SELF-OTHER OVERLAP AND ITS RELATIONSHIP TO PERSPECTIVE TAKING:

UNDERLYING MECHANISMS AND IMPLICATIONS

by

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While research has extensively documented the inter- and intra-personal consequences of

perspective taking, less is known about the mechanisms that underlie this process.

Recent research has explored self-other overlap as a mediator of perspective taking on

various pro-social outcomes, such as helping and decreased stereotyping. Results have

been mixed, perhaps due to the use of different methodologies and scales that actually

measure different facets of self-other overlap. This dissertation investigates the structure

of self-other overlap and examines how perspective taking may affect only certain facets

of self-other overlap, as well as the direction in which this overlap occurs. To test the

conceptual equivalence of different overlap measures, in Study 1, participants completed

several previously used measures of overlap for two targets: their best friend and an

acquaintance. Factor analyses revealed two distinct factors of self-other overlap –

perceived closeness and *attribute overlap* – although small variations emerged depending

on target. These two factors had unique associations with several relationship quality and individual difference measures. Study 2 extended these results by manipulating perspective taking with a stranger. Results replicated the same factor structure from Study 1, and found that perspective taking had different effects on the two factors. Study 3 examined whether or not perspective taking affected the direction of self-other overlap by changing one's attitudes and beliefs to become more like the other person. Results supported a model in which *perceived closeness* predicted belief change toward the target person, even after accounting for other related consequences of perspective taking such as empathy and positive attitudes. Together, these results suggest that self-other overlap is a multi-dimensional construct associated with different psychological responses. These results are discussed in connection with the relationship between self-other overlap and perspective taking and how this may lead to "self-expansion."

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TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

CHAPTER I

GENERAL INTRODUCTION

Sayings such as The Golden Rule, "walking in another man's moccasins…", and "how would *you* feel in that situation?" all belie an underlying psychological reality – taking the perspective of another person often leads to more positive and pro-social interactions with that person. For the past 50 years, research has provided an extensive list of the intrapersonal and interpersonal outcomes that are associated with perspective taking. Within the domain of intrapersonal outcomes, perspective taking has been associated with both cognitive and affective changes within the perceiver. For example, a consistent cognitive intrapersonal outcome of perspective taking is that the perceiver is more likely to use situational attributions to describe that person's behavior (Archer, Foushee, Davis, & Aderman, 1979; Betancourt, 1990; Galper, 1976; Regan & Toten, 1975; Vescio, Sechrist, & Paolucci, 2003; Wegner & Finstuen, 1977). Furthermore, perspective taking has been associated with more liking toward the target person (Aderman, Brehm, & Katz, 1974; Batson, Sager, Garst, Kang, Rubchinsky, & Dawson, 1997; Davis, Conklin, Smith, & Luce, 1996), more positive attitudes toward the target person and his or her out-group (Batson, Chang, Orr, & Rowland, 2002; Batson, Polycarpou, Harmon-Jones, Imhoff, Mitchener, Bednar, Klein, & Highberger, 1997;

Galinsky & Moskowitz, 2000) and a *decreased* use of stereotypical judgments (Galinsky & Moskowitz, 2000).

Among the affective changes related to perspective taking, perhaps the most documented outcome is that perspective taking leads to feelings of *empathic concern.* Batson and colleagues (e.g., Coke, Batson, & McDavis, 1978; Toi & Batson, 1982) have defined empathic concern as an "other-oriented" feeling toward another person's welfare that encompasses such emotions as feeling *sympathetic, moved, compassionate,* and *tender* (Batson et al., 1997). Most notably, Batson and colleagues have provided an extensive body of work demonstrating that perspective taking – via increased feelings of empathic concern – is also reliably associated with the interpersonal outcome of helping the target person (see Batson 1987; 1991 for a review).

While much research has documented the intrapersonal and interpersonal outcomes of perspective taking, comparable less research has examined the underlying the mechanisms that explain *how* perspective taking occurs and *why* it leads to these pro-social outcomes. In reality, trying to take the perspective of another person's point of view is a diabolically difficult task, in large part because one never has direct access to the contents of another person's mind. One cannot "peer" into a friend's head and understand all of his thoughts and feelings. A friend's mind – like the mind of every other person in this world – is simply not available for direct "download" (a modern metaphor for the ancient "other minds" problem). Invariably, other social-cognitive processes must be employed during perspective taking to compensate for this

discrepancy. In the past 10 years, one possible mediator of perspective taking that has been examined is the construct of "self-other overlap."

Goals of this Dissertation

The three studies described in this dissertation were designed to systematically examine the relationship between perspective taking and self-other overlap. There were three general goals of this dissertation: First, I sought to clarify the meaning of the term "self-other overlap" by examining whether or not measures used in past research were actually tapping the same construct (Study 1 and 2). Second, I sought to examine which aspects of self-other overlap were enhanced when a person attempts to take the perspective of a target person (Study 2). Finally, I sought to clarify in Study 3 whether or not perspective taking increased self-other overlap *in a particular direction*. In other words, if perspective taking does lead to greater self-other overlap, is this due to perceptions of the other becoming more like the self (i.e., through projection), or by perceptions of the self-concept becoming more "other-like" (i.e., self-expansion)?

Historical Background of Self-Other Overlap

Many of the ideas and much of the theory on self-other overlap in perspective-taking research have been adapted from the extensive work of Aron and his colleagues in the close relationship literature (Aron, & Aron, 1986; Aron, Aron, & Smollan, 1992; Aron, Aron, Tudor, & Nelson, 1991; Mashek, Aron, & Boncimino, 2003). They have discussed self-other overlap as "lessened self/other distinction" and the inclusion of resources, perspectives, and characteristics of others into the self (Aron et al., 1991). Aron and colleagues have suggested that the process of entering and maintaining an

intimate relationship with another person contributes to a lessened self-other distinction at the cognitive level and influences how information is processed about the development, maintenance, and dissolution of the relationship (Aron et al., 1991). Using a reaction-time task, they found that participants were significantly slower at making "me/not me" judgments for traits on which they differed with their spouse versus those traits that they said they shared with him or her. They also found that participants were significantly worse at recalling the names of objects that they had previously formed mental images of themselves or a close other (such as their mother) interacting with, relative to objects that had been paired with a non-close other; there was no difference in performance between objects paired with the self versus those paired with the close other (Aron et al., 1991; Study 2). These researchers interpreted both of these findings as evidence of greater self-other overlap.

However, the most common method for measuring self-other overlap is to use the Inclusion of Other into Self (IOS) scale (Aron et al., 1992). The IOS contains 7 pairs of circle that vary in the extent that they overlap with each other, from no overlap to nearly-complete overlap. One circle represents the "self," while the second circle represents the "other" person in the interaction or relationship. Pairs of circles that overlap to a greater extent indicate perceptions of increased self-other overlap by the participant. In order to clarify the aspects of self-other overlap and how they related to the IOS, Aron et al. (1992) conducted a factor analysis of the IOS and several other self-report measures of closeness. These results indicated that there were two types of closeness – a behavioral component of closeness that included the amount of time and diversity of activities spent

with the other person (*behaving close*) and an affective response of greater intimacy and closeness (*feeling close*).

In the perspective-taking literature, Cialdini and his colleagues (Cialdini, Brown, Lewis, Luce, & Neuberg, 1997; Goldstein & Cialdini, 2007) have described self-other overlap as a sense of *oneness* and "shared or interconnected identities with others" (Cialdini et al., 1997; p. 483). Connecting their definition with Aron's, Cialdini et al. (1997) measured self-other overlap using the IOS. They have also measured their definition of self-other overlap by asking participants to rate the extent that they would use the word "we" to describe their relationship with the other person and to rate their perceived similarity with that person (Goldberg & Cialdini, 2007). In contrast, Davis et al. (1996) have defined self-other overlap more narrowly as a cognitive phenomenon in which mental constructs representing the self and others become increasingly overlapping. In Davis et al.'s study, self-other overlap was measured as the percentage of adjectives from a 149-trait checklist that participants selected to describe both themselves and another person they observed on video.

Finally, Batson and colleagues (1997) have interpreted previous discussion of "self-other overlap" as psychological indistinguishability, suggesting that previous researchers were describing a process in which people actually *confused* themselves with others. According to this view of self-other overlap, people begin to see themselves and the other person as "one" and find it increasingly difficult to distinguish how they are different from the other person (Batson, 1997). Batson et al.'s (1997) interpretation of self-other overlap was created a contrast to other researchers, such as Cialdini et al

(1997), who have hypothesized that feelings of oneness mediate the relationship between empathy and helping. This is a stronger claim than the definition offered by Cialdini and his colleagues, who do not believe that self-other overlap leads to a person to believe that the self and the other person are actually the same (Neuberg, Cialdini, Brown, Luce, Sagarin, & Lewis, 1997).

<div align="center">Is Self-Other Overlap a Consequence of Perspective Taking?</div>

To date, there continues to be disagreement over whether or not perspective taking leads to greater self-other overlap, and in particular, whether or not self-other overlap mediates the effect of perspective taking on many of the pro-social outcomes cited previously. In support of this relationship, Davis et al. (1996) and Galinsky and Moskowitz (2000) have found that participants instructed to take the perspective of a target person shared a greater percentage of personality traits with that person, relative to participants in a control condition (although, in Davis et al., 1996, this was only true for positive traits). Furthermore, Galinsky and Moskowitz (2000) found that self-other overlap mediated the relationship between perspective taking and more positive evaluations of the target person and *less* stereotypical judgments of that person's group. Similarly, Cialdini and colleagues (Cialdini et al., 1997; Goldstein & Cialdini, 2007; Neuberg et al. 1997) have found that feelings of "oneness" are enhanced during perspective taking, and that this form of self-other overlap at least partially mediates the relationship between empathy and helping

In spite of this evidence, others have found evidence suggesting that self-other overlap is *not* a consequence of perspective taking. Notably, as part of his empathy-altruism model of helping, Batson (1987, 1991) has hypothesized that empathic concern (and perspective taking by proxy, since he uses perspective taking to evoke feelings of empathic concern) leads to self-other *distinctiveness* rather than self-other overlap. For Batson and his colleagues (1997), the fundamental difference between altruism and egoism is whether the underlying motivation is to help the other or oneself. Self-other distinctiveness as a component of empathy is critical because it suggests that the motivation behind empathy can be attributed to the genuine concern for the other person (i.e., altruism) and not an egoistical desire. However, if the "self" and "other" cannot be distinguished in empathy, then this difference between altruism and egoism disappears. In other words, "if the empathy-helping relationship is due to self-other overlap, then the empathy-altruism hypothesis is not correct; it is not even meaningful" (Batson et al., 1997; p. 497). Consistent with this belief, Batson et al. (1997) found that perspective taking did not lead to greater self-other overlap nor did their measures of self-other overlap mediate the effect of perspective taking and empathy on helping.

Research in neuroscience also suggests that perspective taking may lead to greater self-other distinction. Several studies have found that taking the perspective of another person leads to an increased activation of areas in the parietal cortex (Decety & Sommerville, 2003; Lamm, Batson, & Decety, 2007; Ruby & Decety, 2004). This area of the brain is associated with self-agency, or a sense that actions of the self are separate from one's surrounding environment. These researchers have interpreted increased

activation in this area of the brain as evidence that perceptions of the self actually become more separate and distinct from the other person during perspective taking, rather than leading to greater perceived overlap with the other person.

Thus, the extent that self-other overlap and perspective taking are related to each other continues to be an unresolved issue in the literature. Empirical evidence examining self-other overlap as a consequence and possible mediator of perspective taking has both supported this theoretical link (Cialdini et al., 1997; Goldstein & Cialdini, 2008; Maner, Luce, Neuberg, & Cialdini, 2002; Neuberg et al., 1997) as well as failed to find such a connection (Batson et al., 1997; Batson, Lishner, Cook, & Sawyer, 2005).

Self-Other Overlap: A Multi-Faceted Construct

Although researchers have used a variety of terms to describe the process of self-other overlap that they hypothesize occurs due to perspective taking (such as "overlapping representations", "oneness," and "psychological indistiguishability," just to name a few), the general assumption has been they have all been talking about the same concept. Equally important, these researchers have also assumed that the measures they have used to assess self-other overlap all tap the same construct. However, very little research has actually examined whether or not this is true. In fact, I assert that this has been an erroneous assumption and that these measures of self-other overlap assess different facets of self-other overlap. A main goal of this dissertation is to provide evidence that past research has found contradictory evidence regarding the association between perspective taking and self-other overlap because only certain facets of self-other overlap are affected by perspective taking.

There is already some evidence suggesting that self-other overlap is a multi-faceted construct. First, as mentioned previously, Aron et al. (1991) found evidence indicating that closeness (a theoretically similar construct to self-other overlap) consisted of two factors that they called *behaving close* and *perceived closeness*. Second, in the Batson et al. (1997) study, the researchers included three measures of self-other overlap: 1) perceived similarity with the target person, 2) the IOS, and 3) a measure that involved the mean absolute difference in ratings of the self and the target person on several personality attributes. However, the correlations among these three measures were quite low (ranging from -.03 to .20), which left the authors themselves wondering whether or not they were measuring self-other overlap and what would be the best way to assess this construct (Batson et al., 1997). Study 1 was designed to answer this question.

CHAPTER II

STUDY 1: THE STRUCTURE OF SELF-OTHER OVERLAP MEASURES

Introduction

The primary purpose of Study 1 was to examine whether or not several measures of self-other overlap used in the perspective-taking literature actually assessed the same underlying construct. Thus, I restricted inclusion of self-other overlap measures in this study to those that had been used in published perspective-taking studies in the past – with one exception described below. Many of these researchers studying perspective-taking have relied on Aron's concept of self-other overlap when creating their own novel measure of self-overlap. In order to examine the conceptual equivalence of these measures of self-other overlap with the concept of self-other overlap that has been discussed in the close relationship literatures, I also included a measure of closeness that Aron et al. (1992) used in their original validity study of the IOS – the Relationship Closeness Index (RCI; Berscheid, Snyder, & Omoto, 1989). Although not an exhaustive list of all measures of self-other overlap, Study 1 provided a substantive step in determining if several of the more well-known measures of self-other overlap (many of which have been used in multiple published studies) are actually related to each other, as has been implied in the perspective-taking literature.

Unlike previous studies, participants in Study 1 completed all of these measure of self-other overlap for a particular target person, in this case, someone for whom self-other overlap should be high (a best friend) and someone for whom self-other overlap should be lower (an acquaintance). Based on the review of the literature, I hypothesized that these measures of self-other overlap would *not* all assess the same construct.

Hypotheses and Rationale

Hypothesis 1: Past Measures of Self-other Overlap Tap Several Different Factors.

I predicted that the data would not support a single factor of self-other overlap. Rather, based on prior research, I predicted that at least two different factors of self-other overlap would emerge. Evidence has indicated that the IOS, "we"-ness measure, and perceived similarity are positively correlated with each other (Cialdini et al., 1997) and that the IOS is correlated with most of the subscales of the RCI (Aron et al., 1992), so I predicted that these items should load on one factor. Batson et al's (1997) measure of a difference score between ratings of attributes for self and attributes of another was intended to be theoretically similar to Davis et al.'s (1996) adjective overlap based on a personality checklist, so I predicted that these items would load on a different factor.

Hypothesis 2: These Factors of Self-Other Overlap Would Be Associated With Unique Interpersonal Outcomes and Individual-Difference Measures Related to Perspective Taking.

Assuming that several factors of self-other overlap were identified, I further predicted that these factors would be conceptually significant (i.e. not simply due to method variance). Thus, the second goal of Study 1 was to examine the convergent and

discriminant validity of these different factors by correlating them with several indicators of relationship quality and individual-difference measures related to perspective taking. Self-other overlap has been associated with several markers of a close and satisfying relationship (Aron et al., 1992; Aron & Fraley, 1999). I was curious to know whether or not all factors of self-other overlap were associated with better relationship quality. To examine this question, participants completed several questions assessing their impressions of the other person and the quality of their relationship with that person.

Of course, the main focus of this dissertation is examining the possible relationship between self-other overlap and perspective taking. As a first step in answering this question, I also was interested in correlating any self-other overlap factors that emerged with self-reported individual differences in perspective taking and empathy by giving participants the subscales of the Davis (1983) Interpersonal Reactivity Index (IRI) that measured these two constructs, as well giving them several other individual difference measures related to perspective taking and empathy, such as an altruism measure (Rushton, Chrisjohn, & Fekken, 1981), the Autism Quotient (Baron-Cohen, Wheelwright, Skinner, Martin, & Clubley, 2001; Carol & Yung, 2006), a measure of adult attachment style (Simpson, Rholes, & Phillips, 1996), and a measure of self-consciousness (Fenigstein, Scheier, & Buss, 1975). Rushton et al.'s (1981) scale of altruism measures the frequency that participants engage in a variety of pro-social activities and has been shown to be associated with other measures of empathy, prosocial values, and other forms of altruism. The Autism Quotient (Baron-Cohen et al., 2001) quantifies the extent that a person exhibits "autistic traits" and taps areas of social skills,

attention switching, attention to detail, communication, and imagination, and was designed to be sensitive to differences in these traits even among individuals not diagnosed with autism or related disorders. The adult attachment scale (Simpson et al., 1996) measures how participants relate to their romantic partner on two general dimensions: 1) the degree that they hold negative views of others, which motivates them to avoid closeness and intimacy, and 2) the degree to which they hold negative self-views in the context of their relationships, which leads them to be preoccupied with issues of abandonment. Finally, Fenigstein et al.'s (1975) self-consciousness scale measures the extent that participants habitually engage in self-awareness in two domains – private aspects of the self and publicly displayed self-aspects. Additionally, this scale measures the extent that participants feel anxious about being in public and being evaluated by others.

