WHAT DOES ACCURACY GET YOU?

EMPATHIC ACCURACY DURING

A NEGOTIATION

by

DEVIN E. HOWINGTON

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Student: Devin E. Howington

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This dissertation has been accepted and approved in partial fulfillment of the requirements for the Doctor of Philosophy degree in the Department of Psychology by:

Sara D. Hodges	Chairperson
Sanjay Srivastava	Core Member
Pranjal Mehta	Core Member
Erik Girvan	Institutional Representative

and

Scott L. Pratt	Dean of the Graduate School

Original approval signatures are on file with the University of Oregon Graduate School.

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DISSERTATION ABSTRACT

Devin E. Howington

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Title: What Does Accuracy Get You? Empathic Accuracy During a Negotiation

Accurately guessing the thoughts and feelings of another person, known as empathic accuracy, is thought to be a useful skill across many domains. However, the evidence supporting the value of empathic accuracy has been mixed, perhaps because the domains previously examined did not require accuracy for functionality. Negotiation may be one domain in which being accurate really matters for positive outcomes for the perceiver. Additionally, men and women may have different motivations to be accurate, including the presence of a competitive or cooperative situation. The primary research questions of this study are: 1) Is empathic accuracy related to outcomes in the negotiation?; 2) Is accuracy dependent on how the negotiation is framed?; and 3) Does how the negotiation is framed affect men's and women's empathic accuracy differently? Individual differences in personal power and Machiavellianism are also examined in relation to accuracy in this context.

In this study, 336 participants interacted in same-sex dyads to negotiate over small items in either a competitive or cooperative context, resulting in a 2 (gender) x 2 (context) design. Accuracy was measured both as empathic accuracy for partner's thoughts during the negotiation as well as accuracy for guessing their partner's idiosyncratic item preferences (provided prior to the negotiation). Actor-Partner

Interdependence models were used to estimate the contributions of each person in the dyad to the outcome of interest. Neither empathic accuracy nor accuracy for guessing item values led to any increases in personal gain in the negotiation. However, empathic accuracy was predictive of satisfaction with the outcome of the negotiation, such that more accurate actors and having more accurate partners both led to significantly increased satisfaction with the outcome. Contrary to the hypotheses, accuracy was not affected by gender or the framing of the negotiation or any interactions between the two variables. Individual differences in power and Machiavellianism did not lead to increases in perceiver empathic accuracy, but rather led to decreases in partner's accuracy: actors that had partners who were high in power or high in Machiavellianism were less empathically accurate. The implications for negotiation research and future empathic accuracy research are discussed.

CURRICULUM VITAE

NAME OF AUTHOR: Devin E. Howington

GRADUATE AND UNDERGRADUATE SCHOOLS ATTENDED:

University of Oregon, Eugene
Hendrix College, Conway

DEGREES AWARDED:

Doctor of Philosophy, Social Psychology, 2016, University of Oregon
Master of Science, Conflict and Dispute Resolution, 2016, University of Oregon
Master of Science, Social Psychology, 2011, University of Oregon
Bachelor of Arts, Psychology, 2007, Hendrix College

AREAS OF SPECIAL INTEREST:

Social Psychology
Mediation and Negotiation

PROFESSIONAL EXPERIENCE:

Graduate Teaching Fellow, Department of Psychology, University of Oregon, September 2011 - December 2016

Volunteer Mediator, Lane County Circuit Court, August 2015 – June 2016

Family Mediation Intern, Lane County Family Mediation, September 2015 – December 2015

GRANTS, AWARDS, AND HONORS:

Dixon Award, Graduate School, University of Oregon, 2015

Graduate Education Committee Research Travel Award, Department of Psychology, University of Oregon, 2012-2015.

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CHAPTER I

INTRODUCTION

Accurately gauging the thoughts and feelings of others, also known as empathic accuracy (Ickes, 1993), is thought to be a particularly useful skill that is necessary for coordinating with and understanding other people. Empathic accuracy is often termed "everyday mind-reading" because of how common it is for us to infer others' thoughts and feelings. However, the usefulness of empathic accuracy, and its positive impact on relationships and social outcomes has thus far been perhaps surprisingly elusive. What few studies there are provide mixed results (Hodges, Lewis, & Ickes, 2015). Many believe that empathic accuracy *should* be useful, yet perhaps the research to date has been looking in the wrong places, based on the lack of a unifying theoretical framework for exploring *when* it should be useful. When is it beneficial to be accurate about other people's thoughts and feelings, and when is accuracy less necessary?

The central goal of this study is to test the idea that empathic accuracy should be particularly useful in one context in which it is helpful and possibly even necessary to know what the other person is thinking: negotiation. The idea that negotiation contexts might be particularly well-suited to study empathic accuracy stems from the hypothesis that much of our social intelligence, particularly our "mind-reading" abilities, evolved out of necessity to navigate the social pressures of living in groups with hierarchical structures (Byrne, 1997; Cummins, 2000; Currie & Sterelny, 2000; Dunbar, 2003; Humphrey, 1976). When evolutionary theorists discuss the evolution of social intelligence, they are often framing the pressures that lead to social intelligence, and "mind reading" abilities as pressures that stem from interacting with others to gain

control of resources. Being adept at reading the desires and intentions of others might yield better control of resources by outsmarting foes – key advantages that would create very strong selection pressures for these social cognitive abilities. Negotiation can be thought of as determining control of resources (Thompson, 1990), and it affords an opportunity to examine empathic accuracy in a context that may be closest to the processes for which it was potentially developed.

