

Values, Goals, and Threats

Value Incompatibilities—More Than Dissimilarities—Predict Prejudices

by

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ABSTRACT

Existing work suggests that intergroup negativity is caused by dissimilarities of values between groups. In contrast, I propose that incompatible values--regardless of whether they are similar or dissimilar--cause intergroup negativities. Because values act as cues to tangible goals and interests, groups' values suggest desired outcomes that may conflict with our own (i.e., incompatible values). The current study conceptually and empirically disentangles value-dissimilarity and value-incompatibility, which were confounded in previous research. Results indicated that intergroup negativities were strongly predicted by value-incompatibility, and only weakly and inconsistently predicted by value-dissimilarity. I further predicted that groups' values cue specific threats and opportunities to perceivers and that, in reaction to these inferred affordances, people will experience threat-relevant, specific emotional reactions (e.g., anger, disgust); however, results did not support this prediction. I also predicted that, because the inferred threats that groups pose to one another are not always symmetric, the negativities between groups may sometimes be asymmetric (i.e., Group A feels negatively toward Group B, but Group B feels neutral or positively toward Group A). This prediction received strong support. In sum, reframing our understanding of values as cues to conflicts-of-interest between groups provides principles for understanding intergroup prejudices in more nuanced ways.

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Values, Goals, and Threat:

Value Incompatibilities—More Than Dissimilarities—Predict Prejudices

In December 2014, numerous flights to Israel were delayed when ultra-Orthodox Jewish male passengers refused to sit next to unrelated female passengers, asking that the women relocate to other seats. More recently, a protest in front of the US Supreme Court divided a family, with a son protesting in favor of same-sex marriage while his father protested in opposition. From the Berlin Wall to the Western Wall, from MLK marching in DC to the KKK marching in Skokie, everything from peaceful protests to international wars have been started in the name of “values.”

Existing empirical work reveals a rather simple relationship between values and intergroup prejudices, suggesting that intergroup antagonism is caused by perceived dissimilarities in values between groups. For example, people rate targets with inferred dissimilar values more negatively than those with similar values (e.g., Rokeach & Mezei, 1966; Cottrell & Neuberg, 2005; Biernat, Vescio, & Theno, 1996; Chambers, Schlenker, & Collisson, 2013; Brandt, Reyna, Chambers, Crawford, & Wetherell, 2014). Whereas previous research suggests that intergroup antagonism emerges when members of one group believe that members of another group have *dissimilar* values, I propose instead that it emerges when members of one group believe that members of another group hold values that are potentially *incompatible* with their own—that is, values that imply conflict over goals and interests.¹

¹ Many authors use the term “incongruent” to reference the degree of dissimilarity between individuals’ or groups’ beliefs or values (e.g., Rokeach & Mezei, 1966; Biernat, Vescio, & Theno, 1996). While “incongruent” is semantically similar to “incompatible”, these authors defined and generally operationalized “incongruent” as “dissimilar.”

Specifically, group values (or morals, or other standards of behavior) shape group actions (Schwartz, 1996), and these actions potentially create conflicts of interest with other groups. For example, some Orthodox Jews value gender segregation among unrelated individuals, leading them to avoid sitting next to unrelated women on a plane, which can conflict with female passengers' desire to remain in their preferred seats. A group's values can thus be used as a cue to their potential behaviors and, therefore, allow inferences that the group may hinder one's own desired behaviors. In this way, because negative prejudices and discrimination are likely to result from actual conflicts of interest between groups (Sherif, 1966; Jackson, 2013), groups perceived to hold incompatible values may elicit negative prejudices and discrimination.

The existing research linking values and intergroup antagonism has focused on cross-group value-pairings that confound dissimilarity and incompatibility. But, similar values across groups are sometimes incompatible and dissimilar values are sometimes compatible (i.e., complementary with, potentially facilitative of, and/or simply not hindering each other's goals). For example, if Group A and Group B both value power (i.e., have similar values), they each threaten the others' interests, given that power is relative and, therefore, power gained by one is lost by the other. Consider, alternatively, that Group A values achievement and Group B values humility (i.e., they hold dissimilar values); the achievement-valuing group would be unconcerned about the humility-valuing group attempting to "steal the spotlight", and the humility-valuing group would be equally unconcerned about the achievement-valuing group attempting to drag them into the spotlight. In this situation, each group's likely behaviors do not threaten the goals of the other group, thus creating compatibility (i.e., no conflict of interest).

In the current paper, I aim to conceptually and empirically disentangle cross-group value-dissimilarity and value-incompatibility, thereby enabling a more nuanced understanding of the role of values in creating intergroup prejudices (i.e., emotional reactions toward groups and their members). I make the following general predictions: (1) Across groups, some pairings of similar values are incompatible; one would expect this value-incompatibility to elicit negative prejudices between the groups. (2) Across groups, some pairings of dissimilar values are compatible; one would expect this value-compatibility to elicit neutral or positive prejudices between the groups. (3) Whereas one group may see a value-pairing as incompatible, the other group may not; one would thus expect these pairings to lead to asymmetries in prejudices, (e.g., Group A feels positively toward Group B, but Group B feels negatively toward Group A). And (4) cross-group value-pairs are not all compatible or incompatible in the same way and with the same implications; because different pairings of values constitute different threats and opportunities to each group, they are likely to elicit qualitatively distinct emotional reactions.

In sum, I propose that we change the values-prejudice conceptualization: Rather than focusing on the idea that intergroup negativity can emerge from perceived value-dissimilarities between groups, we would benefit by instead focusing on the idea that intergroup negativity can emerge from perceived conflicts of interest between groups, as cued by value-incompatibility. In all, my framework generates novel, nuanced predictions about the roles that values and other behavioral standards play in shaping intergroup relations, thereby extending the field's current understanding of values-based prejudices.

Values and Intergroup Negativity: Previous Findings

Decades of research demonstrate that, across groups, inferred dissimilarities in values predict increased intergroup hostility (e.g., Rokeach, 1960; Rokeach & Mezei, 1966; Biernat, Vescio, Theno, & Crandall, 1996; Stephan, Ybarra, & Morrison, 2007; Garcia-Retamero, Muller, & Rousseau, 2012). Rokeach's (1960) formative work proposed that we feel negatively toward beliefs (i.e., attitudes, values), and people who exhibit such beliefs, in proportion to their degree of incongruence (i.e., relative dissimilarity and/or unimportance) to our own beliefs. Indeed, both the salience of one's own group's values and the inferred dissimilarity of another groups' values matter when predicting intergroup negativity: both prejudices and intergroup discrimination increase as the inferred dissimilarity of an outgroup's values increases, and this relationship becomes stronger as the salience of the ingroup's values increases (i.e., when the ingroup's values are more infused into everyday public activities) (Neuberg et al., 2014).

An extension of Rokeach's (1960) theorizing was that racial prejudice—per se—does not exist. Rather, people use race as a cue to others' beliefs and infer that racial outgroup members have incongruent beliefs, thus resulting in what appear to be racial prejudices. Much work supports the predictions that (1) target group membership is used as a cue to value-dissimilarity and (2) above and beyond target group membership, targets inferred to have dissimilar values elicit greater negativity than those inferred to have similar values; such effects have been demonstrated for a wide variety of target groups (e.g., racial, political, religious) and hold even when rating ingroup members (e.g., Biernat et al., 1996a; Cottrell & Neuberg, 2005; Chambers et al., 2013; Rokeach & Mezei, 1966; Brandt et al., 2014; Wetherell, Brandt, & Reyna, 2013). In addition,

individuals' expectations of negativity or threat directed toward their ingroup by outgroups also increases as the inferred dissimilarity of the outgroups' values increases (Schwartz, Struch, & Bilsky, 1990; Garcia-Retamero et al., 2012).

My approach differs from those above in that I argue that dissimilar values between groups will not always result in intergroup negativity, nor will similar values always result in intergroup positivity. In the current manuscript, for the sake of clarity and simplicity, I use the term “values” as an encompassing term meaning “standards of behavior” (i.e., beliefs about desirable ways of behaving); such terminology generally reflects existing definitions of related constructs (e.g., “values”, “morals”) as standards of behavior that regulate and guide one’s behavior (with morality focusing more clearly on interpersonal behavior) (see Schwartz, 1994 for a definition of values; see Killen & Smetana, 2013, and Haidt & Kesebir, 2010, for definitions of morality/moral systems). Overall, I argue that inferences of other groups’ values—sometimes dissimilar, but sometimes similar—drive prejudices because values act as cues to people’s goals and potential behaviors and, therefore, to potential conflicts of interest. For example, individuals who value progressive social roles (e.g., those in favor of women working outside the home) may infer that those who value traditional social roles (e.g., in opposition to women working outside the home) will attempt to impose undesirable constraints on women’s behavior. When one person’s (or group’s) desired actions or outcomes hinder another person’s (or group’s) desired actions or outcomes, I refer to this as a “conflict of interest.”

My approach also differs from existing work in that I argue that cross-group value-incompatibility represents a tangible threat rather than a “symbolic threat”. Some

existing work differentiates between intergroup negativity caused by realistic, tangible potential conflicts (e.g., threats to a group's resources, power, welfare) and symbolic conflicts (e.g., threats to a group's belief system, morality, worldview) (Stephan et al., 2007; Jackson, 2013). I assert that apparent "symbolic" conflicts are, at their core, realistic. To the extent that values act as a semi-reliable cue to others' goals and potential behaviors, values that imply conflicting goals and behaviors represent a realistic—not symbolic—conflict. For example, if one person values egalitarianism and another values meritocracy, although this reflects a difference in their abstract valuations of "fairness", it also suggests differences in their likelihood to support affirmative action policies; those valuing meritocracy may view affirmative action as limiting their personal opportunities for advancement, illustrating that seemingly "abstract" values translate into realistic conflicts. To explicate how cross-group values act as cues to potential conflicts of interest, I briefly discuss the role of threat-detection and threat-management systems in human social life, followed by a demonstration of how values can act as cues to potential threats and opportunities.

Values as Cues to Threats and Opportunities

The ecological approach to perception argues that many of the ways we perceive and interact with our environments—including our social environments—serve adaptive functions, maximizing reproductive success for those organisms who most successfully navigate and manage the affordances (i.e., threats and opportunities) present in their environments (e.g., McArthur & Baron, 1983; Neuberg & Cottrell, 2008; Neuberg, Kenrick, & Schaller, 2011). In general, living in interdependent social groups increases reproductive fitness by allowing individuals to accomplish goals that would be

impossible to accomplish alone. However, living in close proximity to other humans also exposes one to great risks, including physical violence, contagious disease, and loss of resources (Neuberg & Cottrell, 2008; Neuberg et al., 2011).

Because of the potentially high costs (e.g., death, failure to pass along one's genes) of failing to notice a threat or opportunity, humans became highly adept at identifying features of other humans that indicate they may present such affordances (Neuberg, Smith, & Asher, 2000; Neuberg & Cottrell, 2008). Often, the most direct cues to others' affordances are their behaviors (e.g., witnessing someone stealing). However, given the size of modern human social groups, we often have incomplete information regarding others' behaviors. Therefore, in order to infer others' likely behaviors toward us, we must often use indirect indications of their likely behaviors (i.e., cues). Some cues to the potential threats and opportunities others pose to us are based on appearance. For example, masculine facial features can serve as a cue to testosterone levels and, therefore, aggressive tendencies (Lefevre, Lewis, Perrett, & Penke, 2013). Importantly, such cues are imperfect; not all men with very masculine features will act aggressively. Nonetheless, it is more likely that, all else equal, a man with strongly masculine features will act more aggressively than a man with less masculine features, and some information about a target's probable affordances is better than no information.

I suggest that people's values can also act as cues to their affordances, given that values provide information about people's likely behaviors. For example, imagine that you see two people, each wearing a t-shirt displaying one of the images below (Figures 1 and 2). What might you assume about each of these people? If you're like me, you might assume that the wearer of Figure 1 values peace and tolerance, whereas the wearer of

Figure 2 values dominance and aggression. You might extend this logic to make assumptions about their likely behaviors, conjecturing that #1 is more likely to donate money to the World Peace Organization and #2 is more likely to donate money to the National Rifle Association, that #1 is more likely to participate in a sit-in and #2 is more likely to participate in a riot, and that #1 is more likely to harbor refugees and #2 is more likely to guard against them. People's espoused or implied values give us (imperfect) information about their motivations, goals, and behaviors, and, therefore, act as cues to the potential threats and opportunities they pose to us.

Given that others' values cue the behaviors they may direct toward us, values also act as cues to potential conflicts of interest between groups. Some conflicts of interest arise when two groups have dissimilar goals, as cued by their dissimilar values. For example, if Group A values equality, we might presume that Group A's members would vote to allow same-sex marriage, whereas if Group B values traditional gender roles, we might presume that Group B's members would vote to prohibit same-sex marriage. In this instance, dissimilar values represent opposing, mutually exclusive goals. In contrast, a conflict of interest can also arise when two groups have the same goal, as cued by their similar values. For example, if Fraternity A and Fraternity B both value status and compete to be the most popular fraternity, any status gained by Fraternity A is lost, at least relatively, by Fraternity B. Although Fraternities A and B have the same value, their desired actions and outcomes hinder each other. In this way, intergroup negativity does not result from value dissimilarity, per se, but rather from conflicts of interest, which can be cued by dissimilar or similar values.

If values act as cues to peoples' goals and behaviors, understanding the content of peoples' values is necessary to know whether these values are compatible or incompatible and derive predictions about potential conflicts of interest. Theories concerning the function and content of values, morals, and motivations are diverse, although they also produce many overlapping predictions. Here, for the sake of brevity, I merely cite those perspectives that make clear predictions concerning the content of people's values (i.e., standards of behavior); this is by no means an exhaustive review of such literature. And, the predictions I later derive are applicable to all standards of behavior, not only those represented by the perspectives cited here.

Many standards of behavior stem from basic human needs and desires, reflecting implicit, fundamental motives that aid in human survival and reproductive success (e.g., gain status, find and retain mates) and/or basic tenets that enhance the smoothness and efficiency of human coalitional living (e.g., do not harm one's ingroup) (Kenrick, Griskevicius, Neuberg, & Schaller, 2010; Kenrick, Neuberg, Griskevicius, Schaller, & Becker, 2010; Neuberg et al., 2000). Such implicit norms often evolve into more formalized systems of morals and values, many of which focus on harm-based conceptions of morality (e.g., Gray, Young, & Waytz, 2012). More domain-specific perspectives of values and moral systems include work on the "three ethics" (e.g., Shweder, Much, Mahapatra, & Park, 1997), Moral Foundations Theory (e.g., Haidt & Graham, 2007; Graham, et al., 2011; Iyer, Koleva, Graham, Ditto, & Haidt, 2012), the Model of Moral Motives (e.g., Janoff-Bulman & Carnes, 2013), morality as relationship regulation (e.g., Rai & Fiske, 2011; Rai & Fiske, 2012), and Schwartz's (1994; 2012) theory of basic values (e.g., Schwartz et al., 2012). Once we understand the content of a

group's values, we can predict which values are likely compatible or incompatible, and the specific emotional, prejudiced reactions to such potential conflicts.

Value Incompatibilities and Potential Conflicts of Interest

Assumptions

A few assumptions underlie the following predictions. First, any conflict of interest requires that the involved parties be seen as able to influence one another's goals, outcomes, or behaviors. If one group has values that imply a potential conflict of interest with another group, but this group is seen as unable to hinder, constrain, or provide opportunities to the other (e.g., due to physical distance or a lack of power), there will be no perceived conflict.

Second, values are conceptualized at levels ranging from abstract, with few specific behaviors implied (e.g., comply with social roles) to more concrete, with more specific behaviors implied (e.g., protect the self from contagious disease). As cues to potential conflicts of interest, values are most useful at the level closest to predicting specific behaviors; as such, many standards of behavior that are generally conceptualized as attitudes (e.g., people should not have abortions) will be more useful for predicting conflicts of interest than the broader associated values (e.g., people should value life). However, in the absence of more specific attitude information, broad values can still be used to infer potential conflicts of interest.

Prediction I: Similar Values are not Always Compatible

Across groups, if similar values suggest goals, desired outcomes, or behaviors that would hinder (i.e., conflict with) each other, this will result in a conflict of interest. Goals related to obtaining limited resources (e.g., material goods, status and power, desirable

mates) tend to be similar but incompatible because, if both parties want the same limited resource, they generally cannot both have it. Again, for example, if Group A and Group B both value power, their members are motivated to dominate each other and control each other's outcomes, resulting in a conflict of interest. However, the actual outcome of such a conflict may vary based on other factors (e.g., if the groups are equal in power, they may reach a stalemate; if one group is more powerful than the other, the high-power group may successfully aggress against the low-power group). Regardless of such factors, each party potentially hinders the other's goals, resulting in a conflict of interest.

Prediction II: Dissimilar Values are not Always Incompatible

Across groups, dissimilar values are often assumed to lead to negative prejudices. From my perspective, however, dissimilar values that suggest goals, desired outcomes, or behaviors that facilitate or complement each other create no conflict of interest, and thus no negative prejudice. For example, if Group A values tolerance and open-mindedness, its members are likely motivated to learn about and accept others' points of view. If Group B values insularity (i.e., focusing on one's own community, avoiding contact with those outside the community), its members are motivated to avoid learning about others' points of view. Although these groups' values are dissimilar, they do not suggest a conflict of interest. Group A, being motivated to accept Group B's desire for solitude, would likely leave Group B alone. Group B, being motivated to avoid Group A, would leave Group A alone. In this instance, neither party would hinder each other's goals, resulting in no conflict of interest.

Prediction III: Conflicts of Interest are Sometimes Asymmetric

In the example where Group A and B both value power, each group would view the other as presenting the same threat (i.e., potential violence and/or loss of power); this represents a *symmetric* conflict. However, there can also be *asymmetric* conflicts of interest between groups. When two groups each view the other as presenting a potential threat, but the inferred threats differ, I refer to this as a *two-way asymmetric* conflict. For example, if Group A values self-expression and Group B values obedience, Group A may see Group B as a threat to individual liberty, but Group B may see Group A as a threat to effective and efficient group coordination and functioning. So, in a two-way asymmetric conflict, each group views the other as a threat, but the threats each infers from the other differ. Contrast this with a *one-way asymmetric* conflict, where Group A views Group B as a threat, but Group B does *not* view Group A as a threat. For example, if Group A values pacifism, its members are motivated to avoid violence; if Group B values power, its members are motivated to dominate and control others. In this case, Group A may see Group B as a threat to individual liberty; Group A would see Group B's values as incompatible with their own. In contrast, Group B may see Group A as presenting no threat, and perhaps even as presenting opportunities for dominance; thus, Group B would see Group A's values as compatible with their own.

Asymmetric conflicts matter in that, though both groups may feel negatively toward one another, the specific emotions they feel toward one another may differ (e.g., Group A feels anger toward Group B, but Group B feels fear toward Group A). If their negative feelings toward one another differ, defusing the negativities between them may require the use of two differing strategies or interventions. So, whereas a traditional view

espouses that dissimilar values between groups lead to symmetrical intergroup negativity, my “conflict of interest” view suggests that certain value-dissimilarities (or similarities) between groups lead to specific (and not necessarily symmetrical) emotional reactions by each party, resulting in a wide variety of predictable and functional intergroup emotions (see Hypothesis IV).

Prediction IV: Specific Value-Incompatibilities Predict Specific Prejudices

Unlike previous work suggesting that inferred dissimilarities in values elicit general intergroup negativity, I suggest that values cue specific threats and opportunities, which elicit specific emotional reactions. Emotions are suites of coordinated cognitive and physiological processes that motivate organisms and direct their energy toward certain behaviors; they are functionally-specific in that they allow for the effective perception of threats and opportunities in one’s environment, while also guiding relevant behavioral responses to such affordances (Al-Shawaf, Conroy-Beam, Asao, & Buss, 2015; Cosmides & Tooby, 2000). There are many discrete, basic emotions (e.g., anger, fear, disgust) that contribute to prejudices, each of which is elicited by certain types of events (Ekman, 1999; Neuberg et al., 2011; Cottrell & Neuberg, 2005; Neuberg et al., 2000). Here I briefly discuss those emotions that seem most relevant to anticipated intergroup relations. Certain emotions, such as shame, are more applicable to within-group relations (Rozin, Lowery, Imada, & Haidt, 1999) and, therefore, are outside the scope of the current project.