A final and more exploratory goal of Study 1 was to examine whether or not measures of self-other overlap are interpreted differently by participants for different targets – i.e., close others vs. strangers. Some researchers suggested that self-other overlap with a stranger is fundamentally the same as self-other overlap with a close other– albeit, to a much lesser degree, similar to the beginning of a nascent relationship (Davis et al., 1996, Galinsky, Ku, & Wang, 2005). In contrast, others have argued that people interpret the idea of "self-other overlap" differently in the context of a relative stranger than with their best friend or romantic partner, claiming that these measures of self-other overlap for a stranger simply assess feelings of felt care (Batson et al., 1997). If true, this issue becomes particularly problematic when researchers studying perspective

taking with non-close others include measures of self-other overlap taken from the close

relationship literature and assume that they are measuring the same construct in both

contexts. In Study 1, participants completed measures of overlap for a target with whom

self-other overlap should be high – their best friend. By having participants also

complete the self-other overlap measures for a casual acquaintance, I hoped to provide an

initial answer to the question about whether or not these measures are interpreted

differently for a person who is *not* close to self.

Method

Participants

Participants were 132 undergraduates (73% female) who participated in exchange

for course credit. Demographic information was provided by 130 of the participants. Of

these participants, 106 identified themselves as Caucasian, 10 as Asian, 3 as African

American, 1 as American Indian, 1 as Latino/Latina, and 9 as some other ethnic group.

The mean age was 19.80 years (SD_{age} = 2.30, age range from 18 to 33). Five participants

reported that English was not their primary language; they reported speaking English for

between 4 and 13 years.

Materials

Measures of Self-Other Overlap.

Participants completed a series of measures to assess self-other overlap between

the self and their best friend, and between the self and an acquaintance. All but one of

these measures of self-other overlap had been used in previous studies and included the

following:

Adjective checklist overlap. Adapted from Davis et al. (1996), participants completed a personality adjective checklist for themselves, and then several days later completed the same checklist for the target person (best friend and acquaintance). The condensed adjective checklist contained 114 personality traits (41 positive, 35 negative, and 38 neutral)[1]. Replicating Davis et al.'s methodology, self-other overlap was calculated as the percentage of traits selected for self that were later used to describe the target person, computed separately for adjectives of each of three valences (positive, negative, and neutral).

Absolute difference of attributes. Participants also rated themselves on 16 attributes that were taken from the Batson et al. (1997) study, and then later in the study they rated the target person on these same attributes. Participants rated the attributes on a 9-point scale from 1 ("not at all") to 9 ("extremely"). These 16 attributes were *friendly, intelligent, spontaneous, honest, open, cooperative, shy, polite, responsible, brave, pressured, appreciative, lonely, overburdened, carefree,* and *fearful.*[2] Overlap was originally calculated as the mean absolute difference in ratings of these attributes for the self minus the ratings for the target person. However, to maintain consistency with the

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[1] Past research (Myers & Hodges, 2006) has found that using this reduced adjective checklist findings replicates the results reported by Davis et al. (1996).

[2] Originally, Batson et al. (1997) selected these 16 attributes because they considered half of them relevant for the specific target person in their study. Consequently, they created two overlap scores for the relevant and irrelevant attributes. However, this approach did not make sense for the current study, because participants selected their own target people who could have a variety of different characteristics. Thus, one overall difference score was calculated across all 16 of the attributes used in the Batson et al. (1997) study.

other measures of self-other overlap, this measure was re-scored such that higher a larger value indicated *greater* self-other overlap with the target person.

Inclusion of others in self (IOS) scale. The IOS (Aron et al., 1992) contains 7 pairs of circles that vary in the extent that they overlap with each other. Participants were instructed to indicate which pair of circles best described their relationship with the target person (best friend or acquaintance). Higher scores, which corresponded to pairs of circles that increasingly overlapped, represented greater self-other overlap.

Dynamic IOS. This computerized version of the IOS created in our lab showed participants two circles (both 24 mm in diameter) displayed 3 cm apart on a computer screen, with the circles representing the self and the other person. Participants were then instructed to use two "joysticks" to independently move the circle representing the self and the circle representing the target person (i.e., best friend or acquaintance) until the location of the two circles best described their relationship with that person. Distance was measured in pixels (higher numbers indicate greater distance and thus less overlap). The circle representing the participant was labeled "S" for self, while the other circle was labeled "O" for other, representing either the participant's best friend or acquaintance. I counterbalanced which circle ("S" or "O") appeared on the left side of the screen and which appeared on the right. Again, this measure was re-scored such that a higher value indicated greater self-other overlap.

The dynamic IOS differed from the original IOS is three key ways: 1) the dynamic IOS measured the amount of overlap between self and other on a continuous scale rather than providing just seven discreet options for participants to choose, 2) the

dynamic IOS allowed participants to move the circles closer or *farther* apart from where they originally appeared on the screen, allowing them to report *less* self-other overlap, and 3) the dynamic IOS allowed participants to move the circle representing the self and the circle representing the other separately.

"We"-ness. Following Cialdini et al. (1997), I asked participants to rate the extent that they would use the term "we" to characterize themselves and the target person. Participants responded to this question on a 7-point scale from 1 ("not at all") to 7 ("extremely").

Perceived similarity. Following Batson et al. (1997) and Goldstein and Cialdini (2007), I asked participants to rate the degree of their perceived similarity with the target person on a 9-point scale from 1 ("not at all") to 9 ("extremely").

Relationship closeness index (RCI). The RCI (Berscheid et al., 1989) is a self-report questionnaire that measures three aspects of closeness: amount of time spent together (*frequency*), variety of interactions engaged in with the target (*diversity*), and degree of perceived influence of the target on one's decision, activities, and plans (*strength*). The *frequency* subscale asked participants to estimate the number of hours they spent with the target (best friend or acquaintance) over the past week. The *diversity* subscale is a checklist of 38 possible activities done alone with the target during the past week. Sample activities involve doing laundry, going to a clothing store, and preparing a meal. The *strength* subscale included 34 Likert-scale items about the target's influence on one's life. Sample items include "this person will influence my future financial security" and "this person influences important things in my life."

Individual Difference Measures

As part of Study 1, participants also completed several individual difference measures. They included the following:

Interpersonal reactivity index (IRI). General tendencies to experience empathic concern and to engage in perspective taking were measured using the IRI (Davis, 1983). Both subscales contain 7 statements and participants are asked to rate how well the statements describe them on a 5-point scale from 1 ("does not describe me very well") to 5 ("describes me very well"). Sample items for each subscale include: "I often have tender, concerned feelings for people less fortunate than I am" (empathic concern) and "I try to look at everybody's side of a disagreement before I make a decision" (perspective taking).

Self-report altruism scale (SRA). The SRA (Rushton, et al., 1981) asks participants to rate the frequency that they engage in 20 pro-social activities from 1 ("never") to 4 ("very often"). A sample item is "I have offered to help a handicapped or elderly stranger across the street." The average response to these items was calculated for each participant.

Autism quotient scale (AQ). The AQ (Baron-Cohen et al., 2001) is a 50-item questionnaire that measures how much a person exhibits "autistic-like traits." Participants rated the extent that they agree with these statements on a 4-point scale: "definitely disagree", "slightly disagree", "slightly agree", and "definitely agree". All items were scored such that agreement indicated greater autistic tendencies. A sample item is "I frequently find that I don't know how to keep a conversation going." Scores

were calculated as the number of statements a participant rated as "slightly agree" or "definitely agree".

Adult attachment questionnaire (AAQ). The AAQ (Simpson et al., 1996) measures attachment along the two dimensions of avoidance (i.e., negative view of the relationship) and ambivalence (negative self-views regarding the relationship). Participants rated 17 statements on a 7-point scale from 1 ("strongly disagree") to 7 ("strongly agree"), with higher ratings indicating a less secure – and more problematic for the relationship – attachment style. A sample item from the avoidance subscale is "I don't like people getting too close to me" and an item from the ambivalence subscale is "Others often are reluctant to get as close as I would like." The average response to these items was calculated for each participant.

Self-consciousness scale (SCS). The SCS (Fenigstein et al., 1975) contains subscales for public self-consciousness, private self-consciousness, and social anxiety. Participants rated their agreement on 27 statements on a 9-point scale from 0 ("not at all") to 8 ("very much") with higher ratings indicating greater endorsement for each of these three dimensions. For each subscale, the sum of response ratings was calculated for each participant. Sample items from each subscale include: "I am concerned about my style of doing things" (public self-consciousness), "I reflect about myself a lot" (private self-consciousness), and "It takes me time to overcome my shyness in new situations" (social anxiety).

Procedure

Several days before the main part of the study, participants completed Davis et al.'s (1996) adjective checklist for themselves either as part of a general survey packet administered to subject pool participants at the beginning of the term or as a separate "Part 1" of the current study that occurred at least 7 days before participants returned to the lab[3]. Upon entering the lab to complete the main study, participants first completed the individual difference measures on the computer in front of them. Also at this time, participants rated themselves on the 16 attributes taken from the Batson et al. (1997) study.

After participants completed the individual difference measures and the 16 attributes for themselves on the computer, the experimenter handed them a packet to complete. In this packet participants completed the various measures of self-other overlap for both their best friend and an acquaintance. "Acquaintance" was defined in the packet as someone whom the participant would recognize but did not know very well, such as a friend of a friend. One section of the packet contained all of the various measures of self-other overlap for their best friend, while the other section contained the same items for the acquaintance. The order in which these two sections appeared was counter-balanced across participants.

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[3] 26 participants completed the adjective checklist as a "part 1" of the current study. Analyses found no significant differences on this measure of self-other overlap between these participants and the majority who completed the adjective checklist for the self in the general survey.

Within both sections of the packet, participants first completed the RCI and then they completed the following additional items about the quality of their relationship with the target that they rated on a 9-point Likert scale (1 "not at all" to 9 "extremely"): 1) the extent that they cared about the target, 2) how much they liked the target, and 3) how much time they wanted to spend with the target. Participants then completed the remaining self-other overlap measures (i.e., the adjective checklist for the target, the 16 Batson attributes for the target, the IOS, the "we"-ness item, and perceived similarity). The order that these five measures appeared within this section of the packet was randomized across participants.

After completing the section of the packet for one target (best friend or acquaintance), participants completed the dynamic IOS for that same target on the computer. After an opportunity to practice using the joysticks to adjust the circles representing the self and target, participants were instructed to move the two circles to represent their relationship with the target. Whether the circle representing the self appeared on the right or left side of the computer screen was randomized for all participants. After completing the dynamic IOS the first time, participants then returned to the second section of their packet and completed the self-other overlap measures for the other target. Participants then finished by responding to the dynamic IOS about their relationship with this target.

After completing the packet and dynamic IOS, some participants then completed one additional measure of self-other overlap used previously by Aron et al. (1991; Study 2), but not considered central to the research goals of this study. Replicating the

methodology from Aron et al. (1991) study, participants saw 60 concrete nouns (e.g., "toaster") on the computer screen that were randomly paired with one of three people – themselves, their best friend, or their acquaintance. While this pair appeared on the screen for 10 seconds, participants were instructed that they should create as "vivid and interesting a mental image as possible" of the person interacting with the concrete noun. Participants then wrote down their image on the space provided for each pair during the 20 seconds that the screen was blank before the next concrete noun-person pair appeared. After the last noun-person pair, the experimenter returned to the cubicle and took the participant's answer sheet and then administered a surprise memory task by instructing participants writing down as many of the concrete nouns that saw on the screen in 5 minutes.

However, given the time constraint of the current study and the length of Aron et al.'s (1992) methodology (35 minutes in total), not all of the participants were able view all 60 concrete nouns before the study ended. In order to collect their data from this task, the experimenter ended the program for these participants 5 minutes before the study was scheduled to end and administered the surprise memory task at that time.

Results

Predictive Validity of Self-Other Overlap Measures

If all of our measures actually indicate self-other overlap with another person, scores on all of them should significantly differ between acquaintance and best friend. To test this, I ran a series of paired-samples t-tests for each measure. Scores on all of the self-other overlap measures were significantly different between best friend and

acquaintance and in the hypothesized direction, except for the memory recall task.[4]

Table 1 provides the means and descriptive statistics for all the self-other overlap

measures by target.

Table 1. Means and standard deviations of self-other overlap measures by target.

	Best Friend		Acquaintance	
Measures	MN	SD	MN	SD
IOS	5.01	1.60	1.54	.81
Dynamic IOS (pixels)*	891.7	702.2	2207.5	1676.3
"We"-ness	5.48	1.37	1.89	1.07
Perceived Similarity	6.49	1.61	4.09	1.90
RCI:Strength	105.2	24.0	48.2	17.0
RCI:Diversity	8.48	7.15	1.82	2:61
RCI:Frequency	297.3	341.1	55.2	112.9
Adjective Overlap, Neg Traits	30.5	30.4	22.3	27.1
Adjective Overlap, Neu Traits	38.2	24.4	24.9	21.2
Adjective Overlap, Pos Traits	63.4	21.2	47.6	24.3
Abs Diff of Attributes*	1.72	.62	1.88	.63
Percent Nouns Recalled for Target	43.0	20.0	44.6	19.8

* Original values before re-scoring. Low number indicate GREATER self-other overlap

A repeated-measures ANOVA was conducted with the percentage of nouns

accurately recalled for each target (self, best friend, and acquaintance) as the within-

subjects factor. Analyses indicated a significant effect of target on recall, Pillai's V =

.09, $F(2,115)$ = 5.54, $p < .05$. Follow-up contrast indicated that participants recalled a

significantly larger percentage of word paired with their acquaintance (MN = 44.6%)

compared to those words paired with their best friend (MN = 42.9%) or the self (MN =

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[4] Analyses exploring possible gender effects found no significant differences in how men and women rated their overlap with their best friend and acquaintance, nor in their factor scores based on the factor analysis of these measures. Consequently, gender will not be discussed further.

36.3%), $F(1, 116) = 8.42$, $p < .01$. However, in contrast to the Aron et al. (1991; Study 2)
results, the difference between recall for best friend and the self in this study was also
significant, $F(1, 116) = 6.66$, $p < .05$. The current study also failed to find that the
difference between recall for the non-close person and close other was positively
correlated with any of the other measures of self-other overlap. In sum, there was no
evidence in this study that this memory recall task was a reliable measure of self-other
overlap. Consequently, I decided to exclude this measure from the final set of factor
analyses described below.

To examine the relationship among the various measures of self-other overlap, a
principal components factor analysis using an oblique rotation (direct oblimin) was
conducted on the 11 measures of self-other overlap.[5] The first set of analyses examined
the factor structure of the measures for the best friend. The second factor analysis
examined whether or not the factor structure of self-other overlap measures for the
acquaintance was similar to the structure for the best friend.

Factor Analysis of Best Friend

The correlation matrix of the 11 items of self-other overlap completed for the
participant's best friend is provided in Table 2.[6] Examination of the scree plot from an
exploratory factor analysis of self-other overlap measures for the best friend indicated

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[5] A computer error resulted in the data from the Dynamic IOS being lost for 9 participants. Given that most
participants with any missing data were missing it for one measure of self-other overlap, pair-wise deletion
was used for the factor analysis. Estimation of missing data using maximum likelihood was used in the
structural equation modeling.

[6] Analysis of descriptive statistics indicated that RCI:Frequency and dynamic IOS were positively skewed.
As recommended by Berscheid et al. (1989), a log+1 transformation was computed on the RCI:Frequency
scores, while a natural log transformation corrected for skew of the dynamic IOS data.

that a three-factor model was the most parsimonious (the eigenvalues of the 11 principal

components were 3.04, 1.74, 1.36, 1.05, .99, .71, .61, .56, .45, .31, and .19). The first

three factors accounted for 27.6%, 15.8%, and 12.3% of the variance, respectively.