The primary research questions of the study are: 1) Is empathic accuracy related to outcomes in the negotiation?; 2) Is accuracy dependent on how the negotiation is framed?; and 3) Does how the negotiation is framed affect men's and women's empathic accuracy differently? The secondary goals of the project are to measure two forms of accuracy and their relationship with one another as well as with negotiation outcomes, and to explore how these constructs might interact with individual differences in personal power and Machiavellianism.

Empathic Accuracy

The term empathic accuracy has been applied to several different constructs, ranging from reading emotions on static faces to tracking positive or negative affect over real-time by adjusting a dial that corresponds to perceived emotion levels. For the purposes of this project, empathic accuracy will refer to the accuracy with which one can infer the thoughts and feelings of another person throughout an interaction (Ickes, 1993). This construct was chosen because it offers the most stringent test of accuracy: It is based on the richest data available, passes the face validity test of what lay people might think accuracy really means, and has the added bonus of being measured dynamically throughout an interaction. However, it turns out that high levels of interpersonal accuracy

of this kind are difficult to achieve: perceivers rarely reach the midpoint of the accuracy scale; scores usually hover around 25% of the percent of maximum possible (POMP) score (e.g., Lewis, Hodges, Laurent, Srivastava, & Biancarosa, 2012; Simpson, Oriña, & Ickes, 2003).

It is also the case that documented reliable positive social outcomes of being empathically accurate are few and far between (Hodges et al., 2015). Downstream effects of being accurate are not studied as much as increasing participants' accuracy, or searching for the kind of person who is accurate. When those effects are studied, it seems as though the literature is complicated by contradictory results. For example, people who are empathically accurate don't reliably have better relationships with partners (Simpson et al., 2003) or greater rapport with strangers (Stinson & Ickes, 1992). Much of the work on empathic accuracy thus far has examined accuracy either in close relationships or between strangers with no particular shared goals or motivations. In both of these circumstances, there is typically no reason to believe that people would try to hide their true thoughts and feelings, though there are some notable exceptions (see Lawless DesJardins & Hodges, 2015; Simpson, Ickes, & Blackstone, 1995).

The bulk of research into empathic accuracy thus far has examined contexts when people are talking openly about various topics, but very little research has been done during situations where each person might have specific goals during an interaction. One reason researchers exploring empathic accuracy may have struggled to find consistent positive effects of being accurate is that they have been looking in the wrong places. Perhaps accuracy matters the most when there are real resources on the line. Motivations

to become more accurate and the downstream effects of accuracy may become more obvious when people are negotiating.

Negotiation and Accuracy

Negotiation is a conflict-resolution process whereby parties attempt to cooperate to achieve their goals (Thompson, Wang, & Gunia, 2010). The implication of this broad definition is that negotiation is something that everyone encounters on an almost daily basis. When researchers examine negotiation in the laboratory, they are usually examining parties with financial interests trying to make a business deal. To accomplish this, researchers typically provide a role-play scenario to participants that outlines the various components of a deal and how important each of them are to each role (by allocating negotiation points to different outcomes). This strategy provides an objectively measurable outcome for everyone in the negotiation: researchers can evaluate how a party did based on the range of possible outcomes and their score. Additionally, negotiation researchers have focused on negotiations that have an opportunity for joint gain rather than those situations that are zero-sum, in which only one party can get what they want. Most negotiations have some opportunity for joint gain and trade-offs for the parties, making research into how negotiators can optimize joint gains a high research priority (Thompson et al., 2010). As such, the research tends to focus on those outcomes in terms of group performance or finding the optimal solution for all parties, and focuses less on individual, winner-take-all kinds of outcomes. It is important to keep this distinction in mind as the literature is reviewed, because the focus of this study is what empathic accuracy might gain for an individual during a negotiation that is created by the parties themselves, not provided to them via a role-play.

Negotiation researchers have been very interested in the idea of interpersonal accuracy, because of its obvious appeal to getting ahead in negotiations, and the literature shows that many constructs that are conceptually related to empathic accuracy are correlated with success in negotiations. The most common form of accuracy measured in negotiations is the accurate completion of a partner's payoff structure (the simulated matrix of how each issue and each possible outcome on that issue will benefit a negotiating party, provided by the researchers at the outset of the experiment). For example, if two people are negotiating commodities, one person is accurate if they are able to correctly identify that the other person has a high preferences for wood and brick but a low preference for sheep. This form of accuracy is predictive of success in negotiations – Thompson (1991) found that people who are more accurate completed more negotiations in an allotted time frame and that those negotiations created more joint gain for the negotiating parties.

Van Boven and Thompson (2003) have also shown that negotiators who have reached optimal settlements in negotiations were more likely to believe that exchanging information is a key component of negotiating successfully, and were in turn more accurate at guessing their partners' payoff structures than those who did not reach optimal settlements. This suggests that successful negotiators are looking for information that may help all parties, which in turn results in greater understanding of the underlying interests of the parties. Researchers have also hypothesized links connecting both emotional intelligence and perspective taking with successful negotiation outcomes. In fact, at least two studies have found that individual differences in emotional recognition

have a small but positive relationship with negotiation success (Elfenbein, Der Foo, White, Tan, & Aik, 2007; Fulmer & Barry, 2004).