Anger. Anger is elicited by inferred threats to one’s goals and interests; when actors evaluate situations as not reflecting their interests or meeting their needs, given their bargaining power, they feel angry (Sell, Cosmides, & Tooby, 2014). Given that I am

conceptualizing conflicts of interest as the hindering of one another's goals, and that obstacles to one's goals elicit anger, anger will be elicited in all conflicts of interest. So, in symmetric conflicts of interest and two-way asymmetric conflicts of interest, both groups will feel anger; in one-way asymmetric conflicts of interest, only the group whose goals are being hindered will feel anger.

Fear. Fear is elicited by inferred threats to one's security. Most directly, fear is about defending the self (and those in whom we are invested) from physical danger (Ohman & Mineka, 2001). However, fear may also be elicited by potential threats to one's future well-being (e.g., loss of one's home, loss of trust in one's social group) (Cottrell & Neuberg, 2005). Fear is sometimes distinguished from anxiety, with fear posited as the response to a clear, immediate, and certain threat, and anxiety as the response to an ambiguous, potential, or uncertain threat (Sylvers, Lilienfeld, & LaPrairie, 2011). Given the focus of the current project on anticipated threats, I use the term "fear" to encompass the concepts of both fear and anxiety. Fear will be elicited by values that imply potential physical harm and/or loss of stability and predictability in everyday life. For example, to those who value obedience, others who value self-expression present a potential threat to the predictable functioning of the social group and are, therefore, a threat to their group's sense of security (Neuberg et al., 2000).

Disgust. Disgust is elicited by a perceived threat to one's physical health via pathogenic contamination or ingestion of toxins (Curtis, de Barra, & Aunger, 2011; Chapman, Kim, Susskind, & Anderson, 2009). Disgust can also be elicited by moral violations—social acts inferred to be offensive, contaminating, and/or contagious (e.g., cheating) (Rozin et al., 1999; Rozin, Haidt, & McCauley, 2008). Disgust will be elicited

by values that imply a lack of concern with cleanliness/purity and/or openness to experience, given that exploration can expose one to novel pathogens. Disgust may also be elicited by values that suggest potential moral contamination (i.e., values seen as anti-social and easily transmittable). When contact with a potentially contaminating agent becomes unavoidable, groups who value purity may react by attempting to contain the threatening group (e.g., restricting their movement) or to force their participation in hygiene behaviors (Curtis et al., 2011); in both of these cases, the group concerned with purity restricts the liberties of the “disgusting” group.

Positive Emotions: Enthusiasm and Comfort. Theorizing about the functionality of discrete, positive emotions has received much less attention than discrete, negative emotions (Fredrickson, 1998; Shiota et al., 2014; Shiota et al., in press). However, when one group is inferred to offer special opportunities to the other, I believe this will elicit interest/enthusiasm (i.e., curiosity, wonder, excitement). Interest/enthusiasm is experienced when a situation is appraised as safe, but requiring attention or effort; interest motivates individuals to attend to their situation, to explore in order to learn new information, and to take risks (Fredrickson, 1998; Shiota et al., 2014). Enthusiasm will be elicited by values that imply highly desirable and attainable opportunities, rather than threats, and will motivate individuals to explore the source of the opportunity.

However, when one group is inferred to *not* present threats to the other, but to also not present highly desirable, attainable opportunities, I predict this will elicit the positive emotion of comfort (if any emotion is elicited at all). Comfort is not a strong emotion, but is still positively valenced. Most specifically, I predict that, when faced with

neither threats nor opportunities, people will feel fairly neutral (i.e., neither negative nor positive emotions will be elicited). However, given the operating assumption that others may pose highly costly threats to us, when we come to the conclusion that others do not appear to pose threats, individuals may report feeling comforted or at ease. To summarize, when one group perceives another as presenting potential opportunities, regardless of whether the other group also presents threats, this may elicit mild enthusiasm; when one group perceives another as presenting a lack of threat(s), regardless of whether the group also presents opportunities, this may elicit comfort.

Mixed Emotions. I further suggest that a group's values may elicit a mix of emotions. For example, to a group that values openness to experience, a group that values purity may present a potential threat to individual liberty, but may also present the potential opportunity of access to clean, disease-free mates. This suggestion that a single value may elicit both specific negative and positive emotions is an especially important departure from traditional theorizing, which suggests that dissimilar values across groups lead only to intergroup negativity. Indeed, conflicting goals (e.g., Group A wanting to both pursue opportunities presented by Group B while avoiding threats presented by Group B) are a potent source of emotional ambivalence (Berrios, Totterdell, & Kellett, 2014). Furthermore, my perspective predicts that, when faced with conflicts of interest, groups may also experience negative/negative ambivalences (e.g., experiencing both disgust and anger). My conceptualization of values as cues to perceived incompatibilities and conflicts of interest that elicit specific emotional reactions allows for more nuanced predictions concerning prejudices than does the traditional view of dissimilar values eliciting general negativity.

The Current Study

The current study seeks to expand our understanding of the values-prejudice relationship by testing, through three hypotheses, whether cross-group value-dissimilarity or value-incompatibility drives intergroup negativities.

Hypothesis 1: Across groups, values that are incompatible (regardless of whether they are similar or dissimilar) will elicit negative prejudices, whereas values that are compatible (regardless of whether they are similar or dissimilar) will not elicit negative prejudices (see Figure 3).

Hypothesis 2: Different forms of value (in)compatibilities will elicit qualitatively distinct emotional reactions, rather than simple general negativity; the emotional reactions elicited will reflect functional responses to the particular threats (or opportunities) cued by specific values. For example, to a group that values Purity (i.e., upholding standards of decency and sanctity), a group that values Hedonism (i.e., enjoying life and indulging themselves) may be seen as presenting a threat of contamination, which would most strongly elicit an emotional reaction of disgust (see Figure 4). Or, to a group that values Universalism (i.e., protecting the welfare of all people), a group that values Power (i.e., controlling other people) may be seen as presenting a threat of aggression or violence, which would most strongly elicit an emotional reaction of fear.

Hypothesis 3: Whereas one group may see a value-pairing as incompatible, the other group may not; one would thus expect such pairings to lead to asymmetries in prejudices (i.e., Group A feels negatively toward Group B, but Group B feels positively toward Group A). For example, if Group A values Purity and Group B values Hedonism,

Group A may see Group B as behaving in ways that may spread disease (thus creating incompatibility and eliciting negativity), but Group B may actually see Group A as providing opportunities for clean resources (thus creating compatibility, at least from Group B's perspective, and eliciting positivity).

To test these three hypotheses, a study design must allow one to (1) classify the values of target groups as similar or dissimilar to a participants' values (controlling for compatibility) and as compatible or incompatible to a participants' values (controlling for similarity) (i.e., a 2 X 2 design), (2) include target-participant value-pairs hypothesized to elicit a range of specific emotional reactions (e.g., anger, fear, disgust, enthusiasm), and (3) include target-participant value-pairs hypothesized to elicit symmetrical versus asymmetrical prejudices.

As a first step, I selected eight values for which certain pairings of these values would meet the above criteria. Seven of these were pulled most directly from Schwartz's Theory of Basic Values (e.g., Schwartz, 1994; Schwartz et al., 2012) and one from Haidt's Moral Foundations Theory (e.g., Haidt & Kesebir, 2010; Graham et al., 2011), although values of similar content are referenced across a diverse range of theories and frameworks regarding basic values, morals, and human motivations (e.g., Janoff-Bulman & Carnes, 2013; Kenrick et al., 2010b; Rai & Fiske, 2011). The eight values of interest are:

- (1) Purity (i.e., the belief that it is important to uphold standards of decency and sanctity and to avoid doing anything "unnatural")
- (2) Hedonism (i.e., the belief that it is important to enjoy life and indulge oneself)

- (3) Self-direction (i.e., the belief that it is important to think creatively and act independently)
- (4) Achievement (i.e., the belief that it is important to show one's abilities and gain admiration for accomplishments)
- (5) Power (i.e., the belief that it is important to control people and resources)
- (6) Obedience (i.e., the belief that it is important to always follow the rules and avoid doing anything people would say is wrong; referred to as "Conformity" by Schwartz et al.)
- (7) Humility (i.e., the belief that it is important to be modest and satisfied with what one has)
- (8) Universalism (i.e., the belief that it is important to protect the welfare of all people and to tolerate and understand others).

As seen in Table 1, configurations of these eight values were able to fill each of the four Similarity X Compatibility cells of interest: similar/compatible, similar/incompatible, dissimilar/compatible, dissimilar/incompatible. Furthermore, at least one of these value-pairings is predicted to elicit each of the emotional reactions of interest (anger, disgust, fear, comfort, enthusiasm) and to elicit asymmetrical prejudices (e.g., Universalism/Power versus Power/Universalism).

To test my hypotheses, I conducted a single study in which participants provided their emotional reactions toward eight target groups, each defined by one of the values above. Then, participants reported the values of a social group with which they personally strongly identify. I then classified for each participant the target groups that,

for them, held similar versus dissimilar values, and compatible versus incompatible values, resulting in a 2 (Value-Similarity: similar versus dissimilar target values) x 2 (Value-Compatibility: compatible versus incompatible target values) within-subjects design. This classification procedure enabled me to test my hypotheses regarding the effects of value-dissimilarity versus incompatibility on intergroup negativities (Hypothesis 1), the specific emotional reactions elicited by the target groups seen as posing different forms of values threats (Hypothesis 2), and the possibilities of (a)symmetries in values-based prejudices (Hypothesis 3). Support for these predictions would greatly enhance our understanding of values-based prejudices by extending and refining existing theories and perspectives.

Methods

Participants.

Three-hundred and fifteen residents of the United States from Amazon's Mechanical Turk website were recruited for an "Attitudes Survey" on perceptions of social groups and participated for a small monetary payment (90 cents for a 20-25 minute study). Conservatively estimating a small effect size (Cohen's $f = 0.10$), with a repeated-measures 2 (Value-Similarity) x 2 (Value-Compatibility) design, and an anticipated moderate correlation between the repeated measures outcomes ($r = .40$), a sample size of 165 would be required to detect effects at $p < .05$ with Power = .80. However, as is described later, I anticipated that the data from only a limited amount of participants would be included in the within-participant analyses, given that many participants may not have a value-pairing that falls into each of the four cells. As such, I significantly raised my targeted sample size.

Of these 315 participants, 85 were excluded from the data set prior to analyses—9 who failed to follow instructions (e.g., participants were instructed to select an important group identity, but some later reported in open-ended responses that the identity they selected was not important to them), 27 who took less than 3 minutes to complete the survey (median and modal time to take the survey were 16 minutes), and 49 participants who provided no data regarding their own group’s values, making it impossible to classify their values as similar/dissimilar to or compatible/incompatible with the target groups’ values.

After these exclusions, potentially usable data from 230 participants were retained (95 males, 129 females, 6 missing demographic information; mean age = 36.76 years, SD = 12.47; 70.9% White or European American, 7.8% Black or African-American, 7.8% Asian or Asian-American, 4.3% Latino/a or Hispanic, 0.4% Native American, 0.4% Middle Eastern, and 4.8% Multiracial).

Procedure, materials, and measures.

First, participants rated their specific emotional reactions toward eight target groups (presented in a random order), each represented by descriptions reflecting one of eight values: Purity, Hedonism, Universalism, Power, Self-Direction, Obedience, Achievement, and Humility. Descriptions of the groups’ values were modified items from various Schwartz values questionnaires (e.g., the European Social Survey, Bilsky, Janik, & Schwartz, 2011; the Portrait Values Questionnaire 5X, Schwartz et al., 2012) and the Moral Foundations Questionnaire (Graham et al., 2011). For example, the group representing Hedonism was described as “Enjoying life and indulging themselves are

important to members of this group. It is important to them that they have a good time.” See Appendix A for the full set of descriptions.

For each target group, participants rated on 9-point scales how angry/mad, afraid/anxious, disgusted/sickened, comfortable/at ease, and enthusiastic/interested they felt toward the group (2 items for each of 5 emotion constructs); e.g., “How *angry* would you feel toward a group like this?” with a response scale of 1 = *not at all* to 9 = *extremely*. These are the emotional reactions about which I have specific predictions (see Table 1). For each target group, a composite score was computed for each of the five emotion constructs as the two items assessing each construct were significantly positively correlated with one another at $p < .001$: Anger (across the eight target groups, r s ranged from .77 to .86), Fear (r s ranged from .50 to .72), Disgust (r s ranged from .74 to .91), Comfort (r s ranged from .77 to .88), and Enthusiasm (r s ranged from .78 to .87). Participants also rated how generally positive (1 item) and negative (1 item) they felt toward each group (allowing for a test of a less differentiated approach) as well as how much they respect/admire (2 items) each group (to provide some additional positive emotions and to help distract from the emotions of primary interest). For each target group, the general negativity and general positivity (reverse-coded) items were averaged into a General Negativity composite score (across the eight target groups, r s ranged from .31 to .66, all significant at $p < .001$). For each target group, the respect and admiration items were also averaged into a Respect composite score (across the eight target groups, r s ranged from .70 to .90, all significant at $p < .001$). The 14 emotional reaction items were always presented with “How much would you *like* a group like this?” anchored as the first item, followed by the other 13 items in random order; by first reporting positive

feelings toward each target group, I felt that participants would feel greater freedom to subsequently report negative feelings.

Furthermore, across the eight target groups, the four negative emotion composites (General Negativity, Anger, Disgust, and Fear) were strongly related to one another (Cronbach's alphas ranged from .82 to .93) and the three positive emotion composites (Comfort, Enthusiasm, and Respect) were strongly related to one another (Cronbach's alphas ranged from .89 to .96). As such, composite scores were computed for Overall Negativity (i.e., an average of the General Negativity, Anger, Disgust, and Fear composite scores) and Overall Positivity (i.e., an average of the Comfort, Enthusiasm, and Respect composite scores). With this array of outcome measures, analyses can examine effects on Overall Negativity, Overall Positivity, and/or the differentiated emotions (General Negativity, Anger, Disgust, Fear, Comfort, Enthusiasm, Respect).

After rating emotional reactions toward each of the eight target groups, participants rank ordered these groups based on how much each elicits each of the seven emotions. For example, "Please rank the groups in terms of how *angry* you feel toward them, from the *most angry (position 1)* to the *least angry (position 8)*." Rank orders of emotional reactions were included in case Likert-ratings lacked sufficient variability to enable ANOVA analyses (i.e., strong ceilings and/or floors).

Next, participants were asked to think about a social group (e.g., ethnic, religious, professional) to which they belong and strongly identify, and to think about the values of that group. Participants reported the group they chose (open-ended), followed by a "group identification" induction in which they briefly wrote about how this social identity is important in their everyday life, what they enjoy most about being a member of this

group, and how the values of this group are reflected in their choices and behaviors (see Appendix B for complete Group Identification Induction).²

Participants then reported the values of their social group. Again, these value items were modified from various Schwartz values questionnaires and the Moral Foundations Questionnaire (see Appendix C). Although participants rated both the target groups and their own group on the same subset of eight values, the items for the target groups' values versus their own group's values were worded slightly differently to avoid drawing attention to this overlap. The participant read eight descriptions (displayed in a random order) of their group—with each description focused on a single, dominant value—and rated how much they agree or disagree that the description represents their group (1 = *strongly disagree* to 8 = *strongly agree*); e.g., “To my group, it is important to always behave properly. We also believe it is important to do what we are told to do.” Immediately following rating each of these values, participants rank-ordered these descriptions as more or less representative of their group. Rank-orders of the participants' group's values were included to allow for easy and clear identification of the participants' group's most important values (this point elaborated upon later).

² Coding of these open-ended responses for descriptive purposes revealed that eight categories seemed to well-represent these data: occupational/professional identities (23.5%; e.g., Teacher, co-workers, entrepreneurs), social club/hobby/activism identities (21.7%, e.g., skydivers, animal advocate, sci-fi nerd), religious identities (20.4%; e.g., Christian, atheist, church), ethnic/racial/national identities (14.8%; e.g., Black, Scottish), family role identities (7.0%; parent, stay at home mom), political identities (4.3%; e.g., Democrat, Libertarian), gender/sexual identities (2.2%; e.g., Women, LGBT), and “other” identities (6.1%; e.g., realist, 20-something).

Finally, participants provided brief demographic information (e.g., sex, age, ethnicity, socioeconomic status, religious affiliation, political liberalism/conservatism) and rated how unclear/difficult/fatiguing they found the survey to be.

Results and Discussion

Hypothesis 1

I hypothesized that greater cross-group value-incompatibility, but not value-dissimilarity, predicts greater intergroup negativities. To test this, I had to, for each participant, (1) identify the values rated as “most representative” of his or her own group, and (2) identify the target groups whose values would constitute the cross-group value-pairs about which I had predictions (i.e., code certain target groups as having similar versus dissimilar values and compatible versus incompatible values). Doing so allowed me to conduct a 2 (Value-Similarity: similar versus dissimilar values) X 2 (Value-Compatibility: compatible versus incompatible values) within-subjects ANOVA on intergroup negativities. Given the complexity of this procedure, an illustrative example will accompany its explanation.

Identifying participants’ most representative values. For each participant, I identified his or her group’s most representative values by (1) identifying the three values rank-ordered as the “most representative” and (2) ensuring that each of these was rated as a 5 or higher (*slightly agree* to *strongly agree*) on the 9-point scale of representativeness. If any of a participant’s top three rank-ordered values was rated at 4 or below (*slightly disagree* to *strongly disagree*) on the continuous ratings, these were not classified as

important values.^{3 4 5} See Table 2 for example. Selecting up to three most-representative values per participant, rather than a single most-representative value, increases the number of target-group ratings that could potentially be included, increasing the likelihood of a balanced design within each participant (i.e., at least one value-pair in each of the four cells).

With regard to the values classified as most representative of the 230 participants' groups, 138 (60.0%) rated Universalism as one of their group's most representative values, followed by 109 (47.4%) for Self-Direction, 102 (44.3%) for Humility, 86 (37.4%) for Hedonism, 78 (33.9%) for Obedience, 78 (33.9%) for Achievement, 52 (22.6%) for Purity, and 29 (12.6%) for Power.

Allocating value-pairs to the Value-Similarity X Value-Compatibility matrix.

I then identified, for each participant, those target groups whose values fit into the predicted cells of the 2 (Similar, Dissimilar) X 2 (Compatible, Incompatible) matrix. For example, if a participant's top three values were Obedience, Hedonism, and

³ Eleven participants provided continuous ratings of the representativeness of their group's values, but failed to provide rank-order ratings. For these 11 participants, their top values were determined by using only the continuous ratings: Due to ties among the continuous ratings, the value(s) with the three to five highest "most representative" ratings (of 5+) using the continuous scale were coded as the most representative values. For only these 11 participants, up to five values may be coded as "top values".

⁴ For 43 participants, one of the three values rank-ordered as the most representative was rated at 4 or below on the continuous ratings, while values rank-ordered as the 4th or 5th most representative were rated as 5 or higher on the continuous ratings. In an effort to ensure that as many participants as possible had at least 3 representative, important values, in such cases, the value(s) rank-ordered as the 4th or 5th most representative was recoded as one of the top three most representative values.

⁵ Participants could have reported that none of these values are particularly representative of their group; within the confines of this study, such participants were classified as having "no values"; only 1 participant was classified as such.

Achievement, he or she would have outcome data relevant to predictions concerning the participant-target value-pairs of Obedience/Obedience, Obedience/Purity, Obedience/Self-Direction, Hedonism/Hedonism, Hedonism/Purity, Achievement/Achievement, and Achievement/Humility (see Table 3).

Importantly, for each participant, some target groups' values will be left unclassified as I will be focusing my predictions (and analyses) on only those participant-target value-pairs about which I have explicit predictions (see Table 3). Overall, I had predictions concerning six Dissimilar & Incompatible value-pairs, four Dissimilar & Compatible value-pairs, two Similar & Incompatible value-pairs, and six Similar & Compatible value-pairs.

Unfortunately, even though selecting up to three participant values increases the likelihood of including at least one value-pair in each of the four cells, it also increases the chances of a conflict within the 4-cell design. Consider our example of a participant whose top three values are Obedience, Hedonism, and Achievement; we would allocate his or her ratings of the target groups bolded and italicized in Table 3 into the 4-cell design (see Table 4).

Included in analyses would be the participant-target value-pairs of, among others, Hedonism/Purity (dissimilar/incompatible) and Obedience/Purity (dissimilar/compatible), causing ratings of the target group valuing Purity to be placed in both the dissimilar/incompatible cell and the dissimilar/compatible cell. This is a problem because placing the same outcome rating in two of the cells would cause the independent variables to become non-independent. When a participant's values caused a conflict of

this nature, the value-pairs causing the conflict were excluded. Conflicts of this nature were rare (See Appendix D for full details regarding value-pair conflicts).

