

**Intergroup Contact & Empathy:
Understanding Meaningful Contact & Individual Differences in Trait Empathy**

BY

Kendal M. Wong

M.A., University of Illinois at Chicago, 2016

THESIS

Submitted as partial fulfillment of the requirements
for the degree of Doctor of Philosophy in Psychology
in the Graduate College of the
University of Illinois at Chicago, 2019

Defense Committee:

Daniel Cervone, Chair and Advisor
Courtney Bonam, Psychology, University of California Santa Cruz
Julie Chen, Psychology
Sylvia Morelli, Psychology
Tyrone Forman, African American Studies

Table of Contents

	Page
List of Figures.....	iv
List of Tables.....	v
Acknowledgements.....	vi
Summary.....	vii
Introduction.....	1
Literature Review.....	4
Intergroup Contact Theory	4
Intergroup Contact Assessments.....	7
Importance of Meaningful Contact.....	13
Cross-group Romantic Relationships.....	16
Individual Differences in Intergroup Contact.....	18
Present Studies.....	22
Pilot Study.....	25
Method.....	28
Participants.....	28
Materials and Measures.....	28
Procedure.....	33
Results.....	34
Summary.....	37
Study 1.....	38

Table of Contents (continued)

Method.....	41
Participants.....	41
Materials and Measures.....	41
Procedure.....	43
Results.....	44
Summary.....	49
Study 2.....	50
Method.....	52
Participants.....	52
Measures.....	53
Procedure.....	54
Results.....	56
Summary.....	62
Discussion.....	65
Limitations & Future Research.....	70
References.....	74
Appendices.....	88
Curriculum Vitae.....	96

List of Figures

	Page
Figure 1. Moderated mediation model pathways.....	57
Figure 2. Full moderated mediation model: Unstandardized coefficient values	58
Figure 3. Low intimacy intergroup contact moderated mediation model: Unstandardized coefficient values.....	60
Figure 4. High intimacy intergroup contact moderated mediation model: Unstandardized coefficient values.	62

List of Tables

	Page
Table 1. Summary of Contact Assessments.....	12
Table 2. Summary Descriptive Statistics and Cronbach Alpha	34
Table 3. Intercorrelations Among Variables	35
Table 4. Means and standard deviations across news articles conditions.....	36
Table 5. Descriptive Statistics For Variables in Study 1	44
Table 6. Study 1 Intercorrelations Among Variables	46
Table 7. Hierarchical Multiple Regression Analysis of Predictors of Intergroup Empathy....	47
Table 8. Descriptive Statistics For Variables in Study.....	56
Table 9. Intercorrelations Among Variables in Study 2.....	56

Acknowledgements

I take this opportunity to thank my advisor, Dr. Dan Cervone, for his support, guidance, and encouragement throughout my graduate career. I would also like express gratitude to my committee members, Dr. Courtney Bonam, Dr. Julie Chen, Dr. Sylvia Morelli, and Dr. Tyrone Foreman for their time, support, and feedback throughout this entire process. Lastly, I would like to thank my loving husband, family, and friends whose love and support inspire me to persevere in all aspects of life.

Summary

The intergroup empathy gap refers to individual's tendency to respond with less empathy to out-group members relative to in-group members. One way to combat the intergroup empathy gap is through intergroup contact. Allport's intergroup theory (1954) posits that one's experiences and interactions with dissimilar others can serve as a means to improve intergroup relations and attitudes. Within the intergroup contact literature, there are a variety of intergroup contact measures employed across studies. Limited work investigates the relative importance of various forms of contact and the influence of empathy as an antecedent of intergroup contact.

The present thesis presents two studies aiming to gain deeper understanding of intergroup contact theory. Study 1 explores the importance of variation in the nature of these experiences with out-group members. Results indicated that more meaningful and socially close contact experiences yield greater contact effects and increased empathy towards out-groups. Study 2 tests the role of empathy as an antecedent of intergroup contact and as an outcome of intergroup contact. Findings from Study 2 suggest that empathy serves as an important antecedent of intergroup contact experiences, such that contact effects on intergroup empathy were dependent on individual differences in trait empathy. Findings across both studies were consistent with the intergroup contact literature and provide new insight into nuanced variation of intergroup contact and empathy.

Introduction

Given the deeply rooted racial discrimination and prejudice in American history, activists and researchers have long worked to combat social inequality. Concurrently, much work has been done to promote positive intergroup dynamics along the intersections of race, gender, sexuality, religion, income, and political affiliation. The challenges faced by Americans past and present continue to permeate American culture as concern for the state of intergroup relations continues to intensify (Pew Research Center, 2016; 2017a; 2017b). Consequently, the need to understand mechanisms that create positive intergroup dynamics remains an important and central goal for social advocates across disciplines today.

One particular challenge of intergroup dynamics is intergroup empathy: the ability to empathize with people that are different from oneself across various social lines, including race, religion, and sexuality. Empathy broadly refers to the ability to understand and share the emotional and sensory states of others (Cohen & Strayer, 1996; Singer, et. al, 2004). As a multifaceted construct, empathy encompasses cognitive processes, such as the ability to take the perspective of others, and affective processes, such as the ability to experience concern for others (Davis, 1980, 1983). One's ability for empathic responding has been negatively related to prejudice above and beyond other factors associated with prejudice (i.e. social dominance orientation and authoritarianism; Backstrom & Bjorklund, 2007), highlighting the important role of empathy in intergroup processes.

Research on intergroup empathy has revealed a gap in empathic responding, in which empathizing with an out-group member is more difficult than an in-group member. Intergroup empathic failures have been tested using affective, behavioral, physiological, and neural approaches (Cikara, Bruneau, & Saxe, 2011; Riva & Andrighetto, 2012; Xu, Zuo, Wang, & Han,

2000). This bias has been demonstrated to occur for targets across racial groups, sexual orientation, sports teams, and in minimal group paradigms (Avenanti, Sirigu, & Aglioti, 2010; Chiano & Mathur, 2010; Cikara & Fiske, 2013; Gutsell & Inczlicht, 2012; Masten, Gillen-O'Neel, & Brown, 2010).

This growing body of work indicates that empathy and empathic responses are dampened for out-group members and, importantly, can reduce pro-social behavior toward members of these groups (Cikara, Bruneau, & Saxe, 2011; Cikara & Fiske, 2014). Mekawi, Bresin, & Hunter (2016), report that individuals with decreased empathy for racial out-group targets demonstrated a greater likelihood of shooting for Black versus White targets in a shooting task. It is hypothesized that individuals may fail to empathize with another when the target is distant in physical space, time, or belongs to a different racial, political, or social group (Batson & Ahmad, 2009). Social identity and intergroup dynamics that exacerbate the intergroup empathy gap have also been identified. Participants not only fail to empathize with highly stereotyped groups, but also are less likely to engage in helping behavior and often show counter empathic responding (i.e. schadenfreude; Cikara & Fiske, 2014; 2013).

Research that investigates the neural underpinnings of empathic responses to pain and suffering reveals diminished, and sometimes absent, activation in “matching” neural pathways and physiological responses when watching an out-group member receive physical pain (Chiao & Mathur, 2010; Cikara, Bruneau, & Saxe, 2011). Overall, these findings illustrate the dampened ability to empathize with out-group members, and that individual differences and social factors contribute to the intergroup empathy gap. Further, this work suggests empathy plays a central role in a variety of cross-group outcomes. Increased understanding of the factors associated with increasing empathic responding towards out-groups can help promote more

positive intergroup dynamics.

The current work outlines two primary studies designed to gain understanding of the association between intergroup contact and empathy towards out-group. First, a literature review provides an evaluation the body of work relating to intergroup contact and intergroup empathy. Through the literature review, an assessment of the research on this topic and corresponding limitations shape the questions addressed in the subsequent studies.

Literature Review

Intergroup Contact Theory

Intergroup contact theory posits that, despite the robust effect of the intergroup empathy gap, interacting with members of a different group can boost empathy and further reduce prejudice (Pettigrew & Tropp, 2006; 2008). Dating back to the Civil Rights era, intergroup contact was theorized as a method to improve intergroup relations between racial groups (Allport, 1954). According to Allport (1954), contact, or interacting with members of a different social group, can establish positive attitudes between groups. Further, interacting with people of different groups may help mitigate the intergroup empathy gap. Intergroup contact theory states that under conditions of equal status, common goals, cooperation, and institutional support interacting with out-group members can help reduce prejudice and promote positive intergroup dynamics. Pettigrew's subsequent reformulation of intergroup contact theory incorporates societal factors through which contact can reduce prejudice (1998). People can (1) learn about out-groups, (2) change their existing attitudes and behaviors, (3) create affective ties and (4) reappraise their own group (Pettigrew, 1998).

Intergroup contact has been established as a strong and consistent predictor of positive intergroup relations (Davies, et. al, 2011; Pettigrew & Tropp, 2006; 2008). The benefits of intergroup contact have been demonstrated for a variety of out-groups including race/ethnicity, nationality, religion, immigrants, sexuality, age, homeless, physically disabled, and mentally disabled (Aberson, 2015; Hewstone, et. al, 2014; Lee, Farrell, & Link, 2004; Lytle & Levy, 2015; Pettigrew & Tropp, 2006; Vezzali & Giovannini, 2012; Vezzali, Giovannini, & Capozza, 2010; Walker & Scior, 2013). Although Allport's key conditions yield greater contact effects, these conditions are not necessary for prejudice reduction and hold equally well groups beyond

race/ethnicity (Pettigrew & Tropp, 2006). This suggests that the conditions outlined by Allport create circumstances that help facilitate contact effects, but are not essential for reducing prejudice (Pettigrew & Troop, 2006; Pettigrew, 2008).

Additionally, research has demonstrated generalization of contact effects to other out-group targets beyond the immediate situation or context (Brown & Hewstone, 2005; Dovidio, Gaertner, & Kamikawa, 2003; Lolliot, et. al, 2013; Miller, 2002). This work indicates that intergroup contact effects can generalize from known out-group members to the whole out-group (Brown & Hewstone, 2000). Further, the generalization effects are particularly effective when group membership is salient during interactions (Brown & Hewstone, 2005; Dovidio, Gaertner, & Kamikawa, 2003) and when intergroup interactions are personalized (Miller, 2002).

More recently, research on intergroup contact has also revealed a secondary transfer effect—the transfer of contact effects from one out-group (i.e. Black out-group targets) to another out-group outside the immediate contact situation (i.e. Asian out-group targets; Lolliot, et. al, 2013; Pettigrew, 2009; Tausch, et. al, 2010; Voci & Giovannini, 2012). Tausch, et. al, (2010) report that more positive attitudes between Protestants and Catholics in Northern Ireland led to more positive attitudes towards other ethnic minorities even after controlling for contact with these groups. Secondary transfer effects are linked to processes of attitude generalization (Lolliot, et. al, 2013; Tausch, et. al, 2010) and are mediated by intergroup attitudes, intergroup anxiety, and perspective taking (Voci & Giovannini, 2012).

The wide applicability of contact effects, holding across a variety of out-group targets in a variety of settings, suggests that intergroup contact may be related to basic processes such as Zajonc's mere exposure effect—in which greater and repeated exposure to a target can enhance liking for those targets (Zajonc, 1986). However, research investigating potential mediators

highlights various processes in which contact effects may operate in intergroup dynamics. A meta-analytic investigation of three potential mediators revealed that anxiety, knowledge, and empathy all mediate intergroup contact effects (Pettigrew & Troop, 2008). While all three variables operate as mediators, affective factors (empathy and anxiety) have more powerful contact effects than cognitive factors (knowledge; Pettigrew, 2008; Tropp & Pettigrew, 2005). Together these findings highlight the important role of empathy for intergroup contact effects.

Baston and colleagues (1997) have conducted notable work that has since inspired the exploration of empathy and perspective taking as mediators in the association between intergroup contact and prejudice. This body of work indicates that empathy operates as a powerful mediator between intergroup contact and prejudice reduction (Pettigrew & Troop, 2008). Research on intergroup contact and empathy parallels the larger body of work on intergroup contact—contact effects on intergroup empathy have been demonstrated for a variety of out-group targets including race/ethnicity, religion, sexuality, sports teams, disability, elderly, immigrants, and minimal groups (Aberson, 2015; Hewstone, et. al, 2014; Lee, Farrell, & Link, 2004; Lytle & Levy, 2015; Pettigrew & Tropp, 2006; Vezzali & Giovannini, 2012; Vezzali, Giovannini, & Capozza, 2010; Walker & Scior, 2013).

Swart, Hewstone, Christ, & Voci (2011) conducted a longitudinal study designed to examine the effects of cross-group friendships between African students and White students in a South African context. The researchers collected data at three time points each six months apart. Their findings indicate that cross-group friendships at Time 1 were negatively related to out-group prejudice (Time 3) and that this effect was mediated by affective empathy at Time 2. Empathy is posited to generate stronger generalization effects by reminding individuals of the experiences a person has as an out-group member which in turn increases the salience of group

membership (Hewstone, et. al, 2014). Consistent with the work on the intergroup empathy gap, the difficulty for individuals to empathize with racially dissimilar others result from an inability to take the perspective of out-group members (Mekawi, Bresin, & Hunter, 2016). However, intergroup contact provides experiences that can increase one's ability to take the perspective of others (Pettigrew & Tropp, 2008), which in turn can boost empathic responding towards out-groups.

Over a decade and a half has passed since the initial meta-analytic test of three mediators of intergroup contact and prejudice has been conducted (Pettigrew & Tropp, 2008). In this time, research that reports on intergroup contact and empathy towards out-groups has grown substantially (i.e. Abbott & Cameron, 2014; Aberson & Haag, 2007; Brouwer & Boros, 2010; Capozza, Trifiletti, Vezzali, & Favara, 2013; Eller & Abrams, 2003; Hewstone, et. al, 2014; Milgram, Geisis, Katz, & Haskaya, 2008; Pagotto & Voci, 2013). The increase in research on this topic reflects the importance of understanding the association between intergroup contact and empathy towards out-groups and creates opportunity to explore nuanced variation in this literature.

Intergroup Contact Assessments

Contact theorists have long stressed the importance of the *nature of contact* with out-groups to generate a reduction in prejudice (Allport, 1954; Pettigrew, 1998). This refers to the idea that *meaningful* and *intimate* interactions and experiences with out-groups are central to creating improved intergroup attitudes and relations. Allport (1954) describes variation in interpersonal nature of interactions with out-groups, and states “contact must reach below the surface in order to be effective” (pg. 276). Contact of this form encompasses value placed on experiences and interactions with out-group as well as the significance of interpersonal

relationships dissimilar others. In subsequent intergroup contact research, however, contact has taken on a variety of operational definitions (Abbott & Cameron, 2014; Aberson, 2015; Pagotto & Voci, 2013; Schroeder & Risen, 2016). Across these operationalizations of contact, the degree of *meaningfulness* and *intimacy* is often not made explicit.

To identify different components of contact that may be investigated in the contemporary literature, Wong (2017) conducted a narrative and meta-analytic reviews of the existing literature on intergroup contact and empathy towards out-groups. Within the literature there are a variety of contact assessments—proximity of out-groups, quantity of out-group members, frequency of interactions, quality of interactions, combined quality and quantity/frequency of contact, cross-group friendships, indirect contact, experimentally manipulated contact, and negative contact with out-group members (see Table 1 for summary).

Proximity of Contact. Contact in the form of proximity to out-groups describes the operationalization of contact as the proportion or percentage of out-group members in a given space (Cao, Contreras-Huerta, McFadyen, & Cunningham, 2015; Turner, Hewstone, & Voci, 2007). An underlying assumption of this operationalization of contact is that higher proportions of out-group members in a given space will increase *opportunity* for contact with out-group members. Greater opportunity, or proximity to out-group members, will result in an increase of actual contact interactions with out-group members. However this form of contact doesn't explicitly capture real interactions and direct experiences with out-group members. This measurement of contact leads to an interpretation of physical proximity, and thus contact effects could be considered mere exposure effects. It would be difficult to differentiate mere exposure effects and familiarity effects from effects based on intergroup contact and interactions with out-group members as outlined in the original theory.

Frequency of Contact. Frequency of contact measures operationalize contact as the numeric quantity of interactions, or frequency of time spent, with out-group members (Aberson & Haag, 2007; Moeschberger, Dixon, Niens, & Cairns, 2005; Vezzali & Capozza, 2011). These measures emphasize the quantification of time and interactions with out-group members. While increased degree of frequency of contact and experiences with out-groups may implicitly suggest variation in interpersonal nature of the contact, frequency of contact assessments do not explicitly capture variation in meaningfulness of contact.

Quantity of Contact. Quantity of contact assessments operationalize contact as the numeric quantity of out-group members, or number of persons, a given individual knows and interacts with (Hodson, 2008; Miller, Smith, & Mackie, 2004; Vezzali, Giovannini, & Capozza, 2010). This form of contact gauges the quantification of people that belong to a given out-group. An underlying assumption for this operationalization is that the more out-group members an individual knows, the more interactions and experiences a person has with those out-group members. Quantity of contact assessments do not address the nature of the experience or relationship one has with a given out-group member. The degree of meaningfulness and intimacy are not explicitly made through these operationalizations.

Quality of Contact. Quality of contact assessments operationalize contact along qualitative dimensions of one's interactions and experiences with out-group members. Quality of contact is often measured along dimensions that correspond to ideal conditions of contact based on intergroup contact theory (i.e. involuntary-voluntary, equal, cooperative; Aberson, 2015; Aberson & Haag, 2007) or along dimensions relating to the interpersonal nature of the interaction (i.e. pleasant, positive, negative, friendly, important; Brouwer & Boros, 2010; Jackson, James, Poulsen, & Dumford, 2016; Milgram, et. al, 2008; Pagotto, Voci, & Maculan,

2010; Vezzali & Capozza, 2011). By examining the quality of interactions an individual has with an out-group member, the underlying mechanism shifts from observable concrete components of contact to the subjective experience of an individual. These assessments capture varying degrees of meaningfulness by encompassing subjective experiences of interpersonal interaction constructs like importance and pleasantness.

Negative Contact. While the majority of quality contact measures are structured to capture both positive and negative contact, some quality contact measures gauge exclusively negative contact experience. Negative contact assessments specifically tap into the qualitatively negative aspects of interactions and experiences with out-groups (i.e. negative, hostile, discomfort; Aberson, 2015; Pagotto & Voci, 2013). Both quality contact and negative contact assessments can be considered operationalizations of contact that represent the quality of interactions and experiences; however, they create different directional interpretations of intergroup outcomes. Therefore, it is important to differentiate between general quality contact measures and negative contact measures.

Quantity X Quality Contact. In some research, studies that employ contact assessments of quality also incorporate measures of contact quantity/frequency. Despite findings that suggest quality of contact and quantity/frequency of contact have differential effects on intergroup dynamics and outcomes (Davies, et. al, 2011; Milgram, et. al, 2008), researchers often rely on operationalizations that integrate quality of contact with either quantity or frequency of contact.