Finally, there is one bit of evidence that instructing people to think about what their negotiation counterpart is thinking (i.e., to take their perspective) leads to more successful negotiation outcomes than when they are told to think about how their negotiation partner is feeling (Galinsky, Maddux, Gilin, & White, 2008). Perspective taking is typically thought of as closer to empathic accuracy in definition, because it is more akin to thinking about the contents of a person's thoughts, whereas empathy and thinking about their feelings (and thus identifying with them) is more akin to emotional recognition. Many of these constructs may be only loosely related to empathic accuracy as defined in this project, but it does seem as though there is support for the underlying idea that knowing more about one's opponent can lead to better outcomes in negotiations. My first hypothesis stems from that idea:

Hypothesis 1: Empathic accuracy should predict successful outcomes in negotiation, such that those with higher empathic accuracy should gain higher-value outcomes.

Past negotiation studies have some limitations when it comes to studying interpersonal accuracy: The studies cited above examined 1) accuracy for payoff structures, usually at one time-point, and 2) measurements of people during a role-play scenario. The laboratory studies on negotiation thus far rely on participants buying in to their ascribed roles and their assigned payoff structures and the ability of participants to embody their roles convincingly. Granted, this buy-in is usually increased with some monetary incentive, which perhaps goes a long way in helping people assume their roles

in these studies. Even so, there are some potential questions of ecological validity surrounding accuracy when people are trying to simultaneously embody a role and are very likely having meta-thoughts about how they are doing in that role and what they personally would value in that situation (rather than what their payoff structures tell them to value). These issues make it somewhat difficult to discuss the true meaning of understanding another negotiating party, if the person playing the negotiating party is one step removed from those actual interests in the negotiation.

The present study examines accuracy of reading people's thoughts and feelings in a context where people are allowed to negotiate from their true interests based on their real desires. When using a party's payoff structure as the criterion for interpersonal accuracy, it is difficult to say if accuracy reflects true interpersonal skill at reading an individual person or if it instead reflects how good a person happens to be at guessing how a pay-off matrix may be filled out based on logic skills. Measuring empathic accuracy is a more direct test of being able to read other people, but I believe that the underlying skills of reading another's thoughts and guessing their payoff structures should share some overlapping basic skills, which establishes my second hypothesis:

Hypothesis 2: Empathic accuracy will be positively correlated with accuracy for guessing the other person's individualized payoff structure, in the form of guessing their evaluations of the items in the negotiation.

Negotiation Context

In addition to the relationship between accuracy and negotiation outcomes, researchers have also been curious about how accuracy is related to features of a particular negotiation or of the negotiating parties. Negotiation research has rightly

looked to research in social cognition for understanding the mindsets of negotiators, realizing that negotiators have their own motivations and interpretations of their situations, and that those motivations may affect outcomes (O'Connor, 1997). Here, I will focus on a particular set of motives based on how a negotiation is framed: as occurring in either a competitive or cooperative context. Researchers have examined outcome and process differences resulting from competitive versus cooperative frames on negotiations, as well as outcome differences due to competitive versus cooperative personality types engaged in the negotiation (Bazerman, Curhan, Moore, & Valley, 2012; Carnevale & Pruitt, 1992; Ten Velden, Beersma, & De Dreu. 2011).

It is important to note that negotiations often provide mixed motives that allow for both competitive and cooperative actions (Thompson et al., 2010), and that most of the literature defines success in the negotiation as discovering solutions that are satisfactory to all parties. This literature suggests that competitive people misconstrue the mindsets and motives of their partners, believing their partners to also be competitive, believing their partners' goals are incompatible with their own, and mistaking the negotiation to be a zero-sum situation in which there is a winner and a loser (De Dreu, Weingart, & Kwon, 2000; Kelley & Stahelski, 1970; Thompson, 1991; Thompson & Hastie, 1990). These errors are often referred to as "fixed-pie" errors, and are thought to hinder performance on interpersonal accuracy because the competitive negotiators are supposedly basing their judgments on inaccurate assumptions (Thompson, 1991; Thompson & Hastie, 1990). Indeed, a meta-analysis by De Dreu and colleagues (2000) suggested that cooperative participants outperformed competitive participants, but only when those cooperative

negotiators had a strict bottom line that they were motivated to adhere to (De Dreu et al., 2000).

Given that there is some evidence as outlined above that people who have more competitive expectations about the situation might miss some opportunities to trade valuable information, it is possible that people in the competitive condition might be less accurate than those in a cooperative condition. Evidence from negotiation studies that use different operationalizations of accuracy as well as studies from the empathic accuracy literature, however, suggest an alternative hypothesis. A more recent study by De Dreu and Van Kleef (2004) found that negotiators in a position of lower power who had partners who were more competitive were better at asking questions that were actually diagnostic of the other person's position, which in turn has been found to be correlated with motivations to be accurate (Biesanz, Neuberg, Smith, Asher, & Judice, 2001) and with increases in accuracy (Trope & Bassok, 1983). De Dreu and Van Kleef (2004) suggest these findings are consistent with research in social perception that has found that people who are in competitive situations are more likely to individuate others (Ruscher & Fiske, 1990). Their findings complicate the literature reviewed earlier in that competitive individuals were contributing to a dynamic that increased information sharing.