This design possesses certain strengths, but also presents certain difficulties. One strength is that, theoretically, neither value-similarity/dissimilarity nor compatibility/incompatibility are confounded with a single specific participant value or target value, which allows for greater generalizability of the findings. Another strength is the within-subjects design, which allows for greater ability to detect experimental effects. However, within each participant, I may not achieve a balanced design (i.e., an even number of value-pairs representing each the four similarity/dissimilarity and compatibility/incompatibility cells). Issues of imbalance across the four cells were anticipated and were addressed by running a series of supplementary between-subjects analyses (described later), in addition to the focal within-subjects analyses.

Creating scores within cells. For participants with more than one target rating per cell, ratings of all the target groups in the cell were averaged into a single score per outcome for that cell (see Table 5). Ultimately, each participant had either a single score or no score (i.e., missing data due to a lack of relevant value-pairs) for each outcome measure (Anger, Fear, Disgust, Comfort, Enthusiasm, Respect, General Negativity, Overall Negativity, and Overall Positivity) in each of the four cells.

Within-subjects sample. Of the 230 participants, 220 (95.7%) were classified as having at least one Similar/Compatible value-pair to be included in analyses, 217 (94.3%) had at least one Dissimilar/Incompatible value-pair, 160 (69.6%) had at least one Dissimilar/Compatible value-pair, and 75 (32.6%) had at least one Similar/Incompatible value-pair. Sixty-six participants (28.7%) had at least one value-pair in each of the four

cells, making them eligible for inclusion in the within-subjects analyses. Given the small percentage of participants who qualified for inclusion in the within-subjects analyses, exploratory, supplementary between-subjects analyses were also conducted (described later).

The overall sample of 230 and the within-subjects sample of 66 were fairly demographically similar (66 participants with 1 missing demographic information; 33 male, 32 female; mean age = 33.82 years, SD = 10.55; 68.2% White or European American, 9.1% Black or African-American, 9.1% Asian or Asian-American, 6.1% Latino/a or Hispanic, and 6.1% Multiracial). However, the within-subjects sample appeared to differ from the overall sample with regard to the frequencies of the values rated as the most representative. Specifically, the within-subjects sample had a greater percentage of participants with Self-Direction, Power, and Achievement rated as top values and a smaller percentage of participants with Universalism, Obedience, Humility, and Purity rated as top values: 57 (86.4%) rated Achievement as one of their group's most representative values, followed by 39 (59.1%) for Self-Direction, 33 (50.0%) for Universalism, 23 (34.8%) for Hedonism, 18 (27.3%) for Power, 17 (25.8%) for Obedience, 7 (10.6%) for Purity, and 6 (9.1%) for Humility. Such differences are important to keep in mind when considering the generalizability of the results of the within-subjects analyses.⁶

⁶ In addition, the within-subjects sample had a greater percentage of participants who selected an ethnic/racial/national identity and a smaller percentage of participants who selected a religious identity. Overall, the within-subjects sample was represented by occupational/professional identities (21.2%), social club/hobby/activism identities (22.7%), religious identities (9.1%), ethnic/racial/national identities (24.2%) family role

Within-subjects analyses. To assess the effects of value-similarity and value-compatibility on intergroup negativities, I first conducted a 2 (Value-Similarity: Similar, Dissimilar) X 2 (Value-Compatibility: Compatible, Incompatible) within-subjects ANOVA (analysis of variance) on the outcome of Overall Negativity. This revealed a marginally significant main effect of Value-Similarity ($F(1,65) = 3.73, p = .058, 95\% \text{ CI: } -0.01, 0.59, \eta_p^2 = .05$) such that dissimilar values ($m = 3.05, s.e. = .15$) elicited (marginally) more negativity than similar values ($m = 2.76, s.e. = .16$), and a strong, significant main effect of Value-Compatibility ($F(1,65) = 74.32, p < .001, 95\% \text{ CI: } 1.06, 1.70, \eta_p^2 = .53$) such that incompatible values ($m = 3.60, s.e. = .15$) elicited more negativity than compatible values ($m = 2.22, s.e. = .16$). However, these effects were modified by a significant Value-Similarity x Value-Compatibility interaction ($F(1,65) = 5.36, p = .024, \eta_p^2 = .08$; see Figure 5) such that compatible values elicited relatively little negativity regardless of whether they were similar or dissimilar ($p = .955$ based on pairwise comparisons, $95\% \text{ CI: } -0.22, 0.23$), whereas incompatible values elicited even greater negativity when also dissimilar ($p = .025, 95\% \text{ CI: } 0.08, 1.10$).

These results lend general, but incomplete, support to my prediction. As predicted, I found a strong main effect of Value-Compatibility, but against predictions, I also found a marginally significant main effect of Value-Similarity and a significant Value-Similarity X Value-Compatibility interaction. However, the marginal main effect of Value-Similarity was quite small in effect size ($\eta_p^2 = .05$) compared to the very large main effect of Value-Compatibility ($\eta_p^2 = .53$). Furthermore, dissimilarity of values only

identities (9.1%), political identities (4.5%), gender/sexual identities (4.5%), and “other” identities (4.5%).

predicted increased intergroup negativities when values were also incompatible; when values are compatible, value-dissimilarity did not predict increased intergroup negativities. In sum, the within-subjects analyses revealed that, as predicted, Value-Incompatibility strongly predicts intergroup negativity but, against predictions, Value-Dissimilarity also predicts increased intergroup negativity, albeit only for values that are also incompatible.⁷

Next, given that a relatively small proportion of participants from the full sample were included in the within-subjects analyses, I conducted exploratory, supplementary between-subjects analyses to examine whether the pattern of within-subjects findings would generalize when utilizing a larger and more representative sample. I conducted these exploratory, between-subjects analyses to err on the side of conservatism: given that the within-subjects analyses revealed possible effects of Value-Similarity (in contrast to my predictions), I wanted to conduct supplementary analyses that would provide a second method of detecting effects of Value-Similarity, if they existed in these data.

Unlike the participants included in the within-subjects analysis, most participants had target-group ratings that fell into only one, two, or three of the four cells. As such, I conducted a series of iterative between-subjects analyses: in each iteration, for each of the four cells, a random selection of 50 participants who had a rating in that cell were selected to represent that cell (and no other cells), resulting in a sample of 200 for each iterative between-subjects analysis. Although drawing iterative samples of 200 from a total sample of 230 results in highly similar samples across iterations, the samples *within*

⁷ This pattern of results generalized across the specific emotion reactions; it was not limited to some subset of emotional reactions (see Appendix E).

each cell will vary across iterations because the same participant could be assigned to different cells across the iterations.

There is one main drawback to this analysis: there will be less variability in the similar/incompatible cell than the other three cells (see footnote 9), limiting generalizability of the conclusions for that particular cell. However, the potential benefits of these analyses outweigh the costs. By increasing the sample size from 66 (from the within-subjects analysis) to 200, I enhance the generalizability of the findings: unlike the within-subjects analysis, in the between-subjects analyses, the samples can include participants who do not have Power or Achievement as one of their group's top-three values. And, by ensuring an equivalent number of participants in each cell, the between-subjects analyses maximize statistical power, allowing for the greatest chance of detecting effects. In sum, if I see consistent effects across the iterative between-subjects analyses, and these effects allow me to draw similar conclusions as the within-subjects analysis, I have greater confidence in my findings. Exploratory, iterative, between-subjects analyses are not a perfect solution to address the limited sample of the within-subjects analysis, but they can serve as a complement.

Between-subjects samples. For the supplementary between-subjects analyses, from my sample of 230 participants, I drew five samples of 200 participants (referred to as Iteration 1, 2, 3, 4, and 5), each with 50 participants assigned to represent one of the four cells. By selecting 200 participants for each iteration, rather than using all 230 participants, I would ensure that the samples across iterations varied slightly, while still maintaining a high degree of similarity to the overall sample of 230. And, by assigning an

equal number of participants to each of the four cells, I maximized my power to detect statistical effects.

I began by classifying each participant by whether he or she had a representative value-pair in each of the four cells (e.g., Has a similar/compatible value-pair? 0 = *no*, 1 = *yes*). Of my sample of 230 participants, 75 (32.6%) had at least one similar/incompatible value-pair, 160 (69.6%) had a dissimilar/compatible pair, 217 (94.3%) had a dissimilar/incompatible pair, and 220 (95.7%) had a similar/compatible pair.

For each iteration, given that the subset of participants with a similar/incompatible pair was the most limited, I began by randomly selecting 50 of those 75 participants.⁸ Next, excluding the 50 participants already selected, I randomly selected 50 participants who had at least one dissimilar/compatible pair (i.e., the next most-limited sample). Continuing on, excluding the 100 participants already selected for inclusion, I randomly selected 50 with a dissimilar/incompatible pair. Finally, excluding the 150 participants already selected for inclusion, I randomly selected 50 with a similar/compatible pair.

Rather than conducting a single between-subjects analysis with the whole sample of 230, I conducted iterative between-subjects analyses for one main reason: many participants had at least one value-pair representing 2 or more of the 4 cells. As such, I felt it was necessary to draw multiple random samples to allow such participants to be categorized into different cells across the iterative analyses. This way, if I were to see consistent results across the iterative between-subjects analyses, I could draw more confident conclusions that results are due to experimental manipulations rather than

⁸ Each of the 75 participants was designated a random number from 1 to 75, then the 50 participants with the lowest random numbers (1-50) were selected for inclusion in the analyses.

confounds due to sampling. Conducting five iterative analyses (versus four or six) was somewhat arbitrary; five iterations was selected a priori because, for participants who qualified to be assigned to multiple cells, five would allow sufficient opportunity for categorization into multiple cells. If results looked inconsistent across the five iterations, I could always conduct more iterations; but, if results looked consistent across five iterations, I could draw fairly confident conclusions about the pattern of findings.

Each of the five iterative between-subjects samples were demographically similar to one another and to the overall sample, but differed slightly from the within-subjects sample, which was more evenly split between males and females (versus female-biased) and, on average, slightly younger. For demographic information of each of the five iterative between-subjects samples, as well as for the overall sample and the within-subjects sample, see Table 6.

Supplementary between-subjects analyses. Using the outcome of Overall Negativity, the results of the five iterations of the between-subjects analyses were consistent with each other, but varied slightly from the results of the within-subjects analyses. Table 7 presents the means, SDs, and ANOVA test values from both the within-subject sample and each of the five between-subject samples. In general, across the five iterations, there were main effects of Value-Similarity, such that dissimilar values elicited more negativity than similar values; this effect was always significant at $p \leq .01$, with η_p^2 ranging from .03 to .11. There were also consistent main effects of Value-Compatibility, such that incompatible values elicited greater negativity than compatible values; this effect was always significant at $p < .001$, and stronger than the main effect of similarity, with η_p^2 ranging from .16 to .23. Finally, there were no significant Value-Similarity X

Value-Compatibility interactions, with p -values ranging from .142 to .949 and η_p^2 ranging from .00 to .01 (see Iteration 1 results in Figure 6).

The results of the within-subjects analyses and the between-subjects analyses are consistent in some ways and inconsistent in others.⁹ Across both types of analyses, there were consistent main effects of Value-Compatibility such that incompatible values elicited more negativity than compatible values, and these effect sizes were generally 2-4 times larger than those of Value-Similarity. Therefore, I can draw a confident conclusion that value-incompatibilities strongly predict intergroup negativities, more so than do value-dissimilarities. Furthermore, the means for incompatible values (similar and dissimilar) and the mean differences between these two cells were very similar across the within and between-subjects analyses. As such, I can draw a confident conclusion that dissimilar and incompatible values elicit greater negativity than similar and incompatible values.

⁹ When comparing results of the within-subjects analyses to the five iterative between-subjects analyses, the results within certain cells are less likely to differ than those within other cells. Specifically, 66 of the 75 participants who had at least one similar/incompatible pair were included in the within-subjects analyses and a random selection of 50 of these 75 participants were included in the five iterative between-subjects analyses; given the large overlap in these samples, the results of the within and between-subjects analyses within the similar/incompatible cell are likely to look fairly similar. In contrast, given the larger sample sizes for the other three cells, and that the participants selected for inclusion in the between-subjects analyses for the other three cells were unlikely to be those included in the within-subjects analyses, the results within the other three cells are more likely to vary across the within and between-subjects analyses. As such, consistent results across the within and between-subjects analyses, particularly within the dissimilar/compatible, dissimilar/incompatible, and similar/compatible cells, are unlikely to be due to overlaps in sampling and point more strongly toward systematic experimental effects.

The results across sample types were most different for compatible values (similar and dissimilar). Whereas the within-subjects analyses revealed that dissimilarity had little predictive utility when in the context of compatible values, the between-subjects analyses revealed that dissimilarity did predict additional negativity when values were compatible.

Overall, despite the fact that both the within-subjects analysis and the iterative between-subjects analyses had their respective weaknesses, these analyses complement one another and tell a similar story. Taken together, the results from both types of analyses lend strong support to my prediction that value-incompatibility strongly predicts intergroup negativities, but mixed support to my prediction that, controlling for value-incompatibility, value-dissimilarity does not predict intergroup negativities.

Hypotheses 2 and 3

Hypothesis 2 predicts that, based on a target group's values, participants will experience specific, affordance-relevant emotional reactions (e.g., anger, fear, disgust); in other words, in different emotional reactions will be elicited by certain participant-value X target-value interactions. Hypothesis 3 predicts that intergroup feelings will sometimes be symmetrical, but sometimes asymmetrical, as a function of whether groups present potential threats (eliciting negativities) or opportunities (eliciting positivities) to one another.

To test these hypotheses, I (1) classified participants based on the one value they reported as being the most representative of their group and (2) within these eight participant groups, tested whether the predicted patterns of specific emotional reactions, and of symmetrical versus asymmetrical responses—as presented in Table 1—were observed.

Sample. Almost the entire sample of 230 participants from Study 1 were included in these analyses, with the exception of 11 participants who failed to provide rank-orders of the representativeness of their own group's values and 10 whose #1 rank-ordered value was *not* rated as “representative” using the continuous ratings. This resulted in a sample of 209 participants (88 males, 121 females; mean age = 37.38 years, SD = 12.63; 74.2% White or European American, 7.7% Black or African-American, 7.7% Asian or Asian-American, 4.3% Latino/a or Hispanic, 0.5% Native American, 0.5% Middle Eastern, and 4.3% Multiracial).

Of the 209 participants, 19 (9.1%) reported that Purity was their group's most representative value, 15 (7.2%) reported Hedonism, 70 (33.5%) reported Universalism, 8 (3.8%) reported Power, 35 (16.75%) reported Self-Direction, 13 (6.2%) reported Obedience, 17 (8.1%) reported Achievement, and 32 (15.3%) reported Humility. Results for those participant groups with smaller sample sizes should be interpreted with caution.

Analyses. First, to establish general support for my prediction that emotional reactions will be modified by a Participant-Value X Target-Value interaction, I conducted a 5 (Within-Subjects Emotional Reaction: Anger, Disgust, Fear, Comfort, Enthusiasm) X 8 (Within-Subjects: Target Group) X 8 (Between-Subjects: Participant Group) mixed ANOVA, predicting a significant 3-way interaction such that one or two emotional reactions would be prevalent for each target group, and these would differ across the eight groups of participants. This 3-way interaction was significant ($F(196,5572) = 2.54$, $p < .001$, $\eta_p^2 = .08$), but did not take the predicted form; rather than targets eliciting one or two specific negative and/or positive emotions, they tended to elicit either greater positive emotions (e.g., Comfort and Enthusiasm) than negative emotions (e.g., Anger,

Disgust, Fear), or greater negative than positive emotions, with large distinctions between the negative and positive emotions but a lack of distinction *among* the three negative emotions and *among* the two positive emotions (see Appendix F for Means and SD of the five emotional reactions for the 16 value-pairs of central interest).¹⁰

Before moving forward, to confirm that the specific negative emotional reactions were not modified by a Participant Value X Target Value interaction, I conducted a 3 (Within-Subjects Negative Emotions: Anger, Disgust, Fear) X 8 (Within-Subjects: Target Group) X 8 (Between-Subjects: Participant Group) mixed ANOVA, predicting a non-significant 3-way interaction; this 3-way interaction was not significant, $F(98,2786) = 1.20, p = .158, \eta_p^2 = .04$.¹¹ As such, for future analyses, I created a Specific Negativities composite (averaging together Anger, Disgust, and Fear; Cronbach's alphas ranging from .82 to .93) for each of the eight target groups.¹²

Similarly, to confirm that the positive emotional reactions were not modified by a Participant Value X Target Value interaction, I conducted a 2 (Within-Subjects Positive Emotions: Comfort, Enthusiasm) X 8 (Within-Subjects: Target Group) X 8 (Between-Subjects: Participant Group) mixed ANOVA, predicting a non-significant 3-way

¹⁰ I also conducted these analyses controlling for levels of general negativity/positivity by adding General Negativity as a sixth emotional reaction; controlling for General Negativity did not significantly alter the pattern of results or my conclusions.

¹¹ p -values reported use a Greenhouse-Geisser correction as assumption of sphericity was violated.

¹² Given that Hypotheses 2 and 3 dealt with specific emotions, I created this composite of the specific negative emotions for which I had predictions (Anger, Disgust, and Fear); I did not use the Overall Negativity composite from the Hypothesis I analyses, as it averaged these specific emotions with General Negativity and General Positivity (reverse-coded).

interaction; in contrast, this 3-way interaction was significant, $F(49,1400) = 1.53, p = .015, \eta_p^2 = .05$. However, given that I had few predictions where only comfort (but not enthusiasm) or only enthusiasm (but not comfort) would be elicited, and that these were highly correlated (r s ranged from .72 to .88, all significant at $p < .001$), I moved forward by creating a Specific Positivities composite (averaging together Comfort and Enthusiasm).¹³ Specific Negativities and Specific Positivities were significantly negatively correlated with one another at $p < .01$ (across the eight target groups, r s ranged from -.19 to -.44).

Overall, these results do not demonstrate support for Hypothesis 2; participants did not report specific, functionally-relevant emotional reactions in response to different target groups. However, participants did demonstrate clear negativities and positivities toward the various target groups, and these reactions differed based on the participants' own most representative value. To formally test whether general negative/positive attitudes are modified by a Participant-Value X Target-Value interaction, and whether these intergroup feelings are symmetrical or asymmetrical, I conducted a 2 (Within-Subjects Emotion Valence: Specific Negativities, Specific Positivities) X 8 (Within-Subjects: Target Group) X 8 (Between-Subjects: Participant Group) mixed ANOVA, predicting, and finding, a significant 3-way interaction ($F(49,1400) = 2.85, p < .001, \eta_p^2 = .09$). This was followed by a series of Emotion Valence (Specific Negativities versus

¹³ I used this composite, which averaged the specific positive emotions for which I had predictions (Comfort and Enthusiasm), rather than using the Overall Positivity composite, which included a positive emotion for which I had no predictions (Respect).

Specific Positivities) X Target Group within-subjects analyses within each of the eight participant groups (each defined by the participants' group's most representative value).¹⁴

Universalism. For participants whose groups value Universalism ($n = 70$), I predicted (1) relative positivity toward targets who value Universalism (i.e., a compatible value) and (2) relative negativity toward targets who value Power (i.e., an incompatible value); these predictions were supported. For this 2 (Emotional Reaction: Specific Negativities, Specific Positivities) X 2 (Target Value: Universalism, Power) within-subjects analysis, I found a significant main effect of Target Value ($F(1,69) = 26.52, p < .001, \eta_p^2 = .28$) and a significant main effect of Emotional Reaction ($F(1,69) = 26.66, p < .001, \eta_p^2 = .28$), but these were both modified by a significant Target Value X Emotional Reaction interaction ($F(1,69) = 400.95, p < .001, \eta_p^2 = .85$) such that (1) targets who value Universalism elicited more positivity than negativity ($p < .001$), (2) targets who value Power elicited more negativity than positivity ($p < .001$), and (3) targets who value Universalism elicited less negativity ($p < .001$) and more positivity ($p < .001$) than those who value Power; see Figure 7.

Power. For participants whose groups value Power ($n = 8$), I predicted negativity toward targets who value both Power and Universalism (i.e., incompatible values).