Consequently, I examined the fit of this three-factor solution to the data using structural

equation modeling with maximum likelihood estimation. Since maximum likelihood

estimation can lead to convergence problems when the indicators have very different

variances, standardized scores of the self-other overlap measures were used in this

analysis. Fit indices indicated a relatively good fit of the model: χ^2 (42, $n = 142) = 64.8$,

$p = .01$, CFI = .94, RMSEA = .062 (90% CI .029-.09), SRMR = .063. Also, the model

modification indices did not indicate that additional paths should be added from any

indicator to another latent factor, although the residual variance for adjective overlap of

negative traits had to be set at zero. The structure of this three-factor model is found in

Figure 1.
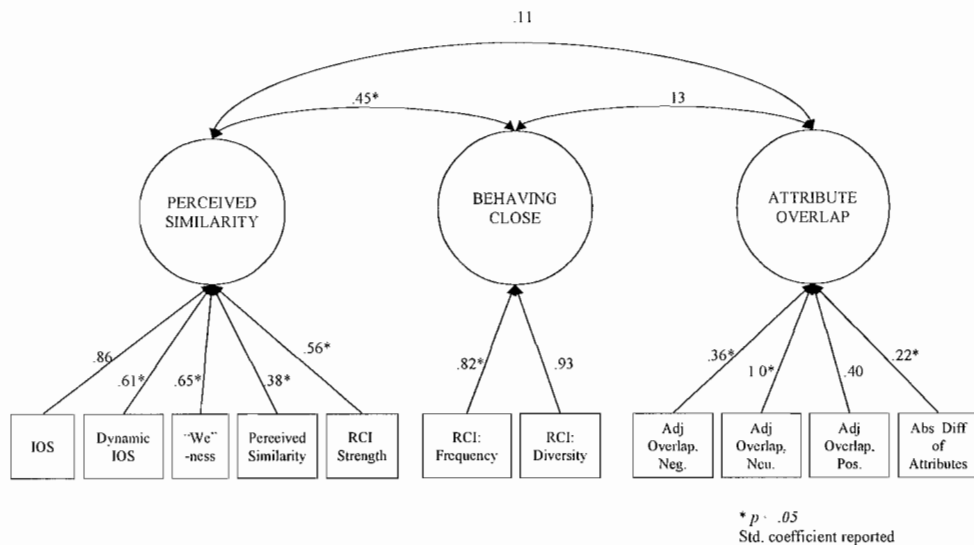
Figure 1. Three-factor structure of self-other overlap measures for best friend.

Table 2. Correlation matrix of self-other overlap measures for best friend.

Measures	1	2	3	4	5	6	7	8	9	10
1. IOS										
2. Dynamic IOS	.56**									
3. "We"-ness	.56	.34**								
4. Perceived Similarity	.36**	.26**	.19*							
5. RCI:Strength	.45**	.33**	.19**	.19*						
6. RCI:Diversity	.33**	.19*	.44**	.075	.38**					
7. RCI:Frequency	.32**	.076	.26**	.14	.23**	.75**				
8. Adjective Overlap, Neg Traits	-.79	-.095	-.087	.002	-.018	.050	-.016			
9. Adjective Overlap, Neu Traits	.11	.067	.020	.11	.041	.13	036	.36**		
10. Adjective Overlap, Pos Traits	.11	.069	.016	.059	-.10	.062	.16	.019	.40**	
11. Abs Diff of Attributes	-.17*	-.076	-.061	.21*	-.12	-.022	-.037	.11	.23**	.17

$* p < .05$
$** p < .01$

Consistent with Hypothesis 1, the IOS, "we"-ness, perceived similarity, the RCI subscale of strength, and the dynamic IOS exclusively loaded on this first factor, while the RCI:Diversity and RCI:Frequency subscales loaded on the third factor. However, as Figure 1 indicates, factors 1and 3 were positively correlated with each other. The first and third factors closely replicate the two-factors of closeness found in the Aron et al. (1992) study. Specifically, Aron et al. (1992) also found that the RCI:Diversity and RCI:Frequency subscales loaded on a separate factor that they labeled *behaving close,* and that this factor was correlated with the other factor of closeness. Consequently, I also decided to call the third rotated factor *behaving close*. Aron et al. (1992) had called the other factor of closeness *feeling close*, but the loading of "we"-ness and perceived similarity onto this first factor suggested more than just an affective response of closeness; it suggested a perceptual component of overlap as well. Hence, the label *perceived closeness* seemed more descriptive of what the items on this factor were tapping.

The second rotated factor also supported my hypothesis that Davis et al.'s (1996) and Batson et al.'s (1997) measures of self-other overlap would constitute a separate factor. Because Davis et al.'s (1996) three adjective overlap measures (i.e., overlap on neutral, positive, and negative traits) and Batson et al.'s (1997) absolute difference in attributes all assessed self-other overlap at the level of attributes and personality, I labeled this factor *attribute overlap*. Results also indicated that the *attribute overlap* factor was unrelated to the other two factors of *perceived closeness* and *behaving close*. As Figure 1

indicates, neither the path between this factor and *perceived closeness* nor the path with *behaving close* was statistically significant.

Finally, I tested the alternative hypothesis that all of these measures loaded on the same factor (i.e., a uni-dimensional model of self-other overlap). Using structural equation modeling with maximum likelihood estimation, fit indices indicated that a single-factor structure of these 11 measures of self-other overlap fit the data very poorly, χ^2 (44, $n = 142$) = 202.6, $p < .001$, CFI = .56, RMSEA = .16 (90% CI .14-.18), SRMR = .11. Not surprisingly, results of the chi-square difference test indicated that the three-factor solution of *perceive closeness, behaving close*, and *attribute overlap* fit the data significantly better than the uni-dimensional model, $\chi^2_D(2) = 137.8$, $p < .01$

Convergent and Discriminant Validity of Self-Other Overlap Factors

In order to examine possible psychological and interpersonal differences between the *perceived closeness, behaving close,* and *attribute overlap* factors (i.e., Hypothesis 2), I correlated the three factor scores from the confirmatory factor analysis with participants' impressions of their relationship with their best friend and the five individual difference measures mentioned previously. As Table 3 indicates, the three self-other overlap factors showed a clear difference in their pattern of correlates with these variables. The *perceived closeness* factor significantly and positively correlated with most of the relationship quality measures – liking, caring, and how much time participants wanted to spend with their best friend. One notable exception was that *perceived closeness* was not significantly correlated with amount of time that the participant had known his or her best friend. Instead, *behaving close* was the only factor correlated with length of time, and

surprisingly, this relationship was negative. *Perceived closeness* also was not

significantly correlated with any of the individual difference measures or their

corresponding sub-scales.

Table 3. Correlation of self-other overlap factors with relationship quality items and individual-difference measures.

Measures	Perceived Closeness	Behaving Close	Attribute Overlap
Relationship Quality Measures			
Liking	.27**	.15	.045
Caring	.32**	.15	.19*
Want to Spend Time with Best Friend	.50**	.29**	.20*
Time Have Known Best Friend	.083	-.26**	-.13
Interpersonal Reactivity Index			
Empathic Concern	.004	-.047	.092
Perspective Taking	.003	-.025	.004
Self-Reported Altruism	.017	.003	.12
Autism Quotient	.003	-.11	-.21*
Adult Attachment Questionnaire			
Avoidance	-.11	-.14	-.12
Ambivalence	-.06	-.15	-.082
Self Consciousness Scale			
Public self-consciousness	.051	-.14	.014
Private self-consciousness	.032	-.072	.001
Social anxiety	.007	-.13	-.24**

* $p < .05$
** $p < .01$

Attribute overlap was only correlated with the relationship-quality measures of

caring and wanting to spend time with the best friend in the future. However, these

correlations were smaller in size than the relationship between *perceived closeness* and

the relationship quality items. On the other hand, *attribute overlap* was significantly correlated with some of the individual-difference measures. Specifically, this factor was negatively correlated with scores on the social anxiety subscale of the Self-Consciousness Scale and with autistic tendencies (as measured by the Autism Quotient).

Factor Analysis of Acquaintance

Turning now to self-other overlap with non-close other, I examined whether or not the factor structure for the acquaintance was similar to that found for the best friend. The correlation matrix of the 11 items of self-other overlap completed for participants' acquaintances are provided in Table 4.[7] I first attempted to fit the 3-factor solution that was found for the best friend on the data for the acquaintance. Using maximum likelihood estimation[8], results indicated that this model did not fit the acquaintance data as well as the best friend data, χ^2 (41, $n = 142$) = 73.2, $p < .01$, CFI = .88, RMSEA = .074 (90% CI .046-.10), SRMR = .07. Adjective overlap of negative traits no long significantly loaded on the *attribute overlap* factor for acquaintance, and instead, the modification indices suggested that perceived similarity should load with the other items on the *perceived closeness* factor. However, chi-square difference test indicated that this three-factor solution still fit the data significantly better than the uni-dimensional model, $\chi^2_D(3) = 18.9, p < .01$.

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[7] Initial inspection of the data revealed that many of the self-other overlap measures for the acquaintance were skewed. The following transformations were used because they improved the normality of these items the most: 1) a natural log transformation was calculated on the scores of the "we"-ness, RCI:Strength, dynamic IOS, and the absolute difference in attributes, 2) the negative inverse was calculated for the IOS, and 3) a log + 1 transformation was calculated for the adjective overlap of negative traits, RCI:Diversity, and RCI:Frequency variables.

[8] Standardized scores of the self-other overlap measures for the acquaintance were used in this analysis.

Table 4. Correlation matrix of self-other overlap measures for acquaintance.

Measures	1	2	3	4	5	6	7	8	9	10
1. IOS										
2. Dynamic IOS	.41**									
3. "We"-ness	.59**	.28**								
4. Perceived Similarity	.42**	.31**	.44**							
5. RCI:Strength	.44**	.16	.43**	.23**						
6. RCI:Diversity	.31**	.30**	.25**	.20*	.30**					
7. RCI:Frequency	.29*	.24	.29*	.22	.25*	.50**				
8. Adjective Overlap, Neg Traits	.017	-.035	-.075	-.10	.032	.12	.12			
9. Adjective Overlap, Neu Traits	.17	.16	.19*	.22*	.11	.071	.27*	.43**		
10. Adjective Overlap, Pos Traits	.24**	.28**	.29**	.39**	.19*	.16	.29*	-.065	.26**	
11. Abs Diff of Attributes	.28**	.20*	.27**	.34**	.10	.14	.18	-.095	.19*	.28**

* $p < .05$
** $p < .01$

Exploratory factor analysis using principle components extraction and an oblique rotation on these variables extracted three factors with eigenvalues greater than 1 (eigenvalues of the 11 principal components were 3.50, 1.45, 1.18, .97, .80, .74, .59, .54, .47, .41, and .35). This first unrotated factor explained 31.8% of the variance, while the other two factors explained 13.2% and 10.7% of the variance, respectively. As seen in Table 5, this first rotated factor appeared to combine the *perceived closeness* and *behaving close* factors extracted for the best friend. All three subscales from the RCI

Table 5. Factor loadings on structure matrix of self-other overlap measures for acquaintance.

Measures	Factor 1	Factor 2	Factor 3
1. IOS	.70	-.039	-.53
2. Dynamic IOS	.15	.003	-.68
3. "We"-ness	.64	-.089	-.57
4. Perceived Similarity	.36	-.038	-.75
5. RCI:Strength	.70	-.034	-.20
6. RCI:Diversity	.74	.17	-.11
7. RCI:Frequency	.63	.36	-.27
8. Adjective Overlap, Neg Traits	.095	.84	.18
9. Adjective Overlap, Neu Traits	.14	.78	-.41
10. Adjective Overlap, Pos Traits	.25	.13	-.69
11. Abs Diff of Attributes	.15	.003	-.68

(diversity, strength, and frequency), IOS, and "we"-ness all loaded highest on this first factor. There was also some evidence that these measures of self-other overlap tapped different facets of this construct, even in the context of an acquaintance. In particular, adjective overlap of negative and neutral traits continued to load on a second factor that

was not correlated with the other factors (inter-factor correlations less than .09), similar to the factor structure for the best friend. Surprisingly, the other items that had loaded on the *attribute overlap* factor for the best friend (adjective overlap of positive traits and absolute difference of attributes), loaded on the third factor with perceived similarity for the acquaintance. Several items that loaded on this factor also loaded on the first factor. As a result, these two factors were moderately correlated with each other (inter-factor correlation of .34). Unfortunately, the data for the acquaintance was highly skewed and much less variable, compared to the data for the best friend. As described in more detail below, these issues of non-normality of the data and restriction of range may have contributed to the different factor structure found for the acquaintance. As such, these results should be interpreted with some caution until they can be replicated.

Discussion

The main goal of Study 1 was to examine whether or not previous measures of self-other overlap used in the past published literature were all measuring the same construct. Based on the previous research, I hypothesized that these past measures actually tap different facets of self-other overlap, and that at least two different groupings would occur – one involving the IOS, "we"-ness, RCI:Strength and perceived similarity, and another grouping including the measures of attribute overlap developed by Davis et al. (1996) and Batson et al. (1997). Upon examination of participants' responses for their best friend, a factor analysis of these items provided strong evidence that these items indeed tapped different aspects of self-other overlap. Rather than extracting a uni-dimensional factor, these items separated into three factors that I have labeled *perceived*

closeness, behaving close and *attribute overlap.* The factor structure of *perceived closeness* and *behaving close* in this study were similar to previous findings of a two-factor structure of closeness using the same variables in the Aron et al. (1992) study, and is where I took these labels. A third factor (that was not correlated with these other two factors) also was identified and included those items that assessed self-other overlap at the level of personality traits and attributes. I called this factor *attribute overlap.*

Construct Validity of Factors

One alternative hypothesis is that these factors only represent different methods for measuring self-other overlap (i.e., adjective traits versus other), and are not substantially different from each other conceptually. However, several findings support the idea that these two factors are conceptually different and not simply due to method variance. First, if method variance was the sole reason for these different factors (i.e., these measures of self-other overlap were actually tapping the same uni-dimensional construct), then these factors should have been inter-correlated with each other. Although the model tested in this study assumed that these latent factors would be correlated, I actually found that *attribute overlap* was not correlated with either *perceived closeness* or *behaving close* for one's best friend.

Second, although the *attribute overlap* factor consisted of measures of self-other overlap that assessed personality traits, the method for assessing this overlap also differed greatly among the measures. The Davis et al. (1996) approach for measuring self-other overlap involved administering an adjective checklist for both self and target several days or weeks apart from each other and then calculating the percentage of traits selected that

were shared for both. In contrast, the Batson et al. (1997) measure of self-other overlap included a pre-selected list of personality traits for which participants used a Likert-scale format to rate the extent that each trait described themselves or the target.

Instead, one possible conceptual difference between these factors of self-other overlap is the extent that participants perceived any overlap with the target person. For both the *perceived closeness* and *behaving close* factors, all of the items specifically asked participants about their perceptions of self-other overlap with the target. Not surprisingly, both this study and the Aron et al. (1992) study found these two factors to be correlated with each other. In contrast, participants likely had no idea that the items on the *attribute overlap* factor were measuring self-other overlap. Neither Davis et al.'s (1996) adjective overlap measure nor Batson et al.'s (1997) difference score of attributes asked for participants' perception about the relationship with the target. Rather, overlap was assessed by having participants complete two separate questionnaires – one for the self; one for the target. Furthermore, for both the Davis et al.'s (1996) adjective overlap measure and Batson et al.'s (1997) difference score of attributes, these questionnaires were completed several days apart – and for some participants, as part of an unrelated study – reducing the likelihood that participants would be biased by their earlier responses.

Psychological Implications of Different Facets of Self-Other Overlap

Most importantly, if the different factors found were solely due to method variance, it is unclear how this could explain the different pattern of correlations between the factors and the individual difference measures and relationship quality items also

collected in this study. All three factors were positively associated with several markers of relationship quality, demonstrating the general importance of self-other overlap in promoting rewarding and long-lasting relationships (Aron & Aron, 1985; Aron et al., 1992; Aron & Freely, 1999). However, specific aspects of relationship quality differed in their association with the three different factors of self-other overlap. Of the three aspects of self-other overlap, *perceived closeness* appeared to be the most reliable predictor of relationship quality. Although this facet of self-other overlap was *not* associated with the actual length of time that the participant had known his or her best friend, this null result is actually consistent with Aron and colleague's (1997) theory that feelings of closeness are influenced by the quality rather than the quantity of interactions with the other person.

In fact, the only factor of self-other overlap that was significantly correlated with length of time was *behaving close* – and unexpectedly, this was a negative relationship! One possible explanation for the negative correlation between *behaving close* and length of the relationship is that time spent together doing activities together is particularly important at the beginning of relationship. Much like a "honeymoon" phase, these shared activities help lay the foundation of increased closeness and self-other overlap by creating a shared history with the other person as well as providing a wealth of information about the other person's past history, thoughts and feelings, and attitudes. In support of this idea, Aron et al. (1997) have demonstrated that they can "manipulate" closeness and accelerate the process of becoming close by having participants engage in conversations that require them to incrementally reveal more personal information to the other person.

However, once a certain level of intimacy and self-other overlap is achieved through frequent engagement of diverse shared activities with the other person, other aspects of self-other overlap (such as *perceived closeness* and/or *attribute overlap*) may become increasingly important in the relationship. Consequently, the negative correlation between *behaving close* and length of the relationship may be due to the fact that this facet of self-other overlap becomes less important over time and is replaced by other facets of self-other overlap that predict long-term satisfaction with the relationship. A future research direction would be to examine whether or not *perceived closeness, behaving close*, and *attribute overlap* develop at different rates in the relationship, and if so, whether or not time moderates their influence on the status of the relationship.

Among the individual-difference measures that were administered, I was particularly interested in the possible relationship between three factors of self-other overlap and individual differences in empathic concern and perspective taking. None of these factors were significantly associated with general tendencies in experiencing empathic concern or attempts at taking the perspective of others. On the other hand, scores on the *attribute overlap* factor were associated with experiencing less social anxiety and less endorsement of autistic tendencies. This pattern of correlations suggests that those who grow close to their friends and view others as similar to the self also tend to be highly social-functioning individuals.