Operationalizations of contact that combine quantity and quality of contact rely on mathematical computations to create a single index of contact (i.e. multiplication, averaging; Armstrong, et al. 2016; Brouwer & Boros, 2010; Pagotto, Voci, & Maculan, 2010; Vezzali & Giovannini, 2012). Although different methods of combining quality, quantity, and frequency of

contact are distinct strategies and yield scores with differential interpretations, each strategy does employ the operationalization of contact as the intersection of quality of contact and quantity/frequency of contact. Across all strategies of integrating quality and quantity, the degree of social closeness remains unclear. By incorporating items of quality and quantity, higher scores may reflect greater quality or greater frequency, making it difficult to determine which underlying mechanism is driving contact effects.

Cross-Group Friendships. Cross-group friendship assessments of intergroup contact capture a variety of components associated with having friendship relationships with out-group members (i.e. number of friends, amount of time spent with, degree of self-disclosure; Fingerhut, 2011; Stasiuk & Bileicz, 2013; Swart, et. al, 2011; Swart, Turner, Hewstone, & Voci, 2011; Troop, 2007; Turner, Hewstone, Voci, & Vonofakou, 2008; see Davies, et. al, 2011 for a review). In a recent meta-analysis, Davies and colleagues (2011) disentangled a variety of operationalizations of cross-group friendships to examine the differential associations between each contact assessment. Although there was evidence that the indicators of behavioral engagement in friendship generated stronger contact effects, the researchers found that all assessments of cross-group friendship appeared to promoted positive intergroup attitudes (Davies, et. al, 2011), and yield larger effects compared to contact assessments more generally (Pettigrew & Troop, 2006). Although cross-group friendship assessments have considerable variability, the degree of meaningfulness and social closeness is greater for cross-group friendships than other forms of more general contact.

Indirect Contact. While the majority of operationalizations that exist within the contact and empathy literature focus on direct forms of contact with out-group members, contact theorists have recognized the potential challenges of direct contact with out-group members.

Table 1. Summary of Contact Assessments

Contact Assessment	Description
Proximity/Proportion	Contact represented by the percentage or proportion of out-group members that comprise a given context.
Frequency	Contact measured as the frequency of time spent with or frequency of interactions with out-group members.
Quantity	Contact assessed by the number of persons that belong to an out-group an individual knows.
Quality	Contact measured by the interpersonal nature of interactions and experiences with out-group members (i.e. importance, pleasantness, cooperativeness).
Quantity x Quality	Contact represented by the mathematical combination of quality and quantity/frequency assessments of contact.
Cross-group Friendship	Contact measured by the number of out-group friends, time spent with out-group friends, or degree of behavioral engagement with out-group friends (i.e. self-disclosure).
Experimental Manipulation	Contact that is experimentally manipulated in the form of activities that induce social closeness to an interaction partner or manipulations that provide interactions with or exposure to out-groups.
Indirect	Contact as measured by non-face-to-face experiences with out-group members including extended and vicarious experiences.
Negative	Subset of quality of contact assessments, specifically measuring the extent to which experiences and interactions with out-groups is negative, hostile, and unpleasant.

Indirect contact refers to non-face-to-face interactions and experiences with out-group members (i.e. extended contact, imagined, vicarious contact; Pagotto & Voci, 2013; Stasiuk & Bileicz, 2013; Turner, et. al, 2008; Turner, Hewstone, & Voci, 2007; Turner, et. al, 2013). For indirect contact assessments the level of social closeness and intimacy of the interaction with an out-

group member has considerable differences. Indirect operationalizations of contact lack face-to-face interaction, and thus the degree of social closeness is substantially reduced.

Experimental Manipulations of Contact. Some work employs experimental manipulations to examine contact effects in a controlled laboratory setting. These experimental manipulations of contact can take a variety of forms, yet all have the foundation of experimental manipulation. Experimental manipulations of contact include various interventions designed to promote more positive inter-group dynamics at work, school, and in the community more generally (Hutchinson, et. al, 2014; Lytle & Levy, 2015; MacInnis & Hodson, 2015), the induction of interpersonal closeness (Aron, et. al, 1997; Sedikides, Campbell, Reeder, & Elliot, 1999; MacInnis & Hodson, 2015), providing the opportunity for interactions with out-group members (Bratt, 2008; Hutchinson, et. al, 2014), and indirect forms of contact interventions (Thakral, et. al, 2016; Walker & Scior, 2013). While all of these studies employed experimental manipulations of contact, there is considerably variability in degree of social closeness and meaningfulness of contact with out-groups.

Importance of Meaningful Contact

There is considerable variation in the underlying mechanisms across each of the contact assessments outlined in the review above (Wong, 2017). In particular, the degree of meaningfulness, intimacy, and social closeness is not consistent across each operationalization. Contact assessments that gauge quality of interactions with out-group members and cross-group friendships appear to capture meaningfulness and intimacy of contact to a greater degree than other contact assessments. Further, a meta-analysis revealed differential patterns of association between contact and empathy across contact assessments (Wong, 2017). Specifically, the more meaningful, intimate, and socially close forms of contact (quality and cross-group friendships)

yielded stronger contact effects compared to more general contact assessments (i.e. proximity, frequency). These findings parallel the initial emphasis contact theorists placed on the *nature* of intergroup contact.

Research on more socially close, meaningful, and intimate forms of contact indicates that contact in the form of cross-group friendships and more quality contact yield greater contact effects (Davies, et. al, 2011; Pettigrew & Troop, 2006; Wong, 2017). Prior work has posited that cross-group friendships enhance affective ties further reducing out-group. Tawagi & Mak (2015) investigated the impact of situational factors in engagement in intergroup contact. Their findings demonstrate that more inclusive environments (i.e. respectful and diverse) facilitate more quality interactions with out-group members (Tawagi & Mak, 2015). In addition, higher degrees of cross-group friendships are associated with greater prosocial and helping behavior (Fingerhut, 2011). These findings demonstrate the importance of contact with out-group members that consist of meaningful experiences and quality interactions.

Overall, work that examines more meaningful forms of contact indicates that meaningful and high quality forms of contact generate greater contact effects (Davies, et. al, 2011; Wong, 2017). Why might quality of contact with out-group members and cross-group friendships lead to especially strong associations with intergroup empathy? Of the nine operationalizations of contact identified in the comprehensive review, quality and cross-group friendships best capture the degree of *meaningfulness*, *intimacy*, and *social closeness* of contact with out-group members. Research on the antecedents of empathy has demonstrated that greater value of another person, and on that individual's wellbeing, leads to increased empathic responding (Batson, et. al, 2007). Specifically for quality and cross-group friendships, the contact between an individual and out-group member imply greater value of the contact target compared to other operationalizations of

contact. Contact measures of quality often have participants rate the degree of importance and pleasantness of contact with out-group members. The adjectives used in bipolar scales to measure quality of contact (i.e. important, cooperative; Capozza, Trifiletti, Vezzali, & Favara, 2013; Milgram, et. al, 2008) are consistent with value of the out-group target. Therefore, a primary reason why quality of contact with out-groups generates such strong contact effects is that the quality of contact measure simultaneously captures the degree of *value* placed on an out-group.

The implication of value is also reflected in cross-group friendship measures. As compared to strangers, friendship relationships encompass greater positivity and supportiveness as central features of friendship maintenance (Gable, Gonzaga, & Strachman, 2006; Oswald, Clark, & Kelly, 2004). Consequently, the existence of a friendship relationship incorporates greater degrees of value, intimacy, and meaningfulness. In addition, research on processes of self-disclosure indicates that self-disclosure generates empathy and trust for out-groups (Swart, et. al, 2011). Individuals in socially close relationships typically engage in processes of self-disclose to a greater degree (Gable, Reis, Impett & Asher, 2004; Fehr, 1996). Further, processes of self-disclosure have been linked to the development of intimacy in relationships (Fher, 2004). Thus, higher quality contact and cross-group friendships could generate more self-disclosure relative to other operationalizations of contact.

Higher quality contact and cross-group friendships encompass heightened intimacy and meaningfulness of relationships with out-group members. As a result, these operationalizations of contact are associated with greater emotional bonds, which generalize to the larger out-group (Pettigrew, 1997). Empathic responding can be an effortful process (Davis, Conklin, Smith, & Luce, 1996). One way to overcome the effects of fatigue is to increase an individual's motivation

(Webster, Richter, & Kruglanski, 1996). When individuals have higher motivation to empathize with others, the inhibiting effects of fatigue on empathic responding are overcome (Nelson, Klein, & Irvin, 2003). Empathic responding has been found to be a key behavioral component of relationship maintenance (Gable, et. al, 2006), suggesting that individuals should have greater motivation to respond empathically to partners in close, meaningful, and valuable relationships.

Together, these findings validate the importance of socially close and intimate contact in empathic responding. Although the importance of meaningful contact has long been emphasized by contact theorists, much of the work on intergroup contact and empathy employs a single assessment of contact. Comparatively less work utilizes multiple forms of contact simultaneously. The proposed studies of the current proposal are designed to address this limitation in the literature.

Cross-Group Romantic Relationships

While the majority of work investigating intimate forms of intergroup contact focuses on cross-group friendships, notable work has been done to examine cross-group romantic relationships as possible contact pathway (Orta, 2013; Paterson, Turner, & Connor, 2015). In a conceptual theory paper, Orta (2013) outlines potential processes in which cross-group romantic relationships may serve as intergroup contact to promote more positive intergroup dynamics. Orta argues that cross-group romantic relationships provide the opportunity to reduce prejudice through each of these pathways.

First, people in an other-race partner gain information about their partners group through firsthand experience with the norms, beliefs, values, and lifestyle of that group. This may create a re-evaluation of the out-group, which can decrease bias and prejudice. Second, people in romantic relationships tend to have strong affective ties and affectionate bonds between partners

in the relationship. Romantic relationships consist of love, affection, and intimacy, which may reduce prejudice directly and indirectly via decreased anxiety (similar to processes in cross-group friendships: Eller & Abrams, 2003; Page-Gould et. al, 2008; Paolini, Hewstone, Carins, & Voci, 2004). Third, engagement in a cross-group romantic relationship can shift the way an individual perceives group membership boundaries. Romantic partners often see each other frequently and have a high degree of self-disclosure. This may motivate an individual to view their partner and themselves as sharing similar characteristics despite belonging to different groups. Further, involvement in a romantic relationship is associated with greater inclusion of other in self (Slotter & Gardner, 2009). The merging of one's own identity with the identity of one's partner can blur the lines of group membership and shift the way an individual's perception of group boundaries.

Indeed, the arguments outlined by Orta (2013) strongly suggest that cross-group romantic relationships can serve as a pathway for intergroup contact. However, little work actually investigates cross-group romantic partners in the context of intergroup contact theory. Of the actual work that investigates cross-group romantic relationships, only extended contact with cross-group romantic partners has been examined (Patterson, Turner, & Connor, 2015). Extended contact with cross-group romantic partners refers to knowledge of an in-group member having a romantic partner of a different social group. In the context of this research study, Patterson and colleagues examined romantic relationships between White/British and South-Asian people.

Patterson, Turner, & Connor (2015) explored the role of extended contact with cross-group romantic partners. Consistent with previous research, they report that individuals perceived cross-group romantic couples as having greater disapproval and less support from their social networks, being less satisfied with, less invested in, less committed to, and having more

appealing alternatives to their relationships than those with same-group partners (Patterson, Turner, & Connor, 2015). Despite these negative perceptions of interracial couples, their results suggest an optimistic view—individuals who had greater extended contact with cross-group romantic relationships were found to have greater approval of interracial dating than those with less extended contact. Further, the extended contact effects were generalized to racial out-group member and these effects were transferred to other cross-group romantic relationships types (secondary transfer effect; Patterson, Turner, & Connor, 2015). The researchers suggest that although cross-group couples face a greater degree of social disapproval, cross-group couples still have positive effects on more general perceptions of interracial dating.

In the literature on intergroup contact theory, comparatively less work has been done on direct forms of cross-group romantic relationships. While the underlying theory driving contact effects for cross-group romantic relationships has been outlined (Orta, 2013) and the benefits of extended contact with cross-group romantic relationships have been identified, direct contact in the form of cross-group romantic relationships has been understudied. With the rise in interracial dating and marriage (Wang, 2012), it is important to consider this type of meaningful and intimate relationship in the context of intergroup contact theory.

Individual Differences and Intergroup Contact

Researchers have explored a variety of individual difference measures and their effects on intergroup contact including age, gender, authoritarianism, social dominance orientation, public self-consciousness, and social comparison (Asbrock, Christ, Duckitt, & Sibley, 2012; Pettigrew, 2008; Sharp, Voci, & Hewstone, 2011). The intergroup contact paradigm posits that increased contact with out-group members can serve as a means to reduce prejudice (Allport, 1954; Pettigrew, 1998), however, research on the reverse pathway indicates that individuals

higher in prejudice are less likely to engage in intergroup contact and less likely to have cross-group friendships (Pettigrew, 2008). Individual difference variables such as gender, age, and authoritarianism predict willingness to engage in intergroup contact, but these moderators do not override the positive effects of actually engaging in intergroup contact (Pettigrew, 2008). In other words, there are individual differences that can shape one's *willingness* and engagement in intergroup contact; however, when individuals *do* have contact experiences with out-groups the positive effects on intergroup attitudes remain.

In one study, Sharp, Voci, & Hewstone (2011) examined the role of the individual difference measures, public self-consciousness and social comparison, in extended cross-group friendship contact effects for Asians and gay men. Public self-consciousness refers to the degree to which an individual has awareness of the way others view them. Social comparison refers to the extent to which an individual engages in social comparison processes, or the degree to which they compare themselves to others. Their findings revealed no effects of public self-consciousness, but social comparison moderated the contact effects for Asians and marginally for gay men (Sharp, Voci, & Hewstone, 2011). Individuals high in social comparison had differential attitudes towards out-groups based on the degree of extended cross-group friendships—such that the greater extended contact the more favorable views they had towards the out-group, individuals with lower extended contact had less favorable views of the out-group. In contrast, those low in social comparison did not show differences based on the degree of extended contact with cross-group friendships (Sharp, Voci, & Hewstone, 2011). Together these findings demonstrate the importance of individual difference measures in intergroup contact effects. Work on individual differences and intergroup contact promotes further understanding to the mechanisms that facilitate and inhibit intergroup contact effects.

Trait Empathy. Empathy is often studied as a mediator of intergroup contact effects (Pettigrew & Tropp, 2008). However, less research examines the impact of individual differences in empathy on intergroup contact effects. According to intergroup contact theory (Allport, 1954; Pettigrew, 1998), interacting and engaging in experiences with out-group members can serve as a means to empathic generate empathy towards those out-groups (intergroup empathy) and further reduce prejudice. Trait empathy, on the other hand, refers to an individuals more general pattern of responding. In contrast to conceptualizing empathy as a mediator of intergroup contact (i.e. generated intergroup empathy), examining the effect of trait empathy shifts the perspective to consider empathy as a moderator of contact effects. From this perspective, the question is whether individual differences in the general degree of empathic responding impact the extent to which individuals engages in intergroup contact or impact the quality of contact.

Trait empathy has been associated with increased agreeableness and greater openness to new experiences (Jolliffe & Farrington, 2006), suggesting that individuals higher in trait empathy may be more open and willing to engage in intergroup contact. Differences in empathy have also been related to intergroup interaction outcomes—less empathic individuals report greater desire for social distance to out-group members. In addition, trait empathy is related to prosocial behavior, social connections, and relationship satisfaction (Gable, et. al, 2006; Morelli, Rameson, & Liberman, 2014). Individuals with greater trait empathy tend to engage in more prosocial and helping behavior, have stronger social connections, and greater relationship satisfaction. Together, these finding suggest that individual differences in trait empathy may influence one's willingness to engage interactions with out-group members. Further, trait empathy may be associated with differences in the qualitative nature of intergroup contact.

Experiencing empathy for dissimilar others and stigmatized groups can generate more positive intergroup relationships and attitudes (Batson, et. al, 1997; Finlay & Stephan, 2000). Tawagi & Mak (2015) report that more inclusive environments enable greater quality intergroup contact. More quality and meaningful contact with dissimilar others is especially important in the development of intergroup empathy and further reduced prejudice and positive intergroup relations (Pettigrew & Tropp; 2008; Wong, 2017) It is possible that individual differences in trait empathy may contribute to the inclusivity of a given environment, which can further impact intergroup contact effects. Together, it is clear that further investigation of individual differences in trait empathy is needed to improve our understanding to the way empathy impacts intergroup contact as both an antecedent and an outcome of contact.

Present Studies

In light of these gaps and limitations in the existing literature, the present studies were designed to address factors related to intergroup contact and empathy towards out-groups. These studies aim to: (1) simultaneously employ multiple contact assessments to understand the relative effects of various forms of contact, (2) examine other forms of close relationships as intergroup contact pathways, and (3) explore the role of individual differences in empathy as a predictor of intergroup contact.

Aim 1

The above literature review revealed differential patterns of association between contact and empathy across various contact assessments. This variation in contact effects depending on which form of contact is measured highlights the importance of considering multiple contact assessments simultaneously. When employing a single operationalization of contact, it is possible that the measure is simultaneously capturing variation of a different type of contact. For instance, if you ask someone how much time they spend with out-group members (frequency of contact), a possible response might be ‘everyday’. If you ask the same individual how many out-group members they know (quantity of contact), they might respond 1 person. These responses would describe an individual who has daily interactions and experiences with the same out-group target; however, the out-group member could be a co-worker or a close friend (cross-group friendships). In most of the intergroup contact work, researchers employ only one contact assessment. When using only one measure of contact, it is possible that the contact assessment employed either captures or fails to capture variation in one’s contact experiences, which can create inconsistencies in research findings.

In addition, different types of relationships (i.e. friend, co-worker, and acquaintance) can impact the interpersonal nature of their experiences with the target. However, most contact assessments do not specify specific relationships (Cao, et. al, 2015; Moeschberger, et. al, 2005; Vezzali & Capozza, 2011) or only rely on one relationship type (Stasiuk & Bileicz, 2013; Swart, et. al, 2011; Troop, 2007). In comparison to the entire intergroup contact and empathy literature, few studies incorporate multiple measures of contact that span various contact operationalizations and contact relationship types. As a result, the relative strength of each form of contact remains unclear.

Thus, the first aim is to address the issue of relative importance among different forms of contact. Specifically, Study 1 examines the impact of each type of contact by testing various contact assessments association with intergroup empathy simultaneously. It is predicted that more quality contact, as measured by contact quality, cross-group friendships, and cross-group romantic relationships, will have stronger associations with empathy above and beyond more general forms of contact, such as proximity frequency of contact.

Aim 2

Few researchers have considered alternative relationships that have particularly high levels of intimacy and social closeness as pathways to promote intergroup empathy. Given the high levels of intimacy in these types of relationships, having a cross-group romantic partner could serve as a contact pathway to boost empathy across groups. The second aim of the is to evaluate the importance of cross-group romantic relationships as a direct form of intergroup contact. Prior research has investigated extended contact effects of cross-group romantic relationships (Paterson, Turner, & Connor, 2015). The present studies extend these findings by

examining *direct* cross-group romantic relationships as a pathway to promote empathy towards out-groups.