However, I also predicted that, to participants who value Power, targets who value

¹⁴ Given some of the extremely small sample sizes (e.g., $n = 8$ for Power), I investigated whether the patterns of results would generalize when I grouped participants based on whether each of the eight values was one of their three "most representative" values (using the full sample of 230), rather than their top-ranked value. The patterns of results were highly similar whether participants were classified based on their top-ranked value or one of their top-three values. The consistency of these results allows for stronger conclusions about their generalizability, despite some of the small sample sizes of the analyses reported.

Universalism may be seen as presenting certain opportunities (e.g., gain resources), resulting in ambivalent (i.e., positive and negative) and therefore, more relatively positive reactions. Overall, these predictions were supported, providing evidence in favor of an affordance-management interpretation. For this 2 (Emotional Reaction) X 2 (Target Value: Power, Universalism) within-subjects analysis, I found a significant main effect of Target Value ($F(1,7) = 8.26, p = .024, \eta_p^2 = .54$) and a significant main effect of Emotional Reaction ($F(1,7) = 13.81, p = .008, \eta_p^2 = .66$), but these were both modified by a significant Target Value X Emotional Reaction interaction ($F(1,7) = 10.05, p = .016, \eta_p^2 = .59$; see Figure 8) such that (1) targets who value Power elicited (marginally) more negativity than positivity ($p = .074$ based on pairwise comparisons), (2) targets who value Universalism elicited more positivity than negativity ($p = .005$), and (3) targets who value Power elicited more negativity ($p = .035$) and less positivity ($p = .010$) than those who value Universalism.

Universalism/Power (a)symmetries. If prejudices between groups were driven solely by how (dis)similar the groups' values were, we would expect to see symmetrical prejudices. In other words, from a "dissimilar values" perspective, if two groups have different values, we would expect them both to feel negatively toward one another. In contrast, an affordance-management perspective would predict that prejudices will sometimes be symmetrical, and other times asymmetrical, as a function of the degree of compatibility between the values.

With regard to the intergroup values of Power and Universalism, if prejudices were symmetrical, we would see that participants who value Universalism feel negatively toward those who value Power, and participants who value Power also feel negatively

toward those who value Universalism. In contrast, we see evidence of *asymmetrical* prejudices. Whereas participants who value Universalism felt negatively toward those who value Power, participants who value Power felt *positively* toward those who value Universalism. These results provide strong evidence in favor of an affordance-management interpretation and against a “similar values” interpretation. The asymmetries of feelings between these groups demonstrate the utility of an affordance-management perspective in understanding the role that value-incompatibilities play in intergroup relations.

Achievement. For participants whose groups value Achievement ($n = 17$), I predicted (1) relative positivity toward targets who value Humility (i.e., a compatible value) and (2) relative negativity toward targets who value Achievement (i.e., an incompatible value); these predictions were supported. For this 2 (Emotional Reaction) X 2 (Target Value: Achievement, Humility) within-subjects analysis, I found no main effect of Target Value ($F(1,16) = 0.31, p = .588$), but a significant main effect of Emotional Reaction ($F(1,16) = 46.74, p < .001, \eta_p^2 = .75$) and a significant Target Value X Emotional Reaction interaction ($F(1,16) = 8.21, p = .011, \eta_p^2 = .34$; see Figure 9) such that (1) both targets who value Achievement and Humility elicited (at least, marginally) greater positivity than negativity (respectively $p = .073$ and $p < .001$) but (2) targets who value Achievement elicited more negativity ($p < .001$) and (marginally) less positivity ($p = .065$) than those who value Humility.

Humility. For participants whose group values Humility ($n = 32$), I predicted relative positivity toward targets who value both Humility and Achievement (i.e., compatible values); these predictions received mixed support. For this 2 (Emotional

Reaction) X 2 (Target Value: Humility, Achievement) within-subjects analysis, I found a main effect of Target Value ($F(1,31) = 6.51, p = .016, \eta_p^2 = .17$), and a significant main effect of Emotional Reaction ($F(1,31) = 87.92, p < .001, \eta_p^2 = .74$), and these main effects were both modified by a significant Target Value X Emotional Reaction interaction ($F(1,31) = 45.55, p < .001, \eta_p^2 = .60$; see Figure 10) such that (1) targets who value both Humility and Achievement elicited more positivity than negativity (respectively, $p < .001$ and $p = .043$) and (2) targets who value Humility elicited less negativity ($p < .001$) and more positivity ($p < .001$) than those who value Achievement. Whereas the target group that values Humility elicited a relatively large amount of positivity from participants who value Humility (in line with predictions), the target group that values Achievement did not (in contrast to predictions).

Achievement/Humility (a)symmetries. With regard to Achievement and Humility, a “similar values” approach would predict that those who value Achievement should feel negatively toward those who value Humility, and vice versa. Again, in contrast to these predictions, we see evidence of *asymmetrical* prejudices. Whereas participants who value Humility felt fairly neutral (i.e., neither strongly positively nor negatively) toward those who value Achievement, participants who value Achievement felt strongly positively toward those who value Humility. Again, these results provide evidence against a “similar values” interpretation, but mixed evidence in favor of an affordance-management interpretation. In line with affordance-management predictions, participants who value Achievement felt relatively positively toward a group with hypothesized compatible values (e.g., Humility) and more negatively toward a group with hypothesized incompatible values (e.g., Achievement). In contrast to predictions,

participants who value Humility felt very positively toward one group hypothesized to have compatible values (e.g., Humility), but less positively toward a second group hypothesized to have compatible values (e.g., Achievement). These results could be interpreted as providing evidence against an affordance-management interpretation, or might simply suggest that, to participants who value Humility, groups who value Achievement are seen as posing a threat (e.g., a threat to social cohesion).

Purity. For participants whose group values Purity ($n = 19$), I predicted (1) relative positivity toward targets who value Purity and Obedience (i.e., compatible values) and (2) relative negativity toward targets who value Hedonism (i.e., an incompatible value); these predictions received mixed support. For this 2 (Emotional Reaction) X 3 (Target Value: Purity, Obedience, Hedonism) within-subjects analysis, I found a significant main effect of Target Value ($F(2,36) = 3.68, p = .035, \eta_p^2 = .17$) and a significant main effect of Emotional Reaction ($F(1,18) = 58.00, p < .001, \eta_p^2 = .76$), but no significant Target Value X Emotional Reaction interaction ($F(2,36) = 2.07, p = .141, \eta_p^2 = .10$; see Figure 11) such that targets who value Purity, Obedience, and Hedonism all elicited more positivity than negativity (respectively, $p < .001, p < .001, \text{ and } p = .015$). However, even though the Target Value X Emotional Reaction interaction was not statistically significant, one of the pairwise comparisons reached statistical significance: targets who value Obedience elicited more positivity than targets who value Hedonism ($p = .008$). In line with predictions, targets who value Purity and Obedience elicited more positivity than negativity; in contrast to predictions, targets who value Hedonism also elicited more positivity than negativity, albeit less positivity than targets who value Obedience. Although results provide mixed evidence in favor of an affordance-

management interpretation, they provide clear evidence against a “similar values” interpretation, given that target groups with both similar and dissimilar values were rated relatively positively.

Hedonism. For participants whose group values Hedonism ($n = 15$), I predicted (1) relative positivity toward targets who value Hedonism (i.e., a compatible value) and (2) relative negativity (or, perhaps, negative/positive ambivalence) toward targets who value Purity (i.e., an incompatible value); these predictions were supported. For this 2 (Emotional Reaction) X 2 (Target Value: Hedonism, Purity) within-subjects analysis, I found no main effect of Target Value ($F(1,14) = 1.81, p = .200$), but a significant main effect of Emotional Reaction ($F(1,14) = 14.37, p = .002, \eta_p^2 = .51$), and a significant Target Value X Emotional Reaction interaction ($F(1,14) = 8.70, p = .011, \eta_p^2 = .38$; see Figure 12) such that (1) targets who value Hedonism elicited more positivity than negativity ($p < .001$) whereas targets who value Purity elicited a relatively equal amount of positivity and negativity and (2) targets who value Hedonism elicited less negativity ($p = .014$) and more positivity ($p = .019$) than those who value Purity.

Purity/Hedonism (a)symmetries. With regard to Purity and Hedonism, a “similar values” approach and an affordance-management approach would both predict symmetrical negativities. Given that those who value Hedonism pose threats to those who value Purity, and vice versa, I predicted that participants who value Hedonism should feel relatively negatively toward targets who value Purity, and participants who value Purity should feel relatively negatively toward targets who value Hedonism. These predictions received mixed support: participants who value Hedonism felt relatively negatively

toward targets who value Purity, but participants who value Purity did not feel especially negatively toward targets who value Hedonism.

Obedience. For participants whose group values Obedience ($n = 13$), I predicted (1) relative positivity toward targets who value Obedience and Purity (i.e., compatible values) and (2) relative negativity toward targets who value Self-Direction (i.e., an incompatible value); these predictions received mixed support. For this 2 (Emotional Reaction) X 3 (Target Value: Obedience, Purity, Self-Direction) within-subjects analysis, I found no main effect of Target Value ($F(2,24) = 1.63, p = .217$) but a significant main effect of Emotional Reaction ($F(1,12) = 57.44, p < .001, \eta_p^2 = .83$) and a marginally significant Target Value X Emotional Reaction interaction ($F(2,24) = 2.66, p = .091, \eta_p^2 = .18$; see Figure 13) such that targets who value Obedience, Purity, and Self-Direction all elicited more positivity than negativity (respectively, $p < .001, p < .001, \text{ and } p = .001$). Furthermore, targets who value Self-Direction elicited marginally more positivity than targets who value Purity ($p = .051$). In line with predictions, targets who value Obedience and Purity elicited more positivity than negativity; in contrast to predictions, targets who value Self-Direction also elicited more positivity than negativity, and marginally more positivity than targets who value Purity. Although results provide mixed evidence in favor of an affordance-management interpretation, they provide clear evidence against a “similar values” interpretation, given that target groups with both similar and dissimilar values were rated relatively positively.

Self-Direction. For participants whose group values Self-Direction ($n = 35$), I predicted (1) relative positivity toward targets who value Self-Direction (i.e., a compatible value) and (2) relative negativity toward targets who value Obedience (i.e., an

incompatible value); these predictions were supported. For this 2 (Emotional Reaction) X 2 (Target Value: Self-Direction, Obedience) within-subjects analysis, I found a significant main effect of Target Value ($F(1,34) = 18.22, p < .001, \eta_p^2 = .35$), a significant main effect of Emotional Reaction ($F(1,34) = 147.01, p < .001, \eta_p^2 = .81$), and a significant Target Value X Emotional Reaction interaction ($F(1,34) = 25.67, p < .001, \eta_p^2 = .43$; see Figure 14) such that (1) targets who value Self-Direction and Obedience both elicited more positivity than negativity (respectively, $p < .001$ and $p = .032$) and (2) targets who value Self-Direction elicited less negativity ($p = .001$) and more positivity ($p < .001$) than those who value Obedience.

Conclusions. Overall, my predictions concerning specific emotional reactions (e.g., anger, fear, disgust) as elicited by particular Participant Value X Target Value interactions (i.e., Hypothesis 2) were generally unsupported. Although participants demonstrated clear patterns differentiating between the negative emotional reactions and positive emotional reactions, there was a generally a lack of distinction among the three negative emotional reactions and two positive emotional reactions. However, when reframing my predictions in terms of generally negative/positive emotional reactions, many of my predictions were supported—groups that I predicted would elicit relative negativity generally did elicit relative negativity, and groups that I predicted would elicit relative positivity generally did elicit relative positivity.

With regard to Hypothesis 3, whereas a “dissimilar values” approach to prejudices would predict symmetrical negativities between groups with dissimilar values, and symmetrical positivities between groups with similar values, the affordance-management approach predicts intergroup emotional reactions that are sometimes symmetrical and

sometimes asymmetrical, as related to the threats and opportunities groups are seen to pose to one another. Although the patterns of obtained results provided mixed evidence in favor of the affordance-management approach, there was strong evidence against a “dissimilar values” approach in that asymmetrical prejudices were evident.

General Discussion

A traditional approach to values-based prejudices would predict that groups possessing dissimilar values will feel negatively toward one another. In contrast, my approach predicts that incompatible values—regardless of whether they are similar or dissimilar—will drive intergroup negativities. I argue that, because groups’ values act as cues to their tangible goals and interests, a target group’s values can cue a potential conflict of interest between oneself and a target group; when groups possess values that I predict would cause a conflict of interest, I refer to these values as incompatible.

Furthermore, I predicted that target groups’ values cue specific threats and opportunities to perceivers; in reaction to these inferred threats and opportunities, I also predicted that people will experience specific emotional reactions (e.g., anger, fear, disgust) in response to others’ values, rather than simple general negativity. Finally, because the inferred threats that groups pose to one another are not always symmetric, I predicted that negativities between groups may be asymmetric, with Group A experiencing negativity toward Group B, even if Group B feels neutral or even positively toward Group A.

Overall, I found strong support for my prediction that incompatible values elicit greater negativities than compatible values. These findings lend strong support to an affordance-management perspective of values-based prejudices. However, I also found evidence suggesting a small, inconsistent effect of value-similarity on intergroup

negativities, such that dissimilar values elicited greater negativities than similar values, as well as mixed evidence suggesting a possible Value-Similarity X Value-Compatibility interaction. Although these results lend some support to a value-dissimilarity perspective of values-based prejudices, the effect of Value-Dissimilarity on intergroup negativities was consistently much weaker than the effect of Value-Incompatibility.

Further contradicting the value-dissimilarity perspective, I found strong evidence demonstrating that certain similar values across groups (e.g., Group A and Group B both value Power) elicit strong negativities, whereas certain dissimilar values (e.g., Group A values Power and Group B values Universalism) elicit strong positivities, albeit asymmetrically. However, in opposition to my predictions, prejudices were not characterized by specific emotional reactions (e.g., anger, fear, disgust); almost all groups elicited greater positive emotional reactions than negative, and emotional reactions were split along negative/positive lines, rather than being differentiated by specific negative and/or positive emotions. These results pose challenges to the affordance-management perspective.

Finally, I also found evidence of asymmetrical prejudices between groups with certain values, providing further support in favor of an affordance-management perspective and contradicting a value-dissimilarity perspective (which would predict symmetrical prejudices). Overall, my findings provide strong evidence *against* a value-dissimilarity interpretation of values-based prejudices, and stronger evidence in favor of an affordance-management interpretation of values-based prejudices.

Did I Fairly Test the Value-Dissimilarity Hypothesis?

Although I found that value-incompatibility strongly predicted intergroup negativity, I also found unpredicted small main effects of and or/interactions with value-dissimilarity. Why did I observe only small effects of value-dissimilarity on intergroup negativity? Is it possible that the weaker effects of value-dissimilarity on intergroup negativity are due simply to a weak manipulation of dissimilarity?

Simultaneously with the current study, I conducted a supplementary study (see Appendix G for full methods, results, and discussion), the results of which suggest that my Value-Dissimilarity operationalization was not weak. Participants rated both the compatibility/incompatibility and the similarity/dissimilarity of the value-pairs of interest and, as intended, value-pairs hypothesized as similar were rated as significantly more similar than those hypothesized as dissimilar, and value-pairs hypothesized as compatible were rated as significantly more compatible than those hypothesized as incompatible. Of note, the Value-Similarity manipulation was actually stronger than the Value-Compatibility manipulation. As such, the comparatively small observed effect of Value-Dissimilarity on intergroup negativities cannot be well explained by a weak manipulation of Value-Dissimilarity compared to Value-Incompatibility.

Why Was There an Effect of Value-Dissimilarity on Intergroup Negativity?

Again, I argued that intergroup negativity is the result of inferred conflicts of interest (i.e., threats) between groups, as cued by other groups' values. Furthermore, I argued that, in previous work, the observed effect of value-dissimilarity on intergroup negativities was likely due to the fact that value-dissimilarity can serve as a cue to value-incompatibility, given that the similarity and compatibility of values are somewhat

confounded. In other words, in the absence of information about the content of another group's values, the knowledge that their values are dissimilar to one's own can serve as a semi-reliable cue to value-incompatibility. As such, I predicted that, when controlling for Value-Incompatibility, the effect of Value-Dissimilarity on intergroup negativity would disappear.

Implicit in my argument was the assumption that, when the incompatibility of values can serve as a direct cue to potential threat(s), the dissimilarity of values would no longer serve as a cue to potential threat(s). This assumes, however, that value-dissimilarity is a cue *only* to value incompatibility. Perhaps, however, value-dissimilarity implies multiple threats. Just as "Blackness" in the U.S. can serve as a cue both to outgroup coalitional status (Kurzban, Tooby, & Cosmides, 2001) and to desperate home ecologies (Williams, Sng, & Neuberg, 2016)—both of which elicit negative stereotypes and prejudices—it may be that value-dissimilarity also cues an additional factor that can drive negative prejudices. One candidate for such a factor is familiarity. That is, if groups that possess dissimilar values are inferred to be unfamiliar, and unfamiliar groups elicit negative prejudices (Neuberg et al., 2011; Schaller & Neuberg, 2012), then dissimilar values—regardless of their compatibility or incompatibility—will have a causal effect on negative prejudices above and beyond its cue value for value-incompatibility.

Why might dissimilarity cue unfamiliarity? Because we adopt values and attitudes from the cultures we are embedded in, and because we are more likely to seek out information (including others' values and attitudes) consistent with our own existing beliefs, we are likely surrounded by people who more strongly share our values than those who are distant from us. Furthermore, many common attitudes are heritable, and

research demonstrates that attitude-similarity serves as a heuristic cue to kinship (Park & Schaller, 2004). In sum, close (and, therefore, familiar) people are more likely to be attitudinally-similar to us than are distant (and, therefore, unfamiliar) people. If my participants were inferring that groups with dissimilar values were also less familiar, the dissimilarity of the values may have had an indirect effect on increasing any inferred potential threat(s), resulting in dissimilar values—independent of value-compatibility—eliciting more negativity than similar values. Indeed, researchers have found that (1) attitudinally-similar targets are inferred to be more familiar and (2) familiar targets elicit greater positivity than unfamiliar targets (Moreland & Zajonc, 1982).

Moving forward, I can explore this possibility by examining whether participants report having more frequent contact with, or infer greater subjective familiarity with, groups who possess similar versus dissimilar values. If groups with dissimilar values are inferred to be less familiar, and if less familiar groups elicit greater negativity than familiar groups, I may have evidence for an indirect effect of value-dissimilarity on intergroup negativity through inferred unfamiliarity.

Finally, there are other possible explanations of the observed effect of value-dissimilarity on intergroup negativity. For example, although I focused on values as representations of groups' desired goals and outcomes, many values encompass both desired outcomes *and* processes for achieving those outcomes. For example, in the current study, the value Achievement was described as, "Showing their abilities and ambition are important to members of this group. It is important to them that people admire their accomplishments." Here, the goal is to be admired for one's accomplishments via the process of demonstrating one's abilities and ambition. As such,

value-similarity may suggest some aspect of shared behavioral processes across groups, even if the groups' goals are incompatible, leading to a reduction in intergroup negativity.

Alternatively, groups that share “process-values” may be less likely to engage in conflict, even if they hold negative feelings toward one another. For example, imagine two groups that both value Achievement, and both believe that the way to gain status and admiration is through a demonstration of physical strength and agility (e.g., a football match). The groups may not have warm feelings toward one another, but both will accept the outcome of the football match because they agreed to use the game as the deciding achievement-factor. In short, there would not be intergroup conflict outside the confines of the agreed-upon process. In this way, groups with similar (process) values may experience less conflict than groups with dissimilar values, even if the (goal) values are incompatible.

Do Qualitatively Different Value-Incompatibilities Elicit Qualitatively Different Emotional Reactions?

I predicted that participants would report specific emotional reactions (e.g., anger, fear, disgust) toward target groups as a function of the potential threat(s) those groups were inferred to pose (i.e., Hypothesis 2). In contrast, participants did not report experiencing these specific emotional reactions—why? My methods were similar to those used in previous studies that found evidence for specific, threat-based emotional reactions (e.g., Cottrell & Neuberg, 2005), so a methodological problem seems an unlikely explanation.

