AN EXPERIMENTAL TEST OF THE REFORMULATED CONTACT MODEL

by

LAUREN E. COURSEY

Presented to the Faculty of the Graduate School of

The University of Texas at Arlington in Partial Fulfillment

of the Requirements

for the Degree of

DOCTOR OF PHILOSOPHY

THE UNIVERSITY OF TEXAS AT ARLINGTON

August 2015

Acknowledgements

I would like to thank my mentor Dr. Jared Kenworthy for all of his guidance and assistance throughout my graduate career. I could not ask for a more supportive mentor. I would also like to express my gratitude to my committee members, Dr. Park, Dr. Dougall, Dr. Lopez, and a special thanks to Dr. Paulus. I had many research assistants for whom this project would not be possible. I would particularly like to mention Stephanie Diaz, Angela Escoto, Brandi Stephens, and Michael Perez for their amazing work. As a personal acknowledgement, I would like to thank Beverly Coursey for the love and support that made all my accomplishments possible. Finally, I would like to dedicate this work to Sam Coursey. Words cannot describe what he has meant to me. He was a loving father and an honest man. He is greatly missed.

July 20, 2015

Abstract

AN EXPERIMENTAL TEST OF THE REFORMULATED CONTACT MODEL

Lauren E. Coursey, PhD

The University of Texas at Arlington, 2015

Supervising Professor: Jared B. Kenworthy

Intergroup contact is generally accepted as an effective means of reducing negative outgroup attitudes. However, the nature of the psychological processes underlying the effects of contact is a point of much debate. In an effort to solve this debate, much research has been devoted to investigating (re)categorization strategies involved in intergroup contact. Three popular strategies are decategorization, salient categorization, and superordinate categorization. In the current study I provide an experimental test of Pettigrew's (1998) reformulated contact model. The reformulated contact model poses a specific time-ordered sequence for the presentation of each of these three categorization strategies. Through computer-mediated contact, the sequence of categorization processes were manipulated to test the predictions of the reformulated model. I hypothesized that decategorization followed by salient categorization and finally superordinate categorization would result in the most positive attitudes toward an atheist outgroup compared to all other order sequences. Contrary to predictions, the order of categorization discussion prompts did not predict attitudes toward atheists. Attitudes toward atheists became more positive following the contact manipulation for all participants regardless of condition. Different categorization prompts uniquely impacted self-reported mood. The theoretical and practical implications of the study are explored.

Table of Contents

List of Illustrations

List of Tables

Chapter 1

Introduction

Overview

For sixty years Allport's (1954) contact hypothesis (see also, Amir 1969; Cook, 1985) has stimulated research efforts aimed at better understanding the role of intergroup interactions in reducing prejudice (Pettigrew, 1998; Pettigrew & Tropp, 2000). Allport (1954) argued that personal contact between members of opposing groups would lead to more positive intergroup attitudes, if structured so as to provide equal status between partners, cooperation, and institutional support. A now extensive body of research using a variety of methodologies (e.g., Cook, 1978; Deutsch & Collins, 1951; Fine, 1979; Pettigrew, 1997) attests to the power of positive intergroup contact to reduce intergroup bias across a range of targets (see Dovidio, Gaertner, & Kawakami, 2003; Pettigrew 1998; Pettigrew & Tropp, 2006). In a meta-analysis including over 500 studies, Pettigrew and Tropp (2006) found the bias-reducing effects of contact to be reliable and robust with 94% of studies reporting a significant and positive relationship between intergroup contact and positive outgroup attitudes. Although the consistent and beneficial effects of positive intergroup contact are evident and generally accepted, the process by which the effect occurs and how it is generalized beyond the immediate contact episode to impact attitudes toward the outgroup as a whole is a point of much debate (see Pettigrew, 1998). A popular explanation for the effects of contact focuses on the ability of intergroup contact to change the basic categorization processes underlying group-based attitudes (see Brown & Hewstone, 2005; Miller, 2002). In the current study, I examine the categorization processes involved in the reduction of anti-atheist prejudice. Specifically, I propose a test of Pettigrew's (1998) reformulated contact model in which various categorization processes (i.e., decategorization, salient categorization, and superordinate

categorization) are manipulated in an ordered sequence within the contact setting in order to produce more positive outgroup attitudes.

According to social identity theory (Tajfel, 1974; Tajfel & Turner, 1979) and self-categorization theory (Turner, Hogg, Oakes, Reicher, & Wetherell, 1987) one's self-concept is composed of both an individual identity, marked by idiosyncratic differences that make each person unique, and a group identity, defined as "…that part of an individual's self-concept which derives from his knowledge of his membership of a social group…" (Tajfel, 1978a, p. 63). Self-categorization theory emphasizes the importance of the social-self or social-identity that arises from ingroup and outgroup categorizations. The general belief is that categorization of stimuli into groups is an automatic and perhaps inevitable process; when presented with social groups individuals naturally assign the self and similar others to ingroups and dissimilar others to outgroups (Tajfel 1978a; Turner, 1987, 1989). Once formed, these groups can take on emotional significance as members identify with their respective ingroups and derive self-esteem from membership in valued groups. Identification with an ingroup typically leads to ingroup-favoring behaviors aimed at increasing the resources and status of the ingroup (Tajfel, 1974; Turner, 1978). Often, this ingroup attachment can go beyond ingroup favoritism to promote behaviors aimed toward the outgroup such as outgroup derogation and discrimination. In sum, the social categorization process is thought to create the meaningful "us" and "them" distinctions that ultimately (but not inevitably; Brewer, 1999) lead to intergroup bias and prejudice (Tajfel, 1978a).

As such, interventions that reduce or redraw these boundaries may effectively change intergroup attitudes. Contact may work through either the reduction of group boundaries (Brewer & Miller, 1984), specifically increasing the salience of group boundaries (Hewstone & Brown, 1986), or by the creation of alternative group boundaries

that extend to include previously considered outgroup members (Gaertner, Dovidio, & Bachman, 1996). According to the decategorization model, intergroup contact works best when partners can cast aside their respective group memberships and get to know one another on an interpersonal, as opposed to an intergroup, level. In support of the decategorization model, a variety of personalization strategies including individuation, decategorization, and empathy were shown to lead to more positive attitudes toward outgroup members (Ensari, Christian, Kuriyama, & Miller, 2012; see also Bettencourt, Brewer, Croak, & Miller, 1992). Through decategorized contact, group boundaries are removed and perceptions of outgroup members can become more individuated and personalized. In reaction to the decategorization model, Hewstone and Brown (1986) cautioned that although decategorization can lead to interpersonal attraction, the maintenance of pre-existing group boundaries are important for the generalization of contact effects beyond the immediate contact setting (e.g., Brown, Vivian, & Hewstone, 1999). If group memberships are completely abandoned, then any positive attitudes developed within the contact setting will be applied to the interaction partner individually and not to their respective group as a whole. Therefore, in order for contact to alter group attitudes, group distinctions must be acknowledged and highlighted (see Brown & Hewstone, 2005). Finally, Gaertner and colleagues (1996) sought to restructure the categorization process in an effort to emphasize broader and more inclusive groups. Individuals identify with multiple groups and the group membership that drives evaluative behaviors depends on its accessibility (Turner et al., 1987). Superordinate contact seeks to increase the accessibility of shared, higher order group memberships (Gaertner & Dovidio, 2000). Interventions that recategorize separate group members into more inclusive superordinate groups have produced decreased intergroup bias among children (e.g., Beaton et al., 2012), college students (e.g., Gaertner, Mann, Murrell, & Dovidio,

1989), banking executives (see, Gaertner et al., 1996), and step-families (e.g., Banker & Gaertner, 1998).

Whether decategorization, salient categorization, or recategorization provides the most optimal solution to intergroup bias remains equivocal. Key criticisms have been raised for each process including the need for group salience to remain intact in order to affect attitudes at the group level (Hewstone & Brown, 1986) and the possibility for recategorization to produce reactance (e.g., Crisp, Stone, & Hall, 2006; Turner & Crisp, 2010). Brown and Hewstone (2005), among others (e.g., Miller, 2002), highlight the fact that the various categorization processes are not, and need not be, mutually exclusive. Various integrative approaches have been proposed to reconcile opposing theoretical orientations. One such approach is Pettigrew's (1998) reformulated contact model in which the processes of decategorization, salient categorization, and recategorization are alternately emphasized during the stages of contact in which they will be most advantageous. Pettigrew hypothesized that decategorized contact would be most beneficial at the beginning so as to promote interpersonal friendship and liking. After interpersonal attraction is established, group memberships can be then reintroduced and emphasized in order to promote the generalization of positive attitudes to the entire outgroup. Through the combination of decategorization and category salience the reformulated model capitalizes on the ability of personalization to foster interpersonal attraction, while protecting against the complete dissolution of category distinctions. Superordinate identities may then be introduced in the final stage of contact in which the outgroup can be accepted into the ingroup to produce maximum bias reduction.

Unfortunately, despite its comprehensiveness, the ordered sequence outlined in the reformulated model has not been thoroughly tested. Perceptions of Pettigrew's categorization processes (i.e., decategorization, salient categorization, and superordinate

identity) were examined as mediators for the relationship between contact and attitudes in two longitudinal studies (Eller & Abrams, 2003, 2004). Both studies assessed self-reported categorization perceptions. No study to date has experimentally tested the sequence of different categorization processes as outlined by the reformulated model within a contact intervention. The current study experimentally manipulates the categorization stages via discussion prompts. Until recently, fully decategorized intergroup contact has been difficult given the visual and/or verbal cues that often indicate group membership in face-to-face contact (Miller, 2002). In the current study I use computer-mediated-contact (i.e., instant messaging) to experimentally control the timing of group salience. The current study is the first (to my knowledge) experimental test of Pettigrew's (1998) sequential categorization solution. In the following sections, I further elaborate the theory of intergroup contact, the categorization methods of reducing intergroup bias, and Pettigrew's integration of these methods.

<div style="text-align:center">Contact Theory and Social Categorization</div>

Hundreds of studies have demonstrated the power of intergroup contact to alter outgroup attitudes (Dovidio et al., 2003; Pettigrew & Tropp, 2006). According to Allport's (1954) original hypothesis, intergroup contact is most effective when conducted under the optimal conditions of a cooperative environment, equal status among groups, the presence of common goals, and authority support (see also Pettigrew, Tropp, Wagner, & Christ, 2011). Yet Pettigrew et al. (2011) and Pettigrew and Tropp (2006) argue that many of these conditions are likely to be sufficient, but not necessary, to elicit positive intergroup contact effects, leaving researchers to increasingly expand and modify the list in the hopes of optimizing intergroup contact (Eller & Abrams, 2004). However, Pettigrew and colleagues (Eller & Abrams, 2004; Pettigew, 1986) in the field have called for a shift in focus away from what has been called a "laundry list of conditions" (Pettigrew, 1998) to

examining the underlying social-cognitive processes and the ways in which the positive effects of contact are translated beyond the immediate setting and partner to influence attitudes toward unacquainted outgroup members (or the group as a whole). Through a better understanding of these underlying processes, contact may be structured in such a way as to offer optimal prejudice reduction.

To understand how prejudice is best reduced, we must first understand how it is initially formed. Ample evidence suggests that categorization is key to the development of intergroup bias (e.g., Tajfel, 1974; Turner, 1978). Experimental tests using the minimal-groups paradigm (Tajfel, 1974, 1978a, 1978b; Turner, 1978) demonstrate the power of mere categorization into groups to incite competitive and prejudiced behavior. Minimal groups utilize artificial or lab created categorizations based on preferences of Flemish painters, estimation of the number of dots in a grid, or the flip of a coin to elicit competitive strategies in which participants favor the ingroup in point or monetary allocations (Tajfel, 1974; Turner, 1978). In the absence of any sociohistorical or political context (e.g. history of conflict, violence, status hierarchies) that exist in naturally occurring groups, these minimal group paradigms suggest that it is categorization that lies at the root of prejudice (Tajfel, 1974, 1978a, 1978b; Turner, 1978) and not limited resources (LeVine & Campbell, 1972), economic dependence, or differences in values (Stephan & Stephan, 1996).

Investigations into the underlying social-cognitive processes of prejudice reduction have been primarily dominated by decategorization, salient categorization, and recategorization theories (see Miller, 2002). Despite their differences, each theory centers on the idea that if categorization processes underlie group formation and intergroup bias then interventions should focus on altering categorization strategies. Strategies to alter the categorization process provide a new perspective for

6

understanding contact effects and have influenced real-world interventions aimed at decreasing prejudice against various outgroups (see Brown & Hewstone, 2005; Miller, 2002). I examine these strategies in detail below.

<center>Decategorization</center>

Devine (1995) argued that, "If group boundaries maintain and perpetuate intergroup biases, a reasonable strategy for reducing such biases would be to decrease the salience or importance of group boundaries" (p. 479). Paralleling this logic a decade earlier, Brewer and Miller's decategorization model (1984) called for a breakdown of these boundaries through increasingly personalized interactions between group members and a shift from intergroup contact to interpersonal contact. Social interaction is thought to lie along a continuum from purely intergroup, driven solely by individuals as group members with no acknowledgment of individual identity, to purely interpersonal, driven by individuals with no reference to group memberships or social categories (Tajfel, 1982). Much interaction between group members occurs at the intergroup level in which members will engage in category-based interactions (Miller, 2002), viewing the outgroup in stark contrast to the ingroup. Through this category-based perspective, outgroup members will be seen as homogeneous and interchangeable. When the outgroup is seen as homogeneous, stereotypes, often negative, are applied to all members indiscriminately (Mullen & Hu, 1989). In order to be successful, Brewer and Miller (1984) state that contact must occur on an interpersonal, as opposed to an intergroup, level in which outgroup members can become differentiated and personalized (Brown & Hewstone, 2005). After intergroup contact, members may reach an intermediate point on the continuum and recognize the variability within the ingroup and outgroup. From this differentiated viewpoint, an outgroup member can be recognized for their individuality and not be seen as merely a representative of their group. Decategorization is thought to

<center>7</center>

result in more personalized contact between outgroup members in which individual identities are noted and self-other comparisons are made (Ensari et al., 2012). Interpersonal contact promotes relationship and trust building activities such as self-disclosure and perspective taking (Berg & Wright-Buckely, 1988; Collins & Miller, 1994; Laurenceau, Barrett, & Pietromonaco, 1998; Steel, 1991). Thus the reduction in the salience of category boundaries will result in a more individuated and positive view of the outgroup.

In support of the decategorization model, laboratory-based studies have shown that creating an interpersonal focus during intergroup cooperation decreases ingroup bias compared to task-focus conditions (Bettencourt et al., 1992; Ensari & Miller, 2002). When participants were first divided into separate groups and then brought together to cooperate as a team to complete a task, those who were instructed to pay attention to each person as an individual, as opposed to focusing on ideas and the task, were less likely to favor the ingroup in reward allocations and positive trait ratings (Bettencourt et al., 1992). An interpersonal focus during contact is thought to promote outgroup liking and intergroup friendships by increasing relationship facilitating behaviors such as self-disclosure and perspective-taking (Berg & Wright-Buckely, 1988; Ensari et al., 2012; Pettigrew, 1998; Steel, 1991).

In fact, decategorization builds on Allport's original argument that superficial contact will not be sufficient and contact must go "…beyond the surface…" (1954, p. 276) in order to reduce prejudice. Personalized interactions between group members may be necessary to reap the benefits of contact. Five personalization strategies including self-disclosure, individuation, decategorization, self-other comparison, and empathy proved effective in reducing prejudice toward conservatives among a sample of undergraduate liberals (Ensari et al., 2012). Recently, researchers have increasingly turned to

8

assessments of quality contact and outgroup friendships as they may be especially

effective in reducing negative outgroup attitudes (Amir, 1969; Islam & Hewston, 1993;

Pettigrew, 1997; Pettigrew & Tropp, 2006; Voci & Hewstone, 2003). In line with the

decategorization model, quality contact and friendship is thought to enhance positive

interpersonal processes, which in turn, leads to more positive intergroup attitudes. For

example, reciprocal self-disclosure, or the extent to which interacting partners reveal

personal and intimate details, has been shown to mediate the relationship between

quality contact and outgroup attitudes (e.g., Pettigrew, 1998; Tam, Hewstone, Harwood,

Kenworthy, Voci, 2006; Turner, Tam, Hewstone, Kenworthy, Cairns, 2013). Similarly,

engaging in outgroup perspective taking, or seeing the world from the outgroup's point of

view, has been shown to lead to more positive outgroup attitudes and mediate the

relationship between contact and attitudes (e.g., Batson et al., 1997; Galinsky &

Moskowitz, 2000; Harwood, Hewstone, Paolini, & Voci, 2005; Vescio, Sechrist, &

Paolucci, 2003). In a meta-analysis, Pettigrew and Tropp (2008) reported that empathy

and perspective taking strongly mediated the effects of contact on outgroup attitudes.

　　　　Decategorized contact may also buffer the negative effects of intergroup anxiety,

an often cited barrier to successful outgroup contact (Stephan & Stephan, 1996, 2000;

Islam & Hewstone, 1993). There is a great deal of uncertainty involved in interacting with

unfamiliar outgroup members. Individuals may feel that their personal safety is

threatened by what are perceived to be hostile outgroup members. Further, individuals

may fear that they will be rejected or ridiculed by outgroup members during intergroup

contact (Stephan & Stephan, 1996). Contact that reduces the saliency of category

distinctions may simultaneously reduce intergroup anxiety as members interact on an

interpersonal rather than intergroup level. Islam and Hewstone (1993) found that contact

that was perceived as occurring between group members, as opposed to two individuals,

9

resulted in increased intergroup anxiety. On the other hand, intimate, quality contact decreased anxiety (see also Vezzali, Capozza, Mari, & Hichy, 2007). Likewise, relationship-building behaviors that often occur in personalized interactions have been shown to decrease feelings of anxiety (Aberson & Haag, 2007; Turner & Feddes, 2011).