It is predicted that direct contact with out-groups in the form of cross-group romantic relationships, that is, having a romantic partner of a different group, will be associated with greater intergroup empathy. Further, it is hypothesized that engagement in cross-group romantic relationships will yield stronger contact effects compared to less meaningful forms of contact.

Aim 3

Lastly, while research on the association between intergroup contact and prejudice reduction has acknowledged and tested reverse causal pathway, comparatively less work has done the same for the association between contact and empathy. The extent to which empathy predicts engagement in intergroup contact remains unanswered. The third aim is to evaluate the reverse pathway of intergroup contact and empathy—to examine empathy as both an antecedent moderator of intergroup contact and empathy as a mediating outcome of intergroup contact and prosocial behavior.

It is predicted that individual differences in trait empathy will (1) predict an individual's contact experiences and (2) moderate the association between contact and prosocial behavior. More specifically, it is hypothesized that more empathic individuals will engage in higher quality and have higher degrees of meaningful contact with out-groups. This increase in quality and meaningful contact will generate stronger intergroup empathy and promote greater prosocial behavior towards the out-group.

Pilot Study

Within the intergroup contact literature, much of the work that investigates empathy as an outcome or mediating variable relies on assessments that measure generalized empathy towards out-groups as a whole. Thus, a novel measure of intergroup empathy was created to address intergroup contact that is directed at specific out-group targets. A commonly used measure, for instance, has participants read the statement, ‘It often happens that we hear or read news about the difficult conditions in which racial and ethnic minorities experience and about them being victims of discrimination’ and report their immediate reactions when thinking of these people (Pagotto, et. al, 2010, pg. 321). Participants are asked to report the degree to which they experienced various statements referring to a variety of empathic feelings (i.e. I feel tenderness for them, I have a feeling of injustice, and I feel anger at the discrimination; see Pagotto, et. al, 2010). This measure, and others like it (Batson, 1991; Batson, Early, & Salvarani, 1997; Hodson, 2008; Moeschberger, et. al, 2005; Pagotto & Voci, 2013; Swart, et. al, 2011; Turner, et. al, 2013; Vezalli, Giovannini, & Capozza, 2010), represents generalized intergroup empathy directed at the out-groups as a whole.

In contrast, the developed measure for this dissertation aims to capture intergroup empathy directed at an individual out-group target. The overall logic behind this method incorporates previous social psychological methodology (i.e. vignette designs; Bacharach & Lawler, 1976; Morgan & Schwalbe, 1990; Rettinger, Jordan, & Peschiera, 2004; Rybash & Roodin, 1989; Schwartz, et. al, 1991; Stolte, 1994; Tuliao, Hoffman, & McChargue, 2017; Tversky & Kahneman, 1981), in which participants were asked to read a passage and then asked to answer a series of questions directly after. The reading passage developed for this measure of intergroup empathy consists of a news article from the Huffington Post published in 2016. The

news story describes a situation in which a couple employed as truck drivers was pulled over and searched. The officers who pulled them over found a large quantity of a white powdery substance. After a faulty drug test, the couple was falsely imprisoned and accused of transporting cocaine, when in reality the substance was baking soda. After spending two months in jail, the couple was released but they were fired from their job. The full news story can be found in Appendix A.

The original publication of this news story included a picture of the couple that was pulled over and falsely imprisoned. This photo depicts Gale Griffin and Wendell Harvey, a middle aged African American married couple (see Appendix A).

The purpose of creating this novel measure was to supplement the existing intergroup empathy measures typically employed in the literature. In the subsequent studies, intergroup empathy was assessed at various time points. In order to determine whether or not this measure yields an intergroup empathy gap, two versions of the news story were created: the first included the picture of the couple to make racial out-group membership salient and the second included the picture of the couple to make racial out-group membership ambiguous. All other content remained identical between the two versions. Comparison of empathic responding between these two conditions serves as a proof of concept for intergroup empathy gap; such that participants should report less empathy for racial out-group targets (picture condition) compared to racially ambiguous targets (no picture condition).

As outlined in the literature review, the intergroup contact and empathy literature employs a variety of contact assessments. Among these contact measures there are clear differences in the underlying mechanisms and the degree to which they each capture meaningful contact. Thus, a general aim of the present dissertation proposal is to understand the relative

importance of each of these contact assessments. While the majority of research has utilized a single contact assessment, the proposed studies are designed to incorporate multiple contact assessments simultaneously. Given that intergroup contact measures have a high degree of conceptual overlap, it is likely that each of these contact assessments are correlated to some degree. High intercorrelations between predictor variables can be problematic for data analyses; therefore the evaluation of the degree of intercorrelations among the contact assessments is necessary prior to the examination of their relative influence.

An additional aim of the present research is to understand factors that promote prosocial behavior. To address this aim, a novel measure of prosocial behavior and prosocial attitudes towards the out-group has been designed. This novel measure is modeled off of prior measures that capture more general prosocial behaviors and attitudes (Vollhardt & Staub, 2011). The novel measure of prosocial behavior has been modified to assess a specific out-group, Black/African-Americans, which was examined in subsequent studies. Thus, an evaluation of the internal reliability of these items was conducted.

The primary objectives of the pilot study was to (1) execute an initial test of an intergroup empathy dependent measure that was developed for the subsequent studies of this dissertation proposal, (2) demonstrate the intergroup empathy gap using the new intergroup empathy measures, (3) evaluate the intercorrelations among the various intergroup contact assessments (i.e. proximity, frequency, quality, and cross-group friendships), and (4) test the internal consistency the prosocial behavior items employed in the proposed subsequent studies.

Method

Participants

Participants were recruited online through Amazon Mechanical Turk (MTurk). A power analysis indicated that 22 participants were required for a power level of .80 and an effect size of $d=1.10$. Anticipated effect size was determined by prior work assessing the intergroup empathy gap (Avenanti, Sirigu, & Aglioti, 2010; Chiano & Mathur, 2010; Cikara & Fiske, 2013; Gutsell & Inczlicht, 2012; Masten, Gillen-O'Neel, & Brown, 2010). However, a greater number of participants were required to assess internal consistency and intercorrelations between the contact variables. Thus, the sample size for the pilot study was sustainably increased in order to test for multicollinearity effects.

152 participants were recruited for the pilot study. Among participants, 117 identified as White, 12 identified as Black/African-American, 6 identified as Hispanic/Latino, 13 identified as Asian/Pacific Islander, and 4 identified as multiracial. Of the entire sample, 78% reported racial identification as White only. The average age among participants was 36.28 years old ($SD=12.15$). Level of education varied across participants; 1 participant completed some high school, 13 participants were high school educated, 54 participants completed some college, 64 participants were college educated, 17 participants had post-graduate degrees, and 3 did not report their education level. All participants were residents in the United States. Participants received \$.60 for participating in the pilot study.

Measures and Materials

Intergroup Empathy. Intergroup empathy refers to the degree to which an individual has empathic experiences specifically directed towards members of different social groups. To test the validity of the developed dependent variables, intergroup empathy was assessed using

two measures. First, participants completed traditional intergroup empathy items commonly employed in intergroup empathy research. For traditional intergroup empathy, participants were asked to report their strongest and immediate reactions when thinking of these people on a list of 7 brief statements referring to several empathic feelings (i.e. I feel tenderness for them, I have a feeling of injustice, I feel anger at the discrimination; see Pagotto, et. al, 2010). Responses were recorded on a 5-point scale ranging from 1 (*not at all*) to 5 (*extremely*). Higher scores indicate higher intergroup empathy towards racial and ethnic minorities (see Appendix B).

For the novel intergroup empathy measure, participants were first asked to read a news article (Appendix A). Directions were intentionally kept to a minimum, as previous work suggests that prompting participants to “think about the other person’s experiences” or “think about how you would feel in this situation” can activate different processes associated with empathic responding (Batson, et. al, 1997). The objective of the instructions was not to induce any of these processes by the directions, but instead to examine differences in empathy for the two versions of the news story (picture and no picture).

After reading the article, they were asked to complete a series of questions to measure intergroup empathy and recognition of information from the news story. For example, participants were asked, “I feel badly for what happened to them” and “They experienced an injustice.” Responses were recorded on a 5-point scale ranging from 1 (*completely disagree*) to 5 (*completely agree*). Higher scores indicate more intergroup empathy directed at the couple in the news story. All items are listed in Appendix A.

Memory recall of information presented in the news story was measured using 9 recall items (see Appendix A). Total questions correct were combined to create a single recall score. Recall scores range from 0-9, higher scores indicate greater memory of information from the

news article. The last question of the recall items (“What is the race of the couple?”) served as a manipulation check and was not included in the total recall score.

Intergroup Contact-Proximity. Proximity of intergroup contact refers to the degree of exposure, or opportunity for contact, an individual has with a given out-group. Proximity of contact was measured using two items, “Where you live, in your neighborhood, which of the following best describes the composition of people?” and “At your workplace, or daily community, which of the following best describes the composition of people?” (see Abbott & Cameron, 2014). Responses were recorded on a 5-point scale ranging from 1 (*mostly white people*), 2 (*mostly white with some racial and ethnic minority people*), 3 (*about half and half*), 4 (*mostly racial and ethnic minority people*), 5 (*mainly racial and ethnic minority people*). The average of these two items was computed to provide a single index of proximity contact; higher scores indicate higher proximity to out-groups.

Intergroup Contact-Frequency. Frequency of intergroup contact refers to the occurrence of interactions and experiences with members of other groups. Frequency of contact was measured using two items, “How often do you interact with racial and ethnic minority people?” and “Do you often meet racial and ethnic minority individuals?” (see Milgram, et. al, 2008; Stasiuk & Bileicz, 2013). Responses were recorded on a 5-point scale ranging from 1 (*never*) to 5 (*everyday*). The average of these two scores was taken for a single index of frequency of contact, higher scores indicate more frequency intergroup contact.

Intergroup Contact-Quality. Quality of contact measures the extent to which interactions and experiences with racial and ethnic minority individuals is perceived is important, pleasant, and equal. Quality of contact was measured using three items that ask participants to think about an out-group member acquaintance and indicate the extent to which contact with that

person was perceived as important, pleasant, and equal (see Aberson & Haag, 2007). Responses were rated on 7-point scales, with the ends of the scale adapted for each item (i.e. 1 = *completely unimportant*, 7 = *completely important*). The average of these items was computed to create a single score for quality of contact; higher scores represent more quality intergroup contact.

Intergroup Contact-Friendships. Cross-group friendships was measured using 2 items: “How many close friends do you have who are racial and ethnic minorities?” (scaled from 1 (*none*), 2 (*one friend*), 3 (*2-5 friends*), 4 (*5-10 friends*), and 5 (*more than 10 friends*) and “How often do you spend time with your racial and ethnic minority friends?” (scaled from 1 (*never*) to 5 (*all the time*); see Swart, et. al, 2011). To combine these items into a single index of cross-group friendships, both items were converted into Z scores and the average of the standardized scores was computed. Higher scores indicate greater degree of cross-group friendship.

Cross-group Romantic Relationships. Intergroup contact in the form of cross-group romantic relationships was measured to assess involvement in current cross-group romantic relationships and past cross-groups romantic relationships. Cross-group romantic relationship status was assessed both current relationship status and past relationship status.

First, participants were asked to indicate if they are *currently* in a romantic relationship with a racial/ethnic minority partner and the duration of their relationship (scaled from 1 (*0-6 months*), 2 (*about a year*), 3 (*1-2 years*), 4 (*over 2 years*), and 5 (*over 5 years*)). Participants were also asked report the extent to which they agree with the following statements, “I spend a lot of time doing things with my romantic partner” and “I share things with my romantic partner I wouldn’t usually tell other people.” Responses were recorded on a 5-point scale ranging from 1 (*Definitely False*) to 5 (*Definitely True*). The average of the two items was taken to create a single score, which was multiplied by score corresponding to the duration of the cross-group

romantic relationship. Scores range from 0-25 with higher scores indicating greater degree of cross-group romantic contact (for similar computational procedure see Voci & Hewstone, 2003).

For participants who indicated that they were not currently involved in a cross-group romantic relationship, past cross-group romantic contact was assessed. Participants were asked if they have ever been involved in a romantic relationship with a racial and ethnic minority person in the past and the duration of their relationship with the out-group member. Responses for past cross-group romantic relationship items were scored as 0 *no* and 1 *yes* and ranging from 1 (*0-6 months*) to 5 (*over 5 years*). Scores on these two items was multiplied to create a single score of past cross-group romantic involvement.

Overall cross-group romantic contact for each participant was taken from their final score on either the current cross-group romantic contact measure or their score on past cross-group romantic contact. Participants who were not currently or had not previously been in a cross-group romantic relationship received a score of 0. Higher scores indicate more recent and greater degree of cross-group romantic contact.

Prosocial Behavior. Prosocial behavior towards Black/African-Americans was measured using six items. First, participants were asked if they have ever attended an organized event supporting the Black Lives Matter movement. Responses were 0 (*no*) and 1 (*yes*). Participants were also asked to report the extent to which they agree with various statements about their participation and support of the Black Lives Matter movement. Statements included, “I would attend an organized event to support the Black Lives Matter movement”, “I would sign a petition to support the Black/African-American victims of police brutality”, and “I would march at a Black Lives Matter protest.” Responses were measured on a 5-point scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). Higher scores indicate higher engagement in activism

in support of the out-group and higher willingness to engage in activism to support the out-group. All items can be found in Appendix C.

Procedure

First, participants were asked to provide informed consent to participate in the research study. Participants were then told that the present study is interested in validating survey questionnaire items about their social networks. Participants then completed the intergroup contact items. Contact items for proximity, frequency, quality, cross-group friendships were randomly presented to each participant. Next, participants completed the cross-group romantic relationships items.

After contact items were completed, participants were told that “Next you will read a news article that was published in 2016. The following news article is a real article that has been published on Huffington Post. After you finished reading, you will be asked to complete a series of questions relating to the article.” Participants were randomly assigned to see one of two versions of the news article. Half of the participants read the news article that contains the picture of the targets in the news story, and the other half read the news article that does not contain any picture of the targets. All written information was held constant in the two versions of the news article. After participants read the provided material, they completed the recall and intergroup empathy items. Next, participants completed the traditional intergroup empathy measure and prosocial behavior items.

Then participants were given an opportunity to share any additional comments, and completed demographic information including age, education, and race/ethnicity. Lastly, participants were debriefed and thanked for their participation.

Results

To ensure that racial/ethnic minority out-group status was maintained for the intergroup contact items, only participants who identified as White (excluding multiracial White participants) were include in the analyses. Given that individuals recruited from MTurk primarily consist of White/Caucasian MTurk users (Huff & Tingley, 2015), it was expected that the majority of participants would identify as White/Caucasian. The following analyses were conducted with a sample of 116 participants that identified as White/Caucasian (77% of total sample).

First, internal consistency of each of the variables in the pilot study was examined. Table 2 contains the Cronbach alpha values for the intergroup contact, intergroup empathy, and prosocial measures. Second, intercorrelations were calculated across all measures to determine the degree of multicollinearity. All correlations are presented in Table 3.

Table 2. Summary Descriptive Statistics and Cronbach Alpha

Variable	<i>M</i>	<i>SD</i>	<i>α</i>	<i>Median</i>	<i>Range</i>
Proximity-Contact	2.44	.84	.69	2.5	[1,5]
Frequency-Contact	2.81	.96	.83	2.5	[1,5]
Quality-Contact	5.06	1.04	.59	5.33	[1,7]
Cross-group Friendship-Contact	2.45	.61	.73	2.67	[1.33, 4]
Cross-group Romantic Relationship-Contact	3.77	5.29	.75	4.75	[2.5, 5]
Intergroup Empathy-Traditional	3.76	.77	.84	3.85	[1.57, 5]
Intergroup Empathy-News Article	3.95	.73	.76	4	[2.17, 5]
Recall-News Article	7.84	1.61	.03	8	[2, 9]
Prosocial Behavior	2.53	1.22	.95	2.57	[1.14, 4.57]

Note: For the cross-group romantic relationship contact measure, 68 participants reported current or past involvement in a cross-group romantic relationship. Scores range from 0-25, 48 participants had scores of 0.

Table 3. Intercorrelations Among Variables

Variable	1	2	3	4	5	6	7	8	9
1. Proximity	-								
2. Frequency	.33***	-							
3. Quality	-.07	.34**	-						
4. Cross-group Friendship	.23*	.61***	.35***	-					
5. Cross-group Romantic	.22*	.16 [`]	.15 [`]	.22*	-				
6. Intergroup Empathy- Traditional	-.03	.11	.35***	.17 [`]	-.06	-			
7. Intergroup Empathy- News Article	-.08	.13	.43***	.09	-.02	.50***	-		
8. Recall-News Article	-.38***	-.06	.18 [`]	-.02	-.08	.24*	.25**	-	
9. Prosocial Behavior	.30***	.37***	.20*	.27**	-.15	.36***	.33***	-.09	-

[`] $p < .07$, * $p < .05$, ** $p < .01$, *** $p < .001$. Note: 58% of participants reported that they were currently in or had previously been in a relationship with an out-group member ($N=68$).

To test the developed news story material, an independent samples t-test was conducted to determine if the degree of intergroup empathy varies between the new story picture condition and the news story no picture condition. Results indicated an effect of coition (picture vs. no picture) in the predicted direction, $t(1, 115)=2.10$, $p=.04$, $d=-.40$, such that participants who read the news article with the photo of the couple reported less empathy for the targets than those who read the news article without the picture (Table 4). In the picture condition, 94% of the participants passed the manipulation check by correctly identifying the racial category of the news article targets. Similarly, 84% of participants passed the manipulation check in the no picture condition.

Table 4. Means and standard deviations across news article conditions.

	No Picture Condition (N=76)	Picture Condition (N=76)
Variable	<i>M (SD)</i>	<i>M (SD)</i>
Intergroup Empathy-News article	4.10 (.67)	3.81 (.76)
Intergroup Empathy-Traditional	3.80 (.81)	3.72 (.74)

Additional exploratory analyses were conducted control for general intergroup empathy, as measured by the traditional measures used in this literature. An analysis of variance that included traditional intergroup empathy as a covariate indicated an effect of condition (picture vs. no picture) on empathy towards the couple in the news article, $F(1, 114)=5.82$, $p=.02$. When controlling for intergroup empathy towards out-groups generally, participants who received the news article containing the picture reported lower empathic responding to the couple in the news article than participants who read the news article that did not contain the picture of the couple. Descriptive statistics for each measure of intergroup empathy are listed in Table 4.

Summary

Consistent with previous work, findings indicate that participants had lower empathic responses to racial out-group members (picture condition) as compared to racially unknown targets (no picture condition). This difference in empathetic responding demonstrates the intergroup empathy gap for the developed news article materials. To understand the validity of the developed intergroup empathy measures, correlations between the news story intergroup empathy items and the traditional intergroup empathy items were conducted. Results suggest that there was a moderate correlation between the developed intergroup empathy measure and the traditional intergroup empathy measure. Since traditional intergroup empathy items represent more generalized intergroup empathy, whereas the intergroup empathy items for the news article represent directed empathy at the couple in the news article, findings revealed a moderate association between these measures of intergroup empathy.