However, previous studies that found evidence of specific intergroup emotions have all used real target groups (e.g., African-Americans) or target groups presenting

clear and immediate threats (e.g., thieves). Given that the target groups in my study were much more abstract, I may not have provided enough information about the groups to cause participants to infer specific threats. Unfortunately, I did not directly measure the inferred threats of the target groups, so the current data provide no means of testing this explanation. In future studies, I could directly measure the inferred threats of the target groups along with the specific emotional reactions to test whether inferred threats are mediating the relationship between target group values and specific emotional reactions. Or, I could use real groups (e.g., Fundamentalist-Christians) and have participants report, (1) the inferred values of those groups, (2) inferred threats of those groups, and (3) specific emotional reactions to the groups. In the future, by simultaneously manipulating or measuring every causal variable in the proposed chain, I could determine why my predictions concerning specific emotional reactions were not supported in the current study.

A second possible explanation for the observed lack of specific emotional reactions is that, in contrast to my predictions, incompatible-values do not cue specific threats. In other words, rather than value-incompatibilities cuing specific threats that elicit specific emotional reactions, value-incompatibility—in general—may cue a broader general threat that elicits more generally negative attitudes. Given the strong connection between groups' values and their norms, it is possible that the most prominent threat inferred from a target group with any type of incompatible values is one of social disorganization and non-coordination. In other words, if I know your values are incompatible with mine, I also know that our groups have very different ways of behaving in social and interpersonal interactions. So, even though your incompatible

values could suggest a multitude of threats, the overwhelmingly obvious threat is one of social disorganization. Indeed, people report strong anger and disgust toward target groups inferred to have dissimilar values, and anger and disgust make theoretical sense as the most prominent emotional reactions to the threat of incompatible social norms and social non-coordination (Cottrell & Neuberg, 2005). In sum, the observed lack of specific emotional reactions to groups with incompatible values may be the result of a more broadly operating mechanism. Again, in the future, by simultaneously manipulating and/or measuring (1) the inferred values of target groups, (2) the inferred threats of those groups, and (3) specific emotional reactions to those groups, I can examine evidence in favor of or opposition to the presence of a more general “values-threat” mechanism.

How might one validate the findings from the current study?

Although I found similar effects of Value-Incompatibility and Value-Dissimilarity on intergroup negativity across both a within-subjects analysis and a series of iterative between-subjects analyses, the between-subjects analyses were exploratory and the within-subjects analysis was limited in generalizability. As such, it would be wise to replicate these findings using a similar within-subjects methodology, but with a much larger and more representative sample. Doing so would also allow me to measure potential mediators of interest (e.g., inferred familiarity) along with the focal predictors and outcomes.

I would also like to validate these findings experimentally. Ideally, I would randomly assign participants to rate groups that have values similar versus dissimilar and compatible versus incompatible to their own group’s values, but this presents certain difficulties. The main difficulty is that the similarity and compatibility of a group’s values

exist in the interaction between the target group's values and the perceiver's own group's values. Although I can manipulate target group values, it is much more difficult to manipulate perceiver group values. I could attempt to prime certain values for my participants' groups; for example, each participant could write a narrative about a time when the value of Power versus Universalism was important to his or her group. However, if the participant's group does not, in actuality, hold a certain value strongly, I would have (at best) a weak manipulation and (at worst) a manipulation that may cause reactance. In short, although I can randomly assign participants' groups to "have" certain values, I cannot control whether they will leave their pre-existing (and, potentially, conflicting) group values at the door.

Hopefully, an experiment would allow me to control for certain factors that I was unable to control in the current quasi-experimental study. One such factor was the suite of inferences that participants made about the target groups. It is naïve to believe that participants' feelings toward the target groups were the result of only the information presented about the target groups' values; many participants may have inferred that the abstract target groups represented real groups (e.g., inferring that the group valuing Universalism was Buddhists) or that the target groups possessed a host of related values/attitudes (e.g., inferring that the group valuing Universalism also values environmentalism). It is possible that participants' feelings toward the target groups may have been driven, in part, by these extraneous inferences.

To control for this, a potential experiment could provide participants with a detailed description of a target group (including information about the groups' demographic make-up, and typical attitudes and behaviors of group members) and

manipulate only information about the groups' value(s). Given that participants have pre-existing attitudes about real groups, an ideal experiment would use a made-up (but, realistic sounding) target group. Although such a design presents certain difficulties (e.g., creating believable, coherent descriptions of a made-up group), it would allow me to control for factors that may have partially driven the observed effects in the current study.

What are the Implications for Conflict-Resolution Interventions?

An affordance-management perspective suggests that values-based intergroup conflicts may benefit from specifically tailored interventions, as opposed to more traditional "one-size-fits-all" interventions. Traditional interventions focus on encouraging cooperation to achieve shared goals (Jackson, 2013), increasing direct or indirect positive contact between groups (Dovidio, Eller, & Hewstone, 2011), teaching about the other's culture and encouraging tolerance, and encouraging empathy through perspective-taking (Abrams, 2010). I predict that these types of interventions may be differentially productive depending on the values of the conflicting groups. My threat-based approach also suggests avenues for de-escalating intergroup conflicts by leveraging the groups' values in ways that both avoid exacerbation of intergroup negativities and encourage intergroup positivity.

For example, if Fundamentalist-Christians value purity and gay men value openness to experience, meaning that Fundamentalist-Christians see gay men as a potential disease and moral-contamination threat, encouraging direct contact between the groups may exacerbate Fundamentalist-Christians' disgust reaction toward gay men because direct contact increases the inferred likelihood of catching "gayness" and gay-associated values (Filip-Crawford & Neuberg, 2016). In interactions between groups with

conflicting purity and openness values, encouraging direct intergroup contact may backfire, increasing rather than decreasing intergroup negativities. Similarly, encouraging tolerance may be successful for groups who already value tolerance (e.g., the United Nations Educational, Scientific and Cultural Organization; UNESCO), but may be unsuccessful for groups who value tradition (e.g., the Traditional Values Coalition); for tradition-valuing groups, tolerance of other lifestyles may be seen as a threat to their group's ability to effectively and efficiently coordinate social action.

However, understanding the content of conflicting groups' values may also provide opportunities for conflict-resolution. To do so, one may be able to reframe conflicting values as complementary. Returning to the tolerance versus tradition example, if tolerance could be reframed as traditional (e.g., "In the United States, our heritage is one of inclusion and acceptance of differences."), this may mitigate the perceived conflict of interest between the groups. Additionally, one may be able to reframe "intractable" value-conflicts as resolvable tangible-conflicts. Again, from my perspective, conflicts of values actually represent competing goals and interests—in other words, value-conflicts are, at their core, tangible conflicts. Given that we know much about the processes involved in conflict over material resources (e.g., Realistic Group Conflict Theory; Jackson, 2013), we may be able to apply those principles to certain types of value-conflicts, especially when values imply competition over limited resources (e.g., two groups both value Power).

However, I urge caution in equating values with material goals, because groups sometimes think of their values as "sacred" (Tetlock, 2003; Atran & Ginges, 2012; Atran, Axelrod, & Davis, 2007). Sacred values, as opposed to secular values, are "those values

that a moral community treats as possessing transcendental significance that precludes comparisons, trade-offs, or indeed any mingling with secular values” (p. 320, Tetlock, 2003). In other words, sacred values are those that one would not trade for any amount of secular/material reward. This does not suggest, however, that people are incapable of making secular/sacred trade-offs; although “devotion to family” is seen by many as a sacred value, and the “pursuit of wealth” as a secular value, people still pursue wealth at the cost of time spent with their family. Such trade-offs suggest that many sacred values are, in fact, “pseudo-sacred” (Tetlock, 2003).

If sacred values are, in actuality, pseudo-sacred, and if we can induce people to recognize the tangible goals and behaviors tied to their values, many seemingly intractable conflicts of “values” may be translated into tangible terms, providing avenues for successful conflict resolution. In support of this, researchers find that framing conflicts in terms of material interests causes people to see more common ground with an opposing party (Kouzakova, Ellemers, Harnick, & Scheepers, 2012). And, when expressing anger in negotiations, anger leads to retaliatory and escalatory behaviors when a conflict is framed as one of values, but de-escalation when a conflict is framed as one of material interests (Harnick & Van Kleef, 2012). Ultimately, framing a conflict as tangible or material, rather than as stemming from values, may help to resolve some intergroup conflicts.

Conclusions

My affordance-management perspective builds upon existing work regarding value-dissimilarity and intergroup negativity, extending and refining our understanding of intergroup values-based conflicts. Although value-dissimilarity appears to play a small

role in intergroup negativities, value-incompatibility plays a much larger role; by understanding symmetric and asymmetric value-incompatibilities, we can better predict which groups will feel negatively or positively toward one another. Reframing our understanding of values as cues to conflicts-of-interest between groups provides principles for understanding intergroup prejudices in more nuanced ways and suggests more specifically tailored and concrete methods for reducing intergroup hostilities.

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Table 1. Value combinations and predicted emotional reactions elicited by cross-group value-pairings.

Group A Value	Group B Value	2 x 2 classification	Affordance(s) posed by Group B, as inferred by Group A	Group A Emotional Reaction(s)
Purity	Hedonism	Dissimilar & Incompatible	Threat: Contagious disease	Disgust Anger
Hedonism	Purity	Dissimilar & Incompatible	Threat: Restriction of liberties Opportunity: Access to clean resources	Anger Enthusiasm
Universalism	Power	Dissimilar & Incompatible	Threat: Violence Threat: Lose resources	Fear Anger
Power	Universalism	Dissimilar & Incompatible	Threat: Lose respect/status Opportunity: Gain resources	Anger Enthusiasm
Self-direction	Obedience	Dissimilar & Incompatible	Threat: Restriction of liberties	Anger
Obedience	Self-direction	Dissimilar & Incompatible	Threat: Social Disorganization	Anger
Achievement	Humility	Dissimilar & Compatible	Opportunity: Dominance	Enthusiasm Comfort
Humility	Achievement	Dissimilar & Compatible	Absence of threat or opportunity	Comfort
Purity	Obedience	Dissimilar & Compatible	Opportunity: Social Organization/Cooperation	Enthusiasm Comfort
Obedience	Purity	Dissimilar & Compatible	Opportunity: Social Organization/Cooperation Opportunity: Access to clean resources	Enthusiasm Comfort
Power	Power	Similar & Incompatible	Threat: Violence Threat: Lose resources	Fear Anger
Achievement	Achievement	Similar & Incompatible	Threat: Lose status/power	Anger
All other similar pairs		Similar & Compatible	Various Opportunities and/or Absence of Threat	Enthusiasm Comfort

Table 2. Example of selecting a participant's top three values.

Value	Rank-Order (1 = <i>most representative</i> to 8 = <i>least representative</i>)	Likert-Rating (1 = <i>strongly disagree</i> that value is representative of group to 8 = <i>strongly agree</i>)	Top 3 Important Value?
Obedience	1	7	Yes
Hedonism	2	5	Yes
Achievement	3	6	Yes
Self-Direction	4	5	No
Purity	5	4	No
Power	6	5	No
Humility	7	4	No
Universalism	8	4	No

Table 3. Example of selecting participant-target value-pairs for inclusion in analyses.

Participant Value	Target Group Value	2 x 2 classification
Purity	Hedonism	Dissimilar & Incompatible
<i>Hedonism</i>	<i>Purity</i>	Dissimilar & Incompatible
Universalism	Power	Dissimilar & Incompatible
Power	Universalism	Dissimilar & Incompatible
Self-direction	Obedience	Dissimilar & Incompatible
<i>Obedience</i>	<i>Self-direction</i>	Dissimilar & Incompatible
<i>Achievement</i>	<i>Humility</i>	Dissimilar & Compatible
Humility	Achievement	Dissimilar & Compatible
Purity	Obedience	Dissimilar & Compatible
<i>Obedience</i>	<i>Purity</i>	Dissimilar & Compatible
Power	Power	Similar & Incompatible
<i>Achievement</i>	<i>Achievement</i>	Similar & Incompatible
Purity	Purity	Similar & Compatible
<i>Hedonism</i>	<i>Hedonism</i>	Similar & Compatible
Universalism	Universalism	Similar & Compatible
Self-Direction	Self-Direction	Similar & Compatible
<i>Obedience</i>	<i>Obedience</i>	Similar & Compatible
Humility	Humility	Similar & Compatible

Table 4. Example of allocating ratings of target groups to the 2 x 2 matrix.

	Similar	Dissimilar
Compatible	Obedience Hedonism	Purity Humility
Incompatible	Achievement	Self-direction Purity

Table 5. Example of averaging target-group ratings within cells.

Ratings of General Negativity	Similar	Dissimilar
Compatible	Obedience m = 1.0 Hedonism m = 3.0	Humility m = 2.0
	Cell mean = 2.0	Cell mean = 2.0
Incompatible	Achievement m = 6.0	Self-direction m = 7.0
	Cell mean = 6.0	Cell mean = 7.0

Table 6. Demographic information for the overall sample, within-subjects sample, and five iterative between-subjects samples.

	Sex	Age	Ethnicity
		<i>m (SD)</i>	
Overall Sample (n = 230)	95 males 129 females	36.76 (12.47)	70.9% W, 7.8% B, 7.8% A, 4.3% L, 0.4% N, 0.4% E, and 4.8% M
Within-Subjects Sample (n = 66)	33 males 32 females	33.82 (10.55)	68.2% W, 9.1% B, 9.1% A, 6.1% L, 0.0% N, 0.0% E, and 6.1% M
Between-subjects Iteration 1 (n = 200)	80 males 115 females	36.66 (12.49)	72.0% W, 7.0% B, 7.0% A, 4.5% L, 0.5% N, 0.5% E, and 5.0% M
Between-subjects Iteration 2 (n = 200)	85 males 110 females	36.84 (12.95)	72.0% W, 7.0% B, 6.5% A, 5.0% L, 0.5% N, 0.5% E, and 5.5% M
Between-subjects Iteration 3 (n = 200)	81 males 113 females	36.62 (12.36)	70.5% W, 7.5% B, 8.0% A, 4.5% L, 0.5% N, 0.5% E, and 4.5% M
Between-subjects Iteration 4 (n = 200)	81 males 115 females	36.29 (12.26)	72.0% W, 7.0% B, 8.5% A, 4.0% L, 0.0% N, 0.5% E, and 5.0% M
Between-subjects Iteration 5 (n = 200)	84 males 112 females	36.65 (12.43)	71.5% W, 8.0% B, 8.5% A, 4.0% L, 0.5% N, 0.5% E, and 4.0% M

Note. In the Ethnicity column, W = White or European American, B = Black or African-American, A = Asian or Asian-American, L = Latino/a or Hispanic, N = Native American, E = Middle Eastern, M = Multiracial.

Table 7. Overall Negativity Means, SDs, and ANOVA results for the within-subjects and between-subjects analyses.

Analysis	<i>M (SD)</i>						ANOVA results							
	Similar/ Compatible		Dissimilar/ Compatible		Similar/ Incompatible		Dissimilar/ Incompatible		Value- Similarity		Value- Compatibility		2-way interaction	
	<i>F</i>	η_p^2	<i>F</i>	η_p^2	<i>F</i>	η_p^2	<i>F</i>	η_p^2	<i>F</i>	η_p^2	<i>F</i>	η_p^2	<i>F</i>	η_p^2
Within-Subjects	2.22 ^a (1.34)	2.21 ^a (1.47)	3.30 ^b (1.58)	3.89 ^c (1.60)	3.73 [*]	.05	74.32 ^{**}	.53	5.36 [*]	.08				
Between-Subjects Iteration 1	1.65 ^a (0.69)	2.78 ^b (1.21)	3.42 ^c (1.62)	3.97 ^d (1.80)	17.95 ^{**}	.08	56.26 ^{**}	.22	2.17	.01				
Between-Subjects Iteration 2	1.80 ^a (0.88)	2.70 ^b (1.45)	3.22 ^c (1.74)	3.42 ^d (1.84)	17.38 ^{**}	.08	42.79 ^{**}	.18	0.00	.00				
Between-Subjects Iteration 3	1.92 ^a (1.15)	2.85 ^b (1.44)	3.11 ^c (1.47)	4.20 ^d (1.71)	24.13 ^{**}	.11	38.11 ^{**}	.16	0.15	.00				
Between-Subjects Iteration 4	1.70 ^a (0.83)	2.66 ^b (1.38)	3.37 ^c (1.69)	4.07 ^d (1.57)	17.47 ^{**}	.08	59.74 ^{**}	.23	0.40	.00				
Between-Subjects Iteration 5	1.98 ^a (0.90)	2.64 ^b (1.25)	3.49 ^c (1.67)	3.87 ^c (1.64)	6.82 [*]	.03	47.94 ^{**}	.20	0.51	.00				

Note. Higher scores on the outcome indicate greater Overall Negativity. Within-subjects $n = 66$; $F(1,65)$. Between-subjects $n = 200$; $F(1,196)$. Within rows, non-shared superscripts indicate significant mean differences at $p < .06$ as indicated via pair-wise comparisons. ^{*} $p < .10$, ^{*} $p < .05$, ^{**} $p < .01$.



Figure 1. Representation of peaceful, tolerant values.



Figure 2. Representation of aggressive, dominant values.

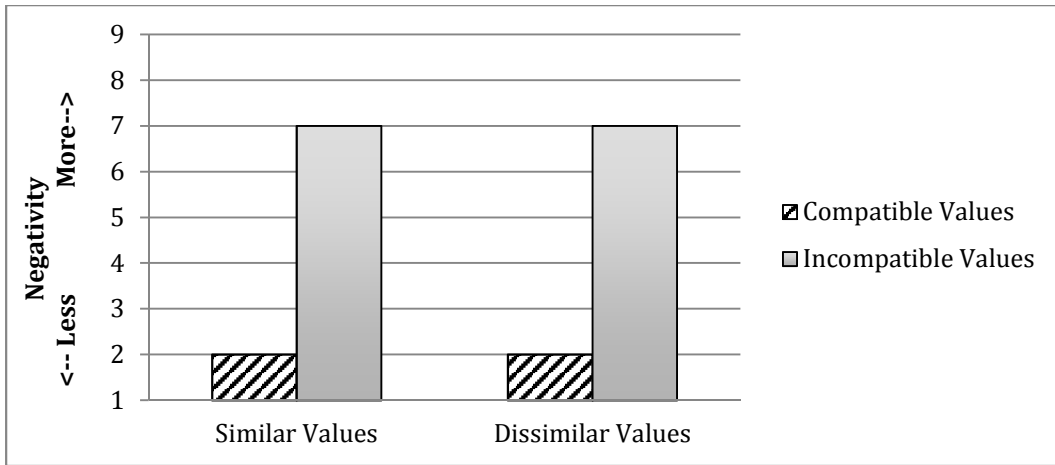


Figure 3. Predicted effects of value-similarity and value-compatibility on intergroup negativity.

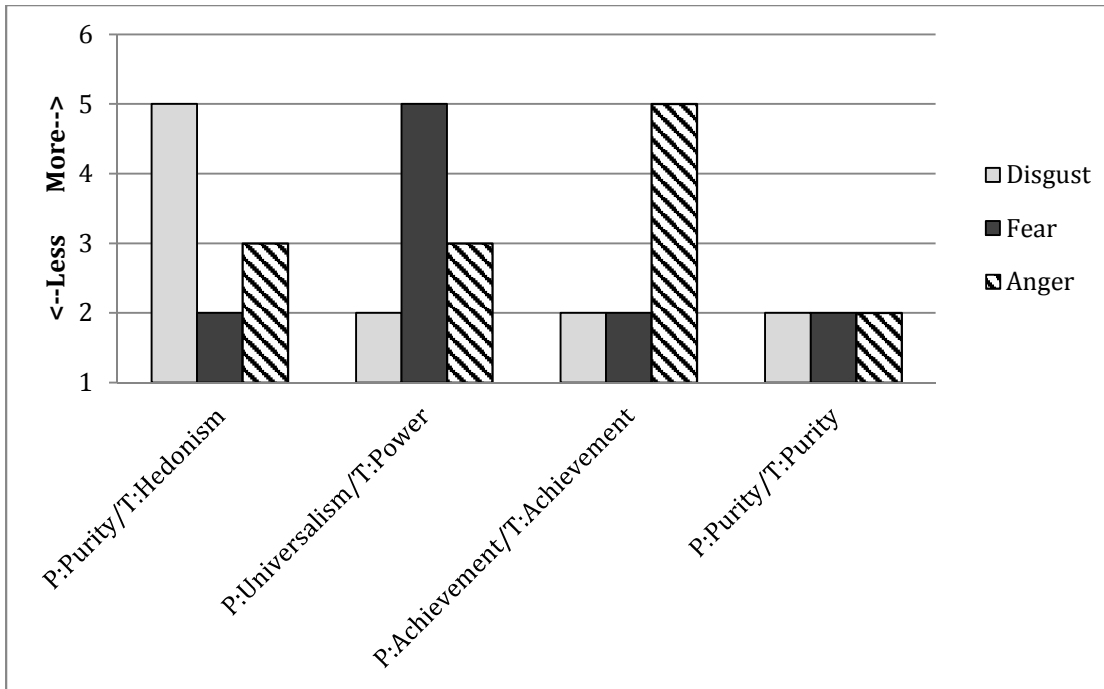


Figure 4. Predicted effects of specific value-pairings on participants' distinct emotional reactions toward targets. "P" represents the participant group's most representative value; "T" represents the target group's value.