The model, however, has not always proved successful (e.g., Scarberry, Ratcliff, Lord, Lanicek, & Desforges, 1997), especially among children (e.g., Rich, Kedem, & Shlesinger, 1995). For instance, an interpersonal focus during intergroup cooperation reduced ingroup bias only among majority, but not minority, group members (Bettencourt, Charlton, & Kernahan, 1997). In a classroom setting, Rich and colleagues (1995) found that religious prejudice was reduced among young children in the task focus condition but not the interpersonal condition. Cameron and Rutland (2006) utilized an extended contact intervention to change attitudes toward the disabled. Extended contact refers to the vicarious experience of contact one feels after learning that an ingroup member is friends with an outgroup member. In the study, young children listened to and discussed stories which focused on either the disabled child's group membership (intergroup condition) or their individual characteristics (decategorization condition). Attitudes toward the disabled were assessed prior to intervention and one week post-intervention; attitudes were more positive in the intergroup condition but not the decategorization condition. There are a number of reasons why personalized interactions may fail to affect overall outgroup attitudes. Hewstone and Brown (1986) have argued that complete decategorization should not be the goal as a certain amount of group salience is necessary for the immediate contact experience to novel outgroup members. Although the positive effects of self-disclosure with a typical outgroup partner may generalize to novel outgroup members (Ensari & Miller, 2002) this may be unlikely when interaction partners are perceived to be atypical or exceptional group members. It has also been noted that many

decategorization manipulations may fail to completely eliminate group membership cues (Brown & Hewstone, 2005). As previously stated, this could be especially difficult in real-world face-to-face contact as physical appearance and tone of voice often reveal one's group identity.

<div align="center">Salient Categorization</div>

Hewstone and Brown's (1986) intergroup contact model, or salient categorization, maintains the saliency of group distinctions during intergroup contact. According to their model group distinctions are vital if we want the positive effects of contact with an individual to translate to other members of the outgroup. If the contact partner is completely stripped of group identifying cues, then the interpersonal experience cannot possibly affect the more general intergroup attitudes and relations. For example, during contact, individuals may learn stereotype disconfirming information about their outgroup partner. Ideally, this information will then be applied to the outgroup as a whole. However, this is unlikely if intergroup saliency is not reinforced during the contact setting. Under such conditions, any positive perceptions of the interaction partner may be applied to the partner specifically and not more broadly applied to the entire outgroup. Moreover, the individual may create a subcategory in which the disconfirming group member is placed such that the interaction partner is seen as an exception to the rule and novel information is not applied to the group as a whole (Desforges, Lord, Pugh, Sia, Scarberry, & Ratcliff, 1997; Richards & Hewstone, 2001). Subtyping or "re-fencing" (Allport, 1954) poses a barrier to overall stereotype and attitude change. The intergroup contact model, or salient categorization, addresses the problem of outgroup subtyping through emphasizing the outgroup typicality of interaction partners. Perceived partner typicality should aid in generalizing the information and emotional attachment to the outgroup as a whole rather than creating specialized subgroups of outgroup members (Brown et al.,

<div align="center">11</div>

1999). Contact that involves typical outgroup members and salient group boundaries is thought to best alter general outgroup attitudes (Brown & Hewstone, 2005; Brown et al., 1999; Wilder, 1984).

In real-world settings group membership is often reinforced through visual and verbal cues. Group members may also repeatedly reference their group so as to draw attention to category membership (Miller, 2002). Thus, real-world contact is likely to follow the intergroup contact model (i.e., salient categorization). Self-reported group saliency has emerged as a reliable moderator of the relationship between contact and intergroup attitudes (for a review see Brown & Hewstone, 2005). Survey items are used to tap individuals' awareness of outgroup membership during contact and ratings of outgroup members' typicality (e.g., Voci & Hewstone, 2003). The relationship between contact (quantity and quality) and positive attitudes toward immigrants (Voci & Hewstone, 2003), rival nationals (Brown, Maras, Masser, Vivian, & Hewstone. 2001), the disabled (Vezzali & Capozza, 2011), and the elderly (Harwood et al., 2005) was stronger when self-reported group saliency was high. Laboratory manipulations of group saliency and partner typicality have likewise provided support for the intergroup contact model (Brown et al., 1999; Desforges et al., 1991, 1997; Van Oudenhoven, Groenewoud, & Hewstone, 1996). For example, British undergraduates had more positive attitudes toward Germans as a group after interacting with a German confederate presented as typical of his/her group, compared to an atypical member (Brown et al., 1999).

Despite its promise, evidence for the model remains inconsistent with salient intergroup contact sometimes failing to change generalized attitudes (e.g., Guerra et al., 2010; González & Brown, 2003) or even increasing outgroup prejudice (e.g., Eller & Abrams, 2003, 2004, 2006). González and Brown (2003) experimentally manipulated intergroup salience during a cooperative task among ad hoc groups. Those in the

intergroup salient condition did not exhibit more positive attitudes toward an

unacquainted outgroup member and showed significant ingroup bias in a reward

allocation post-contact compared the the recategorization (e.g., superordinate groups)

conditions. In a real-world context, the self-reported perception that contact was

intergroup in nature predicted more negative attitudes toward French citizens among a

sample of British undergraduates (Eller & Abrams, 2004). In fact, group salience may be

especially damaging in uncontrolled, real-world contact environments as such situations

are less likely to follow Allport's optimal conditions and may be perceived as negative or

threatening experiences. As stated above, intergroup contact is likely to be more anxiety

provoking than interpersonal contact (Greenland & Brown, 1999; Stephan, Diaz-Loving, &

Duran, 2000). For example, perceptions that contact was intergroup in nature predicted

more intergroup anxiety among American students studying in Mexico (Eller & Abrams,

2004). Further, there is laboratory evidence that the relationship between group salience

and negative contact experiences is reciprocal. Not only does group salience set the

stage for negative contact, but Paolini, Harwood, and Rubin (2010) found that a negative

interaction with an outgroup member increased outgroup category salience. Due to the

(sometimes) detrimental effects of salient categorization, various recategorization

strategies have been proposed (e.g., Gaerner & Dovidio, 2000).

<center>Recategorization</center>

The common ingroup identity model (Gaertner & Dovidio, 2000) promotes the

formation of higher order or superordinate groups that can encompass both the ingroup

and outgroup. The idea is to turn volatile "us" and "them" categories into a more inclusive

and harmonious "we" category. Positive emotions, affective ties, liking, and trust are

typically reserved for members of one's ingroup (Dovidio, Gaertner, Validzic, Matoka,

Johnson, & Frazier, 1997; Tajfel & Turner, 1979). Thus the redrawing of group

<center>13</center>

boundaries to form more inclusive ingroups encourages individuals to extend friendship and positive evaluations to those previously considered outgroup members (e.g., Gaertner et al., 1989; Houlette, Gaertner, Johnson, Banker, Riek, & Dovidio, 2004; West, Pearson, Dovidio, Shelton, & Trail, 2009). Gaertner and colleagues (Gaertner et al., 1996) recommend a focus on mutually shared overarching groups during contact interventions so as to facilitate the acceptance of outgroup members. Once drawn these new boundaries are expected to subsume and negate preexisting category distinctions. Positive attitudes are then generalized to all superordinate category members, including all former outgroup members (Gaertner & Dovidio, 2000). Indeed, Allport's optimal conditions are suspected to work through their inadvertent impact on the superordinate categorization process (Gaertner et al., 1996). Cooperative intergroup contact, such as that induced in Sherif's (Sherif, 1958; Sherif & Sherif, 1953) Robber's Cave experiment, is designed to not only redefine intergroup goals but also relations between group members and the boundaries of the groups themselves (see Gaertner, Dovidio, Banker, Houlette, Johnson, & McGlynn, 2000). Shared tasks, mutually beneficial goals, and common fate can stimulate the creation of superordinate groups (Geartner et al., 1996).

Laboratory interventions that manipulate seating arrangements, cooperative tasks, and shared team names, uniforms, or emblems have been shown to elicit perceptions of common ingroup identity and alter outgroup attitudes (e.g., Gaertner et al., 1996; González & Brown, 2003, 2006; Guerra et al., 2010). Guerra and colleagues (2010) manipulated the categorization process of African and European Portuguese elementary students during a cooperative task. Children placed in an integrated seating arrangement, meant to induce one-group categorization, versus a segregated seating arrangement, intended to induce a two-group categorization, exhibited less bias in competence ratings and resource allocation. This was true for outgroup members

14

physically encountered and for the outgroup as a whole (see also, Guerra, Rebelo, Monteiro, & Gaertner, 2013). Gaertner et al. (1996) similarly manipulated seating arrangements and team names to create separate groups or a one-group categorization scheme among undergraduates in a laboratory setting. Those in the one-group condition rated former outgroup members as more cooperative, honest, and valuable compared to the two-group condition. Perceptions of common group identity has been shown to mediate the relationship between contact and positvie outgroup attitudes in both laboratory (Dovidio, Gaertner, & Validzic, 1998; Dovidio et al., , 1997) and field (Gaertner, Rust, Dovidio, Bachman, Anastasio, 1994) settings. According to the model, contact and intergroup cooperation are thought to work via changes in superordinate group representations (see, Gaertner et al., 1996). Among high school students, optimal contact conditions (Allport, 1954) were found to decrease negative outgroup attitudes via increases in the perception that various ethnicities within the school were all part of a common ingroup (Gaertner et al., 1994). In addition, laboratory categorization manipulations (e.g., seating arrangement) decreased intergroup bias in the absence of cooperation (Gaertner, Mann, Dovidio, Murrell, & Pomare, 1990). Compared to the separate group condition, those in the same group condition displayed lower bias in outgroup evaluations even when intergroup cooperation was not induced. Further, it was found that engaging in intergroup cooperation increased perceptions of a single-group membership. The results suggest that cooperation may decrease negative outgroup attitudes through the increased perception of common ingroup identities.

However, the common ingroup identity model may at times produce adverse effects through its potential to heighten self-identity concerns (see Brewer, 1996). Brewer (1991, 1999) argues that group identification is motivated by both the need to belong and the need to feel unique and distinctive. Optimal group identities help to satisfy motives for

belonging and distinctiveness whereas overly inclusive groups may threaten one's sense of uniqueness (Brewer, 1991, 2007). When the optimal distinctiveness (Brewer, 1991) of these identities are threatened through over-inclusive superordinate groups, group members may be motivated to reestablish their independence. Threats to ingroup distinctiveness can prompt competitive or prejudiced behavior aimed at increasing intergroup differentiation through ingroup bias and discrimination (see Jetten, Spears, & Postmes, 2004). This issue may be especially relevant to individuals who highly identify with their ingroup. These individuals are strongly tied to their ingroup, they take great pride in their group, and group membership is integral to their sense of self (Brown, Condor, Mathews, Wade, & Williams, 1986; Tajfel, 1978a; Tajfel & Turner, 1979). Research suggests that over-inclusive groups may be perceived as threatening to such individuals and common ingroup manipulations can produce increased rather than decreased intergroup bias (Crisp et al., 2006; Turner & Crisp, 2010).

<center>Reformulated Contact Model</center>

Each categorization strategy offers its own unique advantages and limitations. Pettigrew's (1998) reformulated contact model proposes to integrate the three strategies in a time-ordered sequence to maximize the benefits of each. As contact unfolds, each of these techniques will become important at different stages. Interpersonal interactions are expected to be valuable in the first stages of contact as individuals become acquainted with each other and learn about one another. At this stage, decategorized contact can facilitate relationship building behaviors such as self-disclosure and self-other comparisons (Miller, 2002) in the absence of group cues that may induce feelings of anxiety (Islam & Hewstone, 1993). Once the relationship has been forged, intergroup contact, in which group memberships are made salient, can prompt the generalization of contact effects. Through a focus on partners' respective group memberships, the positive

<center>16</center>

affect generated in the immediate contact setting can be generalized to outgroup members not encountered and to the outgroup as a whole. Finally, individuals who have become comfortable with positive intergroup contact may, in time, successfully redraw group boundaries to form more inclusive superordinate groups. Recategorization at the superordinate level will maximize the reduction in bias during the final stage of the contact process through the extension of ingroup favoring behavior now aimed at former outgroup members.

The reformulated model offers a promising reconciliation between the previously opposing categorization strategies, but a thorough test of the model has not been undertaken. Across multiple studies, Eller and Abrams (2003, 2004) investigated the function of categorization processes in the reduction of outgroup bias. Across two studies, friendly contact between ingroup and outgroup members (Study 1 utilized French and European samples; Study 2 utilized Mexican and American samples) resulted in a greater perception of the two groups belonging to one superordinate group (Eller and Abrams, 2003). Also as expected, the perception that contact occurred on an interpersonal level predicted lowered anxiety levels, whereas the perception that contact occurred on an intergroup level had the opposite effect. Although the results highlight the advantages/disadvantages of the various categorization strategies, the studies do not provide a formal test of the Pettigrew model as decategorization, salient categorization, and superordinate categorization were treated as (correlational) mediators in the relationship between intergroup contact and outgroup attitudes. Further, the self-reported perceptions of each categorization process were assessed simultaneously and the specific time-ordered sequence specified by the reformulated model was neither measured nor tested. The current study expands the work of Eller and Abrams (2003,

17

2004) through an experimental test of the categorization sequence outlined in the reformulated contact model.

Current Study

The current study provides the first (to my knowledge) comprehensive, experimental test of Pettigrew's (1998) reformulated contact model. Through computer mediated contact, I manipulate categorization strategies in varying orders. In this way, the sequence outlined in the reformulated model is tested against alternative orderings (e.g., superordinate focus followed by salient categorization and decategorization). A one-way MANOVA with a 6-level IV was used to test the primary hypothesis. Each level of the IV corresponds to a specific ordering of the categorization processes (manipulated through discussion prompts) which was randomly assigned across participants. Order conditions were as follows: Decategorized-Salient-Superordinate; Decategorized-Superordinate-Salient; Salient-Decategorized-Superordinate; Salient-Superordinate-Decategorized; Superordinate-Salient-Decategorized; Superordinate-Decategorized-Salient.

Before recent technological developments, the strict separation of the three techniques proved difficult due to visible and audible group membership cues (Miller, 2002) and the presence of confounding variables such as physical attractiveness or physical similarity that may promote liking outside of category manipulations. Through the use of chat forums and scripted interactions with confederate outgroup members, extraneous influences can be minimized and the sequence of the interaction controlled. Computer mediated contact has proved successful in reducing bias among high school students engaged in extended cooperative problem solving-tasks with outgroup members (White & Abu-Rayya, 2012; White, Abu-Rayya, & Weitzel, 2014). In keeping with Pettigrew's (1998) emphasis on friendship potential, the intervention applied in the

current study is interpersonal in nature, as opposed to the task-focused paradigms utilized in White et al. (2012, 2014). In the current study, I examine the reformulated contact model in the context of religious bias. Atheists are an often-overlooked minority group that faces considerable prejudice in modern America (see Franks & Scherr, 2014; Gervais, 2013).

The structure of contact between religious participants and atheist confederates is manipulated so as to vary the order of categorization processes. It is predicted that the order outlined by the reformulated model (i.e., decategorization followed by salient categorization and finally by superordinate categorization) will produce more positive attitudes toward atheists (hereafter *atheist attitudes*) in general, compared to all other sequences. As personalized contact is argued to be important for the formation of relationships, I expect that decategorization will be most effective when it occurs early on in the contact experience. In general, attitudes are expected to be more positive if contact begins with decategorization, compared to all other order conditions. Brewer and Miller (1984) argue that contact works best when interactions are personalized and category distinctions are minimized. I argue that decategorized contact will be most beneficial at the early stages of the contact intervention (see Pettigrew 1998). Contact that begins with decategorization should minimize feelings of intergroup anxiety and, therefore, more effectively promote positive outgroup attitudes. Attitudes are expected to be more negative if contact ends with salient categorization, compared to all other order conditions. The purpose of decategorization and superordinate categorization is to uncover individual and group similarities that bridge intergroup divisions, so I expect that following decategorization and superordinate categorization with the discussion of salient group differences will undermine any common ground established during the first two phases of the contact intervention.

I also predict that participants who complete the study will have more positive attitudes toward atheists compared to a sample of control participants not exposed to any intergroup contact intervention. Various interpersonal processes, partner evaluations, and mood are expected to vary across discussion sections and order conditions. Just as the reformulated model predicts more positive general outgroup attitudes, I expect that the order condition will predict participants' attitudes toward their specific contact partner. Specifically, I predict that the order outlined by the reformulated model (i.e., decategorization followed by salient categorization and finally by superordinate categorization) will lead to more favorable attitudes toward the contact partner and higher perceived partner similarity. Through beginning with decategorization, this order ensures that anxiety is minimized and interpersonal liking and similarity is established early on in the contact intervention and thereby, potentially inoculating participants against interpersonal animosity that may arise in later discussions of group differences (i.e., during salient categorization). Further, through ending with superordinate categorization, any group differences discussed, or believed to exist, will be resolved through the establishment of common ground, increasingly the likelihood that the participants will see their partner as more similar to themselves.

Self-disclosure and perspective taking are important interpersonal processes underlying the effects of intergroup contact (Harwood et al., 2005; Pettigrew & Tropp, 2008). Decategorized, personalized contact is argued to facilitate the development of self-disclosure and perspective taking. Interventions that begins with decategorized contact as outlined in the reformulated model should promote higher rates of self-disclosure and perspective taking early on in the contact intervention, rates that should continue as the contact intervention unfolds. Interventions that do not begin with

personalized contact may take longer to develop self-disclosure and perspective taking processes between contact partners.