Another objective of the pilot study was to evaluate the intercorrelations among contact variables. It was anticipated that there would be a moderate degree of intercorrelations among contact assessments, but the various contact assessments would capture variation of intergroup contact experiences. Results did not reveal any evidence of multicollinearity (Yu, Jiang, & Land, 2015). Intercorrelations between variables were below the threshold ($r < .80$, $VIF < 5$; see Table 3) for possible multicollinearity, thus there should be no concern of multicollinearity in future analyses.

Overall, findings from the pilot study are consistent with anticipated results testing the reliability, validity, and intercorrelations of measures that were employed in the subsequent studies.

Study 1

The intergroup contact and empathy towards out-groups literature has demonstrated a strong and robust effect of intergroup contact promoting increased empathy towards dissimilar others (Pettigrew & Troop, 2008). Research on this topic has employed a variety of contact assessments ranging from the proportion of out-group members in a given context (Abbott & Cameron, 2014) to having friends and self-disclosure to out-group members (Turner, et. al, 2013). Across all of the contact assessments, findings consistently suggest a positive association between intergroup contact and empathy towards out-groups (Wong, 2017). While much of this work employs one of the various intergroup contact assessments, comparatively less work leverages multiple contact assessments simultaneously. As a result, it is difficult to determine the relative impact of one contact assessment over another. Differential patterns of effects between intergroup contact and empathy towards out-groups have been revealed, however, the strength of each contact assessment above and beyond other forms of intergroup contact and other possible covariates has yet to be determined.

One possible covariate comes from the unique set of variables associated with interracial interactions. Given the deeply rooted racial history in the United States, it is especially important to consider factors associated with such dynamics. Of particular interest is the way in which an individual conceives racial group membership (Williams & Eberhardt, 2008). Individuals can conceive an individual's race as either biologically determined or socially constructed. In the United States, race is commonly constructed in terms of biological essentialism, the idea that race is a central source of division among people and that these differences are biological based (Williams & Eberhardt, 2008). A biologically determined view of race has been associated with greater stereotype endorsement and prejudice towards out-groups (Bastian & Haslam, 2006;

Condit, et. al, 2004; Keller, 2005). On the other hand, the idea that race is socially constructed refers to the idea that one's racial group membership is a dynamic component dependent on the sociocultural context.

Individuals with a more socially constructed view of race are more comfortable with intimate interracial relationships (Bonam & Shih, 2009), which may suggest greater intergroup contact in general. In addition, having greater comfort in intergroup interactions may change the nature of the contact experience with out-groups. Specifically, it is possible an individual's construction of race may change the qualitative nature of one's interaction with racial out-group members, which in turn can have implications on empathic responding towards these groups. Together, these findings illuminate the importance of race conceptions in the investigation of dynamics across racial lines. However, the extent to which one's construction of race impacts the association between intergroup contact and empathy remains unanswered.

Another possible covariate in the association between intergroup contact and empathy towards out-groups is trait empathy. While related, intergroup empathy and trait empathy may have distinct pathways associated with intergroup contact. Trait empathy, as an antecedent of contact, can shape one's engagement in intergroup contact and potentially impact the qualitative nature of one's experiences with out-groups. On the other hand, intergroup empathy as an outcome of intergroup contact may mediate the association between one's contact experiences and prosocial behavior towards the out-group.

Within the larger intergroup contact theory paradigm, intergroup contact is theorized to generate intergroup empathy, which in turn decreases prejudice towards that specific group. Subsequently, this leads to the interpretation of contact with out-groups as the driving force behind generating intergroup empathy. However, it is also possible that individual differences in

empathy could influence the association between intergroup contact and empathy towards out-groups. An individual higher in trait empathy might be more willing to engage in intergroup contact and have more quality contact experiences, which may in turn lead to differences in the extent to which they engage in helping behavior towards these groups. Trait empathy has been associated with greater agreeableness and openness to experience (Jolliffe & Farrington, 2006). Further, trait empathy has been demonstrated to predict prosocial behavior, social connections, and relationship satisfaction (Gable, et. al, 2006; Morelli, et. al, 2014). These findings highlight the need to understand the distinction between trait empathy and intergroup empathy in relation to intergroup contact.

Aims

The aim of Study 1 was to investigate the association between intergroup contact and empathy towards out-groups by leveraging a variety of contact assessments and covariates. Specifically, Study 1 explored the link between high quality contact with out-groups (cross-group friendships and cross-group romantic relationships) and intergroup empathy above and beyond more general measures of intergroup contact, conception of race, and trait empathy. It is predicted that more meaningful and socially close forms of contact with out-groups will predict higher levels of intergroup empathy, above and beyond general forms of contact and trait level individual differences in race conception and empathy. By employing a variety of contact assessments and potential covariates simultaneously, Study 1 aims to provide insight into the relative influence of each construct in the association with empathy towards out-groups.

Method

Participants

Using Amazon Mechanical Turk, 365 participants were recruited to participate in the study. Participation in the present study was limited to MTurk users located in the United States who self-identified as Caucasian/White-European. Of the total participants, 132 identified as male/cis-male, 225 female/cis-female, 1 transgender male, 1 transgender female, 3 gender non-conforming, and 3 preferred not to report their gender identity. Education level across participations varied with 17% of participants having completed post-graduate degrees, 40% with college degrees, 32% with some college education, 10% with high school education, and 1% with some high school education. All participants received \$0.60 in return for their participation in the study.

Measures & Materials

Demographic Controls. To control for various demographic factors, participants were asked to report their highest degree of education achieved, gender identity, and racial identity.

Intergroup Contact. Intergroup contact in the form of proximity, frequency, quality, cross-group friendships, and cross-group romantic relationships was measured using the same measures as employed in the pilot study (see pg. 29). All intergroup contact items can be found in Appendix C.

Intergroup Empathy. Degree of empathic responding toward racial and ethnic minority people was measured using the traditional empathy measure as described in the pilot study (see pg. 28). All items can be found in Appendix B.

Race Conceptions Scale. The extent to which individuals have biologically and physically determined conceptions of race (as compared to social constructions of race) was

measured using 22 items from the Race Conceptions Scale (RCS; Williams & Eberhardt, 2008). Participants were asked to self-report the degree to which they agree with statements like, “The same racial categories have pretty much always existed” and “A person’s race is fixed at birth.” Responses were rated on a 7-point scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). Of the 22 total items, 6 items are reverse coded. An example of a reverse coded item is, “How a person is defined racially depends on the social context” and “It’s possible to be a full member of more than one race.” After items are reverse scored, the average of all items was computed. Higher scores indicated higher belief that race is biologically and physically constructed. All items can be found in Appendix D.

Trait Empathy. Trait level empathy was assessed using the Empathic Concern and Perspective Taking Subscale of the Interpersonal Reactivity Index (IRI; Davis, 1980). The Empathic Concern subscale consists of 7 items that measure degree of participant’s other-oriented feelings of sympathy and concern for others. For example, “I often have tender, concerned feelings for people less fortunate than me” and “I am often quite touched by things that I see happen.” The Perspective Taking subscale consisted of 6 items that measure participant’s tendency to adopt the psychological point of view of others. Items include, “I try to look at everybody’s side of a disagreement before I make a decision” and “When I’m upset at someone, I usually try to ‘put myself in his/her shoes’ for a while.” Items for both subscales were scored on a 5-point scale ranging from 1 (*does not describe me well*) to 5 (*describes me very well*) scale. All items can be found in Appendix E.

Social Desirability. To assess social desirability, the perceived importance of projecting an image that one behaves in socially approved ways or feels socially approved feelings, participants completed the Social Desirability Response Set-5 (SDRS-5; Hays, Hayashi, &

Stewart, 1989), a 5 item abbreviated version of the Marlow Crown Social Desirability Scale (MCSDS; Crowne & Marlow, 1960). It is important to include measures of social desirability to control for biases in responses on culturally sensitive topics (i.e. race). Participants were instructed, “Listed below are a few statements about your relationships with others. How much is *each* statement TRUE or FALSE for you?” Items include, “There have been occasions when I took advantage of someone,” “I sometimes try to get even rather than forgive and forget,” and “I sometimes feel resentful when I don’t get my way.” Two items are reverse scored, “I am always courteous even to people who are disagreeable,” and “No matter who I’m talking to, I’m always a good listener.”

Responses were recorded on a 5-point scale ranging from 1 (*Definitely True*) to 5 (*Definitely False*). Only the most extreme SDRS response option is considered indicative of social desirability. For each extreme score response, participants are scored as 1. All other responses are scored 0. The sum of score across the 5 items represents the participant’s overall social desirability index, higher scores indicate higher social desirability qualities. The SDRS-5 has high reliability $\alpha = .70$ (Hays, Hayashi, & Stewart, 1989). All items can be found in Appendix F.

Procedure

Participants were recruited online through Amazon Mechanical Turk. Participation in the Study 1 was limited to MTurk users located in the United States. Prior to beginning the study, participants provided informed consent for participation. Once consent was given, participants were informed that the purpose of this study is to understand the factors associated with dynamics of social networks. Participants were then asked to complete the trait level measures of empathy and race conceptions. Next, participants self-reported their experiences with various

types of contact with racial/ethnic minority out-group members and completed measures of intergroup empathy. Lastly, participants completed demographic information and other control items. In addition the survey included an attention check to ensure quality of self-report data.

Results

Prior to conducting the primary analysis, the appropriate assumptions for the analysis were tested. The sample size of 365 exceeded the minimum number of participants required for a hierarchical multiple regression analysis with 12 independent variables (minimum required $N=146$; Tabachnick & Fidell, 2007). First, the assumption of normality was addressed. Table 5 provides descriptive statistics for the variables measured in Study 1. Almost all of the variables met criteria for the assumption of normality with kurtosis values within the range $[-3,3]$ (George & Mallery, 2010). The only variable that did not meet criteria for normality was contact in the form of cross-group romantic relationships. Of the total sample, 83.5% of participants indicated that they had no previous contact with out-groups in the form of romantic relationships. The high prevalence of zero scores on the cross-group romantic relationships value created the need to dichotomize this variable for analyses given the non-normal distribution of scores (MacCallum, Zhang, Preacher, & Rucker, 2002).

Table 5. Descriptive Statistics For Variables in Study 1

Variable	<i>M</i>	<i>SD</i>	<i>Kurtosis</i>
Proximity-Contact	3.41	.42	2.95
Frequency-Contact	3.21	1.07	-1.3
Quality-Contact	5.22	1.03	-.12
Cross-group Friendship-Contact	2.66	1.00	-.64
Cross-group Friendship (Quantity/Count)	1.10	1.28	-.24
Cross-group Romantic Relationship-Contact	.72	1.67	133
Intergroup Empathy	3.50	.98	-.15
Trait Empathy (IRI)	3.74	.68	1.60
Social Desirability (MCSDS)	2.76	.41	2.85
Race Conceptions (RCS)	4.33	.91	1.79

Note: $N=365$. Kurtosis values within $[-3,3]$ indicate a normal distribution of scores. For cross-group romantic relationships 83.6% ($n=305$) had a score of 0.

The primary assumption of multicollinearity was tested through correlation analyses among the independent variables. The examination of intercorrelations among independent variables indicated no variables were highly correlated ($r > .80$; Yu, Jiang, & Land, 2015), thus the assumption of multicollinearity was satisfied. Table 6 provides the intercorrelations among all independent variables.

A five stage hierarchical multiple regression was conducted to examine whether or not high quality intergroup contact predicts intergroup empathy above and beyond more general contact and trait empathy. Participant age, gender, and education level were entered at stage one to control for demographic variables. At stage two, psychological control variables (trait empathy, social desirability, and race conceptions scale). The remaining stages of the analysis were used to examine the importance of various contact variables. General intergroup contact (proximity and frequency) was entered at stage 3, quality and cross-group friendships were entered at stage 4, and cross-group romantic relationships were entered in the final stage. Cross-group romantic relationships was dichotomized given the non-normal distribution of scores (MacCallum, et. Al, 2002). Independent variables were entered in this order to examine the relative importance of contact experiences with increasingly higher degrees of meaningfulness and intimacy (Wong, 2017).

Table 6. Study 1 Intercorrelations Among Variables

Variable	1	2	3	4	5	6	7	8	9	10
1. Proximity	-									
2. Frequency	.41***	-								
3. Quality	.30***	.45***	-							
4. Cross-group Friendship	.39***	.48***	.39***	-						
5. Cross-group Friendship (Quantity/Count)	.20***	.37***	.23***	.63***	-					
6. Cross-group Romantic Partner	-.07	.03	.12**	.03	-.07	-				
7. Intergroup Empathy	.20***	.19***	.31***	.25***	.17**	.04	-			
8. Race Conceptions	-.10	-.23***	-.24***	-.23***	-.25*	.02	-.35***	-		
9. Trait Empathy (IRI)	.10	.20***	.35***	.17***	-.07	.19**	.51***	-.04	-	
10. Social Desirability (MCSDS)	-.05	-.04	.01	-.05	.04	-.21**	-.15*	-.11	-.11	-
11. Prosocial Behavior Donation	.22**	.12	.13*	.17**	.17**	-.07	.22**	-.21*	.08	-.03

* $p < .05$, ** $p < .01$, *** $p < .001$. ($N=365$).

Table 7. Hierarchical Multiple Regression Analysis of Predictors of Intergroup Empathy

Variable	Block1	Block 2	Block 3	Block 4	Block 5
Gender	.18 ⁺ (.20)	.07 [~] (.07)	.08 [~] (.04)	.08* (.04)	.08* (.04)
Education	.09 [~] (.08)	.05 (.04)	.04 (.04)	.02 (.04)	.02 (.04)
Age	-.01 [~] (-.10)	-.01 ⁺ (.004)	-.01 ⁺ (.003)	-.01 ⁺ (.003)	-.01 ⁺ (.003)
Trait Empathy		.66 ⁺ (.06)	.66 ⁺ (.07)	.59 ⁺ (.07)	.58 ⁺ (.07)
Race Conceptions	-	-.36 ⁺ (.05)	-.36 ⁺ (.05)	-.32 ⁺ (.05)	-.32 ⁺ (.05)
Social Desirability	-	-.25* (.10)	-.24* (.10)	-.22* (.10)	-.21* (.10)
Proximity	-	-	.16 (.11)	.09 (.11)	.09 (.11)
Frequency	-	-	-.03 (.04)	-.11 [~] (.05)	-.11* (.05)
Quality	-	-	-	.11* (.04)	.13 [~] (.05)
Cross-group Friendship	-	-	-	.13 [~] (.06)	.15 [~] (.06)
Cross-group Friendship (Count/Numeric)	-	-	-	-.001 (.04)	-.004 (.04)
Cross-group Romantic Relationships	-	-	-	-	-.13 (.03)
F	6.91 ⁺	37.59 ⁺	28.53 ⁺	25.82 ⁺	23.62 ⁺
R ²	.05	.39	.39	.42	.43
ΔR^2	.05	.33 ⁺	.004	.03 ⁺	.002

Note: Values for each variable represent unstandardized regression coefficients, standardized Beta in parenthesis.

*[~] < .10 * < .05, ~ < .01, + < .0001*

Block 1 N=365, Block 2, 3, 4, 5 N=309. 56 participants removed due to missing data.

The gender variable was coded 1=male 2=female. Cross-group romantic relationships was dichotomized for this analysis no contact (0) and contact (1).

In Block 1 of the hierarchal multiple regression, the results indicated that gender was the only demographic control variable that predicted intergroup empathy, $F(3, 360)=6.91$ $p<.001$.

The variables entered into Block 1 (gender, education, and age) accounted for 5% of the total variance in the model. In Block 2 trait empathy, race conceptions, and social desirability were added to the model, $F(6, 357)=37.59, p<.001$. The addition of these psychological control variables increased the overall variance accounted for by 33%, $F(3, 357)=64.61, p<.001$.

In the next block, general intergroup contact variables were entered into the model. The model in Block 3 included intergroup contact variables proximity and frequency and results indicated a significant prediction of intergroup empathy, $F(8, 355)=28.536, p<.001$. However, the addition of the general intergroup contact variables did not account for a significant increase in variance in the overall model above and beyond the demographic and psychological control variables ($<1\%$), $F(2, 355)=1.21, p=.30$.

In Block 4, more meaningful and socially close forms of intergroup contact were added into the model. Specifically, intergroup contact in the form of contact quality, cross-group friendships, and quantity of cross-group friends were included into the regression model, $F(10, 353)=25.82, p<.001$. In line with the hypotheses, the higher quality intergroup contact variables added in Block 4 accounted for an additional 3% increase in the overall variance above and beyond the general intergroup contact variables, $F(2, 353)=9.51, p<.001$.

Block 5 included the final intergroup contact variable: cross-group romantic relationships posited to be the most intimate form of intergroup contact. Although the overall model remained significant, $F(11, 352)=23.62, p<.001$, the results indicate that cross-group romantic relationships did not increase the total variance in the overall model above and beyond the high quality and meaningful contact variables entered in Block 4, $F(1, 352)=1.38, p=.24$.

Summary

It was predicted that more meaningful, socially close, and higher quality forms of intergroup contact would predict intergroup empathy above and beyond general forms of contact and trait level individual differences. Specifically, it was hypothesized that Block 4 and Block 5 would uniquely account for increased variance in empathy towards out-groups beyond the variance accounted for from general intergroup contact variables, trait level individual differences, and demographic variables.

In line with the primary hypothesis, the results indicated an increase in variance accounted for from Block 3 to Block 4. Higher quality and more meaningful forms of intergroup contact in the form of quality of contact and cross-group friendships accounted for an additional 3% of the overall variance in the model. Contrary to prediction, contact in the form of cross-group romantic relationships did not account for any additional variance in the overall intergroup empathy.

Importantly, the findings suggest that the most prominent predictor of intergroup empathy was trait empathy. Although the addition of high quality and meaningful intergroup contact experiences into the model accounted for a significant increase in the total variance, trait empathy remained the strongest predictor across all blocks in the model. While intergroup empathy and trait empathy are highly correlated $r=.51$, $t(363)=11.17$, $p<.001$, they remain distinct constructs. One question that remains unanswered is whether trait empathy serves as predictor of intergroup contact experiences or whether individual differences in trait empathy are shaped by the nature of one's intergroup contact experiences. Study 2 aims to address this question.

Study 2

Within the intergroup contact theory paradigm, intergroup contact is posited to serve as a pathway to reduced prejudice and improved intergroup attitudes (Allport, 1954). Further, intergroup empathy serves as a powerful mediator in the association between contact and prejudice (Pettigrew & Tropp, 2008). When considering research using this framework, the interpretation of the directional pathway between contact and empathy is clear—interacting with members of different groups is the source of generating empathy towards those groups. Much of the work that reports on intergroup contact and empathy employs statistical analyses and language that confirms this directional association.