Thus, there could be certain contexts that may motivate people to try harder to figure out their partner. De Dreu and Carnevale (2003) have developed a model for negotiation in which negotiators are motivated by both social motivations (preference for outcomes) and epistemic motivations (preference for understanding) to gather and process information throughout the negotiation. In their model, the competitive or cooperative context could serve as a social motivator that acts on a person's goals to be

pro-self or prosocial (De Dreu & Carnevale, 2003), in turn affecting the person's information search and processing. My model follows the same logic, but focuses on the effects of that information search and processing on empathic accuracy. I believe that competitive situations work as a motivational trigger, but that trigger may be moderated by an important person variable: gender.

In the empathic accuracy literature, it has been found that women are better than men at inferring the thoughts of others, or that men and women are equally accurate, but rarely that men are more accurate than women (Hodges et al., 2015). One of the key findings in reviewing this literature is that this potential deficit in men's accuracy can be improved by motivating them with rewards for personal gain. Klein and Hodges (2001) found that men's accuracy improves to match that of women's when monetary incentives are given for greater accuracy, and Thomas and Maio (2008) showed that men's accuracy improves based on the suggestion that being accurate will make them more romantically successful with women.

It is interesting to note that these effective motivators are both rewards that play a large role in evolutionary theory in psychology, with its emphasis on mate selection and resource attainment (e.g., Buss, 1989). Perhaps men and women are motivated towards accuracy by different rewards, and may see the utility of being empathically accurate for different purposes and in different contexts. Women may be socialized to be more interpersonally accurate, as it fits with their socialized roles as listeners and supporters (Ickes, Gesn, & Graham, 2000), and there is even evidence to show that men's accuracy improves insofar as they endorse communal roles, confirming the underlying role of empathic accuracy as a means to some goal attainment (Laurent & Hodges, 2009). It may

also be that men and women have different motivations around goal attainment, such that men place higher priority and thus higher attentional resources to an activity that is related to goal attainment.

A study by Hall and Schmid Mast (2008) provides evidence that men's accuracy is related to competitive motives, which the researchers suggest is related to goal attainment. They had men and women believe either that they were competing against their partners to complete as many anagrams as possible, or that they were completing the anagrams but not competing, and then measured interpersonal sensitivity through recall of facts about their partners, including appearance and number of anagrams solved. Men, but not women, had better recall for the number of anagrams solved by their partner (but not appearance) in the competitive conditions than in the control condition, which suggests that men were paying closer attention to the variable that mattered to their goal of beating their partner (Hall & Schmid Mast, 2008). This lends some support to the assertion that males will be more interpersonally accurate when primed with competition, but it does not actually test mind-reading capabilities. It does, however, give us some reason to believe that men and women may differ in the situations in which they are motivated to be empathically accurate (Hall & Schmid Mast, 2008; Hodges, Laurent, & Lewis, 2011).

Revisiting the evolutionary theory on the purpose and evolution of mind-reading abilities may shed some light on why men and women may differ in the *contexts* that trigger the desire to be accurate. According to some theorists, social cognition and mind-reading abilities evolved as a kind of arms race to develop better ways to outmaneuver others for control of resources, and those same theorists suggest that the division of labor

at that time meant that men were the most likely to be negotiating and competing with other males (Byrne, 1997; Flinn, Geary & Ward, 2005). It would seem quite advantageous from an evolutionary perspective to become more accurate during the times when the stakes for figuring out one's counterpart were highest. Other theories also argue that women were historically responsible for most of the child-rearing, suggesting that women's edge in non-verbal accuracy may be based on the pressures of attending to the needs of a non-verbal infant (Hall, 1978), and thus be more relational in context.

Of course it is also possible that these evolutionary predispositions for accuracy in certain contexts have continued to develop based on culturally relevant gender roles, and gender roles supporting competition among men and communality among women should also support this proposed relationship between context and gender. Based on this analysis, competitive contexts (relative to more neutral ones) might trigger boosts in men's empathic accuracy, but not women's. To test this idea, I have chosen to examine empathic accuracy in a negotiation that can be construed as either cooperative or competitive, using contexts that may trigger the different motivations to be accurate for each gender. I hypothesize:

Hypothesis 3: Men's accuracy will be higher in the competitive condition than in the cooperative condition.

Hypothesis 4: Women's accuracy will be higher than men's in the cooperative context, but likely will be the same as men's in the competitive context, because women's motivations for communality will remain high in either context.

Secondary Aims

Individual differences have typically been inconsistent predictors of empathic accuracy at best (Hodges et al., 2015), but some individual difference measures have been included in the present study based on their relevancy to negotiation. Power is defined as the individual capacity to influence others, such as having control of resources and as such is a relative construct: people have power relative to others (Anderson, John, & Keltner, 2012). As such, power is often examined as a situational variable: researchers assign high- or low-power roles to participants to manipulate a person's power in a given situation. However, power can also be examined as an individual difference: some people may believe they are powerful and can influence others across a variety of domains. This second operationalization of power was used in the current study, measured with the Anderson Power Scale (Anderson et al., 2012). The Anderson Power Scale has two subscales that are generally treated separately: an individual's sense of power (their perception of their own ability to influence people) and an individual's willingness to use power (their perception of how much they want to influence people).