Self-reported emotions are also predicted to vary across the study session. The different categorization processes should uniquely impact mood. As explained above, discussion of group differences is argued to increase feelings of anxiety and discomfort, as such, negative mood should temporarily increase directly following the salient categorization discussion phase. Further, the perceived quality of each discussion phase (i.e., decategorization, salient categorization, and superordinate categorization discussions) will predict overall atheist attitudes. When the conversation is perceived as more enjoyable, atheist attitudes should become more positive. If the conversation is viewed negatively, participants are more likely to have a negative view of atheists in general as a result. Finally, changes in attitudes as a result of the contact intervention are predicted to be stable across time. Specific hypotheses are as follows below.

H_{1a}: Atheist attitudes will be more positive for participants randomly assigned to the Decategorized-Salient-Superordinate condition compared to all others.

H_{1b}: Attitudes will be more positive when contact begins with decategorization. Atheist attitudes will be more positive in the Decategorization-Salient-Superordinate and Decategorization-Superordinate-Salient conditions compared to all other conditions.

H_{1c}: Attitudes will be more negative when decategorization occurs last. Specifically, attitudes will be more negative in the Salient-Superordinate-Decategorized and Superordinate-Salient-Decategorized conditions compared to all other conditions.

H_2: The intergroup contact manipulation will lead to more positive atheist attitudes across conditions. In general, atheist attitudes will be more positive at post-study compared to pre-screen across conditions. Further, it was hypothesized that the order condition would interact with the repeated measures factor to predict atheist

21

attitudes. It was expected that attitudes would be more positive in the Decategorized-Salient-Superordinate condition compared to all other conditions.

H_3: Participants not exposed to the intergroup contact manipulation will not exhibit more positive atheist attitudes at the follow-up assessment compared to the prescreen assessment.

H_4: Order condition will predict partner attitudes, partner similarity, partner typicality, and group saliency. Partner liking, perceived partner similarity, perceived partner's group typicality, and perceived group saliency during the interaction will be higher in the Decategorized-Salient-Superordinate condition compared to all others.

H_{5a}: Self-reported self-disclosure and perspective taking will be higher in the Decategorized-Salient-Superordinate condition compared to all other conditions.

H_{5b}: Self-reported self-disclosure and perspective taking will be higher when contact begins with decategorization (i.e., Decategorized-Salient-Superordinate and Decategorized-Superordinate-Salient conditions) compared to all other conditions.

H_6: Mood is expected to vary across the course of the study. Positive mood is expected to be lowest and negative mood highest directly following the Salient discussion.

H_7: Self-reported expected and perceived conversation quality measured at baseline, following each categorization discussion phase (i.e., measured directly following the decategorization, salient categorization, and superordinate categorization discussions), and after the full thirty-minute conversation will positively predict overall atheist attitudes. As quality ratings increase, atheist attitudes will become more positive.

H_8: Participants exposed to the contact manipulation will have more positive atheist attitudes at a later follow-up assessment compared to control participants.

Chapter 2

Methods

Participants

Based on a power analysis for a one-way MANOVA and an expected power of 1 – β = .80, a total of 158 participants were required. However, because additional co-variates, predictors, and models were anticipated, 201 individuals participated in the study in exchange for partial course credit. A total of nine participants indicated during discussion that they identified as atheist and were not included in the main analyses. The remaining sample consisted of 119 females and 73 males. The religious make-up of participants was 72 non-denominational Christians, 22 Protestants, 57 Catholics, 18 Muslims, 6 Hindus, 3 Buddhists, and 14 other. The racial identity of the sample was 34% White (n = 66), 22% Black (n = 43), 20% Asian (n = 38), and 15% Other/Multiracial (n = 29). 48 participants (25%) reported a Hispanic ethnic identity. The average age of the sample was 20.91 years (SD = 4.24). Only 10 of the 119 participants completed the online follow-up survey. Therefore, Hypothesis 8 could not be tested and the follow-up survey results were not further analyzed.

Procedure

Items from the departmental online prescreen survey were used to assess religious denomination, religious identification strength, race, ethnicity, and baseline atheist attitudes. Upon arrival to the lab, all participants were signed onto Skype instant messenger and were provided with a cover story. Participants were told that the study would examine the effects of communication medium on first impressions. All participants were led to believe they would be chatting with another naïve participant in the next room. This "other participant" was actually a research confederate using a script to guide appropriate responses during the interaction. Prior to the chat session, each participant

completed a brief online survey to assess baseline mood and expectations for the upcoming conversation. In each condition, the participant chatted with the confederate for thirty minutes discussing a total of three assigned "get to know you" topics (i.e., decategorized, salient categorized, and superordinate categorization). In the decategorization discussion section, participants discussed personal details about themselves, such as college major, hobbies, and future life goals. In this condition no reference was made to religious group membership. In the salient categorization section, participants were specifically asked to discuss their religious group and the importance of religion in their life. In the superordinate categorization section, participants were asked to discuss the group similarities they share with their partner. Participants were encouraged to discuss alternative group memberships (e.g., university, state, or nationality) if they did not share a religious group.

Discussion prompts were thoroughly explained to confederates during training. All confederates were provided with possible conversation starters, questions, and responses that would apply to each discussion topic. Personal details which the confederate revealed remained consistent across study sessions. For example, each confederate was provided a name to use during the discussion, gender-specific hobbies (e.g., Zumba and video games), a personal history or backstory (e.g., employed at Target, Biology major, one older brother, born in Texas, etc.), and information regarding their religious beliefs (e.g., atheist, attended bible church in the past, does not believe in God or any higher power). Confederates were encouraged to ask participants topic-related questions such as, "What is your major?" or "Did you grow up as a member of that religion?" Confederates were also instructed to provide polite responses such as "that's interesting" or "I understand" in order to facilitate the conversation. The order of discussion topic presentation was randomized between participants. Participants were

24

instructed to discuss each topic for ten minutes. Upon finishing each discussion section, participants took a short survey to assess (a) emotional reactions, (b) evaluations of the discussion section, and (c) attitudes toward their conversation partner (all items completed a total of three times).

At the end of the full conversation all participants completed an overall partner survey to assess their mood, partner satisfaction, amount of perceived self-disclosure and perspective taking during the interaction, awareness of partner differences during interaction, perceived partner similarities and perceived group typicality of their partner. After completing the survey, participants were met by a research assistant, taken to a separate room, and instructed to complete an unrelated online survey of general social attitudes. Participants were told that the purpose of the final survey was to pilot test potential survey items that may or may not be used for an Honor student's future project. The survey assessed atheist attitudes, trust in atheists, religious fundamentalism, and hometown classification (i.e., rural, urban, or suburban). The survey included filler items to disguise the true intent of the assessment. All survey items are presented in Appendix A. Upon completing the final attitude survey, all participants were thoroughly debriefed and thanked for their participation. No participants reported suspicions regarding their partner or the cover story.

All participants were personally invited (via email) to complete an online follow-up survey for additional SONA credit. The survey was also available to all SONA subjects, including those not enrolled in the current laboratory study. The online study was available from November 28, 2014 – December 2, 2014 and again from February 11, 2015 – February 23, 2015. The follow-up survey contained items to assess religious beliefs and practices, atheist attitudes, and filler items.

Prescreen Survey Items

Demographics and Religion

Date of birth, race, Hispanic ethnicity, and gender were assessed using single self-report items. Participant's religious denomination was assessed using a single self-report item with options for: Nondenominational Christian, Protestant, Catholic, LDS/Mormon, Jewish, Muslim, Buddhist, Muslim, Hindu, Secular, Atheist/Agnostic, or Other. Strength of religious ingroup identification was measured with a series of nine 7-point scales ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). Example items include: "Being a member of my religion is an important reflection of who I am" and "I value being a member of my religion" (see Kenworthy, Barden, Diamond, & del Carmen, 2011).

Atheist Attitudes

Baseline atheist attitudes were assessed using an 11-point feelings thermometer and a bipolar scale. The feelings thermometer ranged from 0 – 100 degrees in ten degree increments (see Haddock, Zanna, & Esses, 1993). Participants rated how favorable they felt towards atheists, with lower scores indicating colder feelings and higher scores indicating warmer feelings. The scale was recoded to range from 1 – 11. The bipolar scales (see, Tausch, Tam, Hewstone, Kenworthy, & Cairns, 2007; Wright, Aron, McLaughlin-Volpe, & Ropp, 1997), anchored from 1 to 7, included six sets of opposing emotions toward atheists, including warm—cold, negative—positive, friendly—hostile, suspicious—trusting, respect—contempt, and admiration—disgust. Before combining items into an average attitude index, item reversals were computed where appropriate so that a higher average scores indicated more positive attitudes.

Discussion Survey Items

Affect

A modified version of the Positive and Negative Affect Schedule (PANAS-X; Watson & Clark, 1994) was used to assess emotions post discussion. Participants were asked to indicate to what extent they felt a series of particular emotion states. Items were altered to include the following emotions: bored, awkward, happy, self-conscious, and uncomfortable. A total of 20 emotion items were used, 9 indicating positive emotions and 11 indicating negative emotions. Participants responded using 9-point scales, ranging from 1 (*not at all*) to 9 (*extremely*). The scale was assessed at baseline and after each conversation section (i.e., Decategorized, Salient, and Superordinate).

Quality

A measure of quality contact was modified to apply to the specific interaction partner (see Tausch, Hewstone, & Roy, 2009). The measure includes six-items, using a 9-point bipolar scale 1 (*Not at all*) to 9 (*Extremely*). Participants rated the conversation with their partner along six dimensions including: pleasant, cooperative, superficial, uncomfortable, awkward, and respectful. The scale was assessed after each conversation section, for Decategorized, Salient, and Superordinate, respectively. Expectations for conversation quality were assessed at baseline. One item was used to assess the perceived friendliness of their interaction partner, assessed on a 6-point scale from 0 (*Not enough information to decide*) to 5 (*Very much*).

Partner Survey Items

Reciprocal Self-Disclosure and Perspective Taking

Reciprocal self-disclosure was assessed using 9 items measured on a 7-point scale 1 (*None at all*) to 7 (*Very much*). Example items include, "How much personal information (e.g., information about them personally and their views) did they disclose to

27

you?" and "How much of your feelings did you express to them?" A six-item measure using 7-point scales 0 (*strongly disagree*) to 6 (*strongly agree*) assessed perspective taking with the interaction partner. Items were adapted from Aberson and Haag (2007). An example item is, "I believe that I have a good understanding of how my partner views the world."

Mood and Partner Attitudes

The same affect measure assessed in the discussion surveys was used to measure the post-conversation mood of all participants. Attitudes toward the partner were assessed using a 5-item scale developed for the study. All items were measured on a 7-point scale from 1 (*Not true*) to 7 (*Very true*). Items include: "My partner is someone I would like to meet in person", "I would like to meet other members of my partner's group", "I don't think I would be friends with someone like my partner", and "I think I would be friends with other members of my partners group".

Group Saliency, Partner Similarity, and Group Typicality

Four items, created for the study, were used to assess group saliency during the conversation. Items include: "When communicating with your partner, how much did you think about their group membership?", and "During your interactions, did you learn about things that make your partner seem very different from you?" Perceived self and partner similarity was assessed using a single item, "How similar are you and your partner." Finally, participants were asked to report the extent to which their partner represented a typical member of the outgroup (i.e., atheists) using a single item. The item was as follows, "During your interactions, did you tend to think of your partner as being like other members of his/her group, or as a unique individual?" All items were measured on a 7-point scale from 1 (*Not at all*) to 7 (*A great deal*).

Attitudes Survey Items

Hometown and Religious Fundamentalism

Self-reported community classification was measured via one item. Participants reported whether their hometown was rural, urban, or suburban. The Revised 12-Item Religious Fundamentalism Scale (FUN; Altemeyer & Hunsberger, 2004) was used to assess individual difference in FUN. The original scale was adapted for a 7-point response format. Participants rated the extent to which they agreed with each statement, ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). Example items include, "To lead the best, most meaningful life, one must belong to the one, fundamentally true religion" and "When you get right down to it, there are basically only two kinds of people in the world: the Righteous, who will be rewarded by God; and the rest, who will not."

Outgroup Attitudes

The main dependent measures were attitudes towards atheists as a group and trust in atheists. The same feelings thermometer and bipolar scales, used in the prescreen survey were used to asses post-discussion atheist attitudes. Before combining bipolar items into average attitude index, item reversals were computed where appropriate so that a higher average score indicates more positive attitudes. A modified feelings thermometer ranging from 0 – 100 degrees in ten degree increments(see Haddock, Zanna, & Esses, 1993) was used to assess trust in atheists. The scale was recoded to range from 1 – 11. Participants rated the extent to which they trusted atheists in general, with lower scores indicating less trust and higher scores indicating more trust.

Follow-up Survey Items

Outgroup Attitudes

Attitudes towards atheists as a group were assessed using the same bipolar scales, used in the prescreen survey and the post-discussion Attitudes Survey were used

to asses follow-up atheist attitudes. Before combining bipolar items into an average attitude index, item reversals were computed where appropriate so that a higher average score indicates more positive attitudes.

Coding Procedure

Each short discussion section was analyzed using trained coders and quantitative text analysis. First, three pairs of trained coders (i.e., five undergraduate assistants and myself) rated twenty-five percent (approximately 150 discussions out of 600) of all short discussion sections along three dimensions including individuating information, group differences, and group similarities. No coder rated more than one dimension. All dimensions were rated on a 5-point scale with 0 (*the dimension was not mentioned)* and 4 (*the majority of the discussion focused on the* dimension). Only the participants' responses were coded; experimenter and confederate posts were excluded from the coding document. For the individuating dimension, coders were asked to rate the extent to which the participant discussed individuating information such as personal facts or details, interests, hobbies, personal goals, individual/unique experiences, etc. For group difference or group salience dimension, coders were asked to rate the extent to which the participant discussed their membership (i.e., religious group) and what made their group unique and different from other groups. For group similarities or superordinate salience dimension, coders were asked to rate the degree to which participants discussed groups that the participant and confederate shared or had in common. Each dimension served as a manipulation check to verify that participants followed the appropriate conversation topics/prompts. Reliability between coders was acceptable, $ICC_{individuation}$ = .59, $ICC_{group\ salience}$ = .58, $ICC_{superordinate\ salience}$ = .45. Once reliability was established on the random sample of conversations, the remaining conversations were coded separately/individually by a single member of the pair.

Each short discussion section was also submitted to a quantitative text analysis using Linguistic Inquiry and Word Count (LIWC; Pennebaker, Booth, & Francis, 2007). The program provides a word count and systemic analysis of text in which words are grouped along separate linguistic dimensions developed by independent raters (Pennebaker et al., 2007). LIWC results for each dimension represent the percentage of words in the text that are represented by that dimension. A single word may be categorized as belonging to more than one dimension according to the LIWC schema, and therefore total percentages may exceed 100%. The LIWC dictionary contains over 80 dimensions. Only 7 were deemed relevant to the current study and included in analyses. These categories include social themed words, religious themed words, first person plural pronouns such as we and us, and words related to insight, positive affect, and negative affect. The social category included words such as, buddies, we, your, and let's. The religious category included words such as afterlife, faith, and scripture. The insight category contained words such as know, discover, and accept. Finally, the assent category was used to measure verbal agreement with words such as agree, yes, and okay. In addition to these standard dimensions, one was added specifically for the purposes of the current study. A category titled "same group" was created to further capture discussion content centered on creating or establishing collective identities. Example words include: we, both, common, similar, and alike. Each short discussion, including participant and confederate responses, were analyzed via LIWC. As confederates were trained to respond consistently across sessions, differences in word use should be attributable to participant differences.

For every confederate, one of each of the short discussion sections (Decategorized, Salient, and Superordinate) across study sessions was randomly selected to be coded and analyzed. Each short discussion was coded by the same

31

coders and along the same dimensions discussed above (i.e., individuating information,

group differences, and group similarities). Only the confederates' responses were coded

and analyzed.

Chapter 3

Results

Preliminary Analyses

Scale means, standard deviations, and reliabilities are presented in Table 1.

Inter-scale correlations for Hypothesis 1 – Hypothesis 5 are presented in Table 2. Inter-

scale correlations for Hypothesis 6 – Hypothesis 7 are presented in Table 3. The atheist

trust thermometer and atheist attitude thermometer were highly correlated and were

therefore averaged into a single composite for use in all analyses. Prior to data analysis,

all variables were screened for the presence of normality and absence of outliers. The

negative emotion assessments following the decategorized, salient, and superordinate

discussions were positively skewed. These variables were transformed using a

logarithmic transformation. Both transformed and untransformed versions of the variables

were analyzed. All other variables met normality assumptions.

Table 1 Large Scale Reliability and Descriptive Statistics

	Scale	N	α^a	M	SD
1.	Prescreen Thermometer	177		5.15	2.44
2.	Prescreen Bipolar	178	.91	4.03	1.22
3.	Self-Disclosure	191	.88	4.55	.92
4.	Perspective Taking	191	.84	4.75	1.25
5.	Partner Ratings	191	.82	5.07	1.27
6.	Group Saliency	191	.78	3.56	1.40
7.	Partner Similarity	191	--	4.01	1.29
8.	Partner Typicality	191	--	5.26	1.59
9.	Attitude-Trust Thermometer [b]	190	.90	7.45	2.38

Table 1 – *Continued.*

10.	Attitude Bipolar	191	.90	4.99	1.19
11.	Baseline Positive	192	.89	5.75	.10
12.	Baseline Negative	192	.84	2.90	1.16
13.	Decategorized Positive	192	.89	3.85	.07
14.	Decategorized Negative	192	.82	1.43	.52
15.	Salient Positive	191	.87	3.84	.07
16.	Salient Negative	191	.68	1.51	.56
17.	Superordinate Positive	191	.92	5.75	.12
18.	Superordinate Negative	191	.89	1.96	1.12
19.	Post Positive	191	.91	5.65	.13
20.	Post Negative	191	.88	1.65	.86
21.	Baseline Quality	192	.68	6.06	1.19
22.	Decategorized Quality	192	.75	6.30	.55
23.	Salient Quality	191	.75	6.19	.59
24.	Superordinate Quality	191	.77	7.32	1.28
25.	Hometown	190	--	2.22	.73
26.	Religious Fundamentalism	191	.92	4.31	1.50
27.	Attitude Composite	183	.92	.00	.79
28.	Follow-up Bipolar	173	.91	4.24	1.11

Note. [a] Cronbach's alpha not computed for single item measures. [b] Reliability was assessed using the correlation between the trust and attitude thermometer scales.