Comparatively less work considers the alternative. Indeed, some work has been done on the reverse association between prejudice and contact, suggesting that individuals with greater prejudice towards out-groups engage in less intergroup contact (Pettigrew, 1998), however, the reverse association between intergroup contact and empathy remains unanswered. Research on intergroup contact generally investigates the consequences of intergroup contact (i.e. intergroup empathy, intergroup anxiety, prejudice), which leaves a gap in the literature. An understanding of variables that could serve as antecedents of intergroup contact has yet to be determined.

One variable that could act as both an antecedent and consequence of intergroup contact is empathy. While empathy has consistently been shown to be a strong mediator of intergroup contact and positive intergroup dynamics (Pettigrew & Tropp, 2008), less work investigates the role of empathy as an antecedent of contact. Interacting and engaging in experiences with out-group members can serve as a means to generate empathy towards those out-groups (intergroup empathy). An alternative way to consider empathy is as an antecedent of intergroup contact—that is, the influence of individual differences in trait empathy on the degree to which one

engages in intergroup contact. It is possible that individuals, who are generally more empathic, may be more likely to engage and opt into interactions with members of different groups. In contrast, it is possible that individuals who are low in general empathy, may be more likely to avoid and disengage from experiences with out-group members.

Trait empathy has been associated with increased agreeableness and greater openness to new experiences (Jolliffe & Farrington, 2006). Phelan & Basow (2007) report that more empathic individuals show a decreased desire for social distance to out-group members, suggesting that empathy is an important predictor in the willingness and engagement in interactions with dissimilar others. Individuals higher in trait empathy tend to have higher rates of prosocial behavior, greater social connections, and increased relationship satisfaction (Gable, et. al, 2006; Morelli, et. al, 2014).

When individuals experience empathy for stigmatized groups, there are a variety of improvements on intergroup relationships and attitudes (Batson, et. al, 1997; Finlay & Stephan, 2000). Further, research on cultural inclusiveness suggests that more inclusive environments enable greater quality contact with out-group members (Tawagi & Mak, 2015). More quality and meaningful contact with dissimilar others is especially important in the development of intergroup empathy and further reduced prejudice and positive intergroup relations (Pettigrew & Tropp; 2008; Wong, 2017).

Together, these finding suggest that trait empathy may serve as an antecedent of intergroup contact and that one's degree of trait empathy may influence the qualitative nature of the interactions and experiences with out-group members. This in turn may have stronger downstream effects of intergroup contact. Intergroup contact and important implications for intergroup relationships including reduced prejudice, improved attitudes, forgiveness, and

prosocial behavior (Abbott & Cameron, 2014; Cehajic, Brown & Castano, 2008; Pettigrew & Tropp, 2006). To better understand the role of empathy in the association between intergroup contact and helping behavior, we must consider empathy as both an antecedent and a consequence of contact with dissimilar others.

Aims

Study 2 aims to understand the relative influence of empathy (1) as an antecedent of contact and (2) as an outcome of contact to determine which has greater effect on pro-social behavior towards out-groups. Intergroup contact theory, typically, structures the relationship between intergroup contact and empathy towards out-groups as having experiences with out-groups leads to the development of intergroup empathy. However, the reverse pathway may also be true: more empathic individuals may engage in contact experiences to a greater degree than less empathic individuals. It is possible that both of these pathways operate in intergroup dynamics, yet the relative influence of each remains unanswered. Study 2 aims to compare ‘trait’ level empathy, or empathy as an antecedent to contact, with intergroup empathy, empathy as a consequence of contact, across multiple time points in the effort to understand the relative impact of each on downstream pro-social behavior can be identified.

Method

Participants

132 undergraduate college students were recruited through the Introduction to Psychology subject pool. Participants were recruited using the subject pool in order to collect data at multiple time points throughout the semester to measure variables over time. Of the total participants 18% identified as Caucasian/White-European, 31% identified as Hispanic/Latino, 42% identified as Asian/Asian American/Pacific Islander, 5% identified as Middle Eastern/North

African, and 5% identified as Multiracial. Gender identity varied across participants with 27% self-identifying as male/cis male, 73% self-identifying as female/cis female, and less than 1% preferred not to answer. All participants received course credit in return for their participation.

Measures

Trait Empathy. Trait Empathy was assessed using the same measure as described in Study 1 (IRI; Davis, 1980, see pg.). All items can be found in Appendix E.

Intergroup Empathy. Intergroup empathy was assessed in two ways. First, intergroup empathy toward Black/African-American individuals were measured using the intergroup empathy measure used in the pilot study and study 1 (see pg. 28). These items were modified to reflect Black/African-American out-group targets as opposed to racial/ethnic minority people.

Second, intergroup empathy was assessed using the novel news story article measure and intergroup empathy items described in the pilot study (see pg. 28). The objective of Study 2 is to examine empathy towards Black/African-American people; thus, all participants viewed the news article that contains the picture of the couple to ensure racial out-group status is salient. All materials can be found in Appendix A.

Intergroup Contact. Intergroup contact in the form of proximity, frequency, quality, cross-group friendships, and cross-group romantic relationships was measured using the same basic format as measures employed in the pilot study and Study 1 (see pg. 29).

Given the high percentage of racial and ethnic minorities in the sample population and lower percentage of Black/African-American students in the UIC subject pool, intergroup contact items were modified to measure contact with Black/African-American people instead of racial/ethnic minorities generally. All items can be found in Appendix B.

Prosocial Behavior. In the context of the present study, participants were informed that in return for their participation, they would be entered into a lottery for a chance to win a \$25 prize. Participants were then given information about a local organization helping racial/ethnic minorities. Then, participants were asked, “If you are selected to win the lottery prize of \$25, would you be willing to donate to the organization?” Participants had the option of donating 0 (*no money*), 1 (*five dollars*), 2 (*ten dollars*), 3 (*fifteen dollars*), 4 (*twenty dollars*), or 5 (*twenty-five dollars*). Higher scores indicate greater donation sum to the charity, corresponding to greater pro-social behavior.

In addition, prosocial behavior towards Black/African-Americans was measured using the prosocial behavior measure described in the pilot study (see pg. 32). All items can be found in Appendix C.

Control Measures

Social Desirability & Race Conceptions. Social desirability and race conceptions were measured using the same items described in Study 1 (see pg. 45). Items for social desirability are listed in Appendix F. Items for race conceptions are listed in Appendix D.

Procedure

At the beginning of the academic semester, participants completed demographic information (age, gender identity, and racial identity), trait level empathy, race conceptions scale, and social desirability items during a mass testing session (Time 1). In addition, participants completed measures of intergroup contact (proximity, frequency, quality, cross-group friendships). To complete these intergroup contact items, participants were instructed to, “For the following questions, please think about your life before you started school at UIC and respond accordingly.” This served as a pre-UIC measure of intergroup contact.

At a later point in the semester, participants who completed the mass testing items were recruited to participate in the study at Time 2. At Time 2, participants completed an online survey assessing their experiences with out-group members and empathy towards them. After participants provided informed consent, participants were informed that they would be participating in a research study aimed to understand factors associated with social network dynamics. Next, participants completed the intergroup contact items. Participants were instructed to, “Please consider your time spent at UIC and the experiences you have had since starting school when answering the following questions.” Additionally, participants were asked to report their involvement with campus organizations and clubs, the amount of time they spend at these organization events, and the extent to which these organizations include Black/African-American individuals. Black/African-Americans are specified for consistency of out-groups across variables in the study. Next, participants completed generalized measures of intergroup empathy. Participants were debriefed and thanked for their participation.

After participants completed procedures in session 2, they were eligible to participate in Time 3. For Time 3, participants completed an online survey. After participants provided informed consent, they were told the purpose of the study is to “understand the dynamics of social networks in relation to news consumption and reading comprehension. Participants were instructed to, “Please read the following passage from a recent news story” (See Appendix A). After they read the news story, they were asked to complete the intergroup contact items and recall items associated with the news story (see Appendix A). At the end of the study, their willingness to donate to an out-group charity and engagement in activism to support the out-group was recorded. Participants were debriefed and thanked for their participation.

Results

Prior to testing the hypotheses, the underlying assumptions for the analyses were tested. Variables used analyses appeared to be normally distributed with the exception of cross-group romantic relationships (see Table 8; George & Mallery, 2010). Of the entire sample, less than 1% of people indicated that they had experienced contact in the form of a romantic relationship with a Black/African American out-group member. Thus variable was determined to be non-normal (George & Mallery, 2010). Given the extreme prevalence of zero value scores, cross-group romantic relationships was not included in the measure of intergroup contact used in the subsequent conditional process model. The assumption of multicollinearity was also met (see Table 9; Yu, Jiang, & Land, 2015).

Table 8. Descriptive Statistics For Variables in Study 2

Variable	<i>M</i>	<i>SD</i>	<i>Kurtosis</i>
Proximity-Contact	3.68	.59	.72
Frequency-Contact	2.60	.94	1.10
Quality-Contact	5.26	1.04	-.70
Cross-group Friendship-Contact	2.10	.99	-.78
Cross-group Romantic Relationship-Contact	.04	.39	133
Intergroup Empathy-News Article	3.69	.62	.37
Trait Empathy	3.75	.58	8
Prosocial Behavior	3.22	.80	.32

Note: $N=133$, Kurtosis values within $[-3,3]$ indicate a normal distribution of scores. For cross-group romantic relationships 99% ($n=132$) had a score of 0.

Table 9. Intercorrelations Among Variables in Study 2

Variable	1	2	3	4	5	6	7	8
1. Proximity	-							
2. Frequency	.22**	-						
3. Quality	.0	.38**	-					
4. Cross-group Friendship	.27**	.60**	.35**	-				
5. Cross-group Romantic	.11	.06	.01	.04	-			
6. Trait Empathy	-.002	.17	.40**	.10	.01	-		
7. Intergroup Empathy-News Article	.06	-.06	.03	.19*	-.003	.08	-	
8. Prosocial Behavior	-.12	.24**	.20*	.24*	.09	.38*	.15*	-

$^{\circ}$ $p < .07$, * $p < .05$, ** $p < .01$.

To test the relationship between intergroup contact and prosocial behavior, a conditional process model was used to test for moderated mediation (Hayes, 2018). Analyses were conducted using Model 7 of the PROCESS macro. Specifically, the conditional process model was used to examine (1) the role of empathy as an antecedent of intergroup contact and (2) the role of empathy as an outcome of contact (see Figure 1 for pathway model).

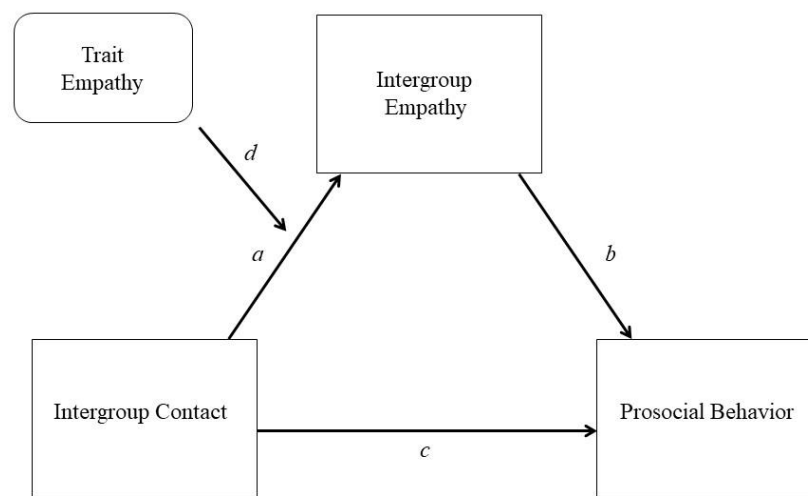


Figure 1. Moderated mediation model pathways.

First, if trait empathy serves as an antecedent of contact, then we would expect trait empathy to moderate the association between intergroup contact and intergroup empathy, such that intergroup contact effects are dependent on an individual's degree of trait empathy (*path d*). Second, if intergroup empathy serves as an outcome of intergroup contact, then we would expect to intergroup empathy to mediate the association between contact and prosocial behavior. It was predicted that empathy serves as both an antecedent and as a consequence of contact, in which case, we would expect to see moderated mediation effects.

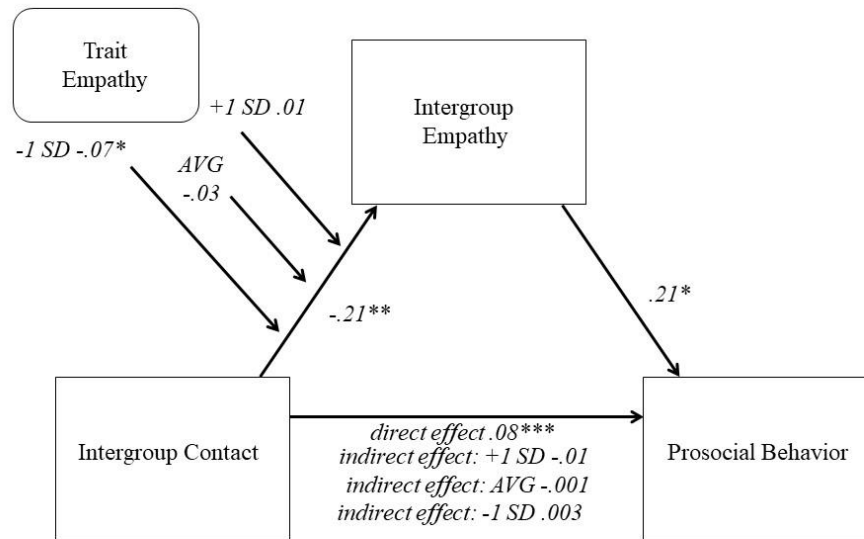


Figure 2. Full moderated mediation model: Unstandardized coefficient values.

* $<.05$, ** $<.01$, *** $<.001$

In line with the prediction that trait empathy would serve as an antecedent of intergroup contact, results indicated trait empathy moderated the association between intergroup contact and intergroup empathy, $\beta = .07$, $SE = .03$, $p = .03$, 95% CI [.001, .13]. Further analysis of the moderation effect indicated that the association between intergroup contact and intergroup empathy was only significant for individuals with low trait empathy, (*minus 1 SD*), $\beta = -.07$, $SE = .03$, $p = .03$, 95% CI [-.12, -.01]. The moderation effects did not hold for individuals with average, $\beta = -.03$, $SE = .02$, $p = .17$, 95% CI [-.07, .01], and individuals with high levels of trait empathy (*plus 1 SD*), $\beta = .01$, $SE = .02$, $p = .52$, 95% CI [-.03, .06]. Individuals with lower levels of trait empathy demonstrated greater contact effects on intergroup empathy, whereas individuals with average and high levels of trait empathy did not demonstrate contact effects on intergroup empathy.

However, results indicated no moderated mediation effect overall. The Index of Moderated Mediation, which tested for equality of conditional indirect effects, was non-significant, $\beta=.01$, $SE=.01$, 95% CI $[-.001, .03]$. This test indicates that the indirect effects of intergroup contact through trait empathy and intergroup empathy on prosocial behavior were non-significant. The indirect effects were not different across each level of trait empathy (*1 SD below, average, 1 SD above*). The pathway between intergroup contact and intergroup empathy was significant, $\beta=-.28$, $SE=.11$, 95% CI $[-.51, -.05]$, indicating that empathy towards out-groups is an outcome of intergroup contact. Further, the pathway between intergroup empathy (as an outcome of contact) and prosocial behavior was significant, $\beta=.21$, $SE=.11$, 95% CI $[-.00, .42]$. While these two pathways comprise the pathways necessary for mediation effect alone, the moderated mediation effect did not hold suggesting that empathy does not serve as an antecedent and as an outcome of contact simultaneously.

Supplemental Analyses

In light of the primary finding from Study 1, more meaningful and socially close forms of intergroup contact yield stronger contact effects on empathy towards out groups, exploratory analyses were conducted to test the moderated mediation model for intergroup contact at low (proximity/frequency) and high (quality/friends) levels of intimacy. For both low intimacy and high intimacy levels of intergroup contact, the conditional process model was used to examine (1) the role of empathy as an antecedent of intergroup contact and (2) the role of empathy as an outcome of contact.

Low Intimacy Intergroup Contact. To test the relationship between low intimacy intergroup contact (proximity/frequency) and prosocial behavior, a conditional process model was used to test for moderated mediation (PROCESS, Model 7; Hayes, 2018).

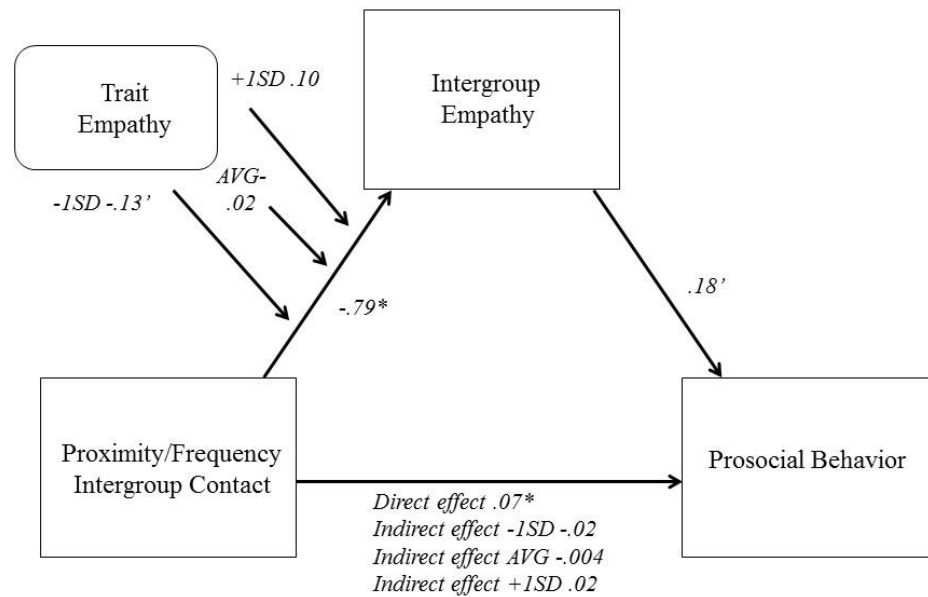


Figure 3. Low intimacy intergroup contact moderated mediation model: Unstandardized coefficient values.

$'<.10$, $*<.05$, $**<.01$, $***<.001$

Consistent with previous findings, results indicated that trait empathy moderated the association between low intimacy intergroup contact and intergroup empathy, $\beta=.21$, $SE=.09$, $p=.02$, 95% CI [.03, .38], suggesting that the effect of intergroup contact with low levels of intimacy on intergroup empathy are dependent upon individual differences in trait empathy. For individuals with low levels of trait empathy (*minus 1 SD*), there was a marginally significant moderation effect, $\beta=-.13$, $SE=.08$, $p=.10$, 95% CI [-.27, .03]. The moderation effect of trait empathy did not emerge for average trait empathy, $\beta=-.02$, $SE=.06$, $p=.70$, 95% CI [-.13, .09], and high levels (*plus 1 SD*) of trait empathy, $\beta=.003$, $SE=.07$, $p=.16$, 95% CI [-.04, .25] (see Figure 3). Although the effect for individuals with low levels of trait empathy was marginally

significant, the general moderation effect of trait empathy was significant and consistent with findings from the overall model.