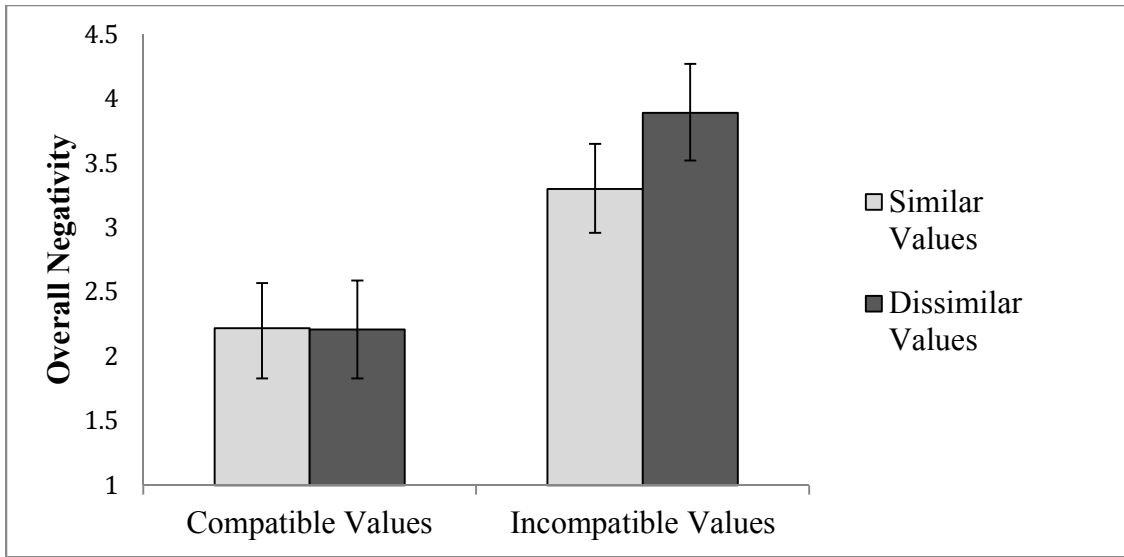


Figure 5. Mean Overall Negativity toward target groups based on Value-Similarity and Value-Compatibility (within-subjects analysis). Error bars represent 95% confidence intervals.

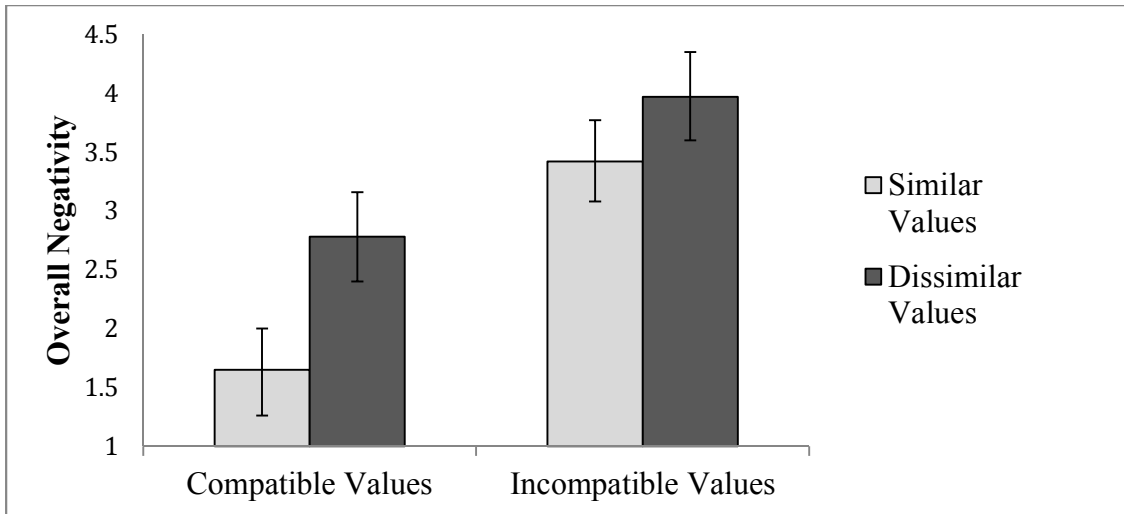


Figure 6. Mean Overall Negativity toward target groups based on Value-Similarity and Value-Compatibility (between-subjects analysis, Iteration 1). Error bars represent 95% confidence intervals.

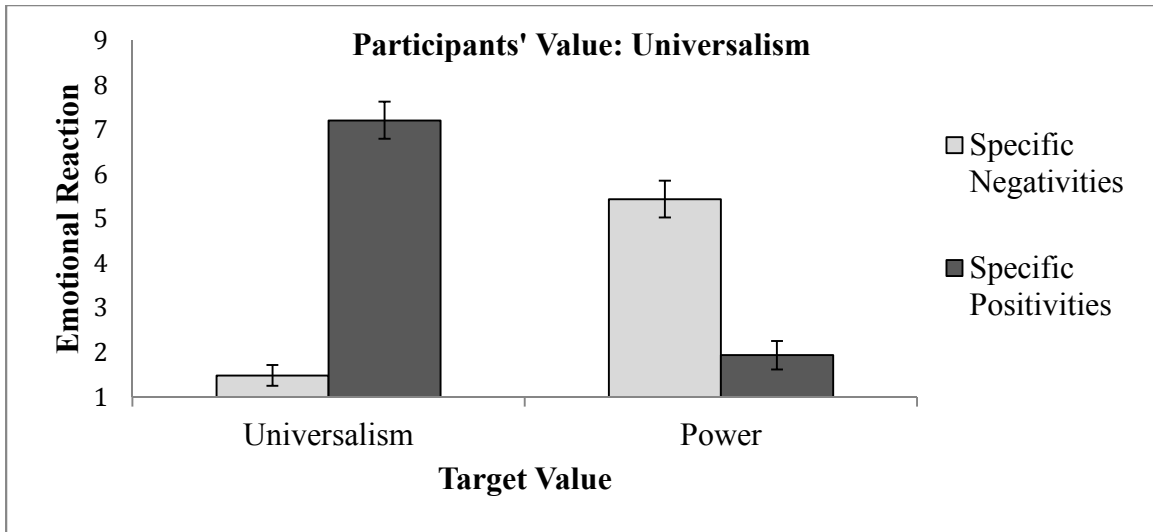


Figure 7. Mean Specific Negativities and Specific Positivities toward target groups who value Universalism and Power by participants whose group’s most representative value is Universalism. Error bars represent 95% confidence intervals.

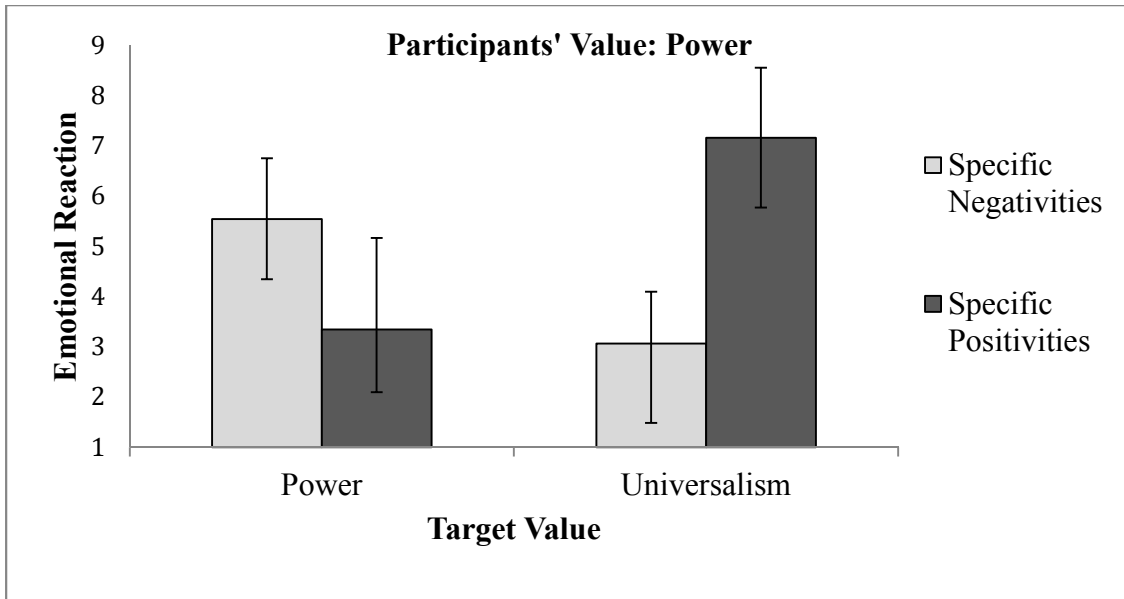


Figure 8. Mean Specific Negativities and Specific Positivities toward target groups who value Power and Universalism by participants whose group's most representative value is Power. Error bars represent 95% confidence intervals.

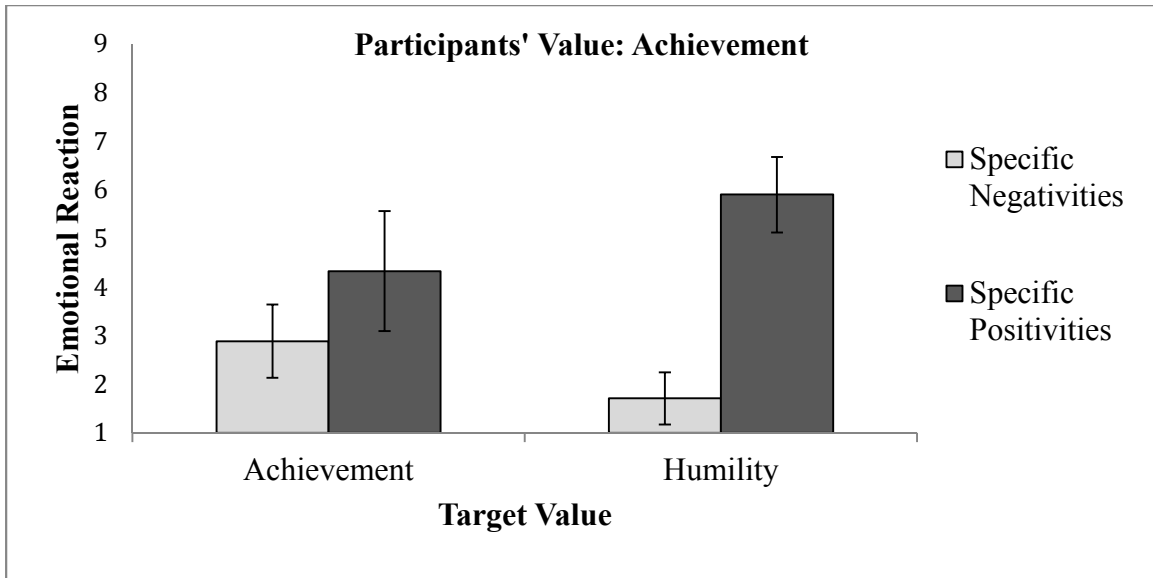


Figure 9. Mean Specific Negativities and Specific Positivities toward target groups who value Achievement and Humility by participants whose group's most representative value is Achievement. Error bars represent 95% confidence intervals.

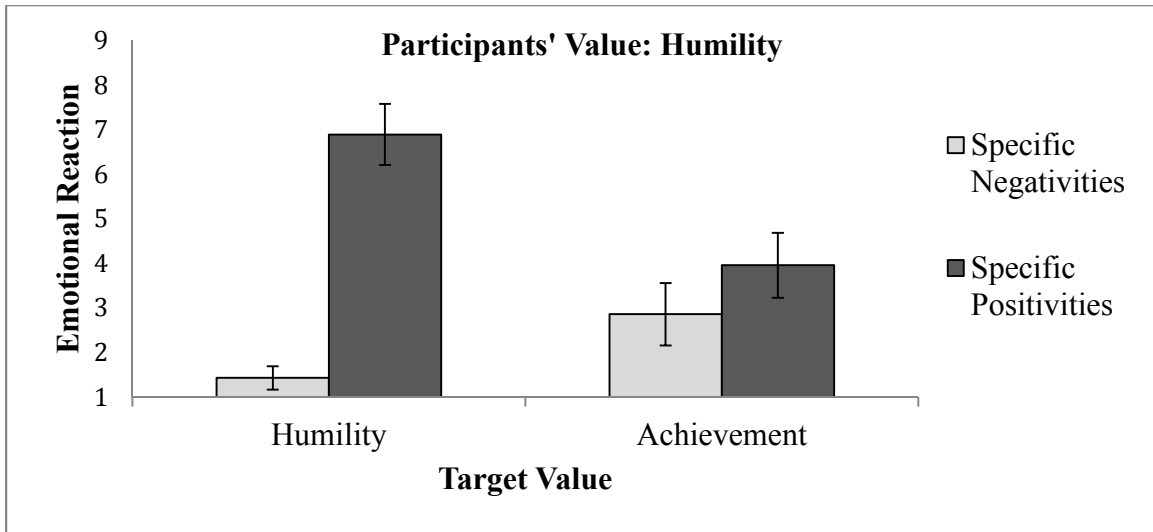


Figure 10. Mean Specific Negativities and Specific Positivities toward target groups who value Humility and Achievement by participants whose group's most representative value is Humility. Error bars represent 95% confidence intervals.

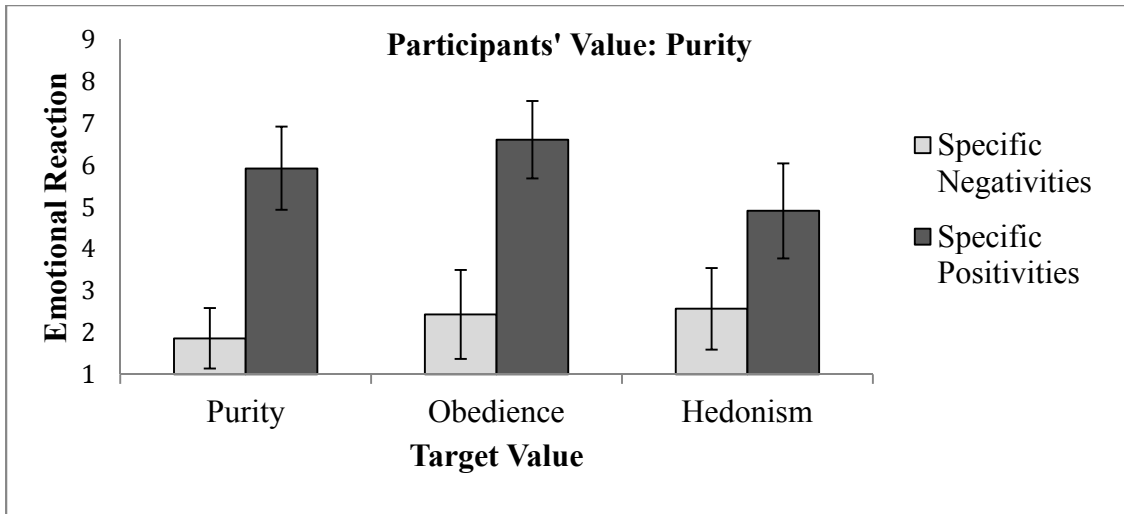


Figure 11. Mean Specific Negativities and Specific Positives toward target groups who value Purity, Obedience, and Hedonism by participants whose group's most representative value is Purity. Error bars represent 95% confidence intervals.

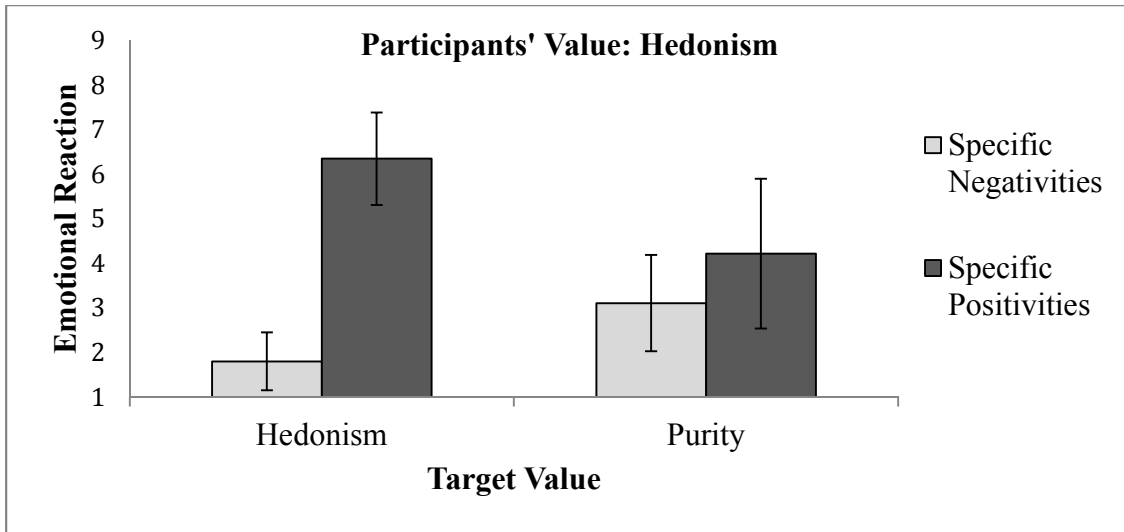


Figure 12. Mean Specific Negativities and Specific Positives toward target groups who value Hedonism and Purity by participants whose group’s most representative value is Hedonism. Error bars represent 95% confidence intervals.

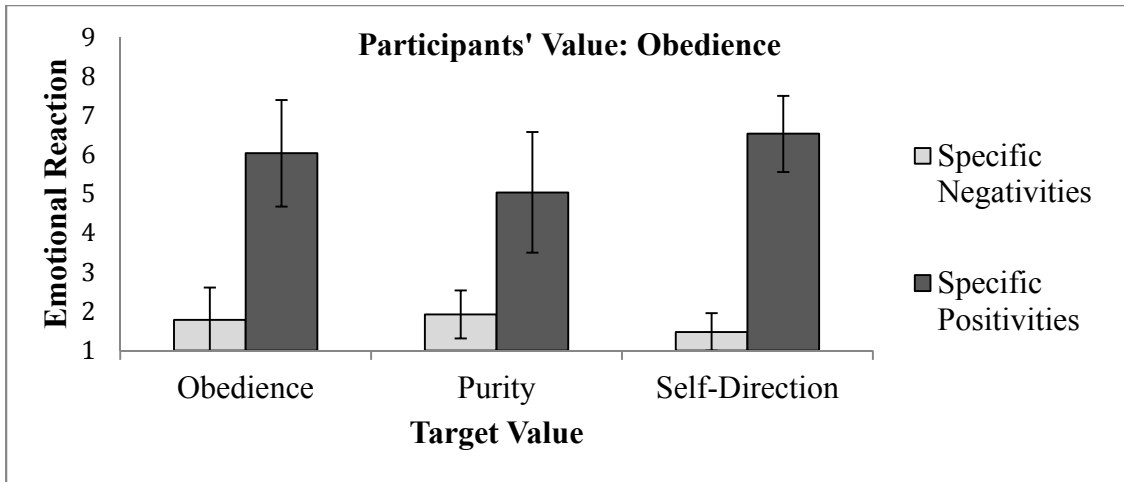


Figure 13. Mean Specific Negativities and Specific Positives toward target groups who value Obedience, Purity, and Self-Direction by participants whose group's most representative value is Obedience. Error bars represent 95% confidence intervals.