Structure of Self-Other Overlap with Non-Close Others

Some have cautioned against adapting measures of self-other overlap from the close relationship literature for use with non-close others, as participants may interpret the measures differently for different targets (Batson et al., 1997). Another goal of Study 1 was to pursue this question by comparing the factor structure of self-other overlap measures completed for one's best friend with those completed for an acquaintance. A multi-dimensional factor structure of self-other overlap was replicated for both target people, leading us to conclude that participants appeared to make a distinction between overlap of personality traits and attributes (especially negative and neutral traits) versus overlap related to perceptions or feelings of closeness in the same way when responding about their best friend or an acquaintance.

On the other hand, the findings also indicated that the factor structures of self-other overlap for the two targets were not identical, suggesting that the structure of overlap is influenced by the relationship context. This extends the previous validity study of the IOS by Aron et al. (1992), which only examined the structure of closeness for close others. Study 1 suggests that this distinction between *feeling close* and *behaving close* may not exist in the context of non-close relationships, such as an acquaintance. One possibility is that these different facets of self-other overlap do not differentiate and split off until later in a relationship. The target also appeared to change the *attribute overlap* factor somewhat. There was compelling evidence in both the best friend and acquaintance factor analyses that Davis et al.'s (1996) adjective overlap and Batson et al.'s (1997) absolute difference of attributes were conceptually different from those

measures loading on the *perceived overlap* factor. However, these measures all hung together to constitute a second factor in the best friend analysis, but appeared to split in two for the acquaintance, apparently based in part on the valence of the attributes.

Caution should be used in interpreting the results for the acquaintance, as the data were very skewed for most of the self-other overlap items. In a related issue, there was much less variability in responses to these items for the acquaintance, relative to the responses for one's best friend. Thus, issues with restriction of range may account for the different pattern of correlations and factor structure among the self-other overlap items for the acquaintance. This unintended limitation was possibly due to the clear operational definition of "acquaintance" provided to the participants. In order to help participants think of someone that they knew somewhat well and spent time with, but who was still considered a "non-close" other, I provided explicit instructions about the type of target person that fit this definition ("a friend of a friend"). In contrast, participants were given complete freedom to choose anyone that they considered a "best friend" – such as their current roommate, best friend from high school, or even a girlfriend or boyfriend. Participants may have been more uniform in their selection of a target person that fit this study's definition of an "acquaintance," which may have limited variability and hindered attempts to examine the relationship among these different measures of self-other overlap for non-close others.

CHAPTER III

STUDY 2: THE STRUCTURE OF SELF-OTHER OVERLAP

AND PERSPECTIVE TAKING

Introduction

Study 1 demonstrated that several measures of self-other overlap (many of which

had been used in studies related to perspective-taking) loaded onto several different

factors. An initial attempt was also made to examine whether or not these different

factors of self-other overlap were related to perspective taking. Study 1 found that

perceived closeness, *behaving close*, and *attribute overlap* were not associated with self-

reported tendencies in perspective taking or empathic concern. The purpose of Study 2

was to provide a more direct test to examine the possible relationship between

perspective taking and these different facets of self-other overlap. Specifically, would the

manipulation of perspective taking affect these factors of self-other overlap to the same

degree or differently?

As mentioned previously, some researchers have hypothesized that taking the

perspective of another person can set in motion the same qualities of self-other overlap

that are found to a more elaborate degree between partners in a close relationship

(Cialdini et al., 1997; Davis et al., 1996; Galinsky, Ku, & Wang, 2005; Maner, et al.,

2002; Neuberg et al., 1997). Accordingly, several studies have found that participants

who took the perspective of another person demonstrated greater self-other overlap with that person, as compared to those who did not take that person's perspective (Davis et al., 1997; Galinsky & Moskowitz, 2000; Galinsky, et al., 2005; Galinsky, Wang, & Ku, 2008).

However, other studies have not found this relationship between perspective-taking and self-other overlap. Batson et al. (1997) found that perspective-taking instructions marginally affected scores on the IOS but *not* their measure of self-other overlap based on mean absolute difference of attributes or a measure about perceived similarity with the other person. Instead, Batson (1987, 1991) has hypothesized that empathy (which is often evoked by perspective-taking) actually leads to self-other *distinctiveness* rather than self-other overlap. Batson et al. (1997) did find a non-significant trend for participants in the perspective-taking condition to have a *larger* mean difference scores than participants in the control condition, which they interpreted as evidence that perspective taking actually leads to self-other differentiation.

Connecting this research with the results from Study 1, four of the five self-other overlap items that loaded on the *perceived closeness* factor – IOS, dynamic IOS, "we"-ness, and perceived similarity – have been shown to be affected by perspective taking (Batson et al., 1997; Cialdini et al., 1997; Goldberg & Cialdini, 2008; Myers & Hodges, 2006; 2009). On the other hand, evidence suggests that *attribute overlap* may be less influenced by perspective taking. As mentioned previously, Batson et al. (1997) did not find that a perspective-taking manipulation affected scores on their absolute difference score of attributes. Regarding the effect of perspective taking on their adjective checklist

overlap, Davis et al. (1996) found that perspective taking increased self-other overlap of positive traits, but not overlap for negative or neutral traits. Thus, of the four items that loaded on the *attribute overlap* factor for the best friend in Study 1, past research has shown only one of them to be affected by perspective taking.

The general prediction of Study 2 was that the contradictory findings regarding perspective taking and self-other overlap could be partially explained by the fact that researchers have been measuring different types of self-other overlap, and that perspective taking affects only some of them. In light of the findings provided in Study 1 and how they related to the past literature, I made the following hypotheses:

Hypotheses and Rationale

Hypothesis 1: Relative to the Control Condition, Perspective Taking Will Primarily Enhance Feelings of Closeness and Will Have Less Effect on Attribute Overlap.

In this study, a standard perspective-taking manipulation was used in which participants were given different instructions to watch a person on video. Participants then completed all of the same measures of self-other overlap from Study 1, except for the RCI. The reason for excluding the RCI was two-fold: 1) I wanted to focus exclusively on those measures of self-other overlap that had been used previously in the perspective-taking literature, which the RCI had not, and 2) The RCI specifically measures closeness with another person *in an on-going relationship*. The target person used in this study was a stranger whom none of the participants knew. Thus, it would have been impossible or at best strange for participants to answer most if not all of the questions on the RCI.

Hypothesis 2: The Factor Structure of Self-Other Overlap Found in Study 1 Will Be Replicated in Study 2.

Using a new sample and a different target person, I still expected to find that our measures of self-other overlap tap at least two distinct facets of overlap. One factor would consist of items such as the IOS, dynamic IOS, "we"-ness, and perceived similarity – the factor labeled *perceived closeness* in Study 1. Another factor would consist of the self-other overlap items that assess overlap more indirectly and at the personality trait level (i.e., *attribute overlap*).

Method

Participants

Participants were 118 undergraduates (80% female) from the University of Oregon who participated in exchange for course credit. Demographic makeup was similar to Study 1, with primarily Caucasian participants. Eight participants reported that English was not their primary language (time spent speaking English ranged from 2 to 14 years), but results did not differ significantly when they were removed from the analyses. Their data were included in the final analyses reported below.

Procedure

The first part of this study replicated the procedure from Study 1. Several days before the main part of the study, participants completed Davis et al.'s (1996) adjective checklist for themselves either as part of a general subject pool prescreening at the beginning of the term or as a separate "Part 1" of the study that occurred at least 7 days

before participants returned to the lab.[9] Upon entering the lab to do the main study, participants first completed several individual difference measures on the computer unrelated to this study. Participants also rated themselves on the 16 attributes from the Batson et al. (1997) study.

The experimenter then told participants that they would watch a short video of a person named Lisa talking about her social and academic experiences since starting college. This video was the same stimulus video used by Davis et al. (1996) as their perspective-taking target. This target person was a female actor posing as a freshmen university student. As part of a script she memorized, this target person described herself as an average student (making mostly C's) who had done better in high school but was having some trouble doing well scholastically because of several factors: being on the volleyball team, having an after-school job, as well as admitting to engaging in social activities at the expense of school-work. She also described herself as possessing a close group of friends in high school, but feeling slightly isolated in the larger college community. Similar to the methodology used by Davis et al. (1996), participants were randomly assigned to one of two perspective-taking conditions before watching this video. Those in the "perspective-taking" condition opened a sealed envelope from the experimenter to find instructions that asked them to imagine how Lisa was feeling about

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[9] 105 participants completed the adjective checklist in the general survey while 13 completed it during Part I of the study. There were no significant differences on measures of self-other overlap between the two methodologies.

what is happening to her by picturing to themselves how she felt in the situation.

Specifically, these participants read the following instructions:

> As you watch the interview, please imagine how Lisa feels. Try to take
> her perspective in the interview, imagining how she is feeling about what
> is happening. While you watch and listen to her, picture to yourself just
> how she feels. Concentrate on her in the experience. Think about her
> reactions. In your mind's eye visualize clearly and vividly how she feels
> in this situation. Try not to concern yourself with attending to all the
> information presented. Just imagine how Lisa feels in this situation.

In contrast, participants in the "control" condition received instructions to make careful

observations of Lisa's behavior during the video and to remain objective. These

participants read the following:

> As you watch the interview, closely look at and listen to what Lisa does
> and says. Make careful observations of all her behavior. Concentrate
> your observations on Lisa's mannerisms, posture, movements, facial
> expressions, speech characteristics, tone of voice, etc. Notice *exactly* what
> she does, whatever it is. Try to take a neutral perspective, being as
> objective as possible about the situation. Do *not* concern yourself with
> Lisa's feelings or views. Do *not* let yourself get caught up in imagining
> what she has been through and how she feels as a result. Just try to
> concentrate on the situation objectively.

The experimenter was blind to participants' condition and was instructed not to look at

the instructions when participants had opened their envelopes.

The experimenter left participants alone to watch the video and then complete a

questionnaire packet. This packet included three questions used to assess whether or not

participants followed their perspective-taking instructions, plus four questions that asked

participants to rate how much they cared about Lisa, how much they liked Lisa, the

degree they would want to spend time with Lisa, and how similar they were to her on a

Likert-scale from 1 ("not at all") to 9 ("extremely"). Finally, participants completed all

of the same self-other overlap measures used in Study 1, except for the RCI. Similar to

Study 1, the IOS, "we"-ness, perceived similarity, the reduced Davis et al. (1996)

adjective checklist, and the 16 Batson attributes were in a randomized order within the

packets, while all participants completed the animated IOS for Lisa at the end of the

experimental session.

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

<div align="center">*Replication of Factor Structure of Self-Other Overlap Measures*</div>

First, I examined whether or not the factor structure of self-other overlap

identified in Study 1 was replicated when using a standard perspective-taking

manipulation with a stranger as the target. Table 6 provides the correlation matrix for the

8 self-other overlap items included in this study, collapsing across perspective-taking

conditions. Specifically, I hypothesized that a two-factor solution of *perceived closeness*

and *attribute overlap* would fit the data the best (a *behaving close* factor was not

expected, as the items that loaded on this factor in Study 1 both came from the RCI).

Using structural equation modeling with maximum likelihood estimation, a two-

factor model with the IOS, dynamic IOS, "we"-ness, and perceived similarity loading on

one factor and the Davis et al. (1996) adjective overlap items and Batson et al. (1997)

difference score of attributes loading on the other was tested. The results indicated that

this model did not fit the data well. Instead, exploratory factor analysis using principal

Table 6. Correlation matrix of self-other overlap measures for study 2.

Measures	1	2	3	4	5	6	7
1. IOS							
2. Dynamic IOS	.45**						
3. "We"-ness	.61**	.46**					
4. Perceived Similarity	.48**	.41**	.61**				
5. Adjective Overlap, Neg Traits	.010	-.31**	.012	-0.13			
6. Adjective Overlap, Neu Traits	.20	-.037	.15	0.14	.33**		
7. Adjective Overlap, Pos Traits	.25*	.21*	.34**	.26**	-.14	.053	
8. Abs Diff of Attributes	.24*	.12	.32**	.28**	.00	.098	.38**

* $p < .05$

** $p < .01$

47

Components and an oblique rotation clearly suggested that a three-factor model fit the data better (eigenvalues for 8 factors were 2.92, 1.46, 1.05, .68, .60, .54, .43, and .32, respectively).[10] Cumulatively, these three factors accounted for 67.9% of the variance in the data.

As Table 7 indicates, the factor loadings from this study replicated the findings from Study 1. In spite of the absence of the RCI:Strength item, the remaining items from the *perceived closeness* factor in Study 1 (i.e., IOS, dynamic IOS, "we"-ness, and perceived similarity) continued to load together on the same factor in this study. Supporting a multi-dimensional construct of self-other overlap suggested by Study 1, the adjective overlap items and absolute difference of attributes again appeared to be separate from this first factor. The main difference was that *attribute overlap* factor in Study 1 split into two factors in this study. The results looked quite a bit like the acquaintance factor analysis in Study 1, with negative and neutral adjective loading on the second factor (*attribute overlap A*) while positive adjective overlap and absolute difference of attributions loaded on the third factor (*attribute overlap B*).[11] Also replicating the factor structure of self-other overlap found for the acquaintance in Study 1, *attribute overlap B* was correlated with the *perceived closeness* factor (interfactor correlation of .33), but

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[10] Due to a computer error, 16 participants lacked adjective checklist for Lisa, 8 participants were missing the Batson attribute ratings for Lisa, and 4 were missing scores on the dynamic IOS. Again, the majority of these participants with missing data were missing it for just one measure of self-other overlap, and exploratory t-tests found no significant differences between these participants and those with complete data. Therefore, I again employed a strategy of pair-wise deletion for the factor analysis and estimation of missing data using maximum likelihood in this study.

[11] Five of the 16 attributes used in the Batson et al. (1996) measure were also adjectives that participants could have selected on the adjective checklist. One concern is that the adjective overlap items and absolute difference score of attributes loaded on the same factor because of this shared variance. However, using re-calculated adjective overlap scores that removed these items yielded identical results as those described in Study 2.

attribute overlap A (i.e. negative and neutral adjective overlap) was still distinct from the

other factors (interfactor correlations both less than .056).

Table 7. Factor loadings on structure matrix of self-other overlap measures for study 2.

| Measures	Perceived Closeness	Attribute Overlap A	Attribute Overlap B
1. IOS	.81	.18	-.27
2. Dynamic IOS	.74	-.35	-.16
3. "We"-ness	.83	.14	-.43
4. Perceived Similarity	.78	.022	-.36
8. Adjective Overlap, Neg Traits	-.17	.83	.065
9. Adjective Overlap, Neu Traits	.19	.76	-.11
10. Adjective Overlap, Pos Traits	-.32	.096	.81
11. Abs Diff of Attributes	-.26	-.12	.84

Perspective-Taking Manipulation on Self-Other Overlap Factors

To examine the effect of perspective taking on self-other overlap, a 2 (perspective

taking condition) x 3 (self-other overlap) repeated-measures ANOVA was conducted

with the three factors scores as the within-subjects factor.[12] There was no main effect of

self-other overlap, Wilk's $\lambda = .99$, $F(2,86) = .015$, $p = .99$, $\eta^2 = .00$. Instead, the

hypothesized condition x self-other overlap interaction was significant, Wilk's $\lambda = .78$, F

$(2,86) = 3.15$, $p < .05$, $\eta^2 = .068$. As Figure 2 indicates, the effect of perspective taking

was in the expected direction for all three factor scores. Participants instructed to take the

perspective of the stranger in the video reported more *perceived closeness, attribute*

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[12] Including gender in an earlier repeated-measures ANOVA found that it did not predict self-other overlap. Subsequently, gender was removed in the final analysis.

overlap A (negative and neutral adjective overlap), and *attribute overlap B* (positive

adjective overlap and absolute difference of attributes) than participants in the control

condition. Examination of the individual facets of self-other overlap indicated that

perspective taking had an effect on *perceived closeness,* $t(87) = 5.04$, $p < .001$, and

attribute overlap B, $t(87) = 2.90$, $p < .01$, but not on *attribute overlap A,* $t(87) = 1.14$, $p =$

.25.
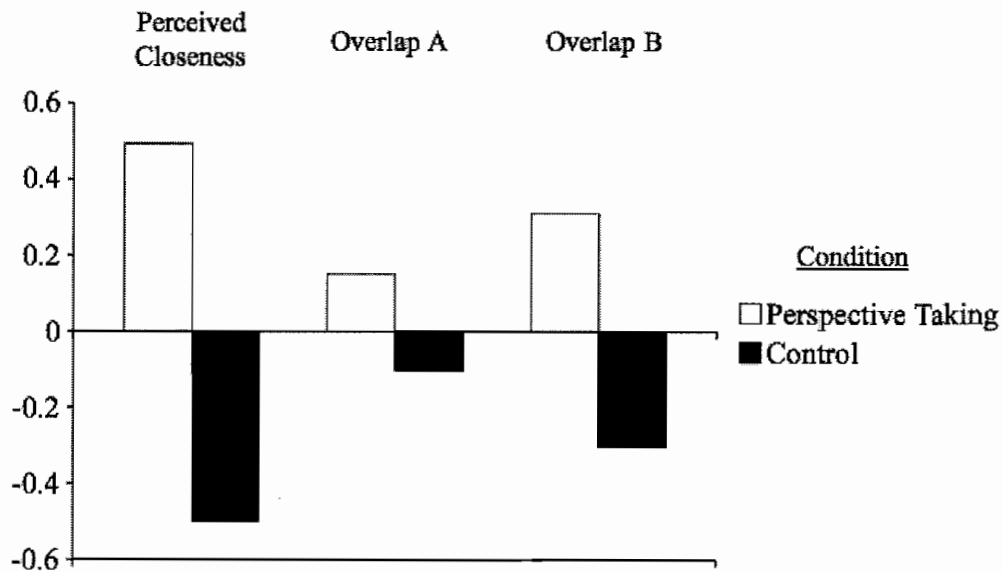
Figure 2. Perspective-taking condition x self-other overlap factor score interaction.