Results provided no evidence of a moderated mediation effect, $Index=.04$, $SE=.01$, 95% $CI [-.001, .03]$. While the direct effect of low intimacy intergroup contact on prosocial behavior was significant, $\beta=.14$, $SE=.07$, 95% $CI [.00, .28]$, and the association between intergroup empathy and prosocial behavior was marginally significant, $\beta=.18$, $SE=.11$, 95% $CI [-.04, .40]$, there was no evidence of a moderated mediation effect overall. The indirect effects were not different across each level of trait empathy (*1 SD below, average, 1 SD above*; see Figure 3). The association between low intimacy intergroup contact and prosocial behavior was not simultaneously influenced by empathy as an antecedent and outcome of contact.

High Intimacy Intergroup Contact. To test the relationship between high intimacy intergroup contact (quality/friends) and prosocial behavior, the same conditional process model was used to test for moderated mediation (PROCESS, Model 7; Hayes, 2018).

In contrast to previous finding, trait empathy did not moderate the association between high intimacy intergroup contact and intergroup empathy, $\beta=.10$, $SE=.05$, $p=.06$, 95% $CI [-.01, .20]$, although this moderation effect was marginally significant. Further analysis indicated that for individuals with low trait empathy, trait empathy moderated the association between high intimacy intergroup contact and intergroup empathy, $\beta=-.11$, $SE=.05$, $p=.03$, 95% $CI [-.20, -.01]$. For average trait empathy, $\beta=-.06$, $SE=.04$, $p=.10$, 95% $CI [-.13, .01]$, and high trait empathy, $\beta=.002$, $SE=.04$, $p=.97$, 95% $CI [-.08, .09]$, there was no moderation effect of trait empathy (see Figure 4).

Results provided no evidence of a moderated mediation effect, $Index=.02$, $SE=.01$, 95% $CI [-.002, .05]$. The individual pathways between intimacy intergroup contact on prosocial

behavior, $\beta=.15$, $SE=.04$, 95% $CI [.07, .23]$, and the association between intergroup empathy and prosocial behavior, $\beta=.21$, $SE=.11$, 95% $CI [.0004, .43]$, were both significant. However, there was no evidence of a moderated mediation effect overall, the indirect effects were not different across each level of trait empathy (1 SD below, average, 1 SD above; see Figure 4).

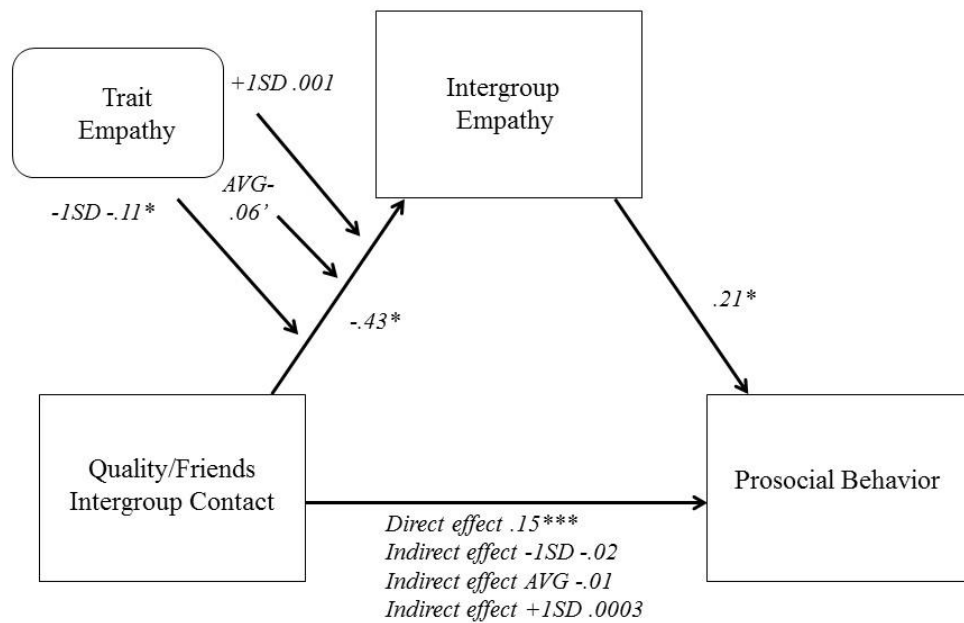


Figure 4. High intimacy intergroup contact moderated mediation model: Unstandardized coefficient values.

$^{\dagger} < .10$, $^* < .05$, $^{**} < .01$, $^{***} < .001$

Summary

Study 2 aimed to understand the role empathy plays in the association between intergroup contact and prosocial behavior. Primarily, Study 2 assessed whether empathy serves as an antecedent of intergroup contact (trait empathy) and whether empathy serves as an outcome of intergroup contact (intergroup empathy). It was predicted that empathy could serve as both an antecedent of intergroup contact, such that mediating effect of intergroup empathy in the

association between intergroup contact and prosocial behavior would vary depending on individual differences in trait empathy.

In line with the hypotheses, the association between intergroup contact experiences and intergroup contact depended on an individual's level of trait empathy. Individuals with low levels of trait empathy demonstrated greater effects of contact on intergroup empathy. For less empathic individuals, greater degree of intergroup contact generated stronger contact effects on empathy towards the out-group targets in the news article. In contrast, there was no effect of intergroup contact experiences on empathy towards the out-group targets in the news article for individuals with average and high levels of trait empathy. Contrary to the hypotheses, there was no indication of a moderated mediation effect indicating that empathy did not serve as an antecedent and as a consequence simultaneously. This finding suggests that the mediating effect of intergroup empathy on intergroup contact and prosocial behavior was not dependent on an individual's level of trait empathy.

Exploratory analyses examined the same effect for intergroup contact with low levels of intimacy (proximity and frequency) and for intergroup contact with high levels of intimacy (quality and cross-group friendships). For low intimacy intergroup contact, results were consistent with the overall model, such that, trait empathy moderated the association between intergroup contact and empathy towards out-groups. However, for high intimacy intergroup contact, contact effects did not vary across individual differences in trait empathy. Together, these findings highlight the important interactive nature between trait empathy and the nature of intergroup contact. Individual differences in trait empathy are more influential when the nature of intergroup contact is less intimate, whereas, contact with out-groups that is meaningful and intimate in nature is less impacted by individual differences in trait empathy. Consistent with the

overall model, both low intimacy and high intimacy intergroup contact did not show a simultaneous mediation and moderation effect.

Overall, Study 2 did support the important role of trait empathy as an antecedent of intergroup contact. The magnitude of contact effects on intergroup empathy were dependent on an individual's initial level of trait empathy. Although the association between intergroup contact and intergroup empathy was significant, results did not support the prediction that empathy serves as an antecedent of contact and serves as an outcome of contact simultaneously. Importantly, Study 2 suggests that individual's differences in trait empathy can interact with the contact experiences individuals have with out-group members.

Discussion

In general, the findings from the present work converges with the larger intergroup contact and intergroup empathy literature. Intergroup contact theory posits that interacting with members of a different group can boost empathy, reduce prejudice, and promote positive intergroup relations (Allport, 1954; Pettigrew & Tropp, 2006; 2008). Interactions and experience with members of a different social group can serve as a means to establish positive attitudes between groups (Allport, 1954). Subsequent work on intergroup contact theory suggests that empathy plays an important role in contact effects (Pettigrew & Tropp, 2008).

Findings from the present research are consistent with the large body of work highlighting the important role of intergroup empathy in contact effects (Abbott & Cameron, 2014; Aberson & Haag, 2007; Brouwer & Boros, 2010; Capozza, Trifiletti, Vezzali, & Favara, 2013; Eller & Abrams, 2003; Hewstone, et. al, 2014; Milgram, Geisis, Katz, & Haskaya, 2008; Pagotto & Voci, 2013; Pettigrew & Tropp, 2008). Both Study 1 and Study 2 demonstrate that intergroup empathy was associated with the degree of one's interactions and experiences with out-group members. Specifically, people who had greater intergroup contact experiences reported increased levels of intergroup empathy towards out-groups (Study 1). Further, intergroup contact was associated with intergroup empathy and individual differences in trait empathy (Study 2). Broadly, these findings are consistent with the literature demonstrating the important association between intergroup contact and intergroup empathy.

Contact theorists have long emphasized the importance of the nature of one's interactions and experiences with out-group members in shaping attitudes and behaviors towards these groups (Allport, 1954; Pettigrew & Tropp, 2006). Findings from the present work address this through the measurement of different forms of intergroup contact along varying degrees of social

closeness and meaningfulness (i.e. frequency, quality, cross-group friends). Findings indicate that the relative importance of various forms of intergroup contact vary across different forms of intergroup contact (Study 1). Within the intergroup contact literature, limited research employs multiple forms of intergroup contact simultaneously. The present work address this limitation in the literature by measuring multiple forms of intergroup contact and testing the relative importance of each form of contact. Importantly, Study 1 is one of the first research studies to measure intergroup contact in the form of proximity, frequency, quality, cross-group friendships, and cross-group romantic relationships simultaneously.

While the present work supports the larger intergroup contact theory literature, Study 1 and Study 2 explored nuanced variation within the literature specifically focused on the association between intergroup contact and empathy towards out-groups. First, the present work explored differential patterns of contact effects across various forms of intergroup contact. Study 1 examined differential patterns of effects between intergroup contact and empathy towards out-groups and tested the strength of each contact assessment above and beyond other forms of intergroup contact and other possible covariates. Second, the present work examined whether empathy plays different roles within the intergroup contact framework. Study 2 addressed this question by exploring the influence of empathy as an antecedent of contact (trait empathy) and empathy as an outcome of contact (intergroup contact).

Study 1 aimed to test the relative importance of various forms of intergroup contact, including contact proximity, contact frequency, contact quality, cross-group friendships, and cross-group romantic relationships on empathy towards out-groups. It was predicted that more meaningful, socially close, and higher quality forms of intergroup contact would predict intergroup empathy above and beyond general forms of contact and trait level individual

differences. In line with the primary hypothesis, Study 1 results indicate higher quality and more meaningful forms of intergroup contact in the form of quality of contact and cross-group friendships were predictive of intergroup empathy above and beyond less meaningful forms of contact and individual difference variables. Cross-group romantic relationships, however, did not play an important role above and beyond other forms of contact and individual difference measures. Overall, these findings demonstrate that contact effects do vary across different forms of intergroup contact. Interactions and experiences with out-group members that are meaningful and socially close predict intergroup empathy above and beyond contact experiences with less intimacy.

Study 2 addressed the role of empathy as an antecedent of intergroup contact (trait empathy) and the role of empathy as an outcome of intergroup contact (intergroup empathy) in the overall association between intergroup contact and prosocial behavior. It was predicted that empathy could serve as both an antecedent of intergroup contact simultaneously, such that mediating effect of intergroup empathy in the association between intergroup contact and prosocial behavior would vary depending on individual differences in trait empathy. Study 2 indicated that the mediation effect of intergroup empathy between contact and prosocial behavior did not vary across different levels of trait empathy. While empathy did not simultaneously act as both an antecedent and as an outcome of intergroup contact (moderated mediation), individual differences in trait empathy did influence contact effects on intergroup empathy. Individuals with low levels of trait empathy displayed greater contact effects than individuals with average or high levels of trait empathy. These findings help disentangle the different roles of trait empathy and intergroup empathy within the intergroup contact framework. Overall, these findings suggest that trait empathy influences contact effects on intergroup empathy.

The findings from Study 1 and Study 2 highlight the important role of trait empathy. First, trait empathy was the most prominent predictor of intergroup empathy. Second, trait empathy moderated the association between contact and empathy towards out-groups. While trait empathy and intergroup empathy were found to be distinct but related constructs, the findings suggest that trait empathy and intergroup empathy play different roles within the contact theory framework. Across both studies, trait empathy was found to be a prominent predictor of intergroup empathy, suggesting that trait empathy serves as an important antecedent to intergroup contact. Individual differences trait empathy can shape the nature of one's experiences with dissimilar others, which can lead to variation in the magnitude of contact effects on intergroup empathy.

Contrary to the contact theory literature, intergroup empathy did not mediate the association between intergroup contact and prosocial behavior. There was no evidence that intergroup contact experiences generated greater levels of empathy towards out-group targets which in turn led to greater engagement in prosocial behavior. One possibility for these null results is the use of multiple forms of intergroup contact to measure intergroup contact. The majority of research demonstrating the mediating role of intergroup empathy employs one or two forms of intergroup contact (e.g. quality; Abbott & Cameron, 2014; Capozza, et. al, 2013; Hewstone, et. al, 2014; Milgram, Geisis, Katz, & Haskaya, 2008; Pagotto & Voci, 2013;). In contrast, intergroup contact in Study 2 included contact in the form of proximity, frequency, quality, cross-group friends, and romantic relationships.

Another possibility, is the measurement of intergroup empathy. In much of the work testing the mediation effect of intergroup empathy in contact effects, intergroup empathy is measured as a generalized empathy to out-groups as a whole (Abbott & Cameron, 201; Brouwer

& Boros, 2010; Capozza, et. al, 2013; Hewstone, et. al, 2014; Milgram, Geisis, Katz, & Haskaya, 2008; Pagotto & Voci, 2013;). In the present work, intergroup empathy as a mediator was assessed as the degree of empathy directed at specific intergroup targets presented in the news story.

A third possibility for the null effect is the outcome variable. While much of the literature studies the mediational role of intergroup empathy in the association of intergroup contact and attitudes towards out-groups, the present work examined the mediational effect of intergroup empathy on the association between intergroup contact and prosocial behavior. The link between empathy and prosocial behavior, between attitudes towards out groups and prosocial behavior and between intergroup contact and prosocial behavior have been well established in the literature (Fingerhut, 2011; Gable, et. al, 2006; Morelli, Rameson, & Liberman, 2014; Vollhardt & Staub, 2011). Comparatively less work explicitly tests the mediating role of empathy on contact effects on prosocial behavior. Across these three measurement differences, it is possible that the analyses in Study 2 were underpowered and were not well-suited to detect the potential effects of specific interest.

Findings from both studies highlight the important role of trait empathy in shaping the nature of the experiences and interactions people have with dissimilar others. More specifically, the finding that contact effects on intergroup empathy varied across different levels of trait empathy highlights the important role of trait empathy. It is possible that individuals with low trait empathy are well-positioned to benefit from interactions and experiences with out-group members. Further, the findings from Study 1 suggest that individuals with low trait empathy might be especially influenced by meaningful and socially close forms of intergroup contact.

Taken together, these findings show that individuals with low levels of trait empathy may have the most beneficial effects of contact with dissimilar others.

Limitations & Future Research

One limitation of the present work is the measurement of cross-group romantic relationships. In Study 1, cross-group romantic relationships were measured under the assumption that romantic relationships with out-groups would serve as a highly intimate and socially close form of intergroup contact. Cross-group romantic relationships were not found to predict intergroup empathy above and beyond other forms contact experiences. It is possible that the way cross-group romantic relationships was measured did not accurately capture what was intended.

Additionally, across Study 1 and Study 2, more than 85% of participants had no contact with out-groups in the form of romantic relationships. This is consistent with research demonstrating the low prevalence of interracial dating and marriage (Livingston & Brown, 2017; Wang, 2012). It is possible that this extremely non-normal distribution restricted the ability to understand how contact of this nature shapes intergroup empathy and prosocial behavior. Within the contact literature, relatively little research addresses cross-group romantic relationships as a form of intergroup contact. Future work could be done to understand the best way to capture and measure cross-group romantic relationships. In addition, research on the differences in meaningfulness and social closeness of intergroup contact as measured by cross-group friendships and cross-group romantic relationships can provide insight to the underlying assumptions in Study 1.

Another limitation of the present research was the measurement of intergroup empathy in Study 2. Intergroup empathy operationalized as an outcome of contact was measured as the

empathy directed at the out-group targets within the new story article. In the majority of previous work, intergroup contact is typically generalized to the entire out-group, rather than specific out-group targets. Given the difference in measurement, it is possible that we were not able to capture the intergroup empathy construct typically employed within the literature (Pettigrew & Tropp, 2008). Instead, it is possible that we were only able to capture a small subset of the empathy typically assessed in the literature. Consequently, results in Study 2 that show intergroup empathy having no mediation effect in the association between contact and prosocial behavior could have been influenced by the measurement of intergroup empathy. In future work, it would be beneficial to examine these measurement differences and understand the way intergroup empathy is assessed. Greater examination of empathy within the intergroup contact theory framework can help provide insight on and to differentiate between trait empathy and intergroup empathy.

Lastly, there was a high degree of semantic overlap between items used to measure trait empathy (IRI) and intergroup empathy. While the two constructs were found to be independent factors, there was a significant correlation. Further, findings from Study 1 and Study 2 both highlight the important role of trait empathy in predicting empathy towards out-groups. The high degree of semantic overlap between these two construct is a limitation of the present research. In future work, researchers should explore testing similar effects using measures with a lower degree of semantic overlap.

Given the findings from Study 1 and Study 2, future work should explore contact effects for individuals with different levels of trait empathy. More specifically, future research could be done to understand the nature of intergroup contact experiences and how one's level of trait empathy interact with the types of contact experiences they have. Given the findings from the

present work, low empathic individuals displayed greater contact effects on empathy towards out-group targets. Together with the finding that more intimate forms of intergroup contact predict intergroup empathy, it is possible that less empathic individuals may be particularly well-positioned to benefit from intergroup contact. Future research should be done to understand if individuals with different levels of trait empathy are likely to engage in different forms of intergroup contact. For individuals with low trait empathy, intergroup contact experiences that are meaningful and socially close may generate stronger effects on empathy towards out-groups compared to experiences with low intimacy. In contrast, individuals with high trait empathy may show high levels of intergroup empathy across all forms of intergroup contact regardless of how meaningful or how socially close the experience. Future research can help provide insight into these questions to ultimately maximize contact effects.

The methods leveraged in the present thesis were exclusively non-experimental designs—participants in both studies self-reported their interactions with out-groups in their everyday lives. Future research could explore the possibility of experimental methods to gain deeper causal understanding between intergroup contact, trait empathy, empathy towards out-groups, and prosocial behavior. An experimental design applied to this research question could provide participants with choices of contact with out-groups that differ in degree of intimacy of social closeness, in order to evaluate if individuals with varying levels of trait empathy engage, seek out, and avoid contact experiences that vary in nature of social closeness. Further, an experimental design in which participant are randomly assigned to engage in intergroup contact experiences with different levels of intimacy might help disentangle the causal nature of contact effects.

In light of the current political landscape in the United States, the need to understand empathy towards dissimilar others remains an important issue. Increasingly more Americans believe that relations between others of different social groups are growing more hostile and polarized (Hughes & Stocking, 2018). In a recent Pew Research Center study, increased exposure to social media from “the other side” led to greater polarization (Hughes & Stocking, 2018). In other words, greater social media contact with out-groups had negative effects on intergroup dynamics. The findings from both studies suggest that more work needs to be done to understand different forms of empathy and the roles empathy can play within the intergroup contact theory framework. Trait empathy, specifically, was shown to be an important influencer on contact effects. Intergroup relations continue to remain a prominent focus of current events in the United States today. Future research should work to gain insight on the different ways empathy is measured and employed in the literature to maximize intergroup contact effects.