Table 2 Inter-Scale Correlations for Hypothesis 1 – Hypothesis 5

	Variable	1	2	3	4	5	6	7	8	9	10	11
1.	Prescreen Thermometer	--										
2.	Prescreen Bipolar	.76**	--									
3.	Self-Disclosure	.12	.06	--								
4.	Perspective Taking	.16*	.17*	.39**	--							
5.	Partner Ratings	.21**	.26**	.52**	.41**	--						
6.	Group Saliency	-.10	-.18*	.09	-.14	-.24**	--					
7.	Partner Similarity	.04	.12	.23**	.27**	.36**	-.20**	--				
8.	Partner Typicality	.12	.18*	.06	.11	.23**	-.21**	.10	--			
9.	Attitude-Trust Thermometer	.32**	.46**	.17*	.26**	.35**	-.31**	.15*	.09	--		
10.	Attitude Bipolar	.27**	.40**	.29**	.22**	.38**	-.23**	.17*	.19**	.71**	--	
11.	Religious Fundamentalism	-.31**	-.32**	.07	-.16*	-.11	.42**	-.23**	-.18*	-.32**	-.18**	--

Note. N = 177. Sample sizes differ between tables due to missing data.

*p < .05, **p < .001.

Table 3 Inter-Scale Correlations for Hypothesis 6 – Hypothesis 7

	Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1.	Base Pos	--													
2.	Base Neg	-.16*	--												
3.	Decat Pos	.57**	-.15*	--											
4.	Decat Neg	-.13	.53**	-.43**	--										
5.	Salient Pos	.58**	-.18*	.75**	-.29**	--									
6.	Salient Neg	-.13	.47**	-.23**	.64**	-.39**	--								
7.	Super Pos	.64**	-.14*	.73**	-.23**	.72**	-.18*	--							
8.	Super Neg	-.10	.65**	-.17*	.60**	-.26**	.61**	-.23**	--						
9.	Post Pos	.61**	-.08	.74**	-.29**	.76**	-.24**	.82**	-.22**	--					
10.	Post Neg	-.15**	.50**	-.25**	.71**	-.32**	.69**	-.25**	.77**	-.31**	--				
11.	Base Qual	.49**	-.39**	.41**	-.29**	.39**	-.30**	.42**	-.29**	.38**	-.27**	--			
12.	Decat Qual	.28**	-.28**	.63**	-.67**	.46**	-.39**	.50**	-.38**	.51**	-.48**	-.34**	--		
13.	Salient Qual	.27**	-.31**	.40**	-.45**	.62**	-.74**	.39**	-.52**	.43**	-.55**	.39**	.52**	--	

Table 3 —*Continued*

14.	Super Qual	.25**	-.40**	.45**	-.45**	.47**	-.43**	.60**	-.68**	.48**	-.56**	.40**	.53**	.61**	--
15.	Attit Comp	.07	-.12	.19**	-.19**	.29**	-.30**	.21**	-.25**	.25**	-.28**	.09	.24**	.40**	.36**

Note. N = 183. Sample sizes differ between tables due to missing data.
* *p* < .05; ** *p* < .01

Confederate Analyses

A total of 12 research assistants served as confederates for the study. Atheist attitudes were significantly different for one confederate (viz., Verena). All analyses were conducted including and excluding data from this confederate, and results did not appreciably vary when data were excluded and therefore, data for all confederates were included. Each confederate participated in anywhere from 4 – 42 study sessions and as with participants, confederates were randomly assigned to experimental conditions (i.e., discussion/categorization order manipulation). The specific condition by confederate counts are displayed in Table 4. A multivariate ANOVA was conducted to examine the coded dimensions of confederate posts. Each of the three coded dimensions were entered as multiple DVs and confederate was entered as the IV. Discussions did not vary between confederates along any of the coded dimensions, suggesting that study sessions were consistent across confederates.

Table 4 Condition by Confederate Counts

Research Assistant	Decat-Salient-Superordinate	Decat-Superordiante-Salient	Salient-Decat-Superordinate	Salient-Superordinate-Decat	Superordinate-Decat-Salient	Superordinate-Salient-Decat
Angela	3	2	1	4	6	0
Ayda	1	1	0	2	0	0
Brandi	4	3	12	6	4	6
Casey	2	3	1	0	2	1
Cortni	6	5	3	1	8	8
Devika	3	3	3	1	0	1
Felix	5	4	3	4	5	3
Iman	0	2	2	0	1	2
Lauren	2	3	3	3	1	2
Michael	9	7	8	6	5	7
Stephani	3	8	6	9	4	7
Verena	3	1	1	2	1	1

Note. Decat = Decategorization.The total count may exceed the number of sessions ran because, at times, two research assistants would work collaboratively to conduct study sessions (e.g., one would read the script to look for applicable responses while the other typed).

Manipulation Checks

Three separate mixed model ANOVAs were conducted to examine each of the coded discussion dimensions (i.e., individuating information, group differences, and group similarities). For each participant, the three discussions (Decategorized, Salient, and Superordinate) were coded separately and entered as the repeated measures DV. Condition was entered as the between subjects IV. A more conservative significance criterion of $p = .001$ was used to account for multiple analyses. First, the individuating dimension was tested. The amount of content pertaining to individuating information differed across discussion topic, $F(2, 358) = 203.55$, $p < .001$, partial $\eta^2 = .63$. Bonferroni corrected pairwise comparisons were used to further probe the effect. Participants were significantly more likely to discuss individuating information in the decategorized discussion sections compared to the group salient and superordinate discussion sections. See Table 5 for coded dimension means and mean differences. Surprisingly, participants were also significantly more likely to discuss individuating information in the superordinate section, compared to the salient section. Next, the group differences dimension was examined. Mauchley's test of sphericity was significant, Mauchley's W = .80, $\chi^2(2) = 41.27$, $p < .001$. Therefore, the Greenhouse-Geisser statistic was used. The amount of content pertaining to group differences differed across discussion topic, $F(1.66, 300.44) = 308.18$, $p < .001$, partial $\eta^2 = .63$. Participants were significantly more likely to discuss group differences in the salient discussion compared to the decategorized and superordinate discussion sections. Participants were also more likely to discuss group differences in the superordinate discussion compared to the decategorized section. Finally, the same groups dimension was examined. There were differences in the discussion of the same group dimension across discussion topics, $F(2, 179) = 149.06$, $p < .001$, partial $\eta2 = .63$. Participants were more likely to talk about group

similarities in the superordinate discussion, compared to all others. Participants were

significantly more likely to discuss group similarities in the decategorization compared to

the salient section. Together, the results suggest that overall, the discussion prompts

were effective.

Table 5 Coded Dimension Means and Mean Differences

	Decategorized M, SD	Salient M, SD	Superordinate M, SD	Decat-Salient[a]	Decat-Super[b]	Salient-Super[c]
Individuating Information	2.43, 1.20	.41, .64	1.45, 1.17	1.98**	.95**	-1.03**
Group Differences	.33,.58	2.72, 1.16	1.05, 1.10	-2.39**	-.72**	1.67**
Group Similarities	1.17, 66	.34, .55	1.52, 89	.82**	-.35**	-1.17**

Note. N = 187. [a] Positive values indicate that the coded content was higher in the decategorized section compared to the Salient section. [b] Positive values indicate that the coded content was higher in the decategorized section compared to the Superordinate section. [c] Positive values indicate that the coded content was higher in the salient section compared to the superordinate section.
** $p < .001$.

Quantitative text analyses using LIWC were conducted to further analyze

discussion content. A series of nine repeated measures ANOVAs were performed to test

discussion differences (i.e., Decategorization, Salient, and Superordinate) in semantic

content. A more conservative significance criterion of $p = .001$ was used to account for

multiple analyses. See Table 6 for all category mean differences across discussion

topics. As LIWC results are represented as percentages, average means by discussion

topic are uninterpretable and not presented. The Greenhouse-Geisser statistic was used

to test all within-subjects effects. Discussion prompt significantly predicted the social

dimension, $F(1.93, 381.62) = 81.09$, $p < .001$, partial $\eta 2 = .29$. The social dimension is

comprised of words such as brother, children, roommate, and buddy. For example, one

participant wrote, "yes i have 2 older brothers, much older than myself. do you have any

siblings?" Participants were more likely to discuss social themes in the decategorized and

superordinate discussion sections compared to the salient discussion. Discussion prompt significantly predicted the religious and insight dimensions, $F(1.50, 283.34) = 1317.50$, $p < .001$, partial $\eta 2 = .88$ and $F(1.82, 344.44) = 284.87$, $p < .001$, partial $\eta 2 = .60$ for religion and insight respectively. The religious dimension contained words such as God, holy, and soul. For example, one participant wrote, "Yeah, I did, but i really didnt take it seriously, but as Ive grown up, prayer and God has brought me through a lot of tough situations." The insight dimension contained words such as discover, solve, explain, and wonder. For example, a participant wrote,"…if one tries to explain the existence of God rationally they will fail but how do you explain our existence rationally by not incorporating a higher being?" As expected, participants were more likely to discuss religion and insight in the salient discussion compared to all other sections. Participants were also significantly more likely to discuss religion and insight in the superordinate compared to the decategorized section. Discussion prompt also significantly predicted assent, $F(1.99, 376.58) = 107.40$, $p < .001$, partial $\eta 2 = .36$. Assent was lower in the salient section compared to all others. Assent was higher in the superordinate discussion compared to the decategorized discussion section. Use of plural pronouns significantly differed between sections, $F(1.49, 281.34) = 543.57$, $p < .001$, partial $\eta 2 = .74$. Use of plural pronouns was significantly lower in the salient discussion compared to all others. Use was also lower in the salient section compared to the superordinate discussion. Positive emotion significantly differed between discussions, $F(1.92, 363.36) = 311.38$, $p < .001$, partial $\eta 2 = .62$. More positive emotion was expressed in the decategorized discussion section compared to the others. Also, more positive emotion was discussed in the superordinate compared to the salient discussion section. Negative emotion did not significantly differ between sections. Finally, discussion prompt significantly predicted the same group dimension, $F(1.13, 212.58) = 659.43$, $p < .001$, partial $\eta 2 = .78$. As

expected, the same group dimension was more likely to be discussed in the superordinate section compared to all others.

Table 6 Semantic Category Mean Differences

	Decateorized-Salient	Decategorized-Superordinate	Salient-Superordinate
Social	1.66**	-.25	-1.91**
Religious	-3.61**	-.65**	2.96**
Insight	-1.62**	-.42**	1.20**
Assent	.65**	-.40**	-1.04**
Plural Pronouns	-.22**	-1.53**	-1.30**
Positive Emotion	2.94**	1.61**	-1.33**
Negative Emotion	.01	.09	.09
Same Group	-.01	-.48**	-.47**

Note. N = 190.
** $p < .001$.

Hypothesis One

Hypothesis 1 predicted that the order manipulation would predict atheist attitudes. Specifically, in Hypothesis 1a, I expected that atheist attitudes would be highest in the Decategorized-Salient-Superordinate condition. Further, Hypothesis 1b predicted that attitudes would be more positive when contact began with decategorization compared to all other conditions. Specifically, I expected more positive attitudes among the conditions Decategorizaed-Salient-Superordinate and Decategorized-Superordinate-Salient compared to all other conditions. Finally, hypothesis 1c predicted that conditions in which decategorization occurred last (i.e., Salient-Superordinate-Decategorized and Superordinate-Salient-Decategorized), would result in more negative atheist attitudes. A MANOVA was conducted to examine the effects of the order of the discussion sections

on overall attitudes toward atheists. The thermometer composite and the bipolar composite were entered as multiple dependent measures and the order manipulation was entered as a fixed-factor independent variable. A series of planned comparisons using L-Matrices were conducted to test hypotheses 1a through 1c. A more stringent significance level of $p = .010$ was used to account for the use of multiple planned contrasts. Bonferroni corrections were used for all pairwise comparisons.

Box's M and Levene's test were used to test multivariate assumptions of homogeneity of covariance matrices and equality of error variances. Levene's test for equality of error variance was significant for the thermometer composite, $F(5, 184) = 2.29$, $p = .048$. All other assumptions were met. A one-way MANOVA revealed no significant multivariate main effect of discussion order[1]. The between-subjects effect of discussion order was not significant for either the bipolar or the thermometer composite dependent variables. All pairwise comparisons and planned contrasts were not significant[2]. Hypothesis 1 was not supported[3].

<center>Hypothesis Two</center>

Hypothesis 2 predicted that attitude would be more positive at post-test measurement compared to prescreen reports. Further, the order condition was expected to significantly predict change in atheist attitudes from prescreen to post-test. A mixed-model ANOVA was conducted with the order condition entered as the independent

---

[1] Non-significant results are not presented but will be provided upon request.
[2] A planned contrast with Salient first, compared to all other orders, was not significant. A planned contrast with Superordinate first, compared to all other orders, was also not significant.
[3] Including the covariates religious fundamentalism and hometown (dichotomized as rural versus urban and suburban combined) did not alter the pattern of results. Chi-square analyses revealed that religious fundamentalism and hometown did not vary significantly between order conditions.

variable and the prescreen atheist bipolar scale and post-test atheist bipolar scale[4] were entered as the repeated measures dependent variable. Box's M test of equality of covariance matrices was significant, Box's M = 25.80, $F(5, 155684) = 1.67$, $p = .050$, and therefore the Wilkes' Lambda multivariate statistic is reported. The multivariate effect of the repeated measures factor was significant, Wilkes' $\lambda = .65$, $F(1, 171) = 91.29$, $p < .001$, partial $\eta2 = .35$. Atheist attitudes were significantly higher at post-test ($M = 4.97$, $SD = .09$) compared to prescreen ($M = 4.02$, $SD = .09$). The interaction between the repeated measures factor and order condition was not significant. The between-subjects effect of order condition was not significant. Hypothesis 2 was partially supported.

Hypothesis Three

Hypothesis 3 predicted that a group of control participants not exposed to the online-chat contact manipulation would not report a similar increase in positive atheist attitudes from prescreen to follow-up. Prescreen atheist attitudes were assessed. Attitudes were assessed again at time 2 with no intervening contact manipulations. Time between prescreen and posttest assessments ranged from approximately 6 – 178 days. A total of 190 participants completed both the prescreen and follow-up assessments. Thirteen participants were excluded from the analysis because they completed the prescreen after completing the online follow-up survey, leaving 187 included participants. A Mixed-model ANOVA was conducted with the bipolar composite atheist attitude scale entered as the DV, prescreen and follow-up time-points entered as the repeated measures IV, and exposure to the contact manipulation (experimental condition versus control condition) entered as the between-subjects IV. Box's M = 18.53, $F(3, 4.02) = 6.14$, $p < .001$. The multivariate within-subjects effect of time was significant, Wilkes' $\lambda = .86$,

_____

[4] Results substituting atheist thermometer scores as the DV were comparable.

$F(1, 345) = 57.19$, $p < .001$, partial η2 = .14. Atheist attitudes did significantly differ from prescreen ($M = 4.12$, $SD = .07$) to follow-up ($M = 4.59$, $SD = .06$) assessments. The interaction between time and exposure to the contact manipulation was significant, Wilkes' λ = .85, $F(1, 345) = 59.32$, $p < .001$, partial η2 = .15. Pairwise comparisons were conducted to probe the interaction effect. There was a significant difference between prescreen and post-test atheist attitudes among participants exposed to the contact manipulation, $M_{difference} = .96$, $p < .001$. Attitudes were more positive at post-test ($M = 5.01$, $SD = .08$) compared to prescreen ($M = 4.05$, $SD = .09$) levels. However, there was no significant difference between prescreen ($M = 4.18$, $SD = .10$) and post-test ($M = 4.17$, $SD = .09$) atheist attitudes among control participants not exposed to the contact manipulation, Mean difference = .01, $p = .92$. The current results suggest that attitudes did not change in the absence of the online-chat contact manipulation.

Hypothesis Four

I predicted that order condition would have a significant effect on partner evaluations. Partner favorability, partner similarity, typicality, and group saliency were expected to be higher in the Decategorization-Salient-Superordinate condition compared to all other orders. All partner evaluations were assessed in the partner survey that was administered immediately following the full thirty-minute conversation. A MANOVA was conducted with order condition entered as the IV and partner favorability, partner similarity, partner typicality, and group saliency entered as DVs. Levene's test for equality of error variance was significant for partner typicality, $F(5, 185) = 2.69$, $p = .023$. The multivariate effect of order was not significant. There was a significant between-subjects effect of order condition on self-reported partner similarity, $F(5, 185) = 2.98$, $p = .013$, partial $η^2 = .08$. All other between-subjects effects were not significant. A series of planned comparisons using same L-Matrices created for Hypothesis 1 were conducted to

examine significant condition differences. A more stringent significance level of $p = .010$

will be used to account for the use of multiple planned contrasts. Bonferroni corrections

are used for all pairwise comparisons. Contrary to expectations, pairwise comparisons

revealed that reported partner similarity was significantly higher in the Salient-

Superordinate-Decategorized condition (M = 4.42, SD = .23) compared to the

Decategorized-Superordinate-Salient condition (M = 3.47, SD = .22), $p = .040$.