When both measured and manipulated, power has been shown to predict strategic behavior and better outcomes in negotiation situations, and as such is an important construct for negotiation researchers (Thompson et al., 2010). De Dreu and Van Kleef (2004) found that lower power individuals asked more diagnostic questions during a negotiation when in competitive, but not cooperative settings, which De Dreu and Van Kleef found was explained by low-power negotiators being motivated to be more accurate when faced with competitive partners. Asking diagnostic questions could result in knowing more about a counterpart during a negotiation, resulting in higher accuracy.

In interpersonal sensitivity research, people with lower power tend to pay closer attention to others, whereas higher-power individuals tend to use stereotypes more often than individuating data and pay less attention to their lower-power counterparts (Keltner, Gruenfeld, & Anderson, 2003; Snodgrass, 1992). Snodgrass and colleagues (1998) also discovered that higher-powered people were easier to read than lower-power people, which may account for the findings that lower-power people are more accurate in studies that manipulate one person's power relative to another person's power in the lab. Based on this literature, I predict an interaction between context and individual differences in personal power:

Hypothesis 5: Participants with low personal power will be more accurate than those with high personal power, but only in the competitive condition.

Finally, I also measured the "Dark Triad" of personality variables (Machiavellianism, narcissism, and psychopathy) in study participants. I was particularly interested in Machiavellianism, or the tendency to be manipulative and self-concerned (Christie & Geis, 1970), given the nature of my predictions about motivations to gain personal rewards. Some evidence from the interpersonal sensitivity literature points to a null correlation between Machiavellianism and being more sensitive to others' emotions or more accurately identifying the emotions of others, but this work has typically been done in paradigms that don't offer any particular reason for people to be accurate (e.g., Austin, Farrelly, Black, & Moore, 2007; Pilch, 2008). In the negotiation literature, people higher in Machiavellianism have been shown to get greater gains from negotiations, but only in competitive conditions, and only during face-to-face negotiations (Crossley,

Woodworth, Black, & Hare, 2015; ten Brinke, Black, Porter, & Carney, 2015). Based on these findings, I expect:

Hypothesis 6: Machiavellianism will be positively correlated to accuracy, but only in the competitive condition.

Hypothesis 7: Machiavellianism will be positively correlated to individual gain in the competitive condition, but not in the cooperative condition.

CHAPTER II

METHOD

Overview

Participants were paired to create same-sex dyads for this study, which is standard practice for research in negotiation (Kray & Thompson, 2005) and was key to examining the hypotheses concerning gender. Participants were also assigned to either a competitive condition or a cooperative condition, making the design of this study a 2 (gender) x 2 (context), with participants nested within dyads. The participants negotiated over a set of ten small, common items (e.g., gum, pens, granola bars) in the context of either a competitive task or a cooperative task. This session was videotaped, which allowed measurement of empathic accuracy, and then the study closed with questionnaires pertaining to the negotiation and participants' individual differences.

Participants

The study included 336 people (168 same-sex dyads). These participants were drawn from the Psychology Human Subjects Pool at the University of Oregon, and were given class credit for their participation (as well as the opportunity to win items to take home, depending on the study condition). The Human Subjects Pool is made up of students earning class credit for research participation, which is a requirement of introductory psychology and linguistics classes, typically resulting in sample skewed towards those younger and newer-to-college. Demographics were not measured in the sample of participants used in the study, but during the period the study was run, the subject pool was on average 65% Female, 35% Male (M_{age} = 20), and 70% Caucasian,

15% Asian, 3% African American, 1% Native Hawaiian/Pacific Islander, 1% American Indian/Native American, and 10% Other.

Twelve dyads were run in a pilot version of the protocol, which differed greatly in terms of the game participants played and the variables collected, and were not considered in the final sample. One dyad was removed because of a video error did not allow them to complete a majority of the study, leaving a total of 310 participants (155 dyads) in the sample. Of those dyads, 84 were all-female, and 71 were all-male.

The participants were matched on gender by using data from a prescreening survey that they made them eligible to sign up only for sessions with someone of the same gender. Participants were allowed to sign up for any time session that fit in their schedule, but were blind to condition until the condition was revealed to them during the study. The condition for each timeslot was determined by a randomized list that instructed the research assistants which condition to use. This allowed for the conditions to be randomized across the 25 months that the study was run, but it did result in somewhat unequal treatment group sizes ($N_{FemaleCooperate} = 88$; $N_{FemaleCompete} = 80$, $N_{MaleCooperate} = 74$; $N_{MaleCompete} = 68$). Over 91% of the sample reported not knowing their partner prior to participating together, the majority of the remainder reported only knowing someone as an acquaintance, and only 6 participants reported being close friends with their partner.

A power analysis using an online application written by Ackerman, Lederman, and Kenny (in progress) indicated a reasonable potential power of .86 for confirming actor effects, and .43 for confirming partner effects at an alpha level of .05 for a sample of 155 dyads with estimated parameters for Actor-Partner Independence models (using

the following assumed parameters: partial $r = .17$ for actor effect, $r = .10$ for partner effect, $r = .20$ for the correlation between both actor and partner variables and between the errors). The estimates for the assumed effect sizes were based on conservative actor and partner effects sizes.