Discussion

The purpose of Study 2 was to examine whether or not perspective taking affected

some – but not all – facets of self-other overlap. In particular, I expected that perspective

taking would have the greatest effect on enhancing feelings of closeness, and much less

effect on *attribute overlap.* Perspective taking increased self-other overlap in the

hypothesized direction for all of the factors in Study 2, suggesting that there is a general relationship between perspective taking and self-other overlap. Generally speaking, trying to take the perspective of another person's point of view does seem to lead to enhanced perceptions of self-other overlap with that person. However, consistent with my hypothesis, the results suggest that perspective taking primarily enhances the conscious response of *perceived closeness* with that other person, with less of an effect on *attribute overlap*. In fact, only *attribute overlap B* (which consisted of adjective overlap of positive traits and the absolute difference score of attributes) was significantly affected by perspective taking.

The fact that the *attribute overlap* factor separated into two factors that differed on valence, and that only one of those factors was significantly associated with perspective taking, actually provides insight into some previous findings. Davis et al. (1996) found that perspective taking significantly increased overlap of positive traits, but not of negative and neutral traits. Study 2 provided further evidence that the *type* of trait is important when discussing "self-other overlap" and its relationship to perspective taking. These results indicate that an individual who overlaps with another person on negative and neutral traits will not necessarily overlap with that person on positive traits as well, or vice versa. As further evidence of this distinction, perspective taking consistently affects overlap of *positive* traits; it does not make us more likely to see our negative traits in the other person. In fact, the effect of perspective taking on changes in *attribute overlap B* appears to be due primarily to changes in perceived overlap of positive traits. While Batson et al.'s (1997) measure of self-other overlap also was

related to this factor (they used the absolute difference in attributes measure), examination of each measure separately in the current study indicated that perspective taking had a significant effect on adjective overlap of positive traits, but not on the absolute difference of attributes (although the means were in the hypothesized direction). In other words, Davis et al.'s (1996) earlier results make more sense now because they actually measured two different facets of self-other overlap (called *attribute overlap A* and *attribute overlap B* in Study 2) but only one of them (*attribute overlap B*) was influenced by perspective taking in the current study.

One question that remains, however, is how overlap of positive traits is related to perceived closeness. In this study, the *perceived closeness* factor was associated with higher scores on *attribute overlap B* (i.e., overlap of positive adjectives and absolute difference of attributes), as evidenced by their high inter-factor correlation. Furthermore, perspective taking significantly affected both of these factor scores. One intriguing possibility is that one of these facets of self-other overlap may influence the other. In other words, perspective taking may appear to contribute to an increased overlap of *positive* attributes with the other person but this effect is actually driven by accompanying feelings of perceived closeness, which then leads to greater overlap of positive attributes.

Additional Evidence of Self-Other Overlap as a Multi-Dimensional Construct

Another important goal of Study 2 was to examine whether or not the structure of self-other overlap from Study 1 could be replicated in a different paradigm, where the participants did not know the other person, and where closeness was manipulated via

perspective-taking instructions. The results for the factor structure of self-other overlap in Study 2 strongly support the *perceived closeness* factor found in Study 1. In spite of the removal of the RCI items from Study 2, the remaining items from this factor continued to load together, just as they did in the factor analyses for the best friend and acquaintance in Study 1. In terms of replicating the *attribute overlap* factor found in Study 1, results from Study 2 again supported the idea that Davis et al.'s (1996) and Batson et al.'s (1997) measures of self-other overlap are conceptually different from those that loaded on the *perceived closeness* factor, especially adjective overlap of negative and neutral traits.

In conclusion, Study 1 and 2 provided conclusive evidence that self-other overlap is a multi-faceted construct. Directly relevant to work done in the perspective-taking literature, Study 2 further demonstrated that a key psychological difference among the different facets of self-other overlap is the extent that they are affected by attempts at perspective taking. Specifically, perspective taking enhances both *perceived closeness* as well as overlap on positive traits. After having addressed the question of whether or not perspective taking affects certain *aspects* of self-other overlap more than others, I next turn to another question about perspective taking and self-other overlap that has not been fully answered – does perspective taking lead to changes in one's self-concept through its effects on self-other overlap? In other words, does perspective taking make one become more like the other person, and if so, is this mediated by enhanced self-other overlap?

CHAPTER IV

STUDY 3: PERSPECTIVE TAKING ON THE DIRECTION

OF SELF-OTHER OVERLAP

Introduction

The purpose of Studies 1 and 2 was to clarify the concept of "self-other overlap" by examining whether or not this construct consisted of distinct factors that were differentially affected by perspective taking. However, another important question about self-other overlap that still remains unanswered is the *direction* in which this overlap occurs. Using the metaphor of the self and other as two separate circles, overlap can occur in several different ways. One way is by moving the "other" circle closer to the "self" circle. Another way is to move the "self" circle closer to the "other" circle. Although the actual amount of overlap might be the same in both instances, there are different interpersonal and psychological implications associated with the direction in which self-other overlap can occur (e.g., Galinsky et al., 2005; 2008).

In the perspective-taking literature, much of the research has focused on idea that overlap is due to perceptions that the other person becomes more "self-like." Examining the overlap of traits shared between oneself and another person, several studies – including Study 2 of this dissertation – have consistently found that perspective taking leads to a greater percentage of self-descriptive traits to be used in describing the other

person and *not* an increased overlap in terms of the percentage of target-descriptive traits

shared with the self (Galinsky & Moskowitz, 2000; Davis et al., 1996; Myers & Hodges,

2006). In terms of the interpersonal consequences of seeing the other as more "self-like,"

this type of overlap has been associated with more positive evaluations of the target

person as well as decreased stereotyping of the target person and his or her group

(Galinsky & Moskowitz, 2000). Cialdini and colleagues (Cialdini et al., 1997; Neuberg

et al., 1997) have similarly defined self-other overlap in terms of seeing more of oneself

in the other, and have found evidence that seeing the other as more "self-like" accounts

for the relationship between empathic feelings and willingness to provide help. Viewing

the other person as increasingly more like the self appears akin to the concept of

"projection." There is extensive evidence documenting that projection is a common

strategy that people use in order to infer the thoughts and feelings of another person

(Ames, 2004; Davis et al., 1997; Davis, Soderlund, Cole, Gadol, Kute, Myers, &

Weihing, 2004; Epley, Keysar, Van Boven, & Gilovich, 2004; Houston, 1990; Nickerson,

1999; Van Boven & Lowenstein, 2003). In fact, some have theorized that using the self

as a template is the default strategy that people use to understand another's point of view

and only change this strategy when there is clear evidence that the other person is

dissimilar to oneself (Nickerson, 1999).

In spite of this strong claim that the self is the primary reference point when

trying to make mental inferences about others, there is also some evidence suggesting

that perceptions of the self can become more "other-like." In particular, Aron and

colleagues have described the type of self-other overlap that occurs in close relationship

as an "expansion" of the self in which characteristics of the other person become increasingly included into one's own self-concept (Aron & Aron, 1986; 1996; 1997; Aron et al., 1991; Aron & McLaughlin-Volpe, 2001; Tropp & Wright, 2001). For example, Mashek et al. (2003) found that participants who rated traits for themselves, a close other, and a less-close other and then were asked to remember for which target they rated the trait showed significantly more source confusion between themselves and the close other versus confusion between the less-close person and themselves. Mashek et al. (2003) interpreted this finding as evidence that as mental representations of the self and other overlap with each other in a close relationship, unique aspects of the other person become implicitly incorporated into the self-concept. Evidence also suggests that people can overlap with an in-group by incorporating attributes of the group into the self (Smith, Coats, & Walling, 1999). Thus, one psychological implication of perceiving the self as more "other-like" (in contrast to overlapping with another person by perceiving him or her as more "self-like") is that the self-concept changes in such a way that the self becomes more similar to the other person. However, none of the previously-mentioned studies examined the role of perspective taking in invoking self-other overlap in this direction.

In fact, only three articles were found that specifically examined whether or not the effect of perspective taking on self-other overlap contributed to aspects of the self becoming more "other-like." In one study, Goldstein and Cialdini (2007; Study 1) had participants take the perspective of another person, which led to greater overlap with that person. Consequently, participants who took the other person's perspective and then

observed that person freely engaging in some behavior (suggesting that the behavior was diagnostic of that person's attributes) were more likely to incorporate those attributes relevant to the actor's behavior into their own self-concepts. Furthermore, these changes in participants' self-concept then contributed to changes in their behavior. While perspective taking was manipulated in this study, the main focus of Goldstein and Cialdini's investigation was on how individuals used information acquired by observing the behaviors of close others to understand the self. Thus, the authors were not particularly interested in the theory that perspective taking, via increased self-other overlap, led to the inclusion of others into the self, nor was their article specifically designed to address this idea.

Two articles from Galinsky and colleagues (Galinsky et al., 2005; 2008) are probably the most direct examination of the effect of perspective taking on the direction of self-other overlap. In fact, these researchers claim that perspective taking can increase self-other overlap in *both* directions. Both directions of self-other overlap contribute to improved social bonds with others, but the pathway by which this outcome is achieved differs for the two. As mentioned previously, Galinsky and Moskowitz (2002) found that seeing the other as more "self-like" was associated with less stereotypical judgments about the target person and his or her group. On the other hand, Galinsky and colleagues suggest that seeing the self as more "other-like" ironically leads to the perceiver incorporating those same stereotypical attributes into his or her own self-descriptions and behavior (Galinsky et al, 2005; 2008). Consistent with this hypothesis, Galinsky and colleagues (2005, 2008) found that participants who took the perspective of a target

person were more likely to endorse traits for themselves that were identified as stereotypical of the target person (i.e., more attractive and sexy if it the target person was a cheerleader; more analytical, methodological, and smart if the target person was a professor). Perspective-taking participants also were more likely to act in a manner that was stereotypical of the target person's group (e.g., acting more competitive and aggressive in a prisoner's dilemma game after taking the perspective of an African American male; competitiveness and aggressiveness had identified as stereotypic of African Americans in an earlier pilot study).

Although clearly suggestive that perspective taking can lead to the type of "self-expansion" described by Aron and his colleagues, the work by Galinsky and colleagues is limited by fact that they only examine the inclusion of *stereotypical* traits of the target person into the self. Currently, very little is known about whether or not perspective taking can lead to the inclusion of *other* aspects of another person into the self, such as attitudes and beliefs. Galinsky and colleagues do not claim that the effect of perspective taking on becoming more "other-like" is only confined to the realm of attributes. In fact, there is some suggestive evidence from Finlay and Stephan (2006) that taking the perspective of an outgroup member can lead to changes in the perceiver's attitudes that are more similar to that outgroup. Rather, one possible reason why the inclusion of the target's attitudes and beliefs into the self was not examined by Galinsky and colleagues is because this kind of information about the target person was not available to the participants.

This highlights another limitation of the previous research in this area: Of the nine studies described in the Galinsky et al. (2008) article, only one study involved any sort of "social interaction" in the traditional sense. In this study, participants listened to an audio recording of a professor talk about his typical day. For all of the other studies, participants were simply shown a black and white photo of a target person and asked to imagine a typical day in the life of that person. With no additional information about the specific thoughts or feelings of that target person provided, participants in this situation likely had to rely heavily on stereotypes in trying to imagine the person's perspective, as this would be the only source of information available to the participants. Thus, there is good reason to wonder if these results were due primarily to situational demands created in these studies rather than an ecologically valid effect of perspective taking on self-other overlap.

Another limitation in the Galinsky et al. (2005; 2008) studies is that change in self-concept was never explicitly measured in these studies. Instead, the researchers only compared the mean ratings of stereotypical attributes for the self between participants in the perspective-taking condition versus a comparison group. Thus, it is not possible to quantify the amount of self-concept change that occurred due to perspective taking, nor is it possible to determine that this change was due to the participant's perception of the target person. Stereotypical attributes of the target person were selected during a pre-testing phase, but the participants themselves never provided their ratings of the target person on these traits. In sum, the few studies examining whether or not perspective taking can lead to overlap in which the self becomes more "other-like" have provided

only indirect evidence of this effect. They have not demonstrated that the perceptions of the other person directly account for these changes in the self-concept.

Study 3 was designed to address these limitations in several ways. First, this study examined not only the effect of perspective taking on including attributes of the other person into the self, but also on incorporating that person's beliefs into the self. In Study 3, participants rated themselves on attributes that had been pre-identified as being relevant to the target person, but they also rated their agreement to several belief statements relevant to the target person. In addition, the amount of self-concept change and the influence behind this change was directly assessed in this study. By having participants complete the same attributes and belief statements for themselves twice – once prior to perspective taking and once after – any change in their attributes or beliefs due to perspective taking could be quantified. By having participants complete these same attribute and belief statements for the target person, this study could also specifically examine whether or not change in participants' self-concept was actually in the direction *toward* their perceptions of the target person at time 2.

Thus, the main goal of this study was to examine whether perspective taking could lead to changes in participants' attitudes and beliefs such that they became more similar to target person. Furthermore, I predicted that the effect of perspective on self-concept change would be mediated by perceptions of greater self-other overlap with the target person. To examine this relationship among perspective taking, self-other overlap, and self-concept change, I tested the following hypotheses:

Hypotheses and Rationale

Hypothesis 1: Relative to the Control Condition, Perspective Taking Would Be Associated With Greater Perceived Closeness and Overlap of Positive Traits.

Replicating the previous two studies, I expected to find evidence that the measures of self-other overlap included in this study would tap two distinct aspects of self-other overlap – *perceived closeness* and *attribute overlap*. Furthermore, based on the results from Study 2, I expected that perspective-taking instructions would only affect perceived closeness and the overlap of positive traits with the target person.

Hypothesis 2: Relative to the Control Condition, Perspective Taking Would Be Associated With Responses for the Self at Time 2 That Were Predicted to a Greater Extent by Participants' Responses for the Target Person.

As evidence that perspective taking contributed to perceptions of the self becoming more "other-like," I expected that participants' self-responses at time 2 in the perspective-taking condition would change in the direction toward the target person and become more similar to their responses for that person. Furthermore, I predicted that this effect would extend to both attributes used to describe the self as well as self-beliefs.

Hypothesis 3: Perceptions of Self-Other Overlap Would Also Predict Self-Concept Change and Mediate the Effect of Perspective Taking.

I predicted that self-other overlap also would contribute to participants' responses for the self that were increasingly influenced by their responses for the target person. While I had no strong theoretical basis to believe that one aspect of self-other overlap in particular would predict self-concept change, Goldstein and Cialdini (2007; study 2)

found that perceived similarity predicted the incorporation of attributes relevant to the actor's behavior into the participant's self-concepts, and perceived similarity consistently loaded on the *perceived closeness* factor in the first two studies of this dissertation

Assuming that both perspective taking and self-other overlap predict self-concept change, I also hypothesized that the underlying mechanism connecting perspective taking with self-concept change would be enhanced self-other overlap. Furthermore, *Hypothesis 3b* predicts that only self-other overlap will mediate this relationship between perspective taking and self-concept change; mediations will not be accounted for by some other related consequence of perspective taking. For example, past research has demonstrated that self-other overlap and empathic concern are correlated concepts and that their effect on pro-social outcomes can vary depending on whether these two variables are examined in isolation or simultaneously (Cialdini et al., 1997; Maner et al., 2002). Past research has also documented a strong connection between perspective taking and improved attitudes toward the target person (Batson et al., 1997; 2002; Galinsky & Moskowitz, 2000), which could also be a mediator for self-concept change rather than self-other overlap. Thus, to examine the unique effect of self-other overlap on self-concept change, Study 3 included self-other overlap, empathic concern, and positive attitudes toward the target person as simultaneous predictors of self-concept change. I predicted that the effect of self-other overlap in evoking self-concept change would remain after accounting for empathic concern and positive attitudes toward the target person, and that empathy and positive attitude would not mediate the relationship between perspective taking and self-concept change.

Method

Participants

Participants were 118 undergraduates (75% female) from the University of Oregon who participated in exchange for course credit. Demographic makeup was similar to the previous studies, with primarily Caucasian participants. Four participants reported that English was not their primary language (years spent speaking English ranged from 3 to 13 years), but results did not differ significantly when they were removed from the analyses, so their data were included in the final analyses.

Procedure

As part of a general subject pool prescreening, participants completed Davis et al.'s (1996) adjective checklist for themselves at the beginning of the academic term.

Time 1: Online Survey

Apart from the prescreening, but at least 5 days before entering the lab to complete the rest of the study, participants also completed several online measures. Two of them were measures assessing individual differences in empathy and perspective taking (the Interpersonal Reactivity Index; Davis, 1983) and self-reported altruism (Rushton et al., 1989).