Hypothesis 4 was not supported.

<div align="center">Hypothesis Five</div>

Hypothesis 5a predicted that the order condition would significantly impact self-

reported reciprocal positive self-disclosure and perspective taking during the contact

setting. I expected that self-disclosure and perspective taking would be higher in the

Decategorized-Salient-Superordinate condition compared to all others. Further,

Hypothesis 5b predicted that self-disclosure and perspective taking would be higher

when contact began with decategorization compared to all other conditions. Specifically, I

expected higher reported self-disclosure and perspective taking among the conditions

Decategorizaed-Salient-Superordinate and Decategorized-Superordinate-Salient

compared to all other conditions. A MANOVA in which self-disclosure and perspective

taking were entered as DVs and order condition was entered at the IV was used to test

Hypothesis 5. All multivariate assumptions were met. The multivariate effect of condition

was not significant. The between-subjects effect of order condition was not significant. All

post-hoc pairwise comparisons and planned contrasts were not significant. Hypotheses

5a and 5b were not supported[5].

---

[5] Including the covariates Religious fundamentalism and hometown (dichotomized as rural versus urban and suburban combined) did not alter the pattern of results.

Hypothesis Six

Hypothesis 6 predicted that mood would vary across the course of the study and that the order condition would predict mood. Baseline was measured prior to the chat initiation, after each of the three short discussion sections (i.e., decategorization, salient, and superordinate phases), and again at the completion of the full half-hour conversation. Specifically, for Hypothesis 6, I predicted that positive mood and negative mood would vary across the study (i.e., across assessment points). Further, because discussion of group differences is expected to increase feelings of anxiety, positive mood was expected to be lowest and negative mood highest directly following the salient categorization prompt. Two repeated-measures ANOVAs were used to test Hypothesis 6. Order condition was entered as the IV for each analysis. Positive mood and negative mood were entered as repeated measures (i.e., at baseline, decategorization, salient, superordinate, and post-discussion time-points) for each analysis, respectively. A more conservative significance criterion of $p = .025$ was used to account for multiple analyses. Bonferroni corrections were applied to all pairwise comparisons.

Negative Mood

Box's M test of equality of covariance matrices was significant, Box's M = 243.63, $F(75, 55939) = 3.02$, $p < .001$, and therefore the Wilkes' Lambda multivariate statistic was reported. Mauchley's test of sphericity was also significant, Mauchley's W = .30, $\chi^2(9) = 196.18$, $p < .001$. The Greenhouse-Geisser statistic was used for all within-subjects effects. The multivariate effect of the repeated measures factor was significant, Wilkes' $\lambda = .31$, $F(4, 181) = 102.80$, $p < .001$, partial $\eta^2 = .69$. Negative mood significantly differed across measurements, $F_{within-subjects}(2.65, 487.73) = 202.74$, $p < .001$, partial $\eta^2 = .52$. Pairwise comparisons were conducted to examine differences in mood at each measurement point. Table 7 presents the differences in mean negative mood between

assessment points. Negative mood was significantly higher at baseline compared to all other time-points. Negative mood was significantly higher following superordinate section and at the post-discussion time-point compared to the decategorization and salient sections. Finally, negative mood was higher following the superordinate section compared to post-discussion levels. Negative mood did not significantly differ between decategorization and Salient time-points. The between-subjects effect of order condition did not significantly predict negative mood, $F(5, 184) = .38$, $p = .859$, partial $\eta^2 = .01$. The multivariate interaction between the repeated measures factor and order condition was significant, Wilkes' $\lambda = .68$, $F(20, 601.26) = 3.74$, $p < .001$, partial $\eta^2 = .09$. However, pairwise comparisons revealed that negative mood did not vary according to order condition within time-points[6]. Negative mood by time-point collapsing across the order condition manipulation is presented in Figure 1.

Table 7 Negative Mood Mean Differences

		1[a]	2[b]	3[c]	4[d]	5[e]
1.	Baseline Negative	--				
2.	Decategorized Negative	1.46**	--			
3.	Salient Negative	1.38**	-.08	--		
4.	Superordinate Negative	.93**	-.53**	-.45**	--	
5.	Post Negative	1.25**	-.21**	-.13*	.32*	--

Note. N = 190. [a] A positive value indicates that negative mood was higher at Baseline. [b] A positive value indicates that negative mood was higher at the assessment after the decategorized section. [c] A positive value indicates that negative mood was higher after the salient section. [d] A positive value indicates that negative mood was higher after the superordinate section. [e] A positive value indicates that negative mood was higher at the post-test assessment.
* $p < .05$; ** $p < .01$

---

[6] Results did not differ when transformed variables were used. Results did not meaningfully vary when negative mood defined as uncomfortable and nervous, only.
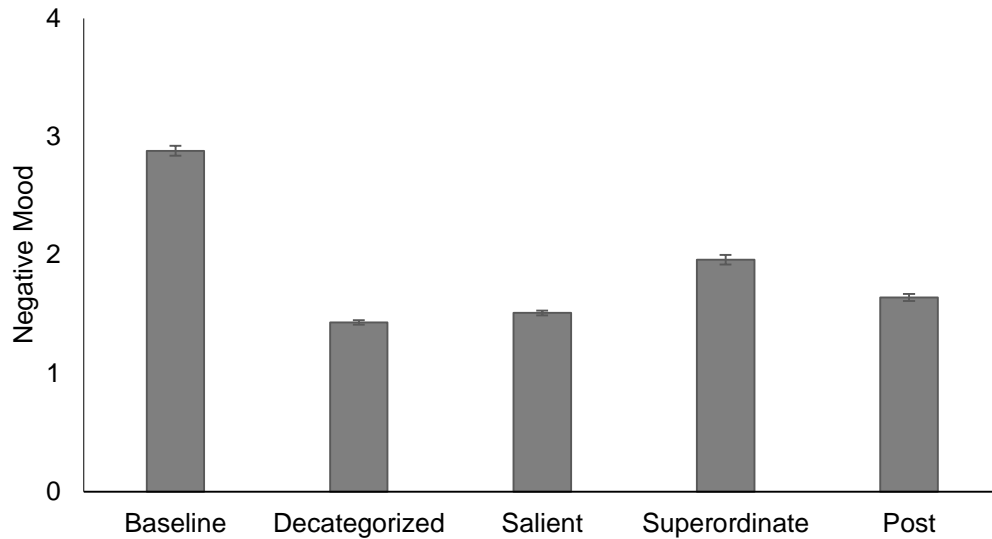
Figure 1 Negative Mood by Time-Point

Positive Mood

Box's M test of equality of covariance matrices was significant, Box's M = 157.56, $F(75, 55939) = 1.96$, $p < .001$, and therefore the Wilkes' Lambda multivariate statistic was reported. Mauchley's test of sphericity was also significant, Mauchley's W = .50, $\chi^2(9) = 125.82$, $p < .001$. The Greenhouse-Geisser statistic was used for all within-subjects effects. The multivariate effect of the repeated measures factor was significant, Wilkes' λ = .15, $F(4, 181) = 251.74$, $p < .001$, partial $\eta^2 = .85$. Positive mood significantly differed across measurements, $F_{within-subjects}(3.10, 571.20) = 294.22$, $p < .001$, partial $\eta^2 = .62$. Pairwise comparisons were conducted to examine differences in mood at each measurement point. All positive mood mean differences are presented in Table 8. Positive mood was significantly higher at baseline compared to the time-points following the decategorization and salient sections. Positive mood was significantly higher following superordinate section compared to the decategorization and salient section time-points. Finally, positive mood was higher following the post-discussion time-point

compared to the decategorization and salient sections. All other time-points did not

significantly differ in positive mood. Again, the between-subjects effect of order condition

did not significantly predict positive mood, $F(5, 184) = 1.18$, $p = .323$, partial $\eta^2 = .03$. The

multivariate interaction between the repeated measures factor and order condition was

significant, Wilkes' $\lambda = .80$, $F(20, 601.26) = 2.14$, $p = .003$, partial $\eta^2 = .06$. However,

pairwise comparisons revealed that positive mood did not vary according to order

condition within time-points. Positive mood by time-point collapsing across the order

condition manipulation is presented in Figure 2.

Table 8 Positive Mood Mean Differences

		1[a]	2[b]	3[c]	4[d]	5[e]
1.	Baseline Positive	--				
2.	Decategorized Positive	1.90**	--			
3.	Salient Positive	1.91**	.01	--		
4.	Superordinate Positive	.00	-1.90**	-1.91**	--	
5.	Post Positive	.10	-1.80**	-1.81**	.10	--

Note. N = 190. [a] A positive value indicates that positive mood was higher at Baseline. [b] A positive value indicates that positive mood was higher at the assessment directly following the decategorized section. [c] A positive value indicates that positive mood was higher following the salient section. [d] A positive value indicates that positive mood was higher following the superordinate section. [e] A positive value indicates that positive mood was higher at the post-test assessment.
* $p < .05$; ** $p < .01$
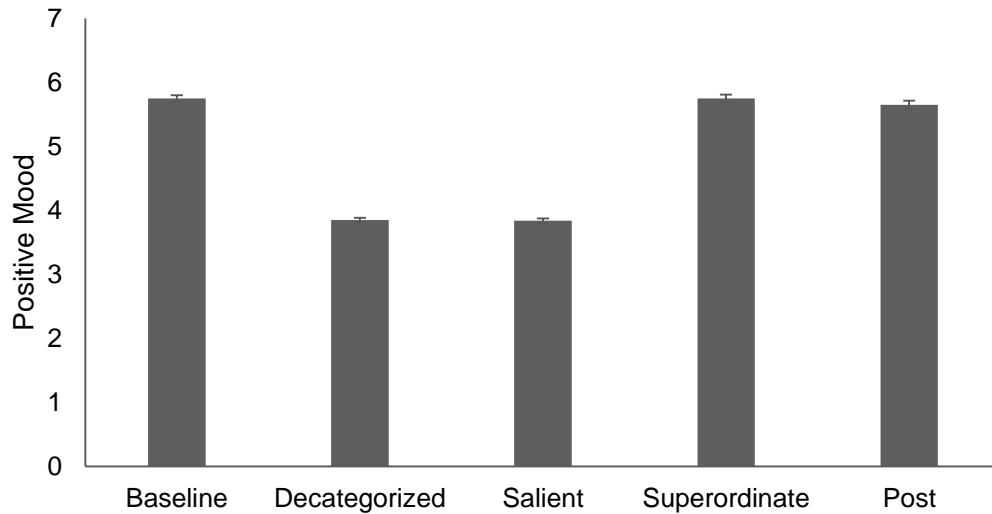
Figure 2 Positive Mood by Time-Point

Hypothesis Seven

I predicted that post-conversation ratings would predict atheist attitudes. Expectations for conversation quality were assessed at baseline. Perceived conversation quality was assessed after each of the three conversations (i.e., Decategorization, Salient, and Superordinate). For Hypothesis 7, I predicted that each of the post-conversation ratings would positively predict atheist attitudes. As conversation quality increased, atheist attitudes were expected to become more positive. A hierarchical linear regression was conducted in which baseline quality expectations were entered on step 1 and quality ratings following the decategorization, salient, and superordinate discussion sections were entered on step 2. The atheists attitude thermometer, trust thermometer, and bipolar scales were averaged to create a single attitude composite for use as the DV in the current analysis.

The overall regression model significantly predicted attitudes, $F(4, 177) = 10.51$, $p < .001$, $R^2 = .19$. Post-conversation quality ratings accounted for a significant increase in the prediction of atheist attitudes, $\Delta R^2 = .18$, $F(3, 177) = 13.43$, $p < .001$. There was a

significant main effect of salient and superordinate section ratings on attitudes, $b = .43$,

$s.e. = .12$, $t(181) = 3.53$, $p = .001$ and $b = .13$, $s.e. = .06$, $t(181) = 2.19$, $p = .030$ for

salient and superordinate, respectively. As salient and superordinate quality ratings

increased, attitudes became more positive. Baseline expectations and decategorization

ratings did not significantly predict attitudes[7]. A second analysis was conducted, further

controlling for prescreen atheist attitudes. Baseline expectations and the prescreen

atheist bipolar scale was entered on step 1. Decategorization, salient, and superordinate

ratings were entered on step 2 predicting the composite DV. Again the overall model was

significant, $F(5, 162) = 17.01$, $p < .001$, $R^2 = .32$. Post conversation ratings accounted

for an increase in the prediction of atheist attitudes, $\Delta R^2 = .11$, $F(3, 162) = 9.04$, $p < .001$.

Prescreen atheist attitudes significantly predicted post-conversation atheist attitudes, $b =$

$.27$, $s.e. = .04$, $t(162) = 6.21$, $p < .001$. As prescreen atheist attitudes became more

positive, so too did post-conversation attitudes. Baseline expectations did not predict

attitudes. Again, salient and superordinate conversation ratings predicted attitudes, $= .32$,

$s.e. = .12$, $t(162) = 2.64$, $p = .009$ and $b = .11$, $s.e. = .05$, $t(162) = 2.02$, $p = .045$ for

salient and superordinate, respectively. As quality ratings increased, atheist attitudes

became more positive.

<div align="center">Ancillary Analyses</div>

<div align="center">Supplemental Predictors of Atheist Attitudes</div>

A series of analyses were conducted to investigate the demographic and

personality predictors of atheist attitudes. Individual differences in religious identification

strength was measured via the departmental online prescreen survey. Religious

identification strength refers to the extent to which individuals regard their religious group

---

[7] Including the covariates religious fundamentalism and hometown (dichotomized as rural versus urban and suburban combined) did not alter the pattern of results.

and beliefs as important and central to their sense of self. Religious fundamentalism and hometown classification (i.e., rural, urban, or suburban) were measured in the final in-lab attitude survey. The religious fundamentalism scale measures the degree to which individuals endorse the belief that there is one true religion and a single path heaven. First, a regression was conducted in which religious fundamentalism and religious identification were entered as IVs and the atheist bipolar scale was entered as the DV. The overall model was significant, $F(2, 181) = 3.26$, $p = .041$, $R^2 = .02$. Religious fundamentalism significantly predicted atheist attitudes, $b = -.20$, $s.e. = .08$, $t(181) = -2.55$, $p = .012$. Individuals higher in religious fundamentalism had more negative atheist attitudes. Religious identification strength did not predict attitudes. Next a univariate ANOVA was conducted in which hometown classification was entered as the IV and the atheist bipolar scale was entered as the DV. The between-subjects effect of hometown classification was significant, $F(2, 187) = 3.33$, $p = .038$, partial $\eta^2 = .03$. Pairwise comparisons were conducted to further probe the significant effect. Atheist attitudes were significantly more positive among participants who grew up in a suburb ($M = 5.20$, $SD = .13$, $N = 76$) compared to those who grew up in a rural community ($M = 4.58$, $SD = .20$, $N = 34$). Atheist attitudes among participants from an urban city ($M = 4.97$, $SD = .13$, $N = 80$) did not significantly differ from the other two groups (i.e., suburban and rural).

<div align="center">Mediation Analyses</div>

Mediation analyses were conducted to examine the indirect effect of perceptions of partner similarity on overall atheist attitudes via reciprocal self-disclosure. Past research suggests that reciprocal self-disclosure increases perceptions of interpersonal similarity and partner liking (see Sprecher, Treger, Wondra, Hilaire, & Wallpe, 2013). Based on prior research (e.g., Spreecher et al., 2013), self-reported reciprocal self-disclosure should, partially or fully, explain the relationship between perceptions of

partner similarity and atheist attitudes. As perceptions of partner similarity increase, reciprocal self-disclosure should increase which, in turn, should lead to more positive atheist attitudes. Perceptions of partner similarity and self-reported reciprocal self-disclosure was assessed after the full thirty-minute conversation via the partner survey. Atheist attitudes were assessed using the atheist bipolar scale measured at the end of the laboratory study via the attitude survey. The statistical package AMOS (Arbuckle, 2006) was used to perform maximum-likelihood estimation of direct and indirect path weights. Bootstrapped confidence intervals, using 1,000 samples and a 95% confidence interval, were constructed to test indirect effects. There was a significant direct effect of partner similarity on reciprocal self-disclosure, $b = .31$, $s.e. = .10$, $p = .002$. As partner similarity increased, reports of self-disclosure increased. The direct effect of self-disclosure on atheist attitudes was also significant, $b = .33$, $s.e. = .09$, $p < .001$. As self-disclosure increased, atheist attitudes became more positive. There was no significant direct effect of perception of partner similarity on atheist attitudes. The indirect effect of partner similarity on atheists attitudes via self-disclosure was significant, $b = = .10$, $s.e. = .04$, $p = .002$. The results suggest that reciprocal self-disclosure fully explained the relationship between perceptions of partner similarity on atheist attitudes. An alternative model was tested in which reciprocal self-disclosure predicted perceived partner similarity which in turn predicted atheist attitudes. The indirect effect of self-disclosure on atheist attitudes via partner similarity was not significant, providing further support for the original model.

Chapter 4

Discussion

Overview of Results

The primary Hypothesis 1 was not supported. There was no effect of order on atheist attitudes and the Decategorized-Salient-Superordinate order proposed by Pettigrew (1998) did not predict more positive atheist attitudes, compared to all other orders. All planned and pairwise comparisons were not significant. In the current study, order of categorization process neither enhanced nor diminished the effects of intergroup contact. The Pettigrew model was originally proposed as a solution to the unresolved debate regarding the most appropriate and beneficial way to structure intergroup contact and target relevant categorization processes to optimally reduce negative outgroup attitudes. The model proposed to incorporate decategorized, group salient, and superordinate contact in a time-ordered sequence that would maximize the advantages of each strategy. The specific time-ordered sequence did not significantly affect attitudes, towards the specific interaction partner or the group as a whole, in the current study. However, a more in-depth analyses revealed that the different categorization strategies uniquely predicted underlying processes such as mood and perceived partner similarity. The results provide preliminary support for Pettigrew's underlying hypothesis that various categorization strategies could and should be combined to offer the optimal contact intervention.