References

- Aberson, C. L. (2015). Positive intergroup contact, negative intergroup contact, and threat as predictions of cognitive and affective dimensions of prejudice. *Group Processes & Intergroup Relations*, 18, 743-760.
- 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, 179-201.
- Abbott, N., & Cameron, L. (2014). What makes a young assertive bystander? The effect of intergroup contact, empathy, cultural openness, and in-group bias on assertive bystander intervention intentions. *Journal of Social Issues*, 70, 167-182.
- Allport, G.W. (1954). *The nature of prejudice*. Reading, MA: Addison-Wesley.
- Armstrong, M., Morris, C., Abraham, C., Ukoumunne, O. C., & Tarrant, M. (2016). Childrens contact with people with disabilities and their attitudes towards disability: a cross-sectional study. *Disability and Rehabilitation*, 38, 879-888.
- Aron, A., Melinat, E., Aron, E. N., Vallone, R., & Bator, R. (1997). The experimental generation of interpersonal closeness: A procedure and some preliminary findings. *Personality and Social Psychology Bulletin*, 23, 363-377.
- Asbrock, F., Christ, O., Duckitt, J., & Sibley, C. G. (2012). Differential effects of intergroup contact for authoritarians and social dominators: A dual process model perspective. *Personality and Social Psychology Bulletin*, 38, 477-490.
- Avenanti, A., Sirigu, A., & Aglioti, S. M. (2010). Racial bias reduces empathetic sensorimotor resonance with other-race pain. *Current Biology*, 11, 1018-1022.
- Bacharach, S., & Lawler, E. (1976). The perception of power. *Social Forces*, 55, 123-134.

- Backstrom, M., & Bjorklund, F. (2007). Structural modeling of generalized prejudice: The role of social dominance, authoritarianism, and empathy. *Journal of Individual Differences*, 28, 10-17.
- Batson, C. D. (1991). *The altruism question*. Hillsdale, NJ: Lawrence Erlbaum Associates, Inc.
- Batson, C. D., Early, S., & Salvarani, G. (1997). Perspective taking: Imagining how another feels versus imagining how you would feel. *Personality and Social Psychology Bulletin*, 7, 751-758.
- Batson, C. D., Polycarpou, P., Harmon-Jones, E., Imhoff, H. J., Mitchener, E. C., Bednar, L. L., et. al. (1997). Empathy and attitudes: Can feelings for a member of a stigmatized group improve feelings toward the group? *Journal of Personality and Social Psychology*, 72, 105-118.
- Batson, C. D., & Ahmad, N. Y. (2009). Using empathy to improve intergroup attitudes and relations. *Social Issues & Policy Review*, 3, 141-177.
- Bastian, B., & Haslam, N. (2006). Psychological essentialism and stereotype endorsement. *Journal of Experimental Social Psychology*, 42, 228-235.
- Bonam, C. M., & Shih, M. (2009). Exploring multiracial individuals' comfort with intimate interracial relationships. *Journal of Social Issues*, 65, 87-103.
- Bratt, C. (2008). The jigsaw classroom under test: No effect on intergroup relations evident. *Journal of Community & Applied Social Psychology*, 18, 403-419.
- Brouwer, M. A. R., & Boros, S. (2010). The influence of intergroup contact and ethnocultural empathy on employees' attitudes toward diversity. *Cognition, Brain, Behavior: An Interdisciplinary Journal*, 3, 243-260.
- Brown, R., & Hewstone, M. (2005). An integrative theory of intergroup contact. *Advances in*

- Experimental Social Psychology*, 37, 255-343.
- Cao, Y., Contreras-Huerta, L. S., McFadyen, J., & Cunningham, R. (2015). Racial bias in neural response to others' pain is reduced with other-race contact. *Cortex*, 70, 68-78.
- Capozza, D., Trifiletti, E., Vezzali, L., & Favara, I. (2013). Can intergroup contact improve humanity attributions? *International Journal of Psychology*, 48, 527-541.
- Cehajic, S., Brown, R., & Castano, E. (2008). Forgive and forget? Antecedents and consequences of intergroup forgiveness in Bosnia and Herzegovina. *Political Psychology*, 29, 351-367.
- Chiano, J. Y., & Mathur, V. A. (2010). Intergroup empathy: How does race affect empathetic responses? *Current Biology*, 20, 478-480.
- Cikara, M., Bruneau, E. G., & Saxe, R. R. (2011). Us and them: Intergroup failures of empathy. *Current Directions in Psychological Science*, 20, 149-153.
- Cikara, M., Bruneau, E., Van Bavel, J. J., & Saxe, R. (2014). Their pain gives up pleasure: How intergroup dynamics shape empathic failures and counter-empathic responses. *Journal of Experimental Social Psychology*, 55, 110-125.
- Cikara, M., & Fiske, S. T. (2013). Their pain, our pleasure: stereotype content and schadenfreude. *Annals of The New York Academy of Sciences*, 1299, 52-59.
- Cohen, D., & Strayer, J. (1996). Empathy in conduct-disordered and comparison youth. *Developmental Psychology*, 32, 988-998.
- Condit, C. M., Parrott, R. L., Bates, B. R., Bevan, J., & Achter, P. J. (2004). Exploration of the impact of messages about genes and race on lay attitudes. *Clinical Genetics*, 66, 402-408.
- Crowne, D. P. & Marlow, D. (1960). A new scale of social desirability independent of psychopathology. *Journal of Consulting Psychology*, 24, 349-354.

- Davis, M. H. (1980). A multidimensional approach to individual differences in empathy. *Catalog of Selected Documents in Psychology, 10*, 85.
- Davis, M. H. (1983). Measuring individual differences in empathy: Evidence for a multidimensional approach. *Journal of Personality and Social Psychology, 44*, 113-126.
- Davis, M. H., Conklin, L., Smith, A., & Luce, C. (1996). Effect of perspective taking on the cognitive representation of persons: A merging of the self and other. *Journal of Personality and Social Psychology, 70*, 713-726.
- Davies, K., Tropp, L. R., Aron, A., Pettigrew, T. F., & Wright, S. C. (2011). Cross-group friendships and intergroup attitudes: A meta-analytic review. *Personality and Social Psychology Review, 15*, 332-351.
- Dovidio, J. F., Gaertner, S. L., & Kawakami, K. (2003). Intergroup contact: The past, present, and the future. *Intergroup Processes & Intergroup Relationships, 6*, 5-21.
- Eller, A., & Abrams, D. (2003). 'Gringos' in Mexico: Cross-sectional and longitudinal effects of language school-promoted contact on intergroup bias. *Group Processes and Intergroup Relations, 6*, 55-75.
- Fehr, B. (1996). *Friendship processes*. Thousand Oaks, CA: Sage.
- Fingerhut, A. W. (2011). Straight allies: What predicts heterosexuals' alliance with the LGBT community? *Journal of Applied Social Psychology, 41*, 2230-2248.
- Finlay, K. A., & Stephan, W. G. (2000). Improving intergroup relations: The effects of empathy on racial attitudes. *Journal of Applied Social Psychology, 30*, 1720-1737.
- Gable, S. L., Gonzaga, G. C., & Strachman, A. (2006). Will you be there for me when things go right? Supportive responses to positive event disclosures. *Journal of Personality and Social Psychology, 91*, 904-917.

- Gable, S. L., Reis, H. T., Impett, E. A., & Asher, E. R. (2004). What do you do when things go right? The intrapersonal and interpersonal benefits of sharing positive events. *Journal of Personality and Social Psychology*, 87, 228.
- George, D. & Mallery, P. (2010). *SPSS for windows step by step a simple guide and reference* (10th ed.). Boston, MA: Pearson.
- Gutsell, J. N., & Inzlicht, M. (2012). Intergroup differences in the sharing of emotive states: neural evidence of an empathy gap. *SCAN*, 7, 596-603.
- Hayes, A. F. (2018). *Introduction to mediation, moderations, and conditional process analysis* (2nd ed.). New York, NY: The Guilford Press.
- Hayes, A. F. (2015). The PROCESS macro for SPSS and SAS. *Computer software*]. Retrieved from [http://www. processmacro.org](http://www.processmacro.org).
- Hays, R. D., Hayashi, T., & Stewart, A. L. (1989). A five-item measure of social desirability response set. *Educational and Psychological Measurement*, 49, 629-636.
- Hewstone, M., Lolliot, S., Swart, H, Myers, E., Voci, A., Al Ramiah, A., & Cairns, E. (2014). Intergroup contact and intergroup conflict. *Peace and Conflict: Journal of Peace Psychology*, 20, 39-53.
- Hodson, G. (2008). Interracial prison contact: The pros for (socially dominant) cons. *British Journal of Social Psychology*, 47, 325-351.
- Huff, C., & Tingley, D. (2015). “Who are these people?” evaluating the demographic characteristics and political preferences of mturk survey respondents. *Research and Politics*, 1-12. doi: 10.1177/2053168015604648
- Hughes, A., & Stocking, G. (Sep. 17, 2018). APSA conference roundup: Research on political polarization on social media and the U.S. congress. *Pew Research Center*.

- Hutchinson, L. M., Hastings, R. P., Hunt, P. H., Bowler, C. L., Banks, M. E., & Totsika, V. (2014). Who's challenging who? Changing attitudes towards those whose behavior challenges. *Journal of Intellectual Disability Research*, 58, 99-109.
- Jackson, J. W., James, A., Poulsen, J. R., & Dumford, J. (2016). Weight bias as a function of person variables and contact experiences. *The Journal of Social Psychology*, 4, 351-368.
- Jolliffe, D., & Farrington, D. P. (2006). Development and validation of the basic empathy scale. *Journal of Adolescence*, 29, 589-611.
- Keller, J. (2005). In genes we trust: The biological component of psychological essentialism and its relationship to mechanisms of motivated social cognition. *Journal of Personality and Social Psychology*, 88, 686-702.
- Lee, B. A., Farrell, C. R., & Link, B. G. (2004). The effects of ingroup and outgroup friendships on ethnic attitudes in college: A longitudinal study. *Group Processes & Intergroup Relations*, 6, 76-92.
- Livingston, G., & Brown, A. (May. 18, 2017). Interracial marriage in the u.s.. 50 years after loving v. virginia. *Pew Research: Social & Demographic Trends*.
- Lolliot, S., Schmid, K., Hewstone, M., Al Ramiah, A., Tausch, N., & Swart, H. (2013). Generalized effects of intergroup contact: The secondary transfer effect. In G. Hodson & M. Hewstone (Eds.), *Advances in intergroup contact* (pp. 81-112). Longdon, England: Psychology Press.
- Lytle, A., & Levy, S. R. (2015). Reducing heterosexuals' prejudice toward gay men and lesbian women via and induced cross-orientation friendship. *Psychology of Sexual Orientation and Gender Diversity*. Advance online publication. <http://dx.doi.org/10.1037/sgd0000135>
- MacCallum, R. C., Zhang, S., Preacher, K. J., & Rucker, D. D. (2002). On the practice of

- dichotomization of quantitative variables. *Psychological Methods*, 7, 19-40.
- Masten, C. L., Gillen-O'Neel, C., & Brown, C. S. (2010). Children's intergroup empathic processing: The roles of novel ingroup identification, situational distress, and social anxiety. *Journal of Experimental Child Psychology*, 106, 115-128.
- MacInnis, C. C., & Hodson, G. (2015). The development of online cross-group relationships among university students: Benefits of earlier (vs. later) disclosure of stigmatized group membership. *Journal of Social and Personal Relationships*, 32, 788-809.
- Mekawi, Y., Bresin, K., & Hunter, C. D. (2016). White fear, dehumanization, and low empathy: Lethal combinations for shooting biases. *Cultural Diversity & Ethnic Minority Psychology*, 22, 322-332.
- Milgram, N., Geisis, M., Katz, N., & Haskaya, L. (2008). Correlates of readiness for interethnic relations of Israeli Jews and Arabs. *Peace and Conflict*, 14, 93-118.
- Miller, N. (2002). Personalization and the promise of contact theory. *Journal of Social Issues*, 58, 387-410.
- Miller, N., Smith, E. R., Mackie, D. M. (2004). Effects of intergroup contact and political predispositions on prejudice: Role of intergroup emotions. *Group Processes & Intergroup Relations*, 7, 221-237.
- Moeschberger, S. L., Dixon, N. D., Niens, U., & Cairns, E. (2005). Forgiveness in northern Ireland: A model for peace in the midst of the "troubles". *Peace and Conflict: Journal of Peace Psychology*, 11, 199-214.
- Morelli, S. A., Rameson, L. T., & Liberman, M. D. (2014). The neural components of empathy: Predicting daily prosocial behavior. *Social Cognitive and Affective Neuroscience*, 9, 39-47.

- Morgan, D., & Schwalbe, M. (1990). Mind and self in society: Linking social structure and social cognition. *Social Psychology Quarterly*, 53, 148-164.
- Nelson, D. W., Klein, C. T. F., & Irvin, J. E. (2003). Motivational antecedent of empathy: Inhibiting effects of fatigue. *Basic & Applied Social Psychology*, 25, 37-50.
- Orta, I. M. (2013). The impact of cross-group romantic relationships on intergroup prejudice. *Social Behavior and Personality*, 4, 1-6.
- Oswald, D. L., Clark, E. M., & Kelly, C. M. (2004). Friendship maintenance: An analysis of individual and dyad behaviors. *Journal of Social & Clinical Psychology*, 23, 413-441.
- Page-Gould, E., Mendoza-Denton, R., Tropp, L. R. (2008). With a little help from my cross-group friend: Reducing anxiety in intergroup contexts through cross-group friendship. *Journal of Personality and Social Psychology*, 95, 1080-1094.
- Pagotto, L., & Voci, A. (2013). Direct and mass-mediated contact: The role of different intergroup emotions. *TPM*, 20, 365-381.
- Pagotto, L, Voci, A., & Maculan, V. (2010). The effectiveness of intergroup contact at work: Mediators and moderators of hospital workers' prejudice towards immigrants. *Journal of Community & Applied Social Psychology*, 20, 317-330.
- Paolini, S., Hewstone, M., Cairns, E., & Voci, A. (2004). Effects of direct and indirect cross-group friendships on judgments of catholics and protestants in northern ireland: The mediating role of an anxiety-reduction mechanism. *Personality and Social Psychology Bulletin*, 30, 770-786.
- Patterson, J. L., Turner, R. N., & Conner, M. T. (2015). Extended contact through cross-group romantic relationships. *Journal of Applied Social Psychology*, 45, 489-497.
- doi: 10.1111/jasp.12314

Pettigrew, T. F. (2008). Future directions for intergroup contact theory and research.

International Journal of Intercultural Relations, 32, 187-199.

Pettigrew, T. F. (1998). Intergroup contact theory. *Annual Review of Psychology*, 49, 65-85.

Pettigrew, T. F. (2009). Secondary transfer effect of contact: Do intergroup contact effects spread to noncontacted groups? *Social Psychology*, 40, 55-65.

Pettigrew, T. P., & Tropp, L. R. (2006). A meta-analytic test of intergroup contact theory.

Interpersonal Relations and Group Processes, 90, 751-783.

Pettigrew, T. F., & Tropp, L. R. (2008). How does intergroup contact reduce prejudice? Meta-analytic tests of three mediators. *European Journal of Social Psychology*, 38, 922-934.

Pew Research Center. (Feb. 16, 2017a). In the first month, views of Trump are already strongly felt, deeply polarized. *Pew Research: Numbers, Facts, and Trends Shaping The World*.

Pew Research Center. (Jan. 19, 2017b). On eve of inauguration, Americans expect nation's deep political divisions to persist. *Pew Research Center: U.S. Politics and Policy*.

Pew Research Center. (Jun. 27, 2016). On views of race and inequality, black and whites are worlds apart. *Pew Research Center: Social and Demographic Trends*.

Phelan, J. E., & Basow, S. A. (2007). College students' attitudes toward mental illness: An examination of the stigma process. *Journal of Applied Social Psychology*, 37, 2877-2902.

Rettinger, D. a., Jordan, A. E., & Peschiera, F. (2004). Evaluating the motivation of other students to cheat: A Vignette Experiment. *Research in Higher Education*, 45, 873-890.

Riva, P., & Andrighetto, L. (2012). "Everybody feels a broken bone, but only we can feel a broken heart": Group membership influences the perception of targets' suffering.

European Journal of Social Psychology, 42, 801-806.

Rybash, J., & Roodin, P. (1989). The framing heuristic influences judgments about younger and

- older adults' decisions to refuse medical treatment. *Applied Cognitive Psychology*, 3, 171-180.
- Schroeder, J., & Risen, J. L. (2016). Befriending the enemy: Outgroup friendship longitudinally predicts intergroup attitudes in a coexistence program for Israelis and Palestinians. *Group Processes & Intergroup Relations*, 19, 72-93.
- Schwartz, S., Link, B., Dohrenwend, B., Naveh, I., & Shrout, P. (1991). Separating class and ethnic prejudice: A study of north african and european jews in israel. *Social Psychology Quarterly*, 54, 289-298.
- Sedikides, C., Campbell, W. K., Reeder, G. D., & Elliot, A. J. (1999). The relationship closeness induction task. *Representative Research in Social Psychology*, 23, 1-4.
- Sharp, M., Voci, A., & Hewstone, M. (2011). Individual difference variables as moderators of the effect of extended cross-group friendship on prejudice: Testing the effects of public self-consciousness and social comparison. *Group Processes & Intergroup Relations*, 14, 207-221.
- Singer, T., Seymour, B., O'Doherty, J., Kaube, H., Dolan, R. J., & Frith, C. D. (2004). Empathy for pain involves the affective but not the sensory components of pain. *Science*, 303, 1157-1162.
- Slotter, E. B., & Gardner, W. L. (2009). Where do you end and I begin? Evidence for anticipatory, motivated self-other integration between relationship partners. *Journal of Personality and Social Psychology*, 96, 1137-1151.
- Stasiuk, K., & Bilewicz, M. (2013). Extending contact across generations: Comparison of direct and ancestral intergroup contact effects on current attitudes towards outgroup members. *Journal of Community & Applied Social Psychology*, 23, 481-491.