Materials

Items. Materials for the negotiation interaction were chosen based on their low price and their general appeal to college students. All items ranged from free to $1.25 each, and included things like pens, highlighters, candy bars, granola bars, facial tissue, "Tupperware" containers, sponges, and other similar small items. Each study session used a new set of 10 items, and the same 10 items were not used across all the study sessions; rather, the particular combination of items was treated as a random variable across dyads. All study sessions, however, did entail both participants viewing the same set of items, thus making the items that were rated fixed within a dyad.

Item Rating Scale. The participants completed a rating scale on a computer designed to capture each person's idiosyncratic valuations of the items used for their session. The participant specified the items used for their session and then allocated 100 points across all 10 items. For example, a participant could allocate 10 points to each item, or 50 points to one item, dividing the remaining 50 points among the other nine items. Participants could also give an item zero points, so long as points given to the remainder of items equaled 100 points. The questionnaire was set so that participants could not exit it until the scale points added up to 100.

Negotiation outcome questionnaire. I designed a questionnaire specifically for this study to measure several variables of interest after the negotiation. Where possible,

questions were worded to ask about the state of the actor during the negotiation, as well as the actor's guess for the state of their partner (e.g., actor's state: "How truthful were you during the conversation?"; partner's state: "How truthful do you think your partner was during the conversation?"). I measured participants' feelings about the outcome of the negotiation (e.g. "How satisfied are you with the division of the items?" "Who ended up with better items?"), liking of their partner, friendliness, similarity, trust, how much they self-disclosed, and truthfulness, along with one item designed to tap "meta-thinking" about the other person's thoughts ("How frequently did you find yourself trying to think about what your partner was thinking about during the conversations?"). All items were rated on a 7-point Likert scale; the full set of items can be seen in Appendix A.

Individual Difference Measures. I also included several individual difference measures. The Dark Triad measures individual personality differences on narcissism, Machiavellianism, and psychopathy (Paulhus & Williams, 2002), and the Anderson Power Scale measures people's perception of their capacity to influence other people, and is broken into two subscales: the personal sense of power and the willingness to use power (Anderson et al., 2012). The Machiavellianism scale had nine items on a 1 (*disagree strongly*) to 5 (*strongly agree*) scale, and Cronbach's alpha was .71 in this sample. The personal sense of power subscale and the use of power subscale each included eight items measured on a 7-point scale (1- *strongly disagree* to 7- *strongly agree*). The reliability for the personal sense of power scale was .81, and the reliability for the use of power scale was .78 for this sample.

Procedure

Participants reported to the same lab for the study, but were separated immediately for the consent procedure and first phase of the study. In this first phase, research assistants presented a set of items to each participant separately and asked them to independently rate their interest in the items by allotting the 100 points among the 10 items. At this point, participants believed they would be discussing the items with the other participant, but were not yet aware of the upcoming negotiation. These item ratings are useful for calculating a second type of accuracy (item accuracy) as well as for calculating the value of each person's ending-"pile" of items (i.e., which items, if any, that they earned as a result of the negotiation). The item ratings were used conceptually as individualized pay-off matrices, in that I used the values assigned to the items by each person to compute how much personal value they derived from the final set of items they received. This total score of their final set of items was what determined who "won" the negotiation in the competitive condition (described in more detail below), and was computed for each person in the cooperative condition as well.

The second phase of the study began after the items were rated. The participants were brought together for the first time and given the context manipulation. Participants in the "compete" condition were told that they were playing a game to get the best items for themselves, and that the winner of the game would get to take home the items they ended up with. The winner in the **compete** condition was determined by summing each participant's individual ratings provided in the first phase of the study for all of the items that a participant managed to negotiate for their share. Participants in the **cooperate** condition were told that the game was to work together to divide the items up in a way

they both agreed on. They were both allowed to take home their items if they found a mutually agreeable solution (mutually agreeable was defined as both participants consenting that the negotiation was over – which happened in all sessions in both the cooperative and competitive conditions).

Everyone was instructed that the division of the items was to be discussed and agreed upon but they were also told that they did not have to end with an equal number of items for each person, and that simply grabbing an item to claim it was not allowed. The full instructions for both conditions are provided in Appendix B. The participants were given seven minutes to complete the negotiation of the items; however, only one dyad came close to taking that amount of time. Many dyads were finished within a couple of minutes. When the participants appeared to have finished dividing up the items, they typically alerted the experimenter, who then asked formally if they were ready to end the interaction. These interactions were videotaped to facilitate collecting the thought and feeling data from participants during the next phase of the study.

During the third phase of the study, participants provided the accuracy data. Immediately after the end of the negotiation, participants were separated again and guessed how they thought their partners rated each of the items by completing the item rating scale for their partner. Once they completed that scale, participants watched the video of the discussion and reported the thoughts and feelings they remembered having during the initial discussion, as per the Ickes (1993) empathic accuracy paradigm. In this paradigm, participants are instructed to stop the video whenever they remember having had a thought or feeling during the original interaction, and are also asked to write down the time on the video counter, the last few words said on the video, and their full thought

in sentence form. These thought reports are the criterion of accuracy for empathic accuracy coding.

Participants then watched the video again, but this time the experimenter stopped the tape at the times that their *partner* reported having had a thought or feeling, and the participants were asked to provide their best guess – their inference -- of what their partner reported thinking. Finally, participants completed the negotiation outcome questionnaire and the individual difference measures. Following the completion of the questionnaires, participants were told who won the negotiation game (in the competitive condition), given any items they successfully negotiated, and debriefed.