The current study provided a very conservative test of the Pettigrew model. Future studies should examine the effects of the combined decategorized, salient, and superordinate contact techniques compared to the effects of each technique applied in isolation. Follow-up studies may investigate the necessity of each categorization process to determine whether the combination of two processes (e.g., the use of only

55

decategorized and salient contact) is superior to three-component process proposed by Pettigrew. A complete test of all tenets of the Pettigrew model was not logistically feasible in the current study. Further, key study limitations may have contributed to the lack of significant findings. The laboratory setting imposed a time constraint on the contact intervention that may or may not reflect real-world intergroup contact experiences. Real-world relations between groups are likely to build and develop over long periods of time. Short-term interventions to alter the categorization process time may be ineffective. The order of categorization processes may only be relevant for repeated contact that extends over long periods of time. Further, a major advantage of decategorized contact is to reduce initial feelings of anxiety and hostility. The intergroup relationship targeted in the current study is not one marked by violence and open antagonism. The order sequence proposed by Pettigrew may be necessary for interventions among groups who have experienced a long history of violence such as Israelis and Palestinians. For such groups, intense feelings of fear, threat, and distrust must be overcome prior to the development of positive attitudes. Among groups not locked in violent conflict, positive contact of any type may be sufficient to reduce negative attitudes. Limitations and future directions are discussed in detail below. Despite the lack of significance for the primary hypothesis, several meaningful results did emerge.

For Hypothesis 2, across order conditions, atheist attitudes were significantly more positive in the post-test assessment compared to the pre-test assessment. Further, supporting Hypothesis 3, atheist attitudes did not significantly differ between prescreen and follow-up assessments among a control sample of participants not exposed to the contact intervention. Together, the results suggest that the contact manipulation led to significantly more positive atheist attitudes. This effect is novel for a variety of reasons.

First, this is the only study (to my knowledge) to examine the effects of contact on atheist attitudes. Recent research indicates that atheist attitudes are marked by high levels of antipathy and distrust (Franks & Scherr, 2014; Gervais, 2013; Gervais, Shariff, & Norenzayan, 2011). Jones (2007) reports that atheists garnered the lowest level of (hypothetical) political support among Americans, compared to other minority groups including the Elderly, Mormons, and Homosexuals. Yet, little is known about the cause of such negative attitudes and there remains a dearth of research on the ways in which to change attitudes and negative stereotypes regarding the non-religious. The current results suggest that atheist attitudes may be greatly enhanced through contact interventions.

Second, although we have become increasingly reliant on technology and electronic forms of communication in both professional and private settings, little research has systematically investigated the appropriateness and impact of computer-mediated contact on outgroup attitudes (see White, Harvey, & Abu-Reyya, 2015). It has been noted that face-to-face contact may be inappropriate in many intergroup contexts due to high levels of violence, long distance, or other intervening obstacles (Amichai-Hamburger & McKenna, 2006; Turner et al., 2013). Multiple alternatives to face-to-face contact have been proposed such as vicarious (e.g., Mazziotta, Mummendey, & Wright, 2011; Cameron & Rutland, 2006) and imagined (Crisp & Turner, 2009) contact. However, electronic contact provides a more optimal solution in that it maintains the immediate, active, and personal engagement of the individual (White et al., 2015). Electronic and online contact allows for active participation in the contact experience while removing the threats to physical and psychological safety that face-to-face contact can entail. As such, it has been argued that electronic intergroup contact may be less anxiety provoking that face-to-face encounters (Amichai-Hamburger & Furnham, 2007). Moreover, this reduced

potential for anxiety may increase the likelihood of self-disclosure among individuals interacting in the contact setting. Online interactions have been shown to produce higher levels of self-disclosure and intimacy compared to face-to-face conversations (e.g., McKenna, Green, & Gleason, 2002). The current study provides a very detailed and in-depth look at electronic contact. Through extensive self-report surveys, various individual reactions to the contact setting were tracked. As predicted by previous studies (McKenna et al., 2002; White & Abu-Rayya, 2012) average self-reported reciprocal self-disclosure and perspective taking were high (above the median), as was partner favorability ratings. Furthermore, negative affect at each stage of contact and post-contact was very low (well below the median) and lower than baseline levels. As expected, self-disclosure and perspective taking were significantly, positively correlated with atheist attitudes, whereas negative affect was significantly, negatively correlated with attitudes.

Finally, the study provided a uniquely structured setting for electronic intergroup contact. As stated above, previous electronic contact interventions have typically utilized a task-focused paradigm in which outgroup members are encouraged to cooperate online to accomplish a set of tasks (see White et al., 2015). Contact between participants in the current study was purely interpersonal in nature. The contact setting was also missing key conditions outlined by Allport (1954), namely cooperative interdependence and explicit institutional support. Unlike previous electronic interventions, participants engaged in casual communication and were not required to coordinate efforts toward any shared task or goal. Participants were also led to believe that conversation partners were chosen at random. Therefore, outgroup contact was perceived as incidental/accidental and not orchestrated or explicitly endorsed by the experimenter or university. As such, the findings provide further support for the essential function of "friendship potential" within the contact setting (Pettigrew, 1998).

The order condition did significantly affect perceived similarity between the self and their partner. Unexpectedly, participants felt more similar to their partner when the overall conversation session ended, rather than began, with the decategorized discussion. It is possible that the recency and accessibility of the discussion is more influential than the specific order sequence as proposed by Pettigrew (1998). However, as none of the planned contrasts proposed to examine collapsed order effects were significant, the significant pairwise comparison observed is difficult to interpret. Supplemental planned contrasts were conducted that tested the effects of order collapsed across which section came last. None of these supplemental planned contrasts were significant. The order condition did not affect partner favorability ratings, perceptions of group saliency, or perceptions of partner's group typicality. Order also did not predict levels of self-disclosure and perspective taking. Possible limitations and future directions are discussed below.

Although the order condition did not affect changes in mood, self-reported positive and negative affect varied significantly across assessments. Affect was assessed at baseline, after each discussion section (i.e., decategorized, salient, and superordinate), and again at post-test (i.e., after the full conversation). Surprisingly, both positive and negative affect were lowest following the decategorized and salient discussions. It would appear that discussion of personal details and group differences did not induce high levels of emotionality. However, semantic coding of the actual conversation content using LIWC analysis revealed that more positive emotion was expressed in the decategorized discussion compared to the salient and superordinate discussions. It is unclear why the high positivity observed in the decategorized discussion did not affect self-reported mood. Other between-discussion differences in semantic content were observed as well. According to LIWC analyses, religious content and insight

59

were highest in the salient discussion compared to the decategorized and superordinate

discussions. Again, this content did not translate to higher self-reported affect following

the salient discussion. As specific hypotheses regarding semantic content of the

discussions are not a priori, only tentative explanations can be offered. Only the use of

plural pronouns and same group content was higher in the superordinate discussion

compared to all others. It is possible that taking a more other-oriented or collective focus

within the contact settings results in higher emotionality.

Lastly, conversation quality ratings following the salient and superordinate

discussion sections significantly predicted overall atheist attitudes. As quality ratings

increased, atheist attitudes became more positive. The results provide further support for

the importance of group salience in reducing negative outgroup attitudes (Hewstone &

Brown, 1986). The quality of the decategorization discussion did not significantly

influence general, group-level atheist attitudes, suggesting that in the absence of group

cues, the quality of contact experiences is not used to guide group-level evaluations.

Supplemental analyses were conducted to examine the relationship between quality

ratings and atheist attitudes at each order position of the decategorization discussion

(i.e., participants discussed the decategorization topic first, second, or last). When the

decategorization section came first, discussion quality ratings following the salient

discussion significantly, positively predicted atheist attitudes, b = .56, $s.e.$ = .21, p = .011.

All other quality ratings were not significant. Salient quality ratings did not significantly

predict attitudes when the decategorization section was presented second or last. The

results suggest that group saliency is important for changing group-level attitudes as

suggested by Brown and Hewstone (1987). However, group saliency may work best

when preceded by decategorized contact as suggested by the Pettigrew model. Further

supplemental analyses were conducted to examine the effects of discussion quality

ratings, controlling for baseline conversation quality expectations, on partner favorability ratings. Discussion quality ratings for the decategorization, salient, and superordinate sections all significantly, positively predicted partner favorability ratings. Although personalized contact may be advantageous for engendering interpersonal liking (Brewer & Miller, 1984), group saliency appears to be necessary for group-level generalizations.

Limitations and Future Directions

Several study limitations may have contributed to the lack of significant findings regarding the primary hypotheses. First, confederates were used for partners as opposed to real, naïve participants. Confederates were used primarily because the available population offered an insufficient sample of outgroup (atheist) participants, making a true dyad design unfeasible. The use of confederates offered the added advantage of ensuring each participant was met with a consistent and positive interaction partner. The use of confederates also allowed for the control of extraneous factors such as inter-individual differences in personality, likability, and positivity. Further, as confederates relied on (loosely) guided scripts, conversations could more easily remain on-topic. However, this added experimental control comes at the cost of psychological realism. Real world intergroup interactions are unlikely to follow a consistent, positive pattern. Moreover, confederates were instructed to maintain a positive and accepting attitude across discussion topics/sections. This approach may have lessened the impact of various categorization techniques/orders. In a real world context it is likely that interactions will be more or less positive, friendly, and accepting depending upon the nature of the context and conversation. The power of Pettigrew's contact structure may lie in its ability to reduce and mitigate the naturally occurring negativity and hostility that arises in intergroup interactions. Presenting a consistently agreeable confederate across discussions and conditions may fail to fully capture the reality, and therefore the ultimate

61

effects, of the contact intervention. Future work should test the current paradigm using real, interacting dyads.

Further, a highly structured contact setting, as Pettigrew proposed, may be more important in face-to-face, as opposed to online, contact. Through beginning with decategorized contact prior to group salient contact, the Pettigrew model works to minimize initial anxiety in the contact intervention. It has been argued that computer-mediated contact can implicitly reduce feelings of intergroup anxiety (Stephan & Stephan, 1996) as there is less threat to physical safety and psychological ridicule (White et al., 2015). Online, text-based contact is by nature more easily structured, controlled, and manipulated. Individuals have greater opportunity and time to edit and craft responses, nonverbal cues remain hidden, and spontaneity is less likely (Amichai-Hambuger & McKenna, 2006). Thus, anxiety may already be minimized by the virtual setting, eliminating the need for further structure. However, if this is the case, the Pettigrew model may prove untenable as many instances would not allow for the appropriate application of decategorized contact given the visual and verbal cues to group membership.

One clear limitation is the time-restrictions on the current intervention. Each full conversation lasted only 30 minutes with short discussion lasting 10 minutes each. Brief intervention may not be sufficient to manipulate and observe the effects of complex categorization processes. Indeed, fully examining group differences or establishing common ground with an outgroup member was likely difficult to achieve in such a short time-span. Stronger order effects may be observed if participants are given more extensive time to fully engage in each categorization process/discussion. In addition, there was only a short delay between discussions (categorization manipulations) of approximately 4-10 minutes. It is possible that the order manipulation was confounded by carry-over effects. As participants began each subsequent conversation, residual thought

processes and emotions from the prior discussion may have been present. Of course the purpose of the ordered contact intervention is that each stage of the process and each categorization manipulation can build on and extend the attitudes and emotions formed in the previous stages. Yet, an extended delay between each categorization manipulation may enhance the focus of each categorization strategy. With little delay, participants may have difficulty distinguishing the various discussions. Future studies should examine the paradigm varying the time delays between category manipulations.

Finally, there was no opportunity to assess follow-up attitudes. Despite considerable efforts to conduct follow-up assessments, only 10 participants completed the follow-up survey, rendering it impossible to examine the long-term effects of the current contact intervention. There were no immediate differences between conditions in atheist attitudes, but delayed effects are possible. The ultimate goal of intergroup contact interventions is to produce long-term, permanent attitude change. Therefore it is important to investigate the stability of contact effects over time. The strength of the Pettigrew model may lie in the durability of the effects over the long-term. Unfortunately, this hypothesis could not be tested in the current study.

Final Conclusions

Our world has become increasingly globalized and religious, ethnic, and national group distinctions continue to lie at the heart of group conflict. A thorough understanding of the categorization processes involved in contact effects is vital to peace and reconciliation efforts. The current results provide additional support for the validity and applicability of computer mediated contact interventions. The study adds to the growing literature on atheist attitudes, providing additional evidence for potential atheist prejudice reduction techniques. Of primary interest, the current results did not support the Pettigrew model of contact. Many limitations may have contributed to the lack of significant findings

and more work is needed to examine the categorization processes involved in intergroup

contact. It is hoped that the current work will stimulate future research efforts aimed at

better understanding the optimal contact structure for prejudice reduction.

Appendix A

Survey Items

Prescreen Survey Items

How do you feel about Atheists in general? Please rate this group on a thermometer that runs from zero (0) to a hundred (100) degrees. The higher the number, the warmer or more favourable you feel towards this group. The lower the number, the colder or less favourable you feel. If you feel neither warm nor cold towards them, rate them at 50.

0°   10°   20°   30°   40°   50°   60°   70°   80°   90°   100°

Please indicate how you feel about Atheists in general by making ratings on the following scales. Just circle the number on each scale that describes how you personally feel towards this group:

warm	1	2	3	4	5	6	7 cold
negative	1	2	3	4	5	6	7 positive
friendly	1	2	3	4	5	6	7 hostile
suspicious	1	2	3	4	5	6	7 trusting
respect	1	2	3	4	5	6	7 contempt
admiration	1	2	3	4	5	6	7disgust

Discussion Survey Items

. This scale consists of a number of words and phrases that describe different feelings and emotions. Read each item and then mark the appropriate answer in the space next to that word. Indicate to what extent you feel this way at this moment. Please be honest, there are no right or wrong answers. Use the following scale to record your answers:

0	1	2	3	4	5

Not at all	Very slightly	A little	Moderately	Quite a bit	Extremely

_____ attentive   _____calm   _____ active _____bored

_____ interested   _____ proud _____guilty

_____ashamed

_____ awkward   _____distressed   _____ nervous

_____happy

_____ upset   _____self-conscious _____enthusiastic

_____excited

_____inspired   _____ irritable   _____ hostile

_____uncomfortable

Please rate the short conversation you just had with your partner, in general did you find the conversation:

pleasant?

not at all   1   2   3   4   5   very much

cooperative?

not at all   1   2   3   4   5   very much

superficial?

not at all   1   2   3   4   5   very much

uncomfortable?

not at all   1   2   3   4   5   very much

awkward?

not at all   1   2   3   4   5   very much

respectful?

not at all   1   2   3   4   5   very much

How friendly did you find your partner?

1	2	3	4	5	6	7	8	9
Not enough info								Extremely

Please briefly describe your discussion prompt for this phase:

Please briefly describe the type of information that your partner revealed to you:

Please list 3 facts you learned about your partner in this phase:

How do you feel about your partner in general? Please rate your partner on a thermometer that runs from zero (0) to a hundred (100) degrees. The higher the number, the warmer or more favourable you feel towards this group. The lower the number, the colder or less favourable you feel. If you feel neither warm nor cold towards them, rate them at 50.

Partner Survey Items

Individual Partner Questions

Using the scale below, please select a number for each statement to indicate how much you agree with it.

68

1 ----------- 2 ----------- 3 ----------- 4 ----------- 5 ----------- 6 ----------7

Not True   Somewhat True   Very True

1. I enjoyed the conversation with my partner.

2. My partner is someone that I would like to meet in person.

3. I would like to meet other members of my partner's group.

4. I don't think I would be friends with someone like my partner.

5. I think I would be friends with other members of my partner's group.

Self-Disclosure Scale

In general, during your interactions with your partner:

None at all1   2   3   4   5   6   7Very much

How much of their feelings did they express to you?

How much personal information (e.g., information about them personally and their views)

did they disclose to you?

How personal was the information that they disclose?

How much positive emotion did they express during your interaction?

How much negative emotion did they express during your interaction?

How much of your feelings did you express to them?

How much personal information (e.g., information about them personally and their views)

did you disclose to them?

How personal was the information that you disclosed?

How much positive emotion did you express during your interaction?

How much negative emotion did you express during your interaction?

Similarity and Group Saliency Items

When communicating with your partner, how aware were you of the differences between you?

When communicating with partner, how much did your different group membership matter?

When communicating with your partner, how much did you think about their group membership?

During your interactions, did you learn about things that make your partner seem very different from you?

During your interactions, did you tend to think of your partner as being like other members of his/her group, or as a unique individual?

Post-test Affect

In general, AFTER interacting with my partner, I feel:

    0. not at all   1   2   3   4   5   6   7   8. extremely

    Attentive

    0. not at all   1   2   3   4   5   6   7   8. extremely

    Calm

    0. not at all   1   2   3   4   5   6   7   8. extremely

    Bored

    0. not at all   1   2   3   4   5   6   7   8. extremely

    Active

| 0. not at all | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8. |

extremely

Interested

| 0. not at all | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8. |

extremely

Proud

| 0. not at all | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8. |

extremely

Guilty

| 0. not at all | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8. |

extremely

Ashamed

| 0. not at all | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8. |

extremely

Awkward

| 0. not at all | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8. |

extremely

Nervous

| 0. not at all | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8. |

extremely

Distressed

| 0. not at all | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8. |

extremely

Happy

0. not at all	1	2	3	4	5	6	7	8.

extremely

Upset

0. not at all	1	2	3	4	5	6	7	8.

extremely

Self-Conscious

0. not at all	1	2	3	4	5	6	7	8.

extremely

Enthusiastic

0. not at all	1	2	3	4	5	6	7	8.

extremely

Inspired

0. not at all	1	2	3	4	5	6	7	8.

extremely

Excited

0. not at all	1	2	3	4	5	6	7	8.

extremely

Irritable

0. not at all	1	2	3	4	5	6	7	8.

extremely

Hostile

0. not at all	1	2	3	4	5	6	7	8.

extremely

Uncomfortable

0. not at all   1   2   3   4   5   6   7   8.
extremely

Perspective Taking:

How much do you agree with the following statements?