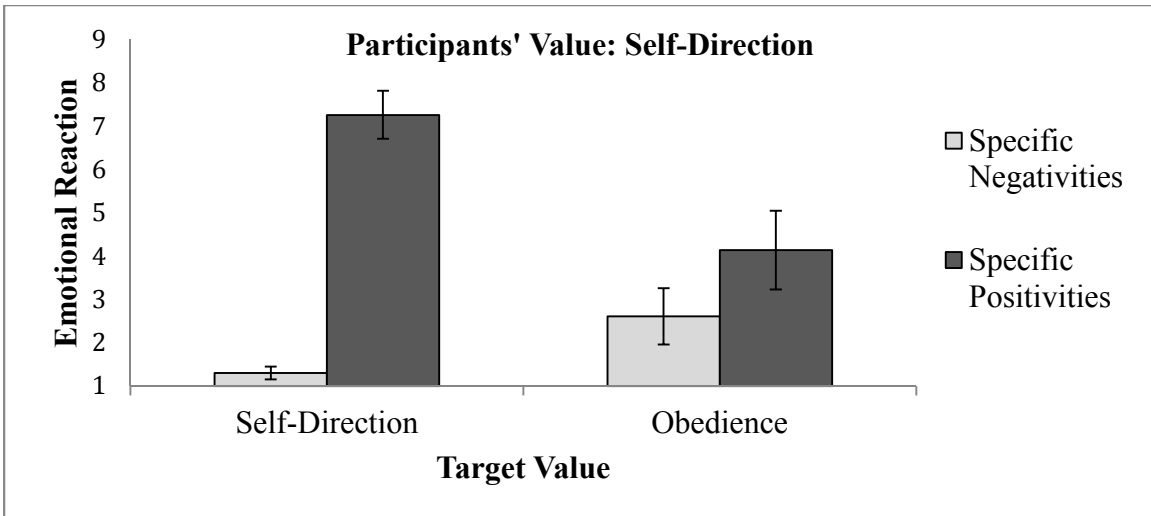


Figure 14. Mean Specific Negativities and Specific Positives toward target groups who value Self-Direction and Obedience by participants whose group's most representative value is Self-Direction. Error bars represent 95% confidence intervals.

APPENDIX A
EMOTIONAL REACTION RATINGS

Participants will rate their emotional reactions toward, as well as reporting the amount of interdependent contact they have with, eight groups, each represented by a single, dominant value. Participants will see the descriptions of the eight targets, one at a time, in a random order.

“On the following pages, we’ll ask about your impressions of eight groups. At the top of the page, you’ll see a description of a group; at the bottom of the page, you’ll answer questions about that group.

We appreciate your honest answers to each question. There are no right or wrong answers; we are simply interested in your personal impressions.

You will notice that some of the questions look similar to one another. However, each question is different from the others, so please read each carefully and consider them individually.”

Modified items from the Portrait Values Questionnaire (Bilsky, Janik, & Schwartz, 2011), the Portrait Values Questionnaire 5X (Schwartz et al., 2012), and the Moral Foundations Questionnaire (Graham et al., 2011).

1. Upholding standards of decency and sanctity is important to members of this group. It is important to them to avoid doing anything “unnatural,” even if nobody is harmed. [Purity]
2. Enjoying life and indulging themselves are important to members of this group. It is important to them that they have a good time. [Hedonism]

3. Tolerating people's differences and protecting the welfare of all people are important to members of this group. It is important to them to understand others, even when they disagree with them. [Universalism]
4. Controlling other people is important to members of this group. It is important to them to have more resources than others. [Power]
5. Thinking up new ideas and being creative is important to members of this group. It is important to them to make their own decisions about what they do. [Self Direction]
6. Following the rules at all times, even when no one is watching, is important to members of this group. It is important to them to avoid doing anything people would say is wrong. [Obedience]
7. Showing their abilities and ambition are important to members of this group. It is important to them that people admire their accomplishments. [Achievement]
8. Being satisfied with what they have is important to members of this group. It is important to them to be modest. [Humility]

Response scale: 1 = *not at all* to 9 = *extremely*

1. How much would you *like* a group like this?
2. How *angry* would you feel toward a group like this?
3. How *comfortable* would you feel around a group like this?
4. How *sickened* would you feel toward a group like this?
5. How *mad* would you feel toward a group like this?

6. How much would you *dislike* a group like this?
7. How *interested* would you be in a group like this?
8. How *disgusted* would you feel toward a group like this?
9. How *anxious* would you feel around a group like this?
10. How *enthusiastic* would you feel about a group like this?
11. How much *respect* would you have for a group like this?
12. How *afraid* would you feel around a group like this?
13. How *at ease* would you feel around a group like this?
14. How much *admiration* would you have for a group like this?

APPENDIX B
GROUP IDENTIFICATION INDUCTION

“Now, we would like for you to think about a social group you belong to and strongly identify with. In other words, think about a group for which being a member is an important part of your identity.

This group could be an ethnic group (e.g., Latino/a), a religious group (e.g., Christian), an occupational or professional group (e.g., teacher), or any other type of social group (e.g., environmentalist).

We also want you to think about the values of that group. **So, please think about a group you strongly identify with and the values that this group has.**

In the box below, please type in the name of your group. [open-ended response]”

“Please tell us a little bit more about your group, [GROUP NAME], by typing a few, brief sentences to answer each of the following questions.

- (1) How is being a member of your group important in your everyday life?
- (2) In what ways do your group’s values influence your choices and behaviors?
- (3) What do you enjoy most about being a member of your group?”

** Responses to these questions were used to remove certain participants prior to analyses. For example, when participants said that the identity they selected was not important to them, they were excluded from analyses for failing to follow instructions.

94 APPENDIX C

QUESTIONNAIRE OF OWN GROUP'S VALUES

- Again, modified items from the Portrait Values Questionnaire (Bilsky, Janik, & Schwartz, 2011), the Portrait Values Questionnaire 5X (Schwartz et al., 2012), and the Moral Foundations Questionnaire (Graham et al., 2011).
 - “We are interested in your group’s [GROUP NAME HERE] values. Next, you will see 8 potential descriptions of your group. Please indicate how strongly you agree or disagree that each description represents your group.”
 - **Response scale:** 1 = strongly disagree, 2 = mostly disagree, 3 = somewhat disagree, 4 = slightly disagree, 5 = slightly agree, 6 = somewhat agree, 7 = mostly agree, 8 = strongly agree
 - After Likert-type responses, participants rank-ordered all the values; “Please rank the following descriptions from the one that is *the most representative of your group (position 1)* to the one that is the *least representative of your group (position 8)*.”
 - To avoid order effects, the eight descriptions were displayed in a random order to each participant.
1. To my group, it is important to maintain purity. We also believe it is important to act virtuously and avoid carnal passions. [Purity]
 2. To my group, it is important to do things that give us pleasure. We also believe it is important to have fun. [Hedonism]
 3. To my group, it is important to listen to people who are different from us. We also believe it is important that people throughout the world are treated equally and have equal opportunities in life. [Universalism]

4. To my group, it is important that others do what we say. We also believe it is important to have money and expensive things. [Power]
5. To my group, it is important to be free and not depend on others. We also believe it is important to do things in our own original way. [Self Direction]
6. To my group, it is important to always behave properly. We also believe it is important to do what we are told to do. [Obedience]
7. To my group, it is important to be successful. We also believe it is important that people view us as competent and recognize our achievements. [Achievement]
8. To my group, it is important to be humble and not draw attention to ourselves. We also believe it is important to ask only for what we need and nothing more.
[Humility]

APPENDIX D
VALUE-PAIR CONFLICTS

Again, selecting up to 3 participant values increases the chances of a conflict within the 4-cell design, potentially leading to the same outcome rating being placed in two of the cells, causing the independent variables to become non-independent. When a participant's values caused a conflict of this nature, the value-pairs causing the conflict were discarded. Conflicting value-pairs are listed here:

- 1) For participants who value both Purity and Hedonism ($n = 5$), we must discard the value-pairs of:
 - a) Purity/Purity and Hedonism/Purity, as including these would cause ratings of the target who values Purity to be placed in both the similar/compatible and dissimilar/incompatible cells.
 - b) Hedonism/Hedonism and Purity/Hedonism, as including these would cause ratings of the target who values Hedonism to be placed in both the similar/compatible and dissimilar/incompatible cells.
- 2) For participants who value both Purity and Obedience ($n = 25$), we must discard the value-pairs of:
 - a) Purity/Purity and Obedience/Purity, as including these would cause ratings of the target who values Purity to be placed in both the similar/compatible and dissimilar/compatible cells.
 - b) Obedience/Obedience and Purity/Obedience, as including these would cause ratings of the target who values Obedience to be placed in both the similar/compatible and dissimilar/compatible cells.
- 3) For participants who value both Hedonism and Obedience ($n = 13$), we must discard the value-pairs of Hedonism/Purity and Obedience/Purity, as including these would

cause ratings of the target who values Purity to be placed in both the dissimilar/incompatible and dissimilar/compatible cells.

- 4) For participants who value both Self-Direction and Obedience ($n = 16$), we must discard the value-pairs of:
 - a) Self-Direction/Self-Direction and Obedience/Self-Direction, as including these would cause ratings of the target who values Self-Direction to be placed in both the similar/compatible and dissimilar/incompatible cells.
 - b) Self-Direction/Obedience and Obedience/Obedience, as including these would cause ratings of the target who values Obedience to be placed in both the similar/compatible and dissimilar/incompatible cells.
- 5) For participants who value both Self-Direction and Purity ($n = 9$), we must discard the value-pairs of Self-Direction/Obedience and Purity/Obedience, as including these would cause ratings of the target who values Obedience to be placed in both the dissimilar/incompatible and dissimilar/compatible cells.
- 6) For participants who value both Power and Universalism ($n = 6$), we must discard the value-pairs of:
 - a) Power/Power and Universalism/Power, as including these would cause ratings of the target who values Power to be placed in both the similar/incompatible and dissimilar/incompatible cells.
 - b) Power/Universalism and Universalism/Universalism, as including these would cause ratings of the target who values Universalism to be placed in both the similar/compatible and dissimilar/incompatible cells.

7) For participants who value both Achievement and Humility ($n = 17$), we must discard the value-pairs of:

- a) Achievement/Achievement and Humility/Achievement, as including these would cause ratings of the target who values Achievement to be placed in both the similar/incompatible and dissimilar/compatible cells.
- b) Achievement/Humility and Humility/Humility, as including these would cause ratings of the target who values Humility to be placed in both the similar/compatible and dissimilar/compatible cells.

APPENDIX E
DETAILED 2 X 2 X 4 ANALYSES

Given the mixed support for my predictions, I wanted to investigate whether this pattern of findings generalized across the specific negative emotion reaction outcomes or whether this pattern was driven by some emotional reactions but not others. If the pattern was driven by certain emotional reactions, we would see a significant 3-way Value-Similarity X Value-Compatibility X Emotional Reaction interaction (although, the small sample size hinders my ability to detect such effects). However, if the pattern generalizes across the negative emotion reaction outcomes, we would see a Value-Similarity X Value-Compatibility interaction, without these interacting with Emotional Reaction.

I conducted a 2 (Value-Similarity: Similar, Dissimilar) X 2 (Value-Compatibility: Compatible, Incompatible) X 4 (Emotional Reaction: General Negativity, Anger, Disgust, Fear) within-subjects ANOVA. First, similar to the previous analysis, there was a significant Value-Similarity x Value-Compatibility interaction ($F(1, 65) = 5.26, p = .025, \eta_p^2 = .08$) such that compatible values elicited relatively little negativity regardless of whether they were similar or dissimilar ($p = .955$ based on pairwise comparisons), but dissimilar and incompatible values elicited greater negativity than similar and incompatible values ($p = .026$). There was neither a significant Value-Similarity X Emotion interaction, nor a significant 3-way interaction, demonstrating that the pattern of results obtained using the Overall Negativity outcome generalizes across the specific emotion reactions, rather than being driven by a particular emotion.

In addition to the effects mentioned above, this analysis revealed a marginally significant main effect of Value-Similarity ($F(1, 65) = 3.66, p = .060, \eta_p^2 = .05$) such that dissimilar values ($m = 3.05, s.e. = .15$) elicited (marginally) more negativity than similar values ($m = 2.76, s.e. = .16$), and a strong significant main effect of Value-Compatibility

($F(1, 65) = 73.99, p < .001, \eta_p^2 = .53$) such that incompatible values ($m = 3.60, s.e. = .15$) elicited more negativity than compatible values ($m = 2.22, s.e. = .16$). In addition, there was a significant main effect of Emotional Reaction ($F(3,195) = 46.19, p < .001, \eta_p^2 = .42$) such that ratings of General Negativity ($m = 3.72, s.e. = .11$) were higher than ratings of the other three emotions (each different from General Negativity at $p < .001$ based on pairwise comparisons), while ratings of the other three emotions did not significantly differ from one another (Anger $m = 2.58, s.e. = .16$; Disgust $m = 2.56, s.e. = .16$; Fear $m = 2.76, s.e. = .17$). The main effects of Value-Compatibility and Emotional Reaction were modified by a 2-way interaction between these variables ($F(3,195) = 15.18, p < .001, \eta_p^2 = .19$) such that, within incompatible values, ratings of General Negativity were higher than ratings of the other three emotions (each different from General Negativity at $p < .05$), but the other three emotions did not differ from each other; however, within compatible values, each of these four emotions differed significantly from the others (at $p < .05$).

APPENDIX F

MEANS AND SD FOR SPECIFIC EMOTIONAL REACTION ANALYSES

Table A1. Means and SDs for specific emotional reactions elicited by certain Participant Value X Target Value interactions.

Participant Group's #1 Value	Target Group's Value	Emotional Reaction <i>M (SD)</i>					
		Anger	Disgust	Fear	Comfort	Enthusiasm	
Purity (n = 18)	Purity	1.33 (0.82)	1.64 (1.57)	2.08 (1.90)	6.22 (2.14)	5.72 (2.18)	
	Hedonism	2.28 (2.15)	2.64 (2.38)	2.42 (1.79)	5.22 (2.41)	4.61 (2.62)	
	Obedience	2.28 (2.32)	2.08 (2.23)	2.53 (2.29)	7.03 (2.00)	6.42 (2.31)	
Hedonism (n = 15)	Hedonism	1.80 (1.36)	1.63 (0.93)	1.97 (1.62)	6.57 (1.75)	6.13 (2.16)	
	Purity	3.03 (2.33)	3.23 (2.38)	3.07 (1.68)	4.40 (3.07)	4.03 (3.13)	
Universalism (n = 69)	Universalism	1.36 (0.93)	1.39 (1.00)	1.70 (1.29)	7.28 (1.80)	7.27 (1.76)	
	Power	5.55 (2.39)	6.00 (2.28)	4.88 (2.18)	1.96 (1.43)	1.90 (1.51)	
Power (n = 8)	Power	5.44 (2.27)	5.44 (1.35)	5.75 (2.24)	3.00 (1.73)	3.69 (2.05)	
	Universalism	3.06 (1.99)	2.88 (1.94)	3.25 (2.22)	7.13 (2.03)	7.19 (1.60)	
Self-Direction (n = 35)	Self-Direction	1.16 (0.40)	1.14 (0.33)	1.60 (0.95)	7.33 (1.65)	7.20 (2.03)	
	Obedience	2.34 (1.72)	2.79 (2.48)	2.70 (2.12)	4.53 (2.82)	3.75 (2.66)	
Obedience (n = 13)	Obedience	1.81 (1.64)	1.69 (1.64)	1.85 (1.31)	6.27 (2.20)	5.81 (2.45)	
	Self-Direction	1.46 (0.88)	1.42 (0.73)	1.54 (0.88)	6.77 (1.73)	6.31 (1.67)	
	Purity	1.96 (1.28)	1.69 (0.83)	2.12 (1.45)	5.19 (2.46)	4.88 (2.81)	
Achievement (n = 17)	Achievement	2.82 (1.71)	2.74 (1.80)	3.09 (1.60)	4.21 (2.30)	4.44 (2.61)	
	Humility	1.50 (1.10)	1.47 (1.01)	2.15 (1.32)	6.38 (1.60)	5.41 (1.83)	
Humility (n = 32)	Humility	1.36 (0.82)	1.22 (0.54)	1.70 (1.14)	7.02 (1.86)	6.77 (2.03)	
	Achievement	2.75 (2.04)	2.98 (2.22)	2.84 (2.15)	3.97 (2.11)	3.95 (2.15)	

Note. I do not report results of the pairwise comparisons of the emotional reactions within each target group as there are a large number of comparisons (potentially artificially inflating the number of significant *p*-values) and certain participant groups have extremely small sample sizes (limiting interpretation of non-significant *p*-values).

APPENDIX G
SUPPLEMENTARY STUDY (DETAILED METHODS, RESULTS, AND
DISCUSSION)

The main purpose of the supplementary study was to provide alternative avenues for analysis of Hypothesis 1 (i.e., effects of value-similarity and compatibility on intergroup negativities) in case the data from the focal study lacked theoretical coherence. In short, in the supplementary study, participants rated the similarity/dissimilarity and compatibility/incompatibility of all of the value-pairs from Study 1. If the results concerning Hypothesis 1 from the focal study had failed to map onto my predictions, I could have used the data from the supplementary study to explore whether participants' classifications of the value-pairs into the 2 (Similarity versus Dissimilarity) X 2 (Compatibility versus Incompatibility) matrix mapped onto my classifications and, if participants' classifications differed from mine, I could have further explored whether the results from the focal study mapped onto participants' classifications. However, given that the Hypothesis 1 results were theoretically coherent, the data from the supplementary study served a more exploratory purpose, allowing for (1) an examination of lay understandings of value-similarity and compatibility and (2) a data-driven exploration of my methodological assumptions.

Procedure and Measures

A second group of participants viewed the same eight descriptions of target groups as used in the focal study, but rather than rating emotional reactions toward the target groups, they rated the similarity/dissimilarity and compatibility/incompatibility of all the possible pairs of the eight values. With eight values, there are 36 potential non-redundant pairs of values (see Appendix H), resulting in 36 similarity/dissimilarity ratings for each participant and 64 compatibility/incompatibility ratings for each participant (100 total ratings); the 64 compatibility/incompatibility ratings are a result of

the fact that the asymmetric value pairs (e.g., asymmetric Purity/Hedonism versus symmetric Purity/Purity) must be rated twice—for example, once asking how compatible/incompatible Hedonism values are to those who value Purity, and once asking how compatible/incompatible Purity values are to those who value Hedonism.

Before rating the value-pairs, participants learned about my conceptual distinctions between similar/dissimilar values and compatible/incompatible values (see Appendix I). At first, participants learned about only one of these distinctions (similarity *or* compatibility); then, they rated all the relevant value-pairs on the dimension they were exposed to. After this first set of ratings, participants learned about the other distinction, followed by rating the value-pairs on this second dimension. For example, if participants had first learned about and rated value-pairs for similarity/dissimilarity, they would then learn about and rate value-pairs for compatibility/incompatibility. Whether participants were first exposed to similarity/dissimilarity or compatibility/incompatibility was counter-balanced across participants.

Having the participants learn about and rate targets for similarity and compatibility separately served a few purposes. First, this made for a cognitively simpler task; having participants rate each value-pair simultaneously as similar/dissimilar and compatible/incompatible would be fairly cognitively demanding, but having them rate each value-pair for similarity then compatibility (or vice versa) is much easier. Second, although I argue that value-similarity/dissimilarity and compatibility/incompatibility are potentially independent constructs, it is reasonable to assume that participants' ratings of similarity and compatibility will be related, as these concepts are related in the lay lexicon. By having participants give separate ratings of similarity and compatibility, we

may better control for the pre-existing lay relationship between these concepts and encourage theoretical distinction of them.

Participants provided continuous ratings (e.g., 1 = *very similar* to 6 = *very different*; 1 = *very compatible* to 6 = *very incompatible*) of value-similarity and compatibility. Continuous ratings (rather than dichotomous, e.g., similar OR different) allow for a better examination of participants' inferences; participants may rate value-similarity/dissimilarity and/or compatibility/incompatibility in a dichotomous manner (which would be evident by bi-modal responding rather than more normally distributed responding), or in a more continuous manner. A continuous-response scale allows for both possibilities.

After the data were collected, similarly to the focal study, I created average scores of the outcome measures (Value-Similarity and Compatibility) for the 18 value-pairs for which I had predictions (see Table 1), resulting in a 2 (Hypothesized Similarity: Similar, Dissimilar) X 2 (Hypothesized Compatibility: Compatible, Incompatible) X 2 (Outcome Measure: Similarity, Compatibility) within-subjects design.

Participants

One-hundred and forty-six residents of the United States recruited from Amazon's Mechanical Turk website who participated for a small monetary payment were randomly assigned to the supplementary study. Originally, I aimed to gather data from 100 participants: conservatively estimating a small effect size (Cohen's $f = 0.10$), with a repeated-measures 2 (Hypothesized Similarity: Similar, Dissimilar) X 2 (Hypothesized Compatibility: Compatible, Incompatible) X 2 (Outcome Measure: Similarity, Compatibility) design, and an anticipated moderate correlation ($r = .50$) between the

repeated measures outcomes, a sample size of 91 would be required to detect effects at $p < .05$ with Power = .80.