CHAPTER III

RESULTS

Coding Schemes

Empathic Accuracy. Independent coders provided empathic accuracy scores using a 4-point scale (Hodges et al., 2015). Each inference was compared to the reported thought and rated from 0 to 3, with 0 being entirely inaccurate (the inference and the reported content do not overlap), 1 being somewhat accurate (the inference is somewhat correct, but something notable is missing or incorrect), 2 being mostly accurate (the inference is mostly correct, but some small element is missing or is incorrect), and 3 being essentially accurate (the inference captures the gist of the actual content – all elements of the thought are there, and nothing is incorrect). Cronbach's alpha across all seven coders using the method was high (above .8). Scores were then averaged across coders and across participant to create one accuracy score per person, which was then divided by three and multiplied by 100 to create a percentage index of accuracy for each person, as is customary when using this scale (Hodges et al., 2015).

Item Relevancy. I developed a new coding scheme specifically for this study to capture the relevancy each thought and inference had to the items and whether a person liked or disliked that item. This coding scheme was important for the analyses predicting empathic accuracy from item accuracy, as it allowed us to divide thoughts and inferences into those that pertained directly to how someone rated an item and those that captured other content. This gave us a more precise picture of how empathic accuracy overlaps with item accuracy. This coding scheme assigned three categorical labels as follows: "Not-related" for thoughts and inferences that were not related to any items, e.g. "He just

let me go first which seemed too easy."; "non-evaluative" for thoughts that were related to items, but were non-evaluative and gave no indication of how the other person may like or dislike an item, e.g. "Thinking about how everyone has multiple chapsticks but few people every [sic] bring them and have them when they need it."; and "evaluative" for thoughts that were related to items, were also evaluative, and gave some indication of how much an item may be valued, e.g. "The Emergen-C was the highest on my list so I wanted to have that first." Three independent coders rated each thought and each inference for item relevancy while they were also coding for empathic accuracy. We counterbalanced coding for empathic accuracy or item accuracy first (as each thought/inference had to be read one time for each process) across coders and within the list of thoughts and inferences.

Coding for item accuracy was a new process and more difficult for coders than coding for empathic accuracy and should thus be interpreted with caution. Coders coded both thoughts and inferences using the item coding scheme, but it was determined that analyzing the item codes for the thoughts, rather than the inferences, would be most appropriate for the analyses of what kinds of thoughts participants were guessing correctly. Therefore, the descriptive information for the thoughts is what is presented here, though the descriptive information for the inferences was very similar. There was not often consensus across the coders: 65.82% of the thoughts and the inferences had one disagreeing code from one of the three coders and 7.91% of the thoughts had zero agreement across coders (that is, codes of not related, non-evaluative, and evaluative – all three different categories - were given to these thought from one of the three coders). For 22.46% of the thoughts, the coders had perfect agreement – that is, all assigned the

thought to the same code category. The primary researcher resolved all codes that had no agreement (131 total thoughts). In addition, there were 3 "missing" thoughts (0.18%) in the dataset (in this case, "missing" thoughts were when an inference was provided but there was no corresponding thought). The most common form of disagreement among coders was between non-evaluative and evaluative thoughts (38.78% of thoughts; the entire range of possible disagreements and their frequencies are in Table 1). Coders were least likely to disagree on whether thoughts were not-related or non-evaluative (5.51% of thoughts), which is reasonable given that both non-evaluative and evaluative thoughts mention the items, but differ in how evaluative the thought is about said item.

These item codes were utilized in the analyses by creating separate empathic accuracy scores for the thoughts in each category for each person. In this way, I could evaluate how the accuracy for thoughts not about the items and thoughts that evaluated the items related to accuracy in guessing their partner's item preferences. Because the coders were most likely to disagree about thoughts belonging in the evaluative vs. non-evaluative categories, I combined those two categories to create an additional category of thoughts that would include all those thoughts codes as being about an item at all. This created five total empathic accuracy scores: a total empathic accuracy score, an empathic accuracy score for thoughts that were unrelated to items, an empathic accuracy score for thoughts that were about items but non-evaluative, an empathic accuracy score for thoughts that were evaluative of items, and an empathic accuracy score for thoughts that were about items (combining both evaluative and non-evaluative categories).

Because most people had an average of five to six thoughts, and most thoughts were categorized as evaluative thoughts (see Table 2 for frequencies of thought codes),

there was potentially an issue with missing data in the separate empathic accuracy scores. For example, if a participant's partner had no thoughts coded as "not related," then that participant's partner would not have an empathic accuracy score for "not related thoughts only." To examine this problem, dummy codes were created for each new accuracy score to indicate if data were missing (coded as 0) or not missing (coded as 1) in that category. T-tests were run on all the continuous study variables with the dummy variable as the between-groups variable to determine if the participants were missing certain types of thoughts at random. Almost all of the t-tests were not significant, save for one key variable. Unsurprisingly, participants who had missing data in each of the categories had significantly fewer thoughts than participants who had scores (absence of not related thoughts: $t(308) = -3.39$, $p < .001$; absence of non-evaluative thoughts: $t(308) = -2.87$, $p < .01$; absence of evaluative thoughts: $t(308) = -3.94$, $p < .001$; absence of both evaluative and non-evaluative thoughts: $t(308) = -2.35$, $p < .05$).

