. In your response, we would like for you to imagine what this news might mean for you and your future career prospects. Please write your response below the following article.

The non-partisan *Economic Policy Institute* called the labor market "grim" and said that over the previous year, unemployment among college graduates younger than 25 had averaged 19.4%, with an additional 24.1% in jobs for which they were overqualified. A Rutgers University study this spring of 944 graduates who received bachelor's degrees from 2007 to 2012 found that 51% were working full time. The rest were in graduate school, unemployed, working part time or no longer in the job market.

It seems that the Great Recession has hit recent college graduates much harder than other groups. Social scientists say these young adults are a lot like the Americans who came of age in the early 1930s, both in the economic upheaval they confront and in the attitudes toward failure, contentment and risk aversion that they are forming.

Trust in People Scale

Directions: We are interested in the extent to which you agree or disagree with the statements below. When answering, we would like you to think about ordinary members of society that you don't personally know. Using the following scale, indicate the extent of your agreement by placing the number that best represents your response on the line preceding each statement. There are no correct or incorrect reactions, so please respond with how you really feel.

Strongly Disagree   **Strongly Agree**

    1   2   3   4   5   6   7   8   9

1. People can usually be trusted to do what's right, even if no one is watching.

2. I think people cheat when they think they can get away with it. (Reverse)

3. Most people are inclined to help others.

4. A majority of people try to be fair to one another.

5. Most people just look out for themselves. (Reverse)

6. If you don't watch out for yourself, people will take advantage of you. (Reverse)

7. I am trusting.

8. Plenty of people don't care if they hurt others. (Reverse)

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