I believe that I have a good understanding of how my partner views the world.

0   1   2   3   4   5   6

Strongly   Strongly

disagree   agree

I think I am able to see the world through the eyes of my partner.

0   1   2   3   4   5   6

Strongly   Strongly

disagree   agree

I believe I understand what it is like to be a member of my partner's group in

this society.

0   1   2   3   4   5   6

Strongly   Strongly

disagree   agree

I cannot seem to grasp my partner's perspective on most issues.

0   1   2   3   4   5   6

Strongly   Strongly

disagree   agree

I can easily put myself in the place of my partner when I want to understand

his/her viewpoint.

0   1   2   3   4   5   6

Strongly   Strongly

disagree   agree

I don't understand the way my partner views the world.

0   1   2   3   4   5   6

Strongly   Strongly

disagree   agree

Attitudes Survey

Outgroup Attitudes

As part of a study of attitudes you will be asked to respond to the following

questions and statements. The purpose of the following items is to assess your personal

thoughts and beliefs. There are no right or wrong answers. The particular items you

receive are randomly assigned; therefore you may find that your attitudes vary in

direction and intensity from item to item. The items you receive and your responses will

remain confidential and anonymous. Instructions will be provided for each set of

questions, please read and respond accordingly. Thank you for your participation!

Please now think about homosexuals.

How do you feel about Homosexuals in general? Please rate this group on a

thermometer that runs from zero (0) to a hundred (100) degrees. The higher the number,

the warmer or more favourable you feel towards this group. The lower the number, the colder or less favourable you feel. If you feel neither warm nor cold towards them, rate them at 50.

0°   10°   20°   30°   40°   50°   60°   70°   80°   90°   100°

Please indicate how you feel about homosexuals in general by making ratings on the following scales. Just circle the number on each scale that describes how you personally feel towards this group:

warm	1	2	3	4	5	6	7	cold
negative	1	2	3	4	5	6	7	positive
friendly	1	2	3	4	5	6	7	hostile
suspicious	1	2	3	4	5	6	7	trusting
respect	1	2	3	4	5	6	7	contempt
admiration	1	2	3	4	5	6	7	disgust

Please now think about African Americans.

How do you feel about African Americans in general? Please rate this group on a thermometer that runs from zero (0) to a hundred (100) degrees. The higher the number, the warmer or more favourable you feel towards this group. The lower the number, the colder or less favourable you feel. If you feel neither warm nor cold towards them, rate them at 50.

0°   10°   20°   30°   40°   50°   60°   70°   80°   90°   100°

Please indicate how you feel about African Americans in general by making ratings on the following scales. Just circle the number on each scale that describes how you personally feel towards this group:

warm	1	2	3	4	5	6	7	cold
negative	1	2	3	4	5	6	7	positive
friendly	1	2	3	4	5	6	7	hostile
suspicious	1	2	3	4	5	6	7	trusting
respect	1	2	3	4	5	6	7	contempt
admiration	1	2	3	4	5	6	7	disgust

Please think about Muslims.

How do you feel about Muslims in general? Please rate this group on a thermometer that runs from zero (0) to a hundred (100) degrees. The higher the number, the warmer or more favourable you feel towards this group. The lower the number, the colder or less favourable you feel. If you feel neither warm nor cold towards them, rate them at 50.

0°　　10°　　20°　　30°　　40°　　50°　　60°　　70°　　80°　　90°　　100°

Please indicate how you feel about Muslims in general by making ratings on the following scales. Just circle the number on each scale that describes how you personally feel towards this group:

warm	1	2	3	4	5	6	7	cold
negative	1	2	3	4	5	6	7	positive
friendly	1	2	3	4	5	6	7	hostile

suspicious	1	2	3	4	5	6	7	trusting
respect	1	2	3	4	5	6	7	contempt
admiration	1	2	3	4	5	6	7	disgust

Please now think about Atheists.

How do you feel about Atheists in general? Please rate this group on a thermometer that runs from zero (0) to a hundred (100) degrees. The higher the number, the warmer or more favourable you feel towards this group. The lower the number, the colder or less favourable you feel. If you feel neither warm nor cold towards them, rate them at 50.

0°   10°   20°   30°   40°   50°   60°   70°   80°   90°   100°

Please indicate how you feel about Atheists in general by making ratings on the following scales. Just circle the number on each scale that describes how you personally feel towards this group:

warm	1	2	3	4	5	6	7	cold
negative	1	2	3	4	5	6	7	positive
friendly	1	2	3	4	5	6	7	hostile
suspicious	1	2	3	4	5	6	7	trusting
respect	1	2	3	4	5	6	7	contempt
admiration	1	2	3	4	5	6	7	disgust

Balanced Inventory of Desirable Responding

This section concerns your traits and attitudes. Using the scale, please select a number for each statement to indicate how much you agree with it.

1 ----------- 2 ----------- 3 ----------- 4 ----------- 5 ----------- 6 -----------7

Not True   Somewhat True   Very True

1. My first impressions of people usually turn out to be right.

*2. It would be hard for me to break any of my bad habits.

3. I don't care to know what other people really think of me.

*4. I have not always been honest with myself

5. I always know why I like things.

*6. When my emotions are aroused, it biases my thinking.

7. Once I've made up my mind, other people can seldom change my opinion.

*8. I am not a safe driver when I exceed the speed limit.

9. I am fully in control of my own fate.

*10. It's hard for me to shut off a disturbing thought.

Ten-Item Personality Inventory

Here are a number of personality traits that may or may not apply to you. Please write a number next to each statement to indicate the extent to which you agree or disagree with that statement. You should rate the extent to which the pair of traits applies to you, even if one characteristic applies more strongly than the other.

1 = Disagree strongly

2 = Disagree moderately

3 = Disagree a little

4 = Neither agree nor disagree

5 = Agree a little

6 = Agree moderately

7 = Agree strongly

I see myself as:

1. _____ Extraverted, enthusiastic.

2. _____ Critical, quarrelsome.

3. _____ Dependable, self-disciplined.

4. _____ Anxious, easily upset.

5. _____ Open to new experiences, complex.

6. _____ Reserved, quiet.

7. _____ Sympathetic, warm.

8. _____ Disorganized, careless.

9. _____ Calm, emotionally stable.

10. _____ Conventional, uncreative.

References

Aberson, C. L., & Haag, S. C. (2007). Contact, perspective taking, and anxiety as
     predictors of stereotype endorsement, explicit attitudes, and implicit
     attitudes. *Group Processes & Intergroup Relations*, *10*(2), 179-201.
     doi:10.1177/1368430207074726

Allport, G. W. (1954). *The nature of prejudice*. Oxford, England: Addison-Wesley.

Altemeyer, B., & Hunsberger, B. (2004). A Revised Religious Fundamentalism Scale:
     The Short and Sweet of it. *International Journal for the Psychology of
     Religion*, *14*(1), 47-54. doi:10.1207/s15327582ijpr1401_4

Amichai-Hamburger, Y., & Furnham, A. (2007). The Positive Net. *Computers in Human
     Behavior*, *23*(2), 1033-1045. doi:10.1016/j.chb.2005.08.008

Amir, Y. (1969). Contact hypothesis in ethnic relations. *Psychological Bulletin*, *71*(5), 319-
     342. doi:10.1037/h0027352

Banker, B. S., & Gaertner, S. L. (1998). Achieving stepfamily harmony: An intergroup-
     relations approach. *Journal of Family Psychology*, *12*(3), 310-325.
     doi:10.1037/0893-3200.12.3.310

Batson, C., Polycarpou, M. P., Harmon-Jones, E., Imhoff, H. J., Mitchener, E. C., Bednar,
     L. L., & ... Highberger, L. (1997). Empathy and attitudes: Can feeling for a
     member of a stigmatized group improve feelings toward the group? *Journal of
     Personality and Social Psychology, 72*(1), 105-118. doi:10.1037/0022-
     3514.72.1.105

Beaton, A. M., Monger, T., Leblanc, D., Bourque, J., Levi, Y., Joseph, D., & ... Chouinard,
     O. (2012). Crossing the divide: The common in-group identity model and
     intergroup affinity. *International Journal of Intercultural Relations*, *36*(3), 365-376.
     doi:10.1016/j.ijintrel.2011.12.003

Berg, J. H., & Wright-Buckley, C. (1988). Effects of racial similarity and interviewer

    intimacy in a peer counseling analogue. *Journal of Counseling*

    Psychology, *35*(4), 377-384. doi:10.1037/0022-0167.35.4.377

Bettencourt, B., Brewer, M. B., Croak, M. R., & Miller, N. (1992). Cooperation and the

    reduction of intergroup bias: The role of reward structure and social

    orientation. *Journal of Experimental Social Psychology*, *28*(4), 301-319.

    doi:10.1016/0022-1031(92)90048-O

Bettencourt, B., Charlton, K., & Kernahan, C. (1997). Numerical representation of groups

    in cooperative settings: Social orientation effects on ingroup bias. *Journal of*

    Experimental Social Psychology, *33*(6), 630-659. doi:10.1006/jesp.1997.1334

Brewer, M. B. (1991). The social self: On being the same and different at the same

    time. *Personality and Social Psychology Bulletin*, *17*(5), 475-482.

    doi:10.1177/0146167291175001

Brewer, M. B. (1996). When contact is not enough: Social identity and intergroup

    cooperation. *International Journal of Intercultural Relations*, *20*(3-4), 291-303.

    doi:10.1016/0147-1767(96)00020-X

Brewer, M. B. (1999). The psychology of prejudice: Ingroup love or outgroup

    hate?. *Journal of Social Issues*, *55*(3), 429-444. doi:10.1111/0022-4537.00126

Brewer, M. B. (2007). The importance of being we: Human nature and intergroup

    relations. *American Psychologist*, *62*(8), 728-738. doi:10.1037/0003-

    066X.62.8.728

Brewer, M. B., & Miller, N. (1984). Beyond the contact hypothesis: Theoretical

    perspectives on desegregation. In N. Miller & M. B. Brewer (Eds.), Groups in

    contact: The psychology of desegregation (pp. 281–302). Orlando, FL: Academic

    Press.

Brown, R., Condor, S., Mathews, A., Wade, G., & Williams, J. (1986). Explaining

    intergroup differentiation in an industrial organization. *Journal of Occupational*

    Psychology, *59*(4), 273-286. doi:10.1111/j.2044-8325.1986.tb00230.x

Brown, R., & Hewstone, M. (2005). An Integrative Theory of Intergroup Contact. In M. P.

    Zanna (Ed.) , *Advances in experimental social psychology, Vol. 37* (pp. 255-343).

    San Diego, CA, US: Elsevier Academic Press.

Brown, R., Maras, P., Masser, B., Vivian, J., & Hewstone, M. (2001). Life on the ocean

    wave: Testing some intergroup hypotheses in a naturalistic setting. *Group*

    Processes & Intergroup Relations, *4*(2), 81-97.

    doi:10.1177/1368430201004002001

Brown, R., Vivian, J., & Hewstone, M. (1999). Changing attitudes through intergroup

    contact: The effects of group membership salience. *European Journal of Social*

    Psychology, *29*(5-6), 741-764. doi:10.1002/(SICI)1099-

    0992(199908/09)29:5/6<741::AID-EJSP972>3.0.CO;2-8

Cameron, L., & Rutland, A. (2006). Extended Contact through Story Reading in School:

    Reducing Children's Prejudice toward the Disabled. *Journal of Social*

    Issues, *62*(3), 469-488. doi:10.1111/j.1540-4560.2006.00469.x

Collins, N. L., & Miller, L. C. (1994). Self-disclosure and liking: A meta-analytic

    review. *Psychological Bulletin*, *116*(3), 457-475. doi:10.1037/0033-

    2909.116.3.457

Cook, S. W. (1978). Interpersonal and attitudinal outcomes in cooperating interracial

    groups. *Journal of Research & Development In Education*, *12*(1), 97-113.

Cook, S. W. (1985). Experimenting on social issues: The case of school

    desegregation. *American Psychologist*, *40*(4), 452-460. doi:10.1037/0003-

    066X.40.4.452

Crisp, R. J., & Turner, R. N. (2009). Can imagined interactions produce positive

    perceptions?: Reducing prejudice through simulated social contact. *American*

    Psychologist, *64*(4), 231-240. doi:10.1037/a0014718

Crisp, R. J., Stone, C. H., & Hall, N. R. (2006). Recategorization and Subgroup

    Identification: Predicting and Preventing Threats from Common

    Ingroups. *Personality and Social Psychology Bulletin*, *32*(2), 230-243.

    doi:10.1177/0146167205280908

Desforges, D. M., Lord, C. G., Pugh, M. A., Sia, T. L., Scarberry, N. C., & Ratcliff, C. D.

    (1997). Role of group representativeness in the generalization part of the contact

    hypothesis. *Basic and Applied Social Psychology*, *19*(2), 183-204.

    doi:10.1207/s15324834basp1902_3

Desforges, D. M., Lord, C. G., Ramsey, S. L., Mason, J. A., Van Leeuwen, M. D., West,

    S. C., & Lepper, M. R. (1991). Effects of structured cooperative contact on

    changing negative attitudes toward stigmatized social groups. *Journal of*

    Personality and Social Psychology, *60*(4), 531-544. doi:10.1037/0022-

    3514.60.4.531

Deutsch, M., & Collins, M. (1951). *Interracial housing; a psychological evaluation of a*

    social experiment. Minneapolis, MN, US: University of Minnesota Press.

Devine, P. G. (1995). Prejudice and out-group perception. In A. Tesser (Ed.), *Advanced*

    social psychology (pp. 466-524). New York, NY McGraw-Hill.

Dovidio, J. F., Gaertner, S. L., & Kawakami, K. (2003). Intergroup contact: The past,

    present, and the future. *Group Processes & Intergroup Relations*, *6*(1), 5-20.

    doi:10.1177/1368430203006001009

Dovidio, J. F., Gaertner, S. L., & Validzic, A. (1998). Intergroup bias: Status, differentiation, and a common in-group identity. *Journal of Personality and Social Psychology*, *75*(1), 109-120. doi:10.1037/0022-3514.75.1.109

Dovidio, J. F., Gaertner, S. L., Validzic, A., Matoka, K., Johnson, B., & Frazier, S. (1997). Extending the benefits of recategorization: Evaluations, self-disclosure, and helping. *Journal of Experimental Social Psychology*, *33*(4), 401-420. doi:10.1006/jesp.1997.1327

Edgell, P., Gerteis, J., & Hartmann, D. (2006). Atheists as 'Other': Moral Boundaries and Cultural Membership in American Society. *American Sociological Review*, *71*(2), 211-234. doi:10.1177/000312240607100203

Eller, A., & Abrams, D. (2003). 'Gringos' in Mexico: Cross-sectional and longitudinal effects of language school-promoted contact on intergroup bias. *Group Processes & Intergroup Relations*, *6*(1), 55-75. doi:10.1177/1368430203006001012

Eller, A., & Abrams, D. (2004). Come together: Longitudinal comparisons of Pettigrew's reformulated intergroup contact model and the Common Ingroup Identity Model in Anglo-French and Mexican-American contexts. *European Journal of Social Psychology*,*34*(3), 229-256. doi:10.1002/ejsp.194

Eller, A., & Abrams, D. (2006). A people's entente cordiale? The role of implicit attitude in the relationship between English-French contact, levels of categorization, and explicit intergroup attitudes. *Current Research in Social Psychology*, *11*(7), 92-110.

Ensari, N., Christian, J., Kuriyama, D., & Miller, N. (2012). The personalization model revisited: An experimental investigation of the role of five personalization-based

strategies on prejudice reduction. *Group Processes & Intergroup*

    Relations, *15*(4), 503-522. doi:10.1177/1368430211434576

Ensari, N., & Miller, N. (2002). The out-group must not be so bad after all: The effects of

    disclosure, typicality, and salience on intergroup bias. *Journal of PersonalityaAnd*

    Social Psychology, *83*(2), 313-329. doi:10.1037/0022-3514.83.2.313

Fine, M. (1979). Options to injustice: Seeing other lights. *Representative Research in*

    Social Psychology, *10*(1&2), 61-76.

Franks, A. S., & Scherr, K. C. (2014). A sociofunctional approach to prejudice at the polls:

    Are atheists more politically disadvantaged than gays and blacks?. *Journal of*

    Applied Social Psychology, doi:10.1111/jasp.12259

Gaertner, S. L., & Dovidio, J. F. (2000). *Reducing intergroup bias: The common ingroup*

    identity model. New York, NY, US: Psychology Press.

Gaertner, S. L., Dovidio, J. F., & Bachman, B. A. (1996). Revisiting the contact

    hypothesis: The induction of a common ingroup identity. *International Journal of*

    Intercultural Relations, *20*(3-4), 271-290. doi:10.1016/0147-1767(96)00019-3

Gaertner, S. L., Dovidio, J. F., Banker, B. S., Houlette, M., Johnson, K. M., & McGlynn, E.