Of the 146 retained participants randomly assigned to the supplementary study, 7 were excluded from the data set before analyses began because they took less than 4 minutes to complete the survey (median survey time = 18.00 minutes and average survey time = 20.58 minutes). After these exclusions, potentially usable data from 139 participants (23 with missing demographic information, 116 with complete demographic information reported here; 63 males, 53 females; mean age = 34.49 years, SD = 11.73; 77.6% White or European American, 6.9% Black or African-American, 5.2% Latino/a or Hispanic, 2.6% Asian or Asian-American, 0.9% Native American, 0.9% Middle Eastern, and 6.0% Multiracial) were retained.

Predictions, Results, and Discussion

Lay understanding of value-similarity and value-compatibility. For the 18 value-pairs for which I had predictions, ratings of the Similarity and Compatibility of pairs of the same values (e.g., Similarity of Purity/Hedonism with Compatibility of Purity/Hedonism, and Similarity of Hedonism/Purity with Compatibility of Hedonism/Purity) were always significantly positively correlated (at $p < .01$, r s ranging from .26 to .55), as were ratings of the Compatibility of pairs of the same values (e.g., Compatibility of Purity/Hedonism with Compatibility of Hedonism/Purity) (at $p < .001$, r s ranging from .45 to .71). This demonstrates that participants' ratings of the Similarity and Compatibility of pairs of values are fairly non-independent, and ratings of inverse Compatibility pairs (e.g., Purity/Hedonism and Hedonism/Purity) are especially related.

In line with this, when classified as Similar versus Dissimilar and Compatible versus Incompatible using participants' mean ratings (e.g., ratings of 1 = *very similar* to 3 = *slightly similar* coded as 0 = *similar*; ratings of 4 = *slightly dissimilar* to 6 = *very dissimilar* coded as 1 = *dissimilar*; see Table 3), the 100 value-pairs were all classified as either Similar & Compatible or Dissimilar & Incompatible. Overall, in contrast to my theoretically-based predictions, participants' ratings of the Similarity and Compatibility of the value-pairs were always highly related, resulting in none of the value-pairs of interest being classified as either Similar & Incompatible or Dissimilar & Compatible. These results suggest that value-similarity and compatibility may be confounded in the existing literature because lay understandings of these concepts are highly related.

Table A2. From supplementary study, mean Similarity and Compatibility ratings of the 18 value-pairs of interest, as well as their 2 X 2 classifications.

Perceiver Value	Target Value	Similarity Rating		Compatibility Rating		2 X 2 Classification	
		M	SD	M	SD	Based on mean participant ratings	Hypothesized
Purity	Hedonism	4.80	1.34	4.66	1.39	Dis & Inc	Dis & Inc
Hedonism	Purity	--	--	4.61	1.54	Dis & Inc	Dis & Inc
Universalism	Power	5.21	1.23	5.01	1.36	Dis & Inc	Dis & Inc
Power	Universalism	--	--	4.53	1.59	Dis & Inc	Dis & Inc
Self-direction	Obedience	4.66	1.28	4.12	1.59	Dis & Inc	Dis & Inc
Obedience	Self-direction	--	--	3.92	1.49	Dis & Inc	Dis & Inc
Achievement	Humility	4.63	1.40	4.18	1.69	<i>Dis & Inc</i>	<i>Dis & Com</i>
Humility	Achievement	--	--	4.12	1.53	<i>Dis & Inc</i>	<i>Dis & Com</i>
Purity	Obedience	2.08	1.26	2.10	1.37	<i>Sim & Com</i>	<i>Dis & Com</i>
Obedience	Purity	--	--	2.14	1.29	<i>Sim & Com</i>	<i>Dis & Com</i>
Power	Power	1.50	1.15	2.16	1.89	<i>Sim & Com</i>	<i>Sim & Inc</i>
Achievement	Achievement	1.48	1.10	1.74	1.51	<i>Sim & Com</i>	<i>Sim & Inc</i>
Universalism	Universalism	1.43	1.06	1.57	1.33	Sim & Com	Sim & Com
Purity	Purity	1.46	1.13	1.78	1.52	Sim & Com	Sim & Com
Hedonism	Hedonism	1.47	1.18	1.61	1.31	Sim & Com	Sim & Com
Self-Direction	Self-Direction	1.60	1.21	1.78	1.55	Sim & Com	Sim & Com
Obedience	Obedience	1.45	1.05	1.77	1.59	Sim & Com	Sim & Com
Humility	Humility	1.55	1.24	1.62	1.29	Sim & Com	Sim & Com

Note. For Similarity ratings, 1 = *very similar* to 6 = *very different*; mean ratings of 1.00-3.50 classified as Similar, ratings of 3.51-6.00 classified as Dissimilar. For Compatibility ratings, 1 = *very compatible* to 6 = *very incompatible*; ratings of 1.00-3.50 classified as Compatible, ratings of 3.51-6.00 classified as Incompatible. In the "2 X 2 Classification" column, Sim = Similar, Dis = Dissimilar, Com = Compatible, Inc = Incompatible.

Exploration of methodological assumptions of Hypothesis 1. Given that the Hypothesis 1 results revealed small main effects of Value-Similarity on intergroup negativities, large main effects of Value-Compatibility, and mixed results regarding a Value-Similarity X Value-Compatibility interaction, I wanted to explore the strength of my Value-Similarity and Value-Compatibility manipulations using participants' ratings of the Similarity and Compatibility of the 18 value-pairs of interest. In other words, given that I found small, inconsistent effects of Value-Similarity, but that the existing literature would predict larger and/or consistent effects, I wanted to explore whether the lack of consistent Value-Similarity effects could be explained by a weak manipulation. In short, I wanted to explore whether those value-pairs that I hypothesized to be similar were rated as more similar than those I hypothesized to be dissimilar, and whether those value-pairs that I hypothesized to be compatible were rated as more compatible than those hypothesized to be incompatible. Although participants' ratings of the similarity and compatibility of the value-pairs were strongly related, and despite the fact that participants' 2 X 2 classifications did not map onto mine, they may still have rated the value-pairs differently on the dimensions of similarity and/or compatibility.

To explore whether participants' ratings of the value-pairs would support my methodological assumptions from Study 1, I conducted a 2 (Hypothesized Similarity: Similar, Dissimilar) X 2 (Hypothesized Compatibility: Compatible, Incompatible) X 2 (Outcome Measure: Similarity, Compatibility) repeated measures ANOVA. If participants' ratings of the Similarity and Compatibility of the 18 value-pairs of interest were in line with my predictions, we would predict that (1) Similar value-pairs will be rated as significantly more similar than Dissimilar value-pairs (i.e., a 2-way Hypothesized

Similarity X Outcome Measure interaction of the predicted form) and (2) Compatible value-pairs will be rated as significantly more compatible than Incompatible value-pairs (i.e., a 2-way Hypothesized Compatibility X Outcome Measure interaction of the predicted form).

First, in line with predictions, value-pairs hypothesized as similar ($m = 1.51$, S.E. = .10) were rated as significantly more similar than those hypothesized as dissimilar ($m = 4.11$, S.E. = .06; mean difference = 2.60, $p < .001$ based on pairwise comparisons). And, value-pairs hypothesized as compatible ($m = 2.46$, S.E. = .08) were rated as significantly more compatible than those hypothesized as incompatible ($m = 3.19$, S.E. = .07; mean difference = 0.73, $p < .001$). As such, I was well suited to detect main effects of Value-Similarity and Value-Compatibility on intergroup negativities, especially when using a within-subjects design that allows for greater power to detect experimental effects. Furthermore, the effect of Hypothesized Similarity on ratings of Similarity is much larger than the effect of Hypothesized Compatibility on ratings of Compatibility. If anything, this would imply that I was well suited to find a main effect of Value-Similarity on intergroup negativities (if one existed), and less well suited to find a main effect of Value-Compatibility. As such, the fact that we found a large, consistent main effect of Value-Compatibility coupled with a small and inconsistent main effect of Value-Similarity enhances my confidence in my conclusion that Value-Incompatibility affects intergroup negativities more so than does Value-Dissimilarity.

Results further indicated a significant Hypothesized Similarity X Outcome Measure interaction ($F(1,117) = 18.29$, $p < .001$, $\eta_p^2 = .14$), but no significant Hypothesized Compatibility X Outcome Measure interaction ($F(1,117) = 0.09$, $p = .769$).

However, the significant Hypothesized Similarity X Outcome Measure interaction was further modified by a significant Hypothesized Similarity X Hypothesized Compatibility X Outcome Measure interaction ($F(1,117) = 5.53, p = .020, \eta_p^2 = .05$; see Figure A1) such that Similar & Compatible value-pairs and Similar & Incompatible value-pairs were rated nearly identically (as both highly similar and highly compatible) to one another, Dissimilar & Compatible value-pairs were rated as moderately dissimilar and moderately incompatible, and Dissimilar & Incompatible value-pairs were rated as strongly dissimilar and strongly incompatible. This 3-way interaction reflects the fact that my hypothesized “independent” variables (i.e., Value-Similarity and Value-Compatibility) were highly confounded, at least when examining lay ratings of value-similarity and compatibility.

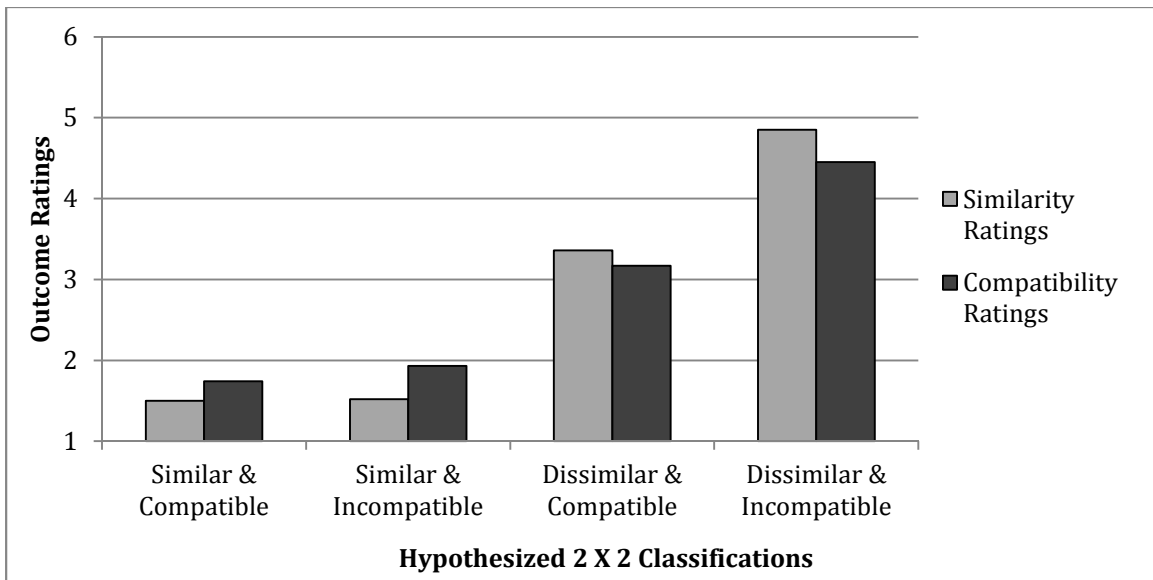


Figure A1. Similarity and Compatibility outcome ratings for the supplementary study.

To conclude, I am hesitant to draw strong conclusions based on participants' ratings of Similarity and Compatibility given that the Hypothesis 1 results are theoretically coherent. However, there are two important conclusions to draw from the results of the supplementary study. First, participants' ratings of the Similarity and Compatibility of cross-group value-pairs were highly confounded, suggesting that confounding of these concepts in the existing literature may reflect lay understandings of these concepts. Second, the Hypothesis 1 results (particularly, the lack of a consistent Value-Similarity effect on intergroup negativities) do not appear to be the result of a weak manipulation of Value-Similarity. If anything, my manipulation of Value-Similarity was stronger than that of Value-Compatibility, yet I found consistent, strong effects of Value-Compatibility on intergroup negativities and inconsistent, weak effects of Value-Similarity. Overall, although participants' ratings of the Similarity and Compatibility of value-pairs were not perfectly aligned with my theoretically based predictions, I am still confident in the conclusions drawn from the results of the focal study.

APPENDIX H

NON-REDUNDANT VALUE-PAIRS FOR SUPPLEMENTARY STUDY

8 values: Purity, Hedonism, Universalism, Power, Self-direction, Obedience, Achievement, Humility

**indicates pairing for which I have predictions (see Table 1)

Participants rate pairs 1-36 on similarity/dissimilarity; they rate pairs 1-36 and 2a-35a on compatibility/incompatibility.

1. Purity/Purity**
2. Purity/Hedonism** (2a. Hedonism/Purity**)
3. Purity/Universalism (3a. Universalism/Purity)
4. Purity/Power (4a. Power/Purity)
5. Purity/Self-direction (5a. Self-direction/Purity)
6. Purity/Obedience** (6a. Obedience/Purity**)
7. Purity/Achievement (7a. Achievement/Purity)
8. Purity/Humility (8a. Humility/Purity)
9. Hedonism/Hedonism**
10. Hedonism/Universalism (10a. Universalism/Hedonism)
11. Hedonism/Power (11a. Power/Hedonism)
12. Hedonism/Self-direction (12a. Self-direction/Hedonism)
13. Hedonism/Obedience (13a. Obedience/Hedonism)
14. Hedonism/Achievement (14a. Achievement/Hedonism)
15. Hedonism/Humility (15a. Humility/Hedonism)

16. Universalism/Universalism**
17. Universalism/Power** (17a. Power/Universalism**)
18. Universalism/Self-direction (18a. Self-direction/Universalism)
19. Universalism/Obedience (19a. Obedience/Universalism)
20. Universalism/Achievement (20a. Achievement/Universalism)
21. Universalism/Humility (21a. Humility/Universalism)
22. Power/Power**
23. Power/Self-direction (23a. Self-direction/Power)
24. Power/Obedience (24a. Obedience/Power)
25. Power/Achievement (25a. Achievement/Power)
26. Power/Humility (26a. Humility/Power)
27. Self-direction/Self-direction**
28. Self-direction/Obedience** (28a. Obedience/Self-direction**)
29. Self-direction/Achievement (29a. Achievement/Self-direction)
30. Self-direction/Humility (30a. Humility/Self-direction)
31. Obedience/Obedience**
32. Obedience/Achievement (32a. Achievement/Obedience)
33. Obedience/Humility (33a. Humility/Obedience)
34. Achievement/Achievement**
35. Achievement/Humility** (35a. Humility/Achievement**)
36. Humility/Humility**

APPENDIX I
MATERIALS FOR SUPPLEMENTARY STUDY

Participants rated the similarity/dissimilarity and compatibility/incompatibility of all the pairs of the eight values of interest; the eight descriptions of groups' values were items 1-8 of Appendix A. Participants rated "chunks" of values, with each chunk displayed in a random order. Specifically, on the top of the screen, participants saw a description of one group's value (e.g., "Upholding standards of decency and sanctity is important to members of this group. It is important to them to avoid doing anything 'unnatural', even if nobody is harmed") and on the bottom of the screen they saw the descriptions of each of the potential values that could pair with the value on the top (excluding redundant pairs). Within each chunk, the "pairing" values on the bottom of the screen were displayed in random order. This chunking method was adopted to make the ratings cognitively simpler and less fatiguing for participants than simply seeing every value-pair in a random order.

Similarity/Dissimilarity ratings: "On the following pages, you will be rating how *similar* or *different* certain pairs of things are. For example, imagine a squirrel. On a scale of 1 = *very similar* to 6 = *very different*, how similar (or different) is a chipmunk to a squirrel? How similar is a fox to a squirrel? How similar is a bluebird to a squirrel?"

Specifically, you will rate how similar or different the *values* of two groups are. Groups vary in their values, and some values are fairly similar to one another whereas others are fairly different from one another.

For example, if one group values longer prison sentences for criminals and another group values increasing the number of police officers patrolling neighborhood streets, these groups' values are fairly similar. However, if one group values longer

prison sentences for criminals and another group values reducing the number of police officers patrolling neighborhood streets, these groups' values are fairly different.

For 36 pairs of values, you will provide a rating of how similar or different two groups' values are (1 = very similar, 2 = somewhat similar, 3 = slightly similar, 4 = slightly different, 5 = somewhat different, 6 = very different).

On each page, you will see a different pair of values. Please pay close attention to the values at the top and the bottom of each page.

There are no right or wrong answers. We are interested in your honest thoughts and impressions.”

Compatibility/Incompatibility ratings: “On the following pages, you will be rating how *compatible* or *incompatible* certain pairs of things are. What do we mean by compatible and incompatible?

Incompatible means “causes a conflict of interest” and compatible means “does NOT cause a conflict of interest.”

A conflict of interest occurs when an individual or group acts in ways that hinder or interfere with others' desired goals, outcomes, or behaviors.

So, two parties are *incompatible* when they hinder or interfere with each others' desired goals, outcomes, or behaviors, but two parties are *compatible* when they do NOT hinder or interfere with each others' desired goals, outcomes, or behaviors.

For example, imagine a squirrel and a bluebird. Squirrels and bluebirds don't interfere with one another's goals or outcomes (i.e., they don't eat the same food, they

aren't aggressive against one another, etc.). Squirrels and bluebirds are pretty *compatible* with each other.

In contrast, imagine a squirrel and a fox. From the squirrel's perspective, the fox poses a large conflict of interest because the fox wants to eat the squirrel but the squirrel doesn't want to be eaten. From the squirrel's perspective, the fox is very *incompatible* with the squirrel.

Finally, imagine a squirrel and a chipmunk. From the squirrel's perspective, the chipmunk also poses a conflict of interest because the chipmunk competes with the squirrel for resources like food and shelter. From the squirrel's perspective, the chipmunk is also *incompatible* with the squirrel.

Specifically, you will rate how compatible groups' values are to each other based on descriptions of the groups' values. Groups vary in their values, and some values are compatible while others are incompatible.

For example, from the perspective of a group that values gun-rights (i.e., is against limiting restrictions on firearm ownership), a group that values gun-control (i.e., is for increasing restrictions on firearm ownership) has *incompatible* values because the group that values gun-control may interfere with the desired goals and behaviors of the group that values gun-rights.

However, from the perspective of a group that values gun-rights, a group that values increasing border patrols and protections has *compatible* values because the group that values increasing border protections would likely not interfere with the desired goals and behaviors of the group that values gun-rights.

For 64 pairs of values, you will provide a rating of how compatible or incompatible one group's values are to another group (1 = very compatible, 2 = somewhat compatible, 3 = slightly compatible, 4 = slightly incompatible, 5 = somewhat incompatible, 6 = very incompatible).

For each pair of groups' values, one group will be labeled **Group A (or B, C, etc.)** and the other will be labeled **Comparison Group**. Please try to take the perspective of Group A (or B, etc.), and then rate the compatibility/incompatibility of the Comparison Group's value from Group A's perspective.

For example, recall the squirrel and the fox. Again, from the squirrel's perspective, the fox is very incompatible because the fox wants to eat the squirrel but the squirrel doesn't want to be eaten.

On the other hand, from the fox's perspective, the squirrel poses no conflict of interest because foxes like to eat meat and squirrels are meat. From the fox's perspective, the squirrel is very compatible with the fox.

So, when rating the compatibility/incompatibility of groups' values, you will rate how compatible or incompatible the Comparison Group's value is from the perspective of Group A.

On each page, you will see a different pair of values: one value from Group A (or B, C, etc.) at the top of the page, and one value from the Comparison Group at the bottom of the page. Please pay close attention to the values at the top and the bottom of each page.

Please note that, at the top of each page, you will see a value for Group A through Group H (eight groups). However, you may not see these in alphabetical order. For

example, you may see Group D, followed by Group F, Group A, Group C, Group H, Group G, Group B, and Group E.

Furthermore, for each Group A-H, you will rate eight comparison groups. So, you will see the value of Group A combined with one value, then another, then another, until you have rated eight Comparison Groups from Group A's perspective. Once you have made eight ratings, you will move onto the next group (e.g., Group B) and make eight more ratings. This will continue until you have made 64 ratings. There are no right or wrong answers. We are interested in your honest thoughts and impressions.”