Participants also rated themselves on 16 attributes from 1 ("not at all") to 9 ("extremely"). Because the target person in this study (described in more detail below) was a researcher, eight of these attributes (*intelligent, knowledgeable, methodological, industrious, opinionated, deliberate, critical of others,* and *preoccupied*) were selected because pre-testing indicated that they were considered representative of researchers. In

contrast, the remaining eight attributes (*impulsive, attractive, relaxed, wholesome, carefree, conforming, resentful,* and *complaining*) were selected because pre-testing indicated that they were considered very unrepresentative of a researcher. Additionally, I ensured that these two groups of attributes included both positive- and negative-valence traits. I included attributes that were both representative and unrepresentative of researchers because past work examining whether self-other overlap makes the self as more "other-like" has suggested that traits relevant to the target person would be most likely to be included in the self (Aron & Aron, 1986; Galinsky et al., 2008).

The final set of measures in the online survey asked participants to rate the extent to which they agreed with 11 belief statements on a 11-point scale from 1 ("not at all") to 11 ("extremely"). Appendix A provides a full list of these statements. These statements were generated in conjunction with the target stimulus person (who is described in more detail below) to assess general themes and beliefs related to the target person's interview. A three-step process was used to create the final list of belief statements. First, the researcher and target person watched the interview several times through. Then, the researcher and target person both created several belief statements that they thought were implied in the interview. Finally, both people met to discuss their respective lists and selected those beliefs statements that they both agreed were implied in the interview but *not* explicitly stated by the target person.

Time 2: Main Study

Upon entering the lab to complete the main part of the study, participants were seated in front of an individual computer station. All of the study measures and

instructions were administered on the computer. First, participants completed several

demographic information questions. Then, the experimenter told them that they would

watch a short video of a person talking about his job as a researcher. Before watching the

video, participants were randomly assigned to one of two perspective-taking instructions

that they read on the screen. Participants in the "perspective-taking" condition read the

following instructions:

> For the next few minutes, you will watch an interview about Tom as he talks about his job as a researcher.
> As you watch the interview, please imagine how Tom feels. Try to take his perspective in the interview, imagining how he is feeling about what is happening. While you watch and listen to him, picture to yourself just how he feels. Concentrate on him in the experience. Think about his reactions. In your mind's eye visualize clearly and vividly how he feels in this situation. Try not to concern yourself with attending to all the information presented. Just imagine how Tom feels in this situation.

Participants in the "control" condition read the following instructions:

> For the next few minutes, you will watch an interview about Tom as he talks about his job as a researcher.
> As you watch the interview, closely look at and listen to what Tom does and says. Make careful observations of all his behavior. Concentrate your observations on Tom's mannerisms, posture, movements, facial expressions, speech characteristics, tone of voice, etc. Notice *exactly* what he does, whatever it is. Try to take a neutral perspective, being as objective as possible about the situation. Do *not* concern yourself with Tom's feelings or views. Do *not* let yourself get caught up in imagining what he has been through and how he feels as a result. Just try to concentrate on the situation objectively.

After thoroughly and completely reading their particular instructions, participants

then watched a 7-minute interview of a Caucasian, middle-aged man talking about his

experiences as a researcher. In reality, this person was a faculty member on sabbatical

from a different university who volunteered to be videotaped for this study while

providing honest answers about his experiences as a researcher. As it turned out, this person later accepted a job as a full time researcher soon after the interview (illustrating the authenticity of the target person's responses). The interviewer (who was located off-camera and never seen) asked the target person several questions related to his job, such as "please describe your average day as a researcher", "what do you enjoy most as a researcher?", "is there anything about your job as a researcher that you find difficult or frustrating?" and "Is there anything about being a researcher that you think others would find interesting or surprising?"

After watching the video, participants answered three questions designed to determine whether or not they followed their perspective-taking instructions: "To what extent did you try to imagine how you felt as if you were Tom?", "To what extent did you imagine how Tom was feeling?", and "To what extent did you carefully and objectively observe Tom's behavior?" Participants also rated their perceived similarity to the target ("in your opinion, to what degree are you and Tom similar?") and the degree that they would want to spend time with him. Participants answered these five questions on a 9-point scale from 1 ("not at all") to 9 ("extremely"). Next, participants rated the target person on 6 terms (*good, bad, like, dislike, negative,* and *positive*) designed to assess their attitude of him (Crites, Fabrigar, & Petty, 1994). Participants answered these items on a 9-point scale from 1 ("not at all") to 9 ("extremely"). Finally, participants indicated how much they had experienced 20 specific emotions from 1 ("not at all") to 9 ("extremely") while watching the video. This list included 6 items (*moved, tender, warm, soft-hearted, sympathetic,* and *compassionate*) found by previous research to load

on an "empathic concern" factor (Batson 1987, 1991). The other emotions were as follows: *annoyed, happy, sad, delighted, sorrowful, joyful, disgusted, acceptance, angry, relaxed, bored, excited, tense,* and *calm.*

After answering the manipulation checks, perceived similarity question, attitude questions, and emotion items, participants completed the following items in a random order: 1) the reduced version of the Davis et al.'s (1996) adjective checklist (the same one used in Studies 1 and 2) for themselves, 2) the adjective checklist for the target person, 3) the same 16 attribute questions from Part 1 for themselves again, 4) the 16 attribute questions for the target person, 5) the 11 belief statements from Part 1 for themselves again, 6) the 11 belief statements based on how they thought the target person would answer them, 7) Aron's IOS, and 8) the "we"-ness question (used in the previous two studies). Finally, the last measure that all participants completed was the dynamic IOS. Participants were then debriefed and thanked for their participation.

Results

The main prediction of Study 3 was that perspective taking would lead to changes that moved the self-concept in the direction of the target person, and that this effect would be mediated by greater self-other overlap. The analyses aimed at examining this prediction are organized into the following sections: 1) Effectiveness of perspective-taking manipulation, 2) Effect of perspective taking on self-other overlap, 3) Effect of perspective taking on changes in self-concept, 4) Effect of self-other overlap on changes in self-concept, and 5) Examination of other possible mediators of change in self-concept.

Effectiveness of Perspective-Taking Manipulation

I checked the effectiveness of the perspective-taking manipulation in three ways. First, I examined whether or not participants' responses to the three manipulation-check questions significantly differed by condition. Consistent with my hypotheses, participants instructed to take the perspective of the target person reported trying harder to imagine how the target person was feeling (M's = 7.34 and 4.02 for perspective-taking and control conditions, respectively; $F(1,116) = 118.0, p < .001, \eta^2 = .50$) as well as reporting how they would have felt in the situation ($M = 6.81$) to a significantly greater degree than those in the control condition ($M = 3.96$), $F(1,116) = 81.2, p < .001, \eta^2 = .41$. Finally, participants in the control condition ($M = 7.35$) reported higher means in trying to carefully and objectively observe the target person than the perspective-taking condition ($M = 6.98$), although this difference was not significant, $F(1,116) = 1.98, p = 16, \eta^2 = .017$.

Second, to assess the effectiveness of my manipulation, I examined whether or not perspective taking evoked feelings of empathic concern toward the target person. Consistent with past research, the six empathic concern adjectives (*moved, tender, warm, soft-hearted, sympathy,* and *compassion*) were significantly correlated with each other and all loaded on one factor. The mean scores of these items were calculated to create a composite "empathic concern" score (Cronbach's $\alpha = .85$). As expected, I found that participants in the perspective-taking condition reported greater feelings of empathy toward the target person ($M = 4.47$) than those in the control condition ($M = 3.57$), $F(1,116) = 10.2, p < .01, \eta^2 = .081$.

Finally, past research has also documented that perspective-taking predicts improved attitudes about the other person (Batson et al, 2002; 1997; Galinsky & Moskowitz, 2000). So, I examined whether or not my perspective-taking manipulation affected scores on the attitude items. The six attitude items were highly correlated with each other (r's from .29 to .68), so they were summed to create a composite "attitudes" score (the *negative, bad,* and *dislike* items were re-coded such that higher values on all of these items indicated a more positive attitude; Cronbach's $\alpha = .85$). As expected, participants in the perspective-taking condition had a more positive attitude toward the target person ($M = 44.8$) than participants in the control condition ($M = 40.7$), $F(1,116) = 12.0, p < .01, \eta^2 = .094$.

Effect of Perspective Taking on Self-Other Overlap

I next examined the effect of the perspective-taking manipulation on self-other overlap. Studies 1 and 2 indicated two distinct aspects of overlap – *perceived closeness* and *attribute overlap*. Consistent with those previous studies, a principal components factor analysis of the seven measures of self-other overlap in Study 3 (IOS, dynamic IOS, "we"-ness, perceived similarity, positive adjective overlap, negative adjective overlap, and neutral adjective overlap) using an oblique rotation again suggested that a 2-factor solution fit the data the best. Table 8 provides the correlation matrix of these self-other overlap items, collapsing across condition.

Table 8. Correlation matrix of self-other overlap measures for study 3.

Measures	1	2	3	4	5	6
1. IOS						
2. Dynamic IOS	.38**					
3. "We"-ness	.58**	.38**				
4. Perceived Similarity	.39**	.35**	.47**			
5. Adjective Overlap, Neg Traits	-.075	.13	-.006	0.077		
6. Adjective Overlap, Neu Traits	.14	.059	.15	0.14	.17	
7. Adjective Overlap, Pos Traits	.24*	.21*	.20*	.27**	.050	.26**

* $p < .05$
** $p < .01$

Only two factors had eigenvalues greater than the traditional cut-off point of 1 (the seven eigenvalues for a principal component analysis were 2.46, 1.21, .91, .80, .65, .58, and .40) and they accounted for 52% of the total variance. As before, the IOS, dynamic IOS, "we"-ness item, and perceived similarity all loaded on the first factor (i.e., *perceived closeness*), while negative, and neutral adjective overlap primarily loaded on the second factor (similar to the *attribute overlap A* factor from Study 2). Positive adjective overlap had the highest loading on the second factor but it also loaded moderately on the first factor in this study. However, structural equation model with maximum likelihood estimation suggested that the best fitting model had positive adjective overlap loading on just the *attribute overlap* factor and that adding a path to *perceived closeness* didn't significantly improve the fit of the model. This final model is provided in Figure 3 and had the following fit indices: χ^2 (13, $n = 118$) = 10.2, $p = .68$, CFI = 1.0, RMSEA = .00 (90% CI .00-.073), SRMR = .041.
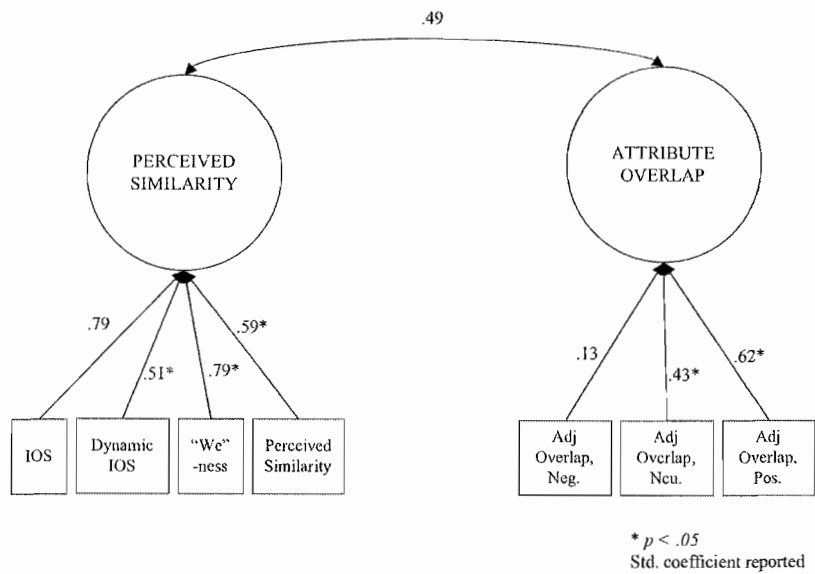
Figure 3. Two-factor solution of self-other overlap measures in study 3.

Using the *perceived closeness* factor scores from the confirmatory factor analysis as the dependent variable, the perspective-taking group ($M = .089$) and control group ($M = -.098$) did not differ significantly differ from each other ($F(1,116) = 2.56$, $p = .11$, $\eta^2 = .022$), although the difference was in the hypothesized direction. Because the categorical perspective-taking manipulation did not provide support for hypothesis 1 (i.e., that perspective taking would be associated with greater perceived closeness), I next examined whether or not my manipulation-check items predicted *perceived closeness*. As mentioned before, participants in the perspective-taking condition reported imagining how the target person felt and how he or she would have felt in the situation to a greater extent than participants in the control condition. These two manipulation-check items were also correlated with each other ($r = .84$, $p < .001$, $n = 118$). Taking the average of these scores, I created a composite variable that measured participant's self-reported attempts at trying to take the perspective of the target person (i.e., a "self-reported perspective taking" score). In support of hypothesis 1, this "self-reported perspective taking" score was positively correlated with *perceived closeness* ($r = .22$, $p < .05$, $n = 118$).

To examine the effect of perspective taking on *attribute overlap*, I conducted a one-way MANOVA with the self-percentage overlap of positive, negative, and neutral adjectives (i.e., what percentage of adjectives participants selected for themselves during the online part of the study were later used to describe the target person) as the three

within-subject variables[13]. This analysis showed a significant main effect of perspective-taking manipulation on adjective overlap, Wilk's $\lambda = .91$, $F(3,107) = 3.51$, $p < .05$, $\eta^2 = .09$. Specifically, participants in the perspective-taking condition overlapped more with the target person on positive adjectives ($M = 64.3\%$) than the control condition ($M = 55.7\%$), $F(1,109) = 4.23$, $p < .05$, $\eta^2 = .037$. Participants in the perspective-taking condition also overlapped significantly *less* with the target person on negative adjectives ($M = 22.5\%$) than the control condition ($M = 25.4\%$), $F(1,109) = 4.87$, $p < .05$, $\eta^2 = .043$. Similarly, participant's "self-reported perspective taking" score also was significantly correlated with overlap of positive adjectives ($r = .26$, $p < .05$, $n = 111$) but it was *not* significantly correlated with overlap of negative adjectives ($r = -.076$, $p = .43$, $n = 111$). These results replicate Study 2 and other past research suggesting that perspective taking primarily increases overlap of positive traits, and not negative or neutral traits (Davis et al., 1996; Galinsky & Moskowitz, 2000).

Effect of Perspective Taking on Changes in Self-Concept

Results from the previous section provided partial support for Hypothesis 1. Specifically, self-reported perspective taking scores were positive associated with enhanced feelings of closeness and both self-reported perspective taking and the perspective-taking manipulation led to greater adjective overlap on primarily positive traits. The analyses in this section examine whether or not perspective taking (both using the "self-reported perspective taking" score and the perspective-taking manipulation) also

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[13] Although these three items loaded together on the attribute overlap factor in this study, Study 2 as well as past research had indicated that they were not all affected by a perspective-taking manipulation to the same degree (Davis et al., 1996; Galinsky & Moskowitz, 2000). Thus, for this analysis, I decided to keep these items separate rather than use the factor score that combined them together.

contributes to the changes in the self-concept (Hypothesis 2). I start with a description of the constructs created to measure self-concept change and then describe the analyses that examined the effect of perspective taking on any changes in self-concept. Four sets of analyses are described in this section: 1) the effect of perspective-taking manipulation on belief-change, 2) the effect of self-reported perspective taking on belief-change, 3) the effect of perspective-taking manipulation on attribute-change, and 4) the effect of self-reported perspective taking on attribute-change.

Constructs

Based on participants' responses for themselves at time 1 and their responses for the target at time 2, I assessed the extent that participants' responses for themselves at time 2 were influenced either by their prior self-concept or by their perceptions of the target. For the 11 belief statements, a multiple regression was computed for each participant, predicting his or her responses at time 2 from self-responses at time 1 and from responses for the target person. The resulting standardized beta weights were then used as measures of "belief self consistency" (the self response at time 1 beta) and "belief change in the direction of the target" (the target person response beta). Thus, the more a participant's own responses at time 1 predicted his or her responses at time 2, the higher his or her measure of belief self consistency was. The more a participant's responses for the target person predicted his or her own responses at time 2, the higher his or her measure of belief-change (in the direction of the target person) was. Belief self consistency and belief change were marginally correlated with each other ($r = -.19$, $p = .06$, $n = 106$). This trend suggested that as participants' responses became more like the target person, they accordingly became less consistent across time.

A similar strategy was employed on the 16 attributes to create an overall "attribute-self-consistency" and "attribute-change in the direction of the target" beta scores. Similar to the beta scores for the belief statements, these two scores were negatively correlated with each other ($r = -.58, p < .001, n = 108$). Separate standardized beta weights assessing attribute self consistency and attribute change (in the direction of the target) were also calculated for the eight attributes identified during pre-testing as being representative and the eight attributes considered unrepresentative of researchers. These separate betas were also both negatively correlated with each other ($r = -.67, p < .001, n = 106$, for the representative attributes and $r = -.33 \ p < .01, n = 106$, for the unrepresentative adjectives).