    A. (2000). Reducing intergroup conflict: From superordinate goals to

    decategorization, recategorization, and mutual differentiation. *Group Dynamics:*

    Theory, Research, and Practice, *4*(1), 98-114. doi:10.1037/1089-2699.4.1.98

Gaertner, S. L., Mann, J. A., Dovidio, J. F., Murrell, A. J., & Pomare, M. (1990). How does

    cooperation reduce intergroup bias?.*Journal of Personality And Social*

    Psychology, *59*(4), 692-704. doi:10.1037/0022-3514.59.4.692

Gaertner, S. L., Mann, J., Murrell, A., & Dovidio, J. F. (1989). Reducing intergroup bias:

    The benefits of recategorization. *Journal of Personality And Social*

    Psychology, *57*(2), 239-249. doi:10.1037/0022-3514.57.2.239

Gaertner, S. L., Rust, M. C., Dovidio, J. F., Bachman, B. A., & Anastasio, P. A. (1994). The contact hypothesis: The role of a common ingroup identity on reducing intergroup bias. *Small Group Research*, *25*(2), 224-249. doi:10.1177/1046496494252005

Galinsky, A. D., & Moskowitz, G. B. (2000). Perspective-taking: Decreasing stereotype expression, stereotype accessibility, and in-group favoritism. *Journal of Personality and Social Psychology*, *78*(4), 708-724. doi:10.1037/0022-3514.78.4.708

Gervais, W. M. (2013). In godlessness we distrust: Using social psychology to solve the puzzle of anti-atheist prejudice. *Social and Personality Psychology Compass*, *7*(6), 366-377.

Gervais, W. M., Shariff, A. F., & Norenzayan, A. (2011). Do you believe in atheists? Distrust is central to anti-atheist prejudice. *Journal of Personality and Social Psychology*, *101*(6), 1189-1206. doi:10.1037/a0025882

González, R., & Brown, R. (2003). Generalization of positive attitude as a function of subgroup and superordinate group identifications in intergroup contact. *European Journal of Social Psychology*, *33*(2), 195-214. doi:10.1002/ejsp.140

González, R., & Brown, R. (2006). Dual identities in intergroup contact: Group status and size moderate the generalization of positive attitude change. *Journal of Experimental Social Psychology*, *42*(6), 753-767. doi:10.1016/j.jesp.2005.11.008

Greenland, K., & Brown, R. (1999). Categorization and intergroup anxiety in contact between British and Japanese nationals. *European Journal of Social Psychology*, *29*(4), 503-521. doi:10.1002/(SICI)1099-0992(199906)29:4<503::AID-EJSP941>3.0.CO;2-Y

Guerra, R., Rebelo, M., Monteiro, M. B., & Gaertner, S. L. (2013). Translating

    recategorization strategies into an antibias educational intervention. *Journal of*

    Applied Social Psychology, *43*(1), 14-23. doi:10.1111/j.1559-1816.2012.00976.x

Guerra, R., Rebelo, M., Monteiro, M. B., Riek, B. M., Mania, E. W., Gaertner, S. L., &

    Dovidio, J. F. (2010). How should intergroup contact be structured to reduce bias

    among majority and minority group children?. *Group Processes & Intergroup*

    Relations, *13*(4), 445-460. doi:10.1177/1368430209355651

Haddock, G., Zanna, M. P., & Esses, V. M. (1993). Assessing the structure of prejudicial

    attitudes: The case of attitudes toward homosexuals. *Journal of Personality And*

    Social Psychology, *65*(6), 1105-1118. doi:10.1037/0022-3514.65.6.1105

Harwood, J., Hewstone, M., Paolini, S., & Voci, A. (2005). Grandparent-Grandchild

    Contact and Attitudes Toward Older Adults: Moderator and Mediator

    Effects. *Personality and Social Psychology Bulletin*, *31*(3), 393-406.

    doi:10.1177/0146167204271577

Hewstone, M., & Brown, R. (1986). Contact is not enough: An intergroup perspective on

    the 'contact hypothesis.'. In M. Hewstone, R. Brown (Eds.) , *Contact and conflict*

    in intergroup encounters (pp. 1-44). Cambridge, MA, US: Basil Blackwell.

Houlette, M. A., Gaertner, S. L., Johnson, K. M., Banker, B. S., Riek, B. M., & Dovidio, J.

    F. (2004). Developing a More Inclusive Social Identity: An Elementary School

    Intervention. *Journal of Social Issues*, *60*(1), 35-55. doi:10.1111/j.0022-

    4537.2004.00098.x

Islam, M. R., & Hewstone, M. (1993). Dimensions of contact as predictors of intergroup

    anxiety, perceived out-group variability, and out-group attitude: An integrative

    model. *Personality and Social Psychology Bulletin*, *19*(6), 700-710.

    doi:10.1177/0146167293196005

Jetten, J., Spears, R., & Postmes, T. (2004). Intergroup Distinctiveness and

        Differentiation: A Meta-Analytic Integration. *Journal of Personality and Social*

        Psychology, *86*(6), 862-879. doi:10.1037/0022-3514.86.6.862

Jones, J. M. (2007). Some Americans reluctant to vote for Mormon, 72-year-old

        presidential candidates: Based on February 9–11, 2007 Gallup poll. *Gallup News*

        Service. Retrieved from http://www.gallup.com/poll/26611/some-americans-

        reluctant-vote-mormon-72yearold-presidential-candidates.aspx

Kenworthy, J. B., Barden, M. A., Diamond, S., & del Carmen, A. (2011). Ingroup

        identification as a moderator of racial bias in a shoot–no shoot decision

        task. *Group Processes & Intergroup Relations*, *14*(3), 311-318.

        doi:10.1177/1368430210392932

Laurenceau, J., Barrett, L. F., & Pietromonaco, P. R. (1998). Intimacy as an interpersonal

        process: The importance of self-disclosure, partner disclosure, and perceived

        partner responsiveness in interpersonal exchanges. *Journal of Personality and*

        Social Psychology, *74*(5), 1238-1251. doi:10.1037/0022-3514.74.5.1238

LeVine, R. A., & Campbell, D. T. (1972). *Ethnocentrism: Theories of conflict, ethnic*

        attitudes, and group behavior. Oxford, England: John Wiley & Sons.

Mazziotta, A., Mummendey, A., & Wright, S. C. (2011). Vicarious intergroup contact

        effects: Applying social-cognitive theory to intergroup contact research. *Group*

        Processes & Intergroup Relations, *14*(2), 255-274.

        doi:10.1177/1368430210390533

McKenna, K. A., Green, A. S., & Gleason, M. E. (2002). Relationship formation on the

        Internet: What's the big attraction?. *Journal of Social Issues*, *58*(1), 9-31.

        doi:10.1111/1540-4560.00246

Miller, N. (2002). Personalization and the promise of contact theory. *Journal of Social Issues*, *58*(2), 387-410. doi:10.1111/1540-4560.00267

Mullen, B., & Hu, L. (1989). Perceptions of ingroup and outgroup variability: A meta-analytic integration. *Basic and Applied Social Psychology*, *10*(3), 233-252. doi:10.1207/s15324834basp1003_3

Paolini, S., Harwood, J., & Rubin, M. (2010). Negative intergroup contact makes group memberships salient: Explaining why intergroup conflict endures. *Personality and Social Psychology Bulletin*, *36*(12), 1723-1738. doi:10.1177/0146167210388667

Pennebaker, J.W., Booth, R.J., & Francis, M.E. (2007). LIWC2007: Linguistic Inquiry and Word Count. Austin, Texas: liwc.net.

Pettigrew, T. F. (1986). The intergroup contact hypothesis reconsidered. In M. Hewstone, R. Brown (Eds.), *Contact and conflict in intergroup encounters* (pp. 169-195). Cambridge, MA, US: Basil Blackwell.

Pettigrew, T. F. (1997). Generalized intergroup contact effects on prejudice. *Personality and Social Psychology Bulletin*, *23*(2), 173-185. doi:10.1177/0146167297232006

Pettigrew, T. F. (1998). Intergroup contact theory. *Annual Review of Psychology*, *49*, 65-85. doi:10.1146/annurev.psych.49.1.65

Pettigrew, T. F., & Tropp, L. R. (2000). Does intergroup contact reduce prejudice: Recent meta-analytic findings. In S. Oskamp (Ed.), *Reducing prejudice and discrimination* (pp. 93-114). Mahwah, NJ, US: Lawrence Erlbaum Associates Publishers.

Pettigrew, T. F., & Tropp, L. R. (2006). A meta-analytic test of intergroup contact theory. *Journal of Personality and Social Psychology*, *90*(5), 751-783. doi:10.1037/0022-3514.90.5.751

Pettigrew, T. F., Tropp, L. R., Wagner, U., & Christ, O. (2011). Recent advances in

    intergroup contact theory. *International Journal of Intercultural Relations*, *35*(3),

    271-280. doi:10.1016/j.ijintrel.2011.03.001

Rich, Y., Kedem, P., & Shlesinger, A. (1995). Enhancing intergroup relations among

    children: A field test of the Miller-Brewer Model.*International Journal of*

    Intercultural Relations, *19*(4), 539-553. doi:10.1016/0147-1767(95)00035-6

Richards, Z., & Hewstone, M. (2001). Subtyping and subgrouping: Processes for the

    prevention and promotion of stereotype change. *Personality and Social*

    Psychology Review, *5*(1), 52-73. doi:10.1207/S15327957PSPR0501_4

Scarberry, N. C., Ratcliff, C. D., Lord, C. G., Lanicek, D. L., & Desforges, D. M. (1997).

    Effects of individuating information on the generalization part of Allport's contact

    hypothesis. *Personality and Social Psychology Bulletin*, *23*(12), 1291-1299.

    doi:10.1177/01461672972312006

Sherif, M. (1958). Superordinate goals in the reduction of intergroup conflict. *American*

    Journal of Sociology, *63*349-356. doi:10.1086/222258

Sherif, M., & Sherif, C. W. (1953). *Groups in harmony and tension; an integration of*

    studies of intergroup relations. Oxford, England: Harper & Brothers.

Sprecher, S., Treger, S., Wondra, J. D., Hilaire, N., & Wallpe, K. (2013). Taking turns:

    Reciprocal self-disclosure promotes liking in initial interactions. *Journal of*

    Experimental Social Psychology, *49*(5), 860-866. doi:10.1016/j.jesp.2013.03.017

Steel, J. L. (1991). Interpersonal correlates of trust and self-disclosure. *Psychological*

    Reports, *68*(3, Pt 2), 1319-1320. doi:10.2466/PR0.68.4.1319-1320

Stephan, W. G., Diaz-Loving, R., & Duran, A. (2000). Integrated threat theory and

    intercultural attitudes: Mexico and the United States. *Journal of Cross-Cultural*

    Psychology, 31(2), 240-249. doi:10.1177/0022022100031002006

Stephan, W. G., & Stephan, C. (1996). Predicting prejudice. *International Journal of Intercultural Relations, 20*(3-4), 409-426. doi:10.1016/0147-1767(96)00026-0

Stephan, W. G., & Stephan, C. (2000). An integrated threat theory of prejudice. In S. Oskamp (Ed.) , *Reducing prejudice and discrimination* (pp. 23-45). Mahwah, NJ US: Lawrence Erlbaum Associates Publishers.

Tajfel, H. (1974). Social identity and intergroup behaviour. *Social Science Information/Sur Les Sciences Sociales, 13*(2), 65-93. doi:10.1177/053901847401300204

Tajfel, H. (1978a). Interindividual behaviour and intergroup behaviour. In H. Tajfel (Ed.), *Differentiation between social groups: Studies in the social psychology of intergroup relations* (pp. 27-60). New York, NY: Academic Press.

Tajfel, H. (1978b). Social categorization, social identity and social comparison In H. Tajfel (Ed.), *Differentiation between social groups: Studies in the social psychology of intergroup relations* (pp. 61-76). New York, NY: Academic Press.

Tajfel, H. (1982). Social psychology of intergroup relations. *Annual Review of Psychology*, 331-39. doi:10.1146/annurev.ps.33.020182.000245

Tajfel, H., & Turner, J. C. (1979). An integrative theory of intergroup conflict. *The social psychology of intergroup relations*, *33*, 47.

Tam, T., Hewstone, M., Harwood, J., Voci, A., & Kenworthy, J. (2006). Intergroup Contact and Grandparent-Grandchild Communication: The Effects of Self-Disclosure on Implicit and Explicit Biases Against Older People. *Group Processes & Intergroup Relations*, *9*(3), 413-429. doi:10.1177/1368430206064642

Tausch, N., Hewstone, M., Kenworthy, J., Cairns, E., & Christ, O. (2007). Cross-Community Contact, Perceived Status Differences, and Intergroup Attitudes in Northern Ireland: The Mediating Roles of Individual-level versus Group-level

Threats and the Moderating Role of Social Identification. *Political Psychology, 28*(1), 53-68. doi:10.1111/j.1467-9221.2007.00551.x

Tausch, N., Tam, T., Hewstone, M., Kenworthy, J., & Cairns, E. (2007). Individual-level and group-level mediators of contact effects in Northern Ireland: The moderating role of social identification. *British Journal of Social Psychology, 46*(3), 541-556. doi:10.1348/014466606X155150

Turner, J. (1978). Social categorization and social discrimination in the minimal group paradigm In H. Tajfel (Ed.), *Differentiation between social groups: Studies in the social psychology of intergroup relations* (pp. 101-140). New York, NY: Academic Press.

Turner, R. N., & Crisp, R. J. (2010). Explaining the relationship between ingroup identification and intergroup bias following recategorization: A self-regulation theory analysis. *Group Processes & Intergroup Relations*, *13*(2), 251-261. doi:10.1177/1368430209351702

Turner, R. N., & Feddes, A. R. (2011). How intergroup friendship works: A longitudinal study of friendship effects on outgroup attitudes. *European Journal of Social Psychology*, *41*(7), 914-923. doi:10.1002/ejsp.843

Turner, J. C., Hogg, M. A., Oakes, P. J., Reicher, S. D., & Wetherell, M. S. (1987). *Rediscovering the social group: A self-categorization theory*. Cambridge, MA US: Basil Blackwell.

Turner, R. N., Tam, T., Hewstone, M., Kenworthy, J., & Cairns, E. (2013). Contact between Catholic and Protestant schoolchildren in Northern Ireland. *Journal of Applied Social Psychology*, *43*(Suppl 2), E216-E228. doi:10.1111/jasp.12018

Van Oudenhoven, J., Groenewoud, J., & Hewstone, M. (1996). Cooperation, ethnic salience and generalization of interethnic attitudes. *European Journal of Social*

Psychology, *26*(4), 649-661. doi:10.1002/(SICI)1099-

0992(199607)26:4<649::AID-EJSP780>3.0.CO;2-T

Vescio, T. K., Sechrist, G. B., & Paolucci, M. P. (2003). Perspective taking and prejudice

reduction: The mediational role of empathy arousal and situational

attributions. *European Journal of Social Psychology*, *33*(4), 455-472.

doi:10.1002/ejsp.163

Vezzali, L., & Capozza, D. (2011). Reducing explicit and implicit prejudice toward

disabled colleagues: Effects of contact and membership salience in the

workplace. *Life Span and Disability*, *14*(2), 139-162.

Vezzali, L., Capozza, D., Mari, S., & Hichy, Z. (2007). Contact models and intergroup

relations in an Italian area bordering on Austria. *TPM-Testing, Psychometrics,

Methodology in Applied Psychology*, *14*(2), 67-81.

Voci, A., & Hewstone, M. (2003). Intergroup contact and prejudice toward immigrants in

Italy: The mediational role of anxiety and the moderational role of group

salience. *Group Processes & Intergroup Relations*, *6*(1), 37-52.

doi:10.1177/1368430203006001011

Watson, D., & Clark, L. A. (1994). The PANAS-X: Manual for the positive and negative

affect schedule-expanded form. *Psychology Publications*, University of Iowa,

Iowa City, IA.

West, T. V., Pearson, A. R., Dovidio, J. F., Shelton, J., & Trail, T. E. (2009).

Superordinate identity and intergroup roommate friendship development. *Journal

of Experimental Social Psychology*, *45*(6), 1266-1272.

doi:10.1016/j.jesp.2009.08.002

White, F. A., & Abu-Rayya, H. M. (2012). A dual identity-electronic contact (DIEC)

experiment promoting short- and long-term intergroup harmony. *Journal of

Experimental Social Psychology*, *48*(3), 597-608. doi:10.1016/j.jesp.2012.01.007

White, F. A., Abu-Rayya, H. M., & Weitzel, C. (2014). Achieving twelve-months of

intergroup bias reduction: The dual identity-electronic contact (DIEC)

experiment. *International Journal of Intercultural Relations*, *38*158-163.

doi:10.1016/j.ijintrel.2013.08.002

White, F. A., Harvey, L. J., & Abu-Rayya, H. M. (2015). Improving Intergroup Relations in

the Internet Age: A Critical Review. *Review of General Psychology*,

doi:10.1037/gpr0000036

Wilder, D. A. (1984). Intergroup contact: The typical member and the exception to the

rule. *Journal of Experimental Social Psychology*, *20*(2), 177-194.

doi:10.1016/0022-1031(84)90019-2

Wright, S. C., Aron, A., McLaughlin-Volpe, T., & Ropp, S. A. (1997). The extended

contact effect: Knowledge of cross-group friendships and prejudice. *Journal of

Personality and Social Psychology*, *73*(1), 73-90. doi:10.1037/0022-3514.73.1.73

Biographical Information

Lauren E Coursey is a member of Dr. Kenworthy's Laboratory for the Study of Intergroup Relations. Her primary research interests include intergroup processes, stereotyping, prejudice, intergroup contact, and social identification. Her research goal is to better understand the psychological causes and consequence of negative intergroup relations. In her current lab, she has had the opportunity to explore issues related to stereotypes, intergroup contact, religiosity, and social identification (among others).