Examining the relationship between missing data and the dyad-level variables of gender and negotiation condition required chi-square tests, as both of those variables are dichotomous. Gender had no relationship with any of the dummy variables, indicating both men and women were equally likely to be missing data from any of the empathic accuracy categories. However, condition did have a relationship with several of the dummy codes. Participants in the cooperate condition were missing data from the "not related thoughts only" category more often than those in the compete condition (70 missing cases in the compete condition, 47 missing cases in the cooperate condition; $\chi^2 (1, N = 310) = 4.32$, $p < .05$). Also, participants in the compete condition were missing data from the "evaluative thoughts only" category more often than those in the cooperate

condition, χ^2 (1, N = 310) = 4.05, p < .05, despite the low numbers of actual missing cases in this category (10 missing cases in the cooperate condition, 19 missing cases in the compete condition). There was no significant relationship between missing data in the two remaining categories ("non-evaluative" and "non-evaluative and evaluative combined") and negotiation condition.

Preliminary Analyses and Manipulation Check

The means and standard deviations from each condition for the variables of interest can be found in Table 3, and the correlations between the study variables can be found in Table 4. The effectiveness of the competitive/cooperative manipulation was checked using two separate factorial ANOVAs with gender and condition as the predictor variables and participants' reported feelings of competitiveness and cooperativeness during the negotiation, respectively, as outcome variables. There was a main effect of negotiation condition on feelings of competitiveness, in which the participants in the compete condition reported feeling more competitive (M = 3.47, SD = 1.85) than participants in the cooperate condition (M = 1.94, SD = 1.49), F(1, 298) = 63.94, p < .001, d = 0.91, r = .41. There was a corresponding main effect of condition for cooperative feelings, with those in the cooperate condition reporting very high levels of cooperation (M = 6.44, SD = .84) and those in the compete condition reporting significantly lower (but also fairly high) levels of cooperative feelings (M = 5.97, SD = 1.09), F(1, 297) = 18.97, p < .001, d = 0.48, r = .23. There was also a main effect of gender for both feelings: Men reported feeling more competitive than women (M_{men} = 2.96, SD = 1.93; M_{women} = 2.41, SD = 1.72), F(1, 298) = 8.81, p < .01, d = 0.3, r = 15, and women reported feeling more cooperative than men (M_{women} = 6.32, SD = .92; M_{men} =

6.09, $SD = 1.07$), $F(1, 297) = 4.47$, $p < .05$, $d = 0.23$, $r = .11$. There were no significant interactions between gender and condition for either competitiveness or cooperativeness, as shown in Figure 1.

The negotiation interactions were constrained to seven minutes or less; however, only one negotiation went that long. The rest of the interactions were generally around two minutes. Because the interactions were typically very short and participants could report as many (or as few) thoughts as they wanted during that time, the number of thoughts can be considered an indicator of participant engagement and gives some context to the empathic accuracy scores. Despite the short interactions, participants reported an average of 5.31 ($SD = 2.49$) thoughts per interaction across the study. Interestingly, there was a relationship between condition and number of thoughts. Pearson's correlations also revealed that the number of thoughts reported was positively correlated to feelings of competitiveness, $r(304) = .117$, $p = .04$, and negatively correlated to feeling cooperative, $r(303) = -.101$, $p = .08$. An ANOVA examining number of thoughts by condition and gender confirmed that participants in the compete condition ($M = 5.71$, $SD = 2.81$) reported more thoughts than participants in the cooperate condition ($M = 4.93$, $SD = 2.08$) $F(1,304) = 8.51$, $p < .01$, $d = 0.32$, $r = .16$. There were no significant differences between genders in the number of reported thoughts ($M_{women} = 5.36$, $SD = 2.50$; $M_{men} = 5.26$, $SD = 2.51$; $F(1, 304) = 0.07$, $p = .785$), and there was no interaction between gender and condition ($F(1, 304) = .605$, $p = .437$). Figure 2 illustrates this pattern in thought reporting.

Analytic Strategy

Each reported thought/feeling was nested within individuals, who were nested within dyads, necessitating a multilevel approach to data analysis. Additionally, all data were collected from both participants in the dyad, making it possible to estimate the effects of both the actor and partner for all of the variables of interest. The Actor-Partner Interdependence Model (APIM; Kashy & Kenny, 2000) was designed to account for the interdependence between partners in a dyad by simultaneously estimating both persons' effects on the outcome variable while accounting for the shared variance across the dyad members (i.e., the outcomes of two participants who were in the same dyad may be more highly correlated than the outcomes of two participants who did not interact with one another). APIM was the main analytic strategy for many of the research questions. All models were run on SPSS Version 22 using the "Mixed" procedure for multilevel modeling. All variables in the APIM models were standardized across the entire sample unless otherwise noted.

Empathic Accuracy and Negotiation Success

Hypothesis 1 stated that empathic accuracy should predict success in a negotiation. Negotiation success was operationalized a number of different ways: total value of the items gained in the negotiation (game score), winning or losing (computed from the game score, with "winning" indicating that a participant's items were more valued by that participant than his or her partner's items were valued by the partner), and negotiation satisfaction.

The first dependent variable of interest is the game score