To test the hypothesis that perspective taking would be associated with responses for the self at time 2 that were predicted to a greater extent by participants' responses for the target person (i.e., Hypothesis 2), I first examined the effect of the perspective-taking manipulation on changes in participants' responses to the belief statements for themselves as time 2. A 2(manipulation: perspective taking vs. control) x 2(influence: belief-self-consistency vs. belief-change) repeated-measures ANOVA was run using the belief-self-consistency and belief-change betas as the within-subjects factor. I predicted that participants in the perspective-taking condition would have higher "belief-change" betas and lower "belief-self-consistency" betas, relative to the control condition. This analysis did not find the hypothesized interaction effect of condition on changes in self-concept for beliefs (Wilk's $\lambda = .99, F(1,104) = .90, p = .35, \eta^2 = .009$).

In the next set of analyses, I then examined the association between participant's self-reported perspective taking (instead of the categorical manipulated perspective-taking variable) and the belief-change and belief-self-consistency betas. Examination of the correlation matrix indicated that self-reported perspective taking was not significantly

correlated with belief change ($r = .071$, $p = .47$, $n = 108$) or belief self consistency ($r = .14$, $p = .14$, $n = 106$).

Moving from beliefs to attributes, the third analysis testing Hypothesis 2 examined the possible effect of perspective-taking manipulation on change in descriptions of self-attributes. A 2(manipulation: perspective-taking or control) x 2(influence: attribute-self-consistency vs. attribute-change) x 2(attribute type: representative vs. unrepresentative) repeated-measures ANOVA was run. In this analysis, the standardized betas of the overall attribute-self-consistency and attribute-change betas were used as the first within-subject factor while the second "attribute type" within-subjects factor examined possible differences based on whether the attributes were representative or unrepresentative of researchers. Again, I predicted that the perspective-taking manipulation would lead to higher attribute-change betas and lower attribute-self-consistency betas, relative to the control condition. However, analyses indicated that there was no significant difference in overall attribute-change and attribute-self-consistency betas between the two perspective-taking conditions (Wilk's $\lambda = .99$, $F(1,103) = 1.04$, $p = .31$, $\eta^2 = .010$). Furthermore, no significant differences in attribute-consistency and attribute-self-consistency betas between the two conditions emerged if the attributes were separated into "representative" versus "unrepresentative" attributes (Wilk's $\lambda = 1.00$, $F(1,103) = .39$, $p = .53$, $\eta^2 = .004$).

The fourth and final analysis examined the association between participant's self-reported perspective taking and their attribute-change and attribute-consistency betas. Examination of the correlation matrix indicated that self-reported perspective taking was not significantly correlated with overall attribute-change ($r = -.019$, $p = .85$, $n = 108$) or overall attribute-consistency scores ($r = -.065$, $p = .50$, $n = 108$), nor with attribute-change of specific attributes ($r = .018$, $p = .85$, $n = 107$ for representative attributes; $r = -.092$, $p = .35$,

n = 106 for unrepresentative attributes). In conclusion, none of the results from these four analyses provided any support for the hypothesis that perspective taking led to changes in participant's self-concept such that responses for the self at time 2 would be predicted to a greater extent by their responses for the target person.

Effect of Self-Other Overlap on Changes in Self-Concept

Although perspective taking did not appear to be a predictor of self-concept change, the next series of analyses examined this study's third hypothesis that self-other overlap with the target person would lead to changes in the self-concept in the direction toward their perceptions of that person. In order to test Hypothesis 3, once again four sets of analyses were conducted: 1) the effect of *perceived closeness* on belief-change, 2) the effect of *attribute overlap* on belief-change, 3) the effect of *perceived closeness* on attribute-change, and 4) the effect of *attribute overlap* on attribute-change.

For the first set of analyses, initial inspection of the correlations between the *perceived closeness* factor score with belief-self-consistency and belief-change (toward the target) betas indicated that greater *perceived closeness* was associated with increased belief-change at time 2 (r = .24, p < .05, n = 108) but not belief-self-consistency (r = -.013, p = .89, n = 106). To further test the hypothesis that self-other overlap would positively predict belief change and negatively predict belief self consistency, I separated participants into two groups based on a median-split of the *perceived closeness* factor score. A 2 (perceived closeness – low vs. high) x 2(influence – belief-consistency vs. belief-change) repeated-measures ANOVA was run using the belief-self-consistency and belief-change betas as the within-subjects factor. Similar to the effect of perspective taking on belief-change, I predicted that participants who experienced high perceived closeness would have higher

"belief-change" betas and lower "belief-self-consistency" betas, relative to participants who experienced little perceived closeness with the target person. In support of Hypothesis 3, this interaction was significant, Wilk's $\lambda = .96$, $F(1,97) = 4.25$, $p < .05$, $\eta^2 = .042$. As Figure 4 indicates, neither group's beliefs at time 2 were predicted by their earlier responses at time 2. In contrast, the high *perceived closeness* group's beliefs for the self were predicted much more by their responses for the target person than those in the low *perceived closeness* group.
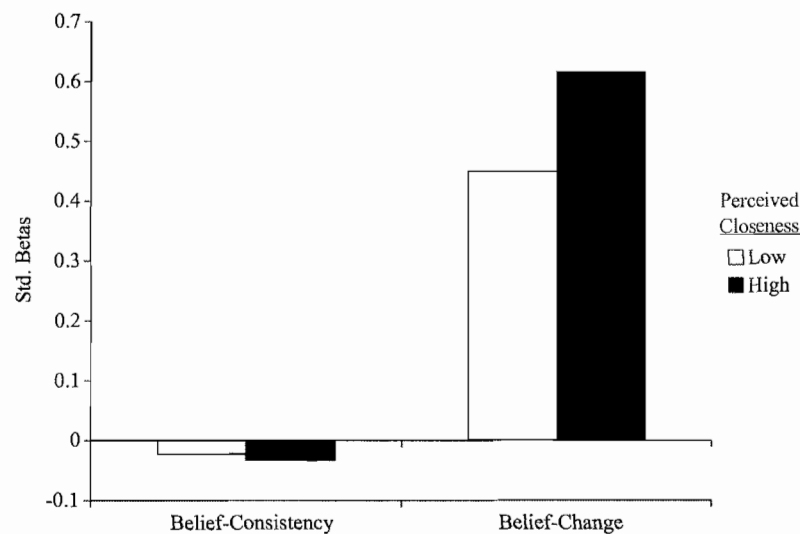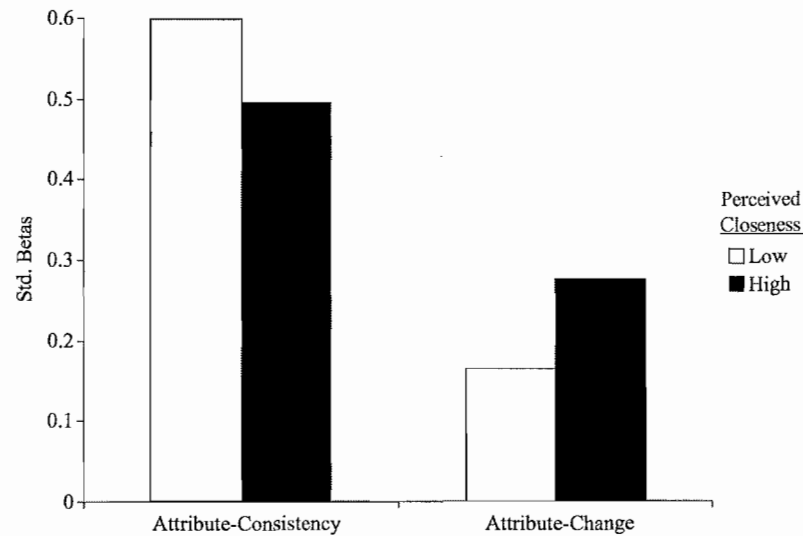

Figure 4. Perceived closeness x influence interaction for belief statements.

The next set of analyses examined whether or not self-other overlap in the form of *attribute overlap* predicted changes in participants' beliefs. Examination of the correlation matrix indicated that the *attribute overlap* factor score was not significantly correlated with belief-consistency ($r = .025$, $p = .80$, $n = 99$) or belief-change betas ($r = .032$, $p = .75$, $n = 101$). Furthermore, none of the individual adjective overlap scores (i.e., positive, negative,

neutral) were significantly associated with belief-consistency or belief-change (r's from -.096 to .11). Consequently, follow-up analyses using repeated-measures ANOVA was not necessary for *attribute overlap*.

The next two sets of analyses repeated the last two analyses, but examined whether self-other overlap factors predicted changes in participants' descriptions of themselves on a set of attributes (rather than beliefs). The effect of perceived closeness on attribute change was borne out in the 2(perceived closeness: low vs. high) x 2(influence: attribute-self-consistency vs. attribute-change) x 2(attribute type: representative vs. unrepresentative) repeated-measures ANOVA. I predicted that participants who experienced high perceived closeness would have higher "attribute-self-change" betas and lower "attribute-consistency" betas, relative to participants who experienced less perceived closeness with the target person. The hypothesized perceived closeness x influence interaction for the personality attributes was significant, Wilk's $\lambda = .95$, $F(1,96) = 4.60$, $p < .05$, $\eta^2 = .046$. As Figure 5 indicates, participants in the high perceived closeness group were less consistent in attribute ratings for themselves than participants who experienced perceived closeness. Conversely, participants' self-attribute responses in the high perceived closeness group became *more* influenced by their ratings of the target person's attributes, relative to the control condition. The three-way interaction of perceived closeness x influence x representativeness was not significant, Wilk's $\lambda = 1.0$, $F(1,103) = .025$, $p = .88$, $\eta^2 = .00$.

Figure 5. Perceived closeness x influence interaction for attribute ratings.

The final set of analyses examined the possible relationship between the *attribute overlap* factor and attribute-change. The *attribute overlap* factor score was not associated with either overall attribute-consistency ($r = .045$, $p = .64$, $n = 108$) or overall attribute-change ($r = .046$, $p = .64$, $n = 108$). *Attribute overlap* was correlated with attribute-change of unrepresentative traits ($r = .19$, $p < .06$, $n = 106$) but not representative traits ($r = .082$, $p = .40$, $n = 107$) or). Examination of the individual adjective overlap items indicated that only overlap of neutral traits was associated with increased overall attribute-consistency ($r = .27$, $p < .05$, $n = 102$). None of the other correlations were significant (r's from -.14 to .19).

Other Predictors of Self-Concept Change

Since the previous analyses indicated that perspective taking had no effect on self-concept change, it was not necessary to test the hypothesis that self-other overlap mediated this effect (i.e., *Hypothesis 3*). However, the findings did justify testing the second part of this hypothesis (Hypothesis 3b), which was whether or not self-other

overlap uniquely predicted self-concept change even when controlling for other possible predictors of self-concept change. As results indicated that only *perceived closeness* was associated with changes in self-concept, I specifically tested whether or not this effect remained when other outcomes of perspective taking (such as empathic concern and positive attitudes) were also included as predictors on self-concept change and/or self-concept consistency by using path analysis modeling. Scores of *perceived closeness*, *attribute overlap*, empathic concern, and positive attitude were simultaneously estimated in the model as predictors of both self-concept consistency and self-concept change scores. As I was primarily interested in the unique effect of perceived closeness on self-concept change, perceived closeness was allowed to co-vary with all of the other predictors in the model. The two betas of self-concept consistency and self-concept change were used as the outcome variables and were allowed to correlate in the model. The first model examined the specific effect of these predictors on belief-change and belief-consistency, while another model examined their effect on overall attribute-change and attribute-consistency.

For belief change, this model fit the data well, χ^2 (2, $n = 118$) = 3.42, $p = .18$, CFI = .97, RMSEA = .078 (90% CI .00-.21), SRMR = .028. As Figure 6 shows, *perceived closeness* was correlated both with empathic concern and positive attitude, but only *perceived closeness* significantly predicted the belief-change score. Neither empathic concern ($\beta = .005$, z-score = .23) nor positive attitude ($\beta = .002$, z-score = .32) were associated with changes in belief change. None of the predictors had any effect on the belief-consistency betas.

p < .05
Std. coefficient reported
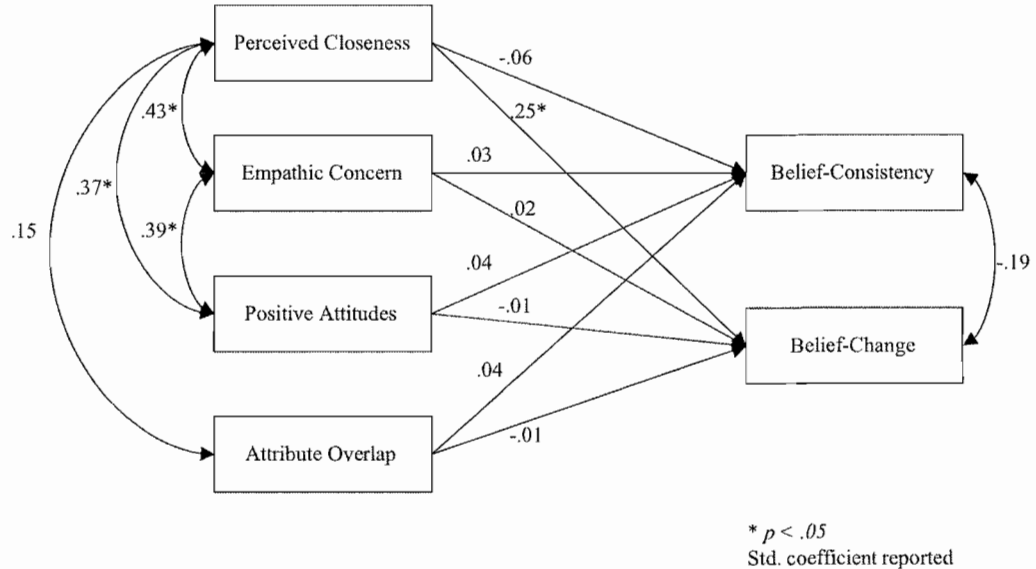
Figure 6. Path model predicting belief-change and belief-consistency.

For changes in self-description on all 16 attributes, the model also fit the data well, χ^2 (2, n = 118) = 3.23, p = .20, CFI = 98, RMSEA = .072 (90% CI .00-.21), SRMR = .028. Interestingly, *perceived closeness* no longer significantly predicted the attribute-change score after including the other predictors of empathic concern, positive attitude, and *attribute overlap* (see Figure 7). In particular, this decrease in the effect of *perceived closeness* may have been due to the presence of empathic concern. Empathic concern was significantly correlated with *perceived closeness*, and unlike Model 1, also had a much stronger association with belief-change (β = -.036. z-score = -1.90). Neither positive attitude nor *attribute overlap* were associated with attitude-change, although surprisingly, *attribute overlap* did positively predict attribute-consistency.

* p < .05
Std. coefficient reported
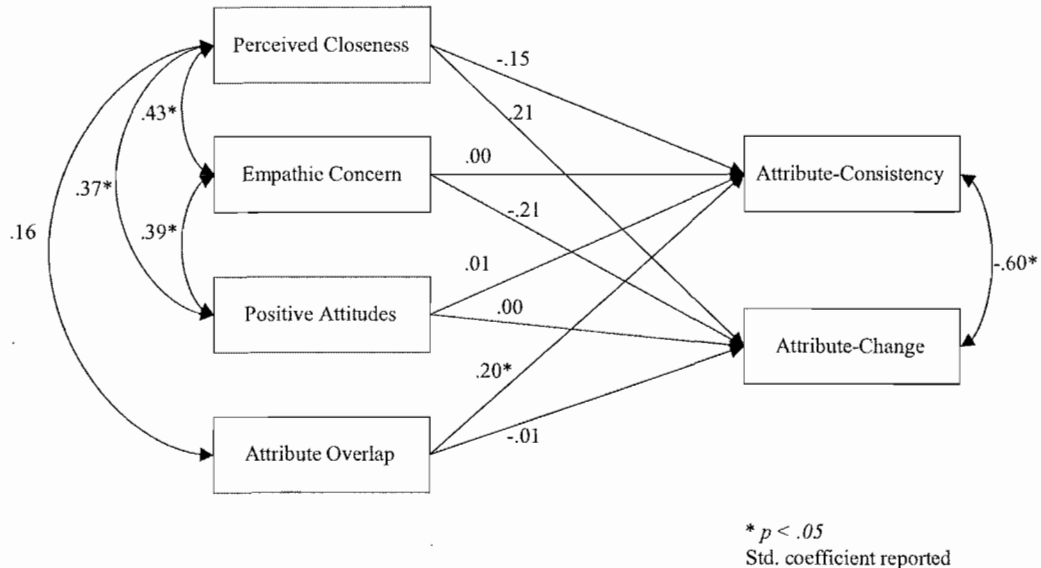
Figure 7. Path model predicting attribute-change and attribute-consistency.