- Stolte, J. F. (1994). The context of satisficing in vignette research. *The Journal of Social Psychology, 134*, 727-733.
- Swart, H., Hewstone, S. H., Christ, O., & Voci, A. (2011). Affective mediators of intergroup contact: A three-wave longitudinal study in South Africa. *Journal of Personality and Social Psychology, 101*, 1221-1238.
- Swart, H., Turner, R., Hewstone, M., & Voci, A. (2011). Achieving forgiveness and trust in post conflict societies: The importance of self-disclosure and empathy. In L. R. Tropp & R. K. Mallet (Eds.), *Beyond prejudice reduction: Pathways to positive intergroup relations*. Washington, DC: APA Books.
- Tausch, N., Hewstone, M., Kenworthy, J. B., Psaltis, C., Schmid, K., Popan, J. R., & Hughes, J. (2010). Secondary transfer effects of intergroup contact: Alternative accounts and underlying processes. *Journal of Personality and Social Psychology, 99*, 282-302.
- Tawagi, A. L., & Mak, A. S. (2015). Cultural inclusiveness contributing to international students' intercultural attitudes: Mediating role of intergroup contact variables. *Journal of Community & Applied Social Psychology, 25*, 340-354.
- Thakral, C., Vasquez, P. L., Bottoms, B. L., Matthews, A. K., Hudson, K. M., & Whitley, S. K. (2016). Understanding difference through dialogue: A first-year experience for college students. *Journal of Diversity in Higher Education, 9*, 130-142.
- Tropp, L. A. (2007). Perceived discrimination and interracial contact: Predicting interracial closeness among black and white Americans. *Social Psychology Quarterly, 70*, 70-81.
- Tuliao, A. P., Hoffman, L., & McChargue, D. E. (2017). Measuring individual differences in responses to date-rape vignettes using latent variable models. *Aggressive Behavior, 43*, 60-73.

- 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*, 216-228.
- Turner, R. N., Hewstone, M., & Voci, A. (2007). Reducing explicit and implicit outgroup prejudice via direct and extended contact: The mediating role of self-disclosure and intergroup anxiety. *Journal of Personality and Social Psychology, 93*, 369-388.
- Turner, R. N., Hewstone, M., Voci, A., & Vonofakou, C. (2008). A test of the extended intergroup contact hypothesis: The mediating role of intergroup anxiety, perceived intergroup and outgroup norms, and inclusion of outgroup in the self. *Journal of Personality and Social Psychology, 95*, 843-860.
- Tversky, A., & Kahneman, D. (1981). The framing of decisions and they psychology of choice. *Science, 211*, 453-458.
- 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*, 139-162.
- Vezzali, L., & Giovannini, D. (2012). Secondary transfer effect of intergroup contact: The role of intergroup attitudes, intergroup anxiety and perspective taking. *Journal of Community & Applied Social Psychology, 22*, 125-144.
- Vezzali, L., Giovannini, D., & Capozza, D. (2010). Longitudinal effects of contact on intergroup relations: The role of majority and minority group membership and intergroup emotions. *Journal of Community & Applied Social Psychology, 20*, 462-479.

- Voci, L., & Giovannini, D. (2012). Secondary transfer effect of intergroup contact: The role of intergroup attitudes, intergroup anxiety, and perspective taking. *Journal of Community & Applied Social Psychology*, 22, 125-144.
- Voci, L., & Hewstone, M. (2003). Intergroup contact and prejudice toward immigrants in Italy: the meditational role of anxiety and the moderational role of group salience. *Group Processes & Intergroup Relations*, 6, 37-54.
- Vollhardt, J. R., & Staub, E. (2011). Inclusive altruism born of suffering: The relationship between adversity and prosocial attitudes and behavior toward disadvantaged groups. *American Journal of Orthopsychiatry*, 3, 307-315.
- Walker, J., & Scior, K. (2013). Tackling stigma associated with intellectual disability among the general public: A study of two indirect contact interventions. *Research in Developmental Disabilities*, 34, 2200-2210.
- Wang, W. (Feb. 16, 2012). The rise of intermarriage: Rates, characteristics vary by race and gender. *Pew Research: Social & Demographic Trends*.
- Webster, D. M., Richter, L., & Kruglanski, A. W. (1996). On leaping to conclusions when feeling tired: Mental fatigue effects on impression primacy. *Journal of Experimental and Social Psychology*, 32, 181-195.
- Williams, M. J., & Eberhardt, J. L. (2008). Biological conceptions of race and the motivation to cross racial boundaries. *Journal of Personality and Social Psychology*, 94, 1033-1047.
- Wong, K. (2017). Intergroup contact and empathy: What do contact measures actually capture? how effective are they? Unpublished manuscript, University of Illinois at Chicago, Chicago, IL.

- Xu, X., Zuo, X., Wang, X., & Han, S. (2000). Do you feel my pain? Racial group membership modulates empathic neural responses. *The Journal of Neuroscience*, 29, 8525-8529.
- Yu, H., Jiang, S., & Land, K. C. (2015). Multicollinearity in hierarchal linear models. *Social Science Research*, 53, 118-136.
- Zajonc, R. B. (1968). Attitudinal effects of mere exposure. *Journal of Personality and Social Psychology*, 9, 1-27.

Appendix A

Intergroup Empathy: News Story Vignette



CRIME 11/18/2016 06:46 pm ET

Couple Spends 2 Months In Jail After Cops Mistake Baking Soda For Cocaine

Police chief's excuse: "We're not chemists."

By David Lohr

A Utah couple spent more than eight weeks in jail after authorities in Arkansas mistakenly identified bags of baking soda as cocaine and arrested them for allegedly transporting \$300,000 worth of drugs, Salt Lake City's KUTV News reports.

Gale Griffin and her husband, Wendell Harvey, haul cargo for the U.S. military. They were delivering a load in May, when guards at Fort Chaffee, an Army National Guard installation, conducted a routine search of their truck.

During the search, the guards found several baggies containing a white powdery substance, which Griffin explained was baking soda that she used to treat an upset stomach. Unconvinced, the guards notified local police.



Gale Griffin and Wendell Harvey

When officers tested the powder using a \$2 narcotics identification kit, it was identified as a controlled substance.

The officer said, “You have over \$300,000 in cocaine,” Griffin told KUTV News. “I told him, ‘I never had two nickels to rub together. Are you crazy?’ He said, ‘I’ve never had two nickels to rub together either, but now I’m the owner of your truck’”

Unable to afford bail, the couple stayed behind bars until mid-July, when a lab analysis found that the substance was, in fact, baking soda and contained no illicit substances.

“We’re not chemists, and we don’t roll with a chemistry set in the back of a police car” Fort Chaffee Police Chief Chuck Bowen explained with Little Rock’s KATV News asked about the mistake.

Field tests for drugs can often be incorrect. In a Nevada study, authorities re-examined a number of field tests conducted from 2010 to 2013 and found that 33 percent of them had resulted in false positives, KUTV News reports.

“There’s no telling how many mistakes they’ve made,” Harvey told KAV News. “It’s a mistake, but these mistakes happen quite often I think.” All charges against the couple were dismissed. However, Griffin and Harvey now find themselves out of work because their security clearances—required to haul cargo for the military—have been revoked. They also say they had to wait a month after their release to regain their truck and it was heavily damaged. A GoFundMe.com campaign has been started to help them get back on their feet.

Intergroup Empathy Items

1. They were wrongly imprisoned.
2. The police were justified in suspecting it was an illegal substance. (R)
3. Mistakes happen, and the police were following protocol. (R)
4. I feel bad for what happened to them.
5. They experienced an injustice.
6. The police were targeting this couple.

News Story Recall Items

1. What are the names of the individuals that were arrested?
2. The police accused them of carrying which of the following substances?
3. How much money were they supposedly transporting of the substance?
4. How much did the test kit cost that was used by the police?
5. How long did they spend in jail?
6. Where did this incident occur?
7. Lab analysis of the substance revealed the substance was which of the following?
8. Why was their truck searched?
9. The couple transports goods for which of the following organizations?
10. What was the race of the couple?

Appendix B.

Intergroup Empathy Items (Traditional)

1. I feel tenderness for them.
2. I have a feeling of injustice.
3. I feel anger at the discrimination.
4. I feel sympathy for them.
5. I try to understand their way of thinking.
6. I see things from their point of view.
7. I feel they are playing the victim. (R)

Appendix C

Prosocial Behaviors

1. I have attended an organized event for the Black Lives Matter movement.
2. I would attend an organized event to support the Black Lives Matter movement.
3. I would sign a petition to support the Black/African-American victims of police brutality.
4. I would march at a Black Lives Matter protest.
5. I would pass out fliers with information about the Black Lives Matter movement.
6. I would sign up for emails to receive information and news about the Black Lives Matter movement.
7. I would volunteer my time to help organizations that fight racial inequality in the United States.

Appendix D

Race Conceptions Scale

1. If a Black American family traveled around the world, people they met would probably think of them as Black, too.
2. The physical features of different racial groups haven't really changed much over the centuries.
3. The same racial categories have pretty much always existed.
4. It's impossible to determine how a person will be racially categorized by examining their DNA. (R)
5. No one can change his or her race—you are who you are.
6. If a White American family traveled around the world, people they met would probably think of them as White, too.
7. It's natural to notice the racial group to which people belong.
8. I believe physical features determine race.
9. Generally speaking, two Black people will always look more similar to each other than a Black person and a White person ever would.
10. How a person is defined racially depends on the social context. (R)
11. Siblings born to the same parents will always be of the same race as each other.
12. Young children probably learn about which people fall into which racial groups automatically, without much help from adults.
13. A person's race is fixed at birth.
14. The political climate can dictate whether someone is categorized as Black or White. (R)
15. In 200 years, society will use basically the same racial categories.
16. There's agreement across cultures about which racial groups people fall into.
17. The average person is highly accurate at identifying people by race.
18. . People who are of different races may look quite similar to each other. (R)
19. Racial categories haven't always existed in the world. (R)
20. It's easy to tell what race people are by looking at them.
21. Racial groups are primarily determined by biology.
22. It's possible to be a full member of more than one race. (R)

Appendix E

Interpersonal Reactivity Index-Empathic Concern Subscale

1. I often have tender, concerned feelings for people less fortunate than me.
2. Sometimes I don't feel very sorry for other people when they are having problems. (R)
3. When I see someone being taken advantage of, I feel kind of protective toward them.
4. Other people's misfortunes do not usually disturb me a great deal. (R)
5. When I see someone being treated unfairly, I sometimes don't feel very much pit for them. (R)
6. I am often quite touched by things that I see happen.
7. I would describe myself as a pretty soft-hearted person.

Interpersonal Reactivity Index-Perspective Taking Subscale

1. I sometimes find it difficult to see things from the "other guy's" point of view. (R)
2. I try to look at everybody's side of a disagreement before I make a decision.
3. I sometimes try to understand my friends better by imagining how things look from their perspective.
4. If I'm sure I'm right about something, I don't waste much time listening to other people's arguments. (R)
5. When I'm upset at someone, I usually try to "put myself in his/her shoes" for a while.
6. Before criticizing somebody, I try to imagine how I would feel if I were in their place.

Appendix F

Marlow Crown Social Desirability Scale – Shortened Version

1. I never hesitate to go out of my way to help someone in trouble.
2. I have never intensely disliked anyone.
3. I sometimes feel resentful when I don't get my way.
4. I like to gossip at times.
5. There have been times when I felt like rebelling against people in authority even though I knew they were right.
6. I can remember "playing sick" to get out of something.
7. There have been occasions when I took advantage of someone.
8. I'm always willing to admit it when I make a mistake.
9. I always try to practice what I preach.
10. I sometimes try to get even, rather than forgive and forget.
11. When I don't know something I don't at all mind admitting it.
12. I am always courteous, even to people who are disagreeable.
13. At times I have really insisted on having things my own way.
14. There have been occasions when I felt like smashing things.
15. I would never think of letting someone else be punished for my wrongdoings.
16. I never resent being asked to return a favor.
17. I have never been irked when people expressed ideas very different from my own.
18. There have been times when I was quite jealous of the good fortune of others.
19. I am sometimes irritated by people who ask favors of me.
20. I have never deliberately said something that hurt someone's feelings.

Kendal M. Wong, Ph.D
Curriculum Vitae

University of Illinois at Chicago, Department of Psychology
 1007. West Harrison Street. Chicago, IL. 60614 | kwong31@uic.edu

EDUCATION

University of Illinois at Chicago | August 2013-present

- M.A. Social and Personality Psychology | Fall 2015
Interracial and Same-Race Couples: Perceptions of Warmth and Competence
- Ph.D Social and Personality Psychology | Fall 2018
 MINOR | Statistics, Methods, & Measurement
Intergroup Contact and Empathy Towards Out-Groups: Testing The Importance of Meaningful Contact and Individual Differences in Trait Empathy

The College of Wooster | August 2009-May 2013

- B.A. Psychology and Mathematics | *magna cum laude*
 Independent Study Thesis: *Exercise Intention and Motivation: Intrapersonal Relationships, Feedback, and Personality*

TEACHING & RESEARCH EXPERIENCE

INSTRUCTOR

Statistical Methods in Behavioral Sciences	2018
Theories of Personality Psychology	2016

TEACHING ASSISTANT

Introductory Psychology	2013, 2014, 2015-Head TA, 2015-Online, 2017-Online
Social Psychology Lab	2017
Advanced Statistics	2017
Theories of Personality Psychology	2016
Statistical Methods in Behavioral Science	2013, 2014, 2015, 2016
Social Psychology	2014

RESEARCH

Mentor to Undergraduate Research	2014, 2015, 2017, 2018
Undergraduate Research Assistant	2012, 2013

OTHER

Research and Data Consultant: Ministry Leadership Center	2016
Research Design and Analysis Consultant: General Motors	2015, 2016

PUBLICATIONS & PRESENTATIONS

PUBLICATIONS

- Washburn, A., Hanson, B., Motyl, M., Skitka, L., Yantis, C., **Wong, K.**, ... Carsel, T. (2018). Why do some psychology researchers resist using best research practices? A description of perceived barriers. *Advances in Methods and Practices in Psychological Science*.
<https://doi.org/10.1177/2515245918757427>
- Motyl, M., Demos, A., Carsel, C., Hanson, B., Melton, Z., Mueller, A. B., Prims, J.P., Washburn, A. N., **Wong, K.**, Yantis, C., & Skitka, L. J. (2017). The state of social and personality science: Rotten to the core, not so bad, getting better, or getting worse? *Journal of Personality and Social Psychology*, 113(1), 34-58.
- Karazsia, B. T., & **Wong, K.** (2016). Does training in table creation enhance table interpretation? A quasi-experimental study with follow-up. *Teaching of Psychology*, 1-5
- Karazsia, B.T., van Dulman, M. H. M., **Wong K.**, & Crowther, J. H. (2013). Thinking meta-theoretically about the role of internalization in the development of body dissatisfaction and body change behaviors. *Body Image: An International Journal of Research*, 10, 433-441.

UNDER REVIEW

- Wong, K., & Cervone, D. (under review). Iconic memory for affective stimuli: A replication.

IN PREPARATION

- Wong, K. Intergroup contact and empathy towards out-groups: A review and meta-analysis.
- Wong, K. Perceptions of individuals with same- and other-race partners: A stereotype content model approach.
- Caldwell, T., & Wong, K. Learning Styles.

BOOK CHAPTERS

- Wong, K. (2017). *Chapter 24: Decision Trees*. In A. Demos (Ed.), *A Language, Not A Letter: Learning Statistics in R*. <http://ademos.people.uic.edu/Chapter24.html>

ORAL PRESENTATIONS

- Washburn, A. N., Hanson, B. E., Motyl, M., Skitka, L. J., Yantis, C., **Wong, K. M.**, Sun, J., Prims, J. P., Mueller, A. B., Melton, Z. J., Carsel, T. S. (2018, April). *Why do some psychology researchers resist using proposed best research practices? A description of perceived barriers*. Paper to be presented at the annual meeting of the Midwestern Psychological Association. Chicago, IL.
- Wong, K. (2018, March). *Intergroup Contact and Empathy Toward Out-Groups: A Review and Meta-Analysis*. Poster presented at the annual meeting of Society for Personality and Social Psychology. Atlanta, GA.

- Wong, K. (2017, March). *Intergroup Contact and Empathy Toward Out-Groups: A Review and Meta-Analysis*. Data Blitz Presentation presented at the Cross Program Conference at the University of Illinois at Chicago. Chicago, IL.
- Wong, K. (2017, March). *A Stereotype Content Model Approach to Perceptions of Black/White Interracial and Same-race Couples*. Poster presented at the International Convention for Psychological Science. Vienna, Austria.
- Wong, K. & Cervone, D. (2016, May). *Iconic memory and affective stimuli: A replication*. Poster presented at the annual meeting for the Association for Psychological Science. Chicago, IL.
- Wong, K. (2016, April). *Graduate School: IRL*. Invited presentation at The College of Wooster. Wooster, OH.
- Wong, K. (2015, March). *Does Training in table creation enhance table interpretation? An Experimental study with follow-up*. Poster presented at the International Convention for Psychological Science. Amsterdam, Netherlands.
- Wong, K. (2013, May). *Exercise Intention and Motivation: Intrapersonal Relationships, Feedback, and Personality*. Poster presented at the Independent Study research Symposium at the College of Wooster. Wooster, Ohio.

GUEST LECTURES

- Wong, K. (2017, November). *Independent Means t-test*. Guest Lecture for Statistical Methods in Behavioral Science at the University of Illinois at Chicago. Chicago, IL.
- Wong, K. (2017, February). *Immigration, Refugees, & Acculturation*. Guest Lecture for Cultural Psychology at the University of Illinois at Chicago. Chicago, IL.
- Wong, K. (2014, November). *Prosocial Behavior*. Guest Lecture for Social Psychology at the University of Illinois at Chicago. Chicago, IL.

STATISTICAL WORKSHOPS & TRAINING

- Programming in R | Course at University of Illinois Chicago 2017
- Intro to SAS | Workshop at Academic Computing and Communication Center
UIC 2016
- Social-Relations Modeling of Dyadic Data: Workshop at APS 2016
- Network Analysis | Course & Training with Gephi & R at the University of Illinois
Chicago 2015

ACADEMIC HONORS SCHOLARSHIPS & AWARDS

The College of Wooster

- Make A Difference Scholarship (2009-2013)
- Dean's List (2009-2013)
- Wooster Grant (2009-2013)
- Psi Chi International Honor Society in Psychology (2010-2013)
- David A. Leach Memorial Prize (2013)
- Magna Cum Laude (2013)

University Of Illinois at Chicago

- LAS PhD Travel Award (2014)
- Graduate College Student Presenter Award (2015)
- Graduate Student Council Travel Award (2015, 2017, 2018)
- Departmental Travel Award (2015, 2017)
- Society for Personality & Social Psychology Travel Award (2017)

SERVICE

- | | |
|---|-----------|
| • Graduate Student Council: Psychology Representative
<i>University of Illinois at Chicago-Graduate College</i> | 2016-2018 |
| • Diversity Advancement Committee-Student Advisory Board
<i>University of Illinois at Chicago, Psychology Department</i> | 2013-2018 |
| • Diversity Advancement Committee
<i>University of Illinois at Chicago-Psychology Department</i> | 2016-2018 |
| • Committee On Graduate Students-Student Representative
<i>University of Illinois at Chicago-Psychology Department</i> | 2016-2018 |
| • Research Submission Reviewer
<i>International Convention for Psychological Science</i> | 2015 |

ACADEMIC AFFILIATIONS

- Association for Psychological Science
- Midwestern Psychological Association
- Society for Personality and Social Psychology
- Society for Psychological Study of Social Issues
- Society for The Teaching of Psychology