Discussion

In general, the results from this study provided support that *perceived closeness*

(which Study 2 demonstrated is influenced by perspective taking) leads to changes in a

people's self-concepts so that they become more similar to their perception of the other

person. Based on past research, Hypothesis 1 predicted that perspective taking would be

associated with increased self-other overlap. This hypothesis was only partially

supported in Study 3. The effect of perspective taking on self-other overlap was only

significant when using self-reported degree of perspective taking; there was no

significant of the manipulated perspective-taking condition variable. On the other hand,

Study 3 did find support for the hypothesis that self-other overlap is associated with self-

concept change at time 2. Specifically, participants who perceived greater self-other

overlap with the target person subsequently showed more influence by their perceptions

of that person when describing themselves. This effect occurred for both beliefs and

attributes and it remained even when accounting for the effect of consistency in describing the self across time. Both of these points are important, as past research had not addressed them directly. Thus, Study 3 is unique from past research in that it demonstrates that the relationship between self-other overlap and perceptions of the self becoming more "other-like" varies depending both on the *type* of self-other overlap and *type* of self-concept assessed.

First, consistent with Studies 1 and 2, this study again found evidence suggesting that two general facets of self-other overlap exist. One type of overlap is more conscious and assesses participant's perceptions and feeling of closeness (*perceived closeness*), while a more subtle form of self-other overlap exists that taps participant's shared traits and attributes with the other person (*attribute overlap*).

Second, these different facets of self-other overlap associated with distinct psychological outcomes. Specifically, Study 3 suggests that *perceived closeness* predicts whether aspects of the other person are incorporated into the self-concept. Results from this study found that *perceived closeness* was consistently associated with both attribute- and belief-change. This finding is consistent with other data suggesting that this facet of self-other overlap is associated with self-concept change (Goldstein & Cialdini, 2007). On the other hand, *attribute overlap* does not appear to drive changes in one's beliefs or attributes to match those of the other person. I found no evidence that *attribute overlap* was associated with either form of self-concept change – neither changes in self-attributes or beliefs. In fact, the only significant effects of *attribute overlap* that I found suggested

that this type of type of self-other overlap was actually associated with greater self-concept *consistency*.

In particular, it was somewhat surprising that *attribute overlap* did not at least have an effect on changes in self-attributes, as they both focused on the same aspect of the self-concept. Although there is considerable evidence from past studies indicating that perspective taking leads to greater overlap in personality attributes for the self and other, Study 3 suggests that this overlap occurs in only one direction. Several studies have found that *attribute overlap* is driven by seeing the other as more "self-like" (Galinsky & Moskowitz, 2000; Davis et al., 1996; Myers & Hodges, 2006), but this study did not find evidence that *attribute overlap* is also driven by seeing the self as more "other-like."

Study 3 also extended our understanding of these facets of self-other overlap by demonstrating how they are conceptually different from other psychological phenomenon. Hypothesis 3b examined whether the effect of self-other overlap on evoking self-concept change was unique to that construct or a cause of some related construct. Research suggests that self-other overlap is theoretically related to both empathic concern and positive attitudes, so one concern was that it was these constructs (and *not* self-other overlap), that led to self-concept change. However, the results from this study demonstrate that *perceived closeness* is a distinct construct with its own set of psychological outcomes. Specifically, *perceived closeness* – and not empathic concern or positive attitudes – significantly predicted self-concept change of beliefs.

However, there is clearly some "overlap" between these constructs, as illustrated by the set of findings examining the effect of *perceived closeness* on attribute-change. When examined as the only predictor, *perceived closeness* was associated with attribute-change in

the hypothesized direction. On the other hand, this effect disappeared in the path analysis when empathic concern and positive attitudes were added. In particular, it appeared that *perceived closeness* and empathic concern worked in conjunction to evoke changes in the description of self-attributes. Thus, future studies that wish to examine the possible effect of self-other overlap on self-concept change should also consider the dual role of self-other overlap *and* empathic concern in evoking these changes.

Limits of Perspective Taking on Evoking Self-Other Overlap and Self-Concept Change?

As mentioned at the beginning of the discussion, one hypothesis that was not supported by the data was that perspective-taking manipulation would predict self-concept change in the direction toward the target person. This was in contrast to the results of Study 2, where the perspective-taking manipulation increased perceived closeness. When considering these results in conjunction with past research that have studied perspective taking and self-other overlap, it is important to note that the target person used in Study 3 was specifically designed to be substantially different from the typical participant. In fact, in some ways this target person may have been the *most* different target person used in this line of research to date. Thus, I believe that these non-significant results help illustrate a potential limit on perspective taking's ability to evoke self-other overlap. If there is not much overlap between the self and other to begin with, perspective taking may be ineffective in enhancing perceptions of overlap with that person.

To explore this idea further, consider the results from Study 2 and the Davis et al. (1996) study. Both studies used the video stimulus target "Lisa", who – as stated in Davis et al. (1996) – was specifically designed to be as "typical" a college student as possible. These studies suggest that, in situations where we take the perspective of a person who is similar to us, it can lead to enhanced feelings of closeness and greater attribute overlap. Similarly, Goldstein and Cialdini (2007) used target people with similar demographic characteristics as the participant (i.e., the targets were the same gender and also were

undergraduates) to demonstrate that perspective taking and *perceived closeness* lead to the incorporation of traits relevant to the target person into the participant's self-concept. In fact, the examples that Goldstein and Cialdini (2007) provide in their article to describe when the self-concept is likely to include aspects of the other person explicitly make reference to the fact that this other person is already someone "close" to them (such as a "close colleague" or "merged other"). Furthermore, they admit that self-concept change may be less likely to occur when the attributes of the other person are counter to the self-image.

Although Galinsky et al. (2005; 2008) used target stimuli that seemed to be dissimilar from the perceiver, the extent of this difference may be less than it initially appears because participants had to construct an image of the other person: Specifically, the paradigm used in these studies gave participants a photograph of a person who was a member of a stereotyped group, and asked participants to imagine a day in the life of a person who was a member of that group. While participants likely ascribed stereotypical attributes to the target person, they were also free to assume that the target person was similar to themselves on other key aspects of their self-concept. For example, when participants were instructed to take the perspective of a photo of an elderly person in Galinsky et al. (2008), they could have imagined how they themselves would be at that age when they were trying to imagine the person in the photograph. In contrast, the target person in the current Study 3 did not allow for the same level of construction by the participants. Much more information was provided about the target person regarding how his personality attributes and beliefs might differ from participants' self-concept. Consequently, there was greater potential for participants in Study 3 to view the target person as too dissimilar, thus reducing the chances that perspective taking would reliably increase self-other overlap.

From a social-function standpoint, it might be beneficial to have such a safe-guard on perspective taking. In everyday life, we wouldn't want to "expand" the self to include everyone we interacted with -- especially those who have very different point of views than ours. For example, it would not be beneficial if our beliefs were easily swayed whenever we listened to a KKK member discuss his or her views on white supremacy. If initial perceived closeness with the other person is too low, this may serve as an implicit sign for the perceiver that he or she should not become more like the other person. Future research could explicitly test whether an initial level of perceived closeness with the other person is necessary for self-concept to occur, and if so, how much initial overlap is required.

CHAPTER V

GENERAL DISCUSSION

Returning to the introduction, the stated purpose of this dissertation was to answer

three related research questions: 1) Is "self-other overlap" a uni-dimensional or multi-

faceted construct? 2) Does perspective taking affect different *types* of self-other overlap?

3) Does perspective affect the *direction* of self-other overlap? Now that the three studies

have been conducted and described in this dissertation, we can now examine how, and to

what extent, these questions have been answered by the research:

Is "Self-Other Overlap" a Multi-Dimensional Construct?

Across all three studies, results consistently indicated that the various measures of

self-other overlap being used did *not* tap the same uni-dimensional construct. Rather, the

clear message of this dissertation is that self-other overlap is a multi-dimensional

construct. Furthermore, these measures of self-other overlap generally fell into two

different factors that I have called *perceived closeness* and *attribute overlap*. This

consistent finding is particular striking when one considers that all three studies involved

different targets (best friend, acquaintance, college student, researcher), different

methodologies (comparison of close versus non-close others, perspective-taking

manipulation, repeated-measures design), and different measures of self-other overlap.

Of course, slight variations in the factor structure were found among the three studies, for several reasons described below.

Of the two facets of self-other overlap, *perceived closeness* appears to be the most robust factor. This factor was always the first factor that was extracted from the factor analysis, and consequently, explained most of the variance. The items that consistently loaded on this factor were the IOS, dynamic IOS, "we"-ness, and perceived similarity. One common element among these measures is that they are fairly direct perceptions of merging and closeness. All of these measures required the participant to focus on the self *in relation* with another person. For example, Cialdini and colleagues, who had used the "we"-ness measure and perceived similarity previously, described the construct they were measuring as "oneness" and "merged identities." The factor of *perceived closeness* also appears similar to what Aron et al.'s (1992) called *feeling close.* Aron et al. (1992) hypothesized that the IOS and *feeling close* tapped a kind of subjective closeness that contributed to a *sense* of being interconnected with another. Again, this idea of interconnectedness and perceptions of merging seem to be important elements underlying this factor.

Aron et al.'s (1992) decision to use the phrase "feeling" close also suggests an affective component to this factor. This may explain why *perceived closeness* was significantly correlated with felt care and liking for the target person in Study 1. In sum, *perceived closeness* appears to assess a direct type of self-other overlap that focuses participant's attention on perceptions of the self in a relationship with the other person. In fact, some have suggested that this type of overlap also taps the concept of the "social

self" (De Cremer, 2004). It also appears to contain an affective component: When people feel close to someone, they also perceive themselves to overlap with that person.

In contrast, *attribute overlap* tapped a more implicit facet of self-other overlap that focused on overlapping mental representations of the self and the other person. Unlike *perceived closeness,* the measures that loaded on this factor did not make ask about the participant's relationship with the other person. In fact, they were created and administered in such a way that participants would likely be unaware that they were measuring any form of "overlap" with the other person. This form of self-other overlap is probably less conscious than *perceived closeness.* Consistent with this idea, Davis et al. (1996) found that their adjective overlap measures (which frequently loaded on this factor) were not affected by additional cognitive load, suggesting that perception of overlapping representations is not a process under conscious control or something that participants have direct awareness of (Bargh & Chartrand, 1999). Future research should explore this hypothesis further.

Unlike *perceived closeness,* the *attribute overlap* factor exhibited more variability in its structure across the three studies. Interestingly, one consistent finding was that *attribute overlap* of negative and neutral traits was uncorrelated with *perceived closeness.* This was true although all of the analyses used across the three studies allowed for these factors to be correlated. Fluctuations in *attribute overlap* appeared to be primarily associated with adjective overlap of positive traits. For example, in Study 1, overlap of positive traits loaded with overlap of negative and neutral traits on a second factor that was uncorrelated with *perceived closeness.* However, in Study 2, overlap of positive

traits loaded with the absolute difference of attributes on a third factor that was moderately correlated with *perceived closeness.* Finally, in Study 3, overlap of positive traits again loaded on a factor with overlap of negative and neutral traits, but exploratory factor analysis suggested that it also was moderately with *perceived similarity.* Furthermore, overlap of adjective traits (and not overlap of negative and neutral traits) was affected by the perspective-taking manipulations in Study 2 and 3, suggesting that the distinction between perceiving overlap with another person on positive traits versus perceiving overlap with him or her on negative and neutral traits may be psychologically important. Galinsky et al. (2005; 2008) have suggested that the purpose of self-other overlap and perspective taking is to help foster social bonds. As such, the norm might be to overlap with others on just positive traits (i.e., a form of "benevolent overlap"), and only in extreme instances would the person perceive greater overlap of negative traits with the other person.

What could account for the different factor structure of *attribute overlap* in Study 1 versus Study 2? One strong possibility is that the target person had an effect on the structure of *attribute overlap.* In Study 1, participants completed these measures of self-other overlap for their best friend, while in Study 2, the target person was a stranger. Perhaps a sign of truly being "best friends" is an increased tendency to share both positive *and* negative traits with the other person. Consistent with this view, Aron et al. (1991) found no effect of valence on participants' speed in making me/not me responses to traits that they shared with their significant other (or romantic partner). Participants were equally slow at identifying whether traits were self-descriptive when those traits

were ones that they did not share with their partner, regardless of whether they were positive or negative traits. One implication of this finding is that self-other overlap at the beginning of a relationship should resemble the three-factor structure found for the acquaintance and stranger from Study 2, but after a relationship has sufficiently developed, the distinction between overlap of positive versus negative attributes dissolves.

Does Perspective Taking Affect Different Types of Self-Other Overlap?

Examining the psychometric properties of self-other overlap measures is an important research task on its own, but having once established that self-other overlap was multi-dimensional, I was able to turn to the central question of whether or not the association between perspective taking and self-other overlap differed among these factors. Again, the clear message of this dissertation is that perspective taking affects some *but not all* aspects of self-other overlap. In particular, both Studies 1 and 2 found evidence that *perceived closeness* and adjective overlap of positive traits are sensitive to changes to the perspective we take when forming impressions of another person. In contrast, taking the perspective of another person does not foster increased perceptions of overlapping on negative or neutral traits with that person (in fact, one surprising finding from Study 3 is that perspective taking may actually lead to *less* overlap of negative traits.

These studies also provide some insights into possible limitations of perspective taking in enhancing self-other overlap. In Study 3, only participants' self-reported attempts at perspective taking was associated with *perceived closeness* and adjective

overlap of positive traits; the experimental manipulation of perspective taking had no effect. However, other theoretical outcomes of perspective taking (such as greater empathic concern and more positive attitudes) were found to be associated with Study 3's perspective taking manipulation, which suggests that the manipulation was effective. Instead, the target person in Study 3 may simply have been too different from most of the participants for the perspective-taking manipulation to lead to any form of self-other overlap. Perhaps some threshold of similarity with the other person must be met initially before perspective taking can have any effect on increased self-other overlap – future studies could test this hypothesis.

In a related vein, Neuberg et al. (1997) have suggested that feelings of empathic concern may serve as the initial starter to kick-off perceptions of self-other overlap. Once feelings of empathic concern dissipate, other predictors of self-other overlap (such as perspective taking) can then begin to have an effect on enhancing self-other overlap. While the target person in Study 3 did evoke greater empathic concern for participants in the perspective-taking condition, the target person was clearly not describing a distressing life experience, and consequently, did not evoke much empathic concern. Thus, the relationship between perspective-taking and self-other overlap may be contingent not only on the type of self-other overlap measured, but also on aspects of the target (i.e., degree of similarity/dissimilarity with the perceiver) and aspects of the target's situation (i.e., to what extent his or plight evokes empathic concern). These considerations relate directly to the last question addressed by this dissertation.

Does Perspective Taking Affect the Direction of Self-Other Overlap?

Because the perspective-taking manipulation failed to evoke greater self-other overlap with the target person, Study 3 was unable to examine the direction in which this overlap occurred. As mentioned above, if perspective taking does lead to the self become more "other-like," then it may only occur in certain contexts. For example, evidence of self-expansion in the close relationship literature would suggest that perspective taking is more likely to lead to self-concept change when we know the person well and are close to them already. Drawing from work on persuasion, research has indicated that people will change their attitudes to be more similar to the themes of a story if the story is more engaging and transportive (Green & Brock; 2000). Similarly, a target person who is more engaging may make it easier for perceivers to expand the self towards that person when they are taking his or her perspective, even if that target person is a non-close other.

While a chain of events linking perspective taking to self-expansion has not been clearly established, Study 3 of this dissertation did provide compelling evidence that self-other overlap predicts self-expansion. In particular, *perceived closeness* appears to connect self-other overlap with self-expansion. *Attribute overlap* had no consistent effect in predicting self-concept change. Additionally, the association between self-other overlap and change in the self-concept toward the other person is something that is unique to self-other overlap. There was no evidence that feelings of empathic concern or positive attitudes toward the target person also led to corresponding changes in the participant's self-concept. Thus, the evidence suggests that self-other overlap (and

perceived closeness, in particular) may be an important construct in understanding how people come to change over time, and why people are influenced by those around them.

Conclusions

While the concept of "self-other overlap" has the potential to explain the link between perspective taking and various pro-social outcomes (such as altruistic helping and decreased stereotyping), the studies in this dissertation make it clear that it is important to specify what aspect of self-other overlap is being discussed. This seems especially true when examining past research in the area of perspective taking, where ambiguity about what self-other overlap means may have slowed progress thus far. Compelling evidence in this dissertation suggests that self-other overlap has multiple facets, each of which is tied to distinct psychological and social implications. Specifically, only certain facets of self-other overlap are related to perspective-taking; others are related to the idea of "self-expansion." Ideally, additional research will continue to explicate specific connections between self-other overlap, perspective taking, and self-expansion, as well as addressing related questions about conflict resolution and self-perception. At the very least, I hope these findings alert researchers that they need to consider what *type* of self-other overlap will be affected in their studies, and to tailor their hypotheses and methods for measuring this construct accordingly.

APPENDIX

BELIEF STATEMENTS FROM STUDY 3

Being a researcher is a time-consuming job

Learning something new is a reward that keeps me motivated to work

I enjoy being in a leadership position

I would prefer a job where I know exactly what I have to do each day

The primary thing that I would consider when choosing a job is how well it pays

If I had a choice, I would rather work on my own than be part of a group project

Everyone is biased in some way, even if they are not to supposed to be in that situation

I enjoy those types of days when I'm moving from on new activity to another

When I'm working on something important, it's OK with me if I don't have a clear sign of the progress I've made that day

Patience is an important characteristic to have

Balancing a career with family life is worth the potential sacrifices I would have to give up to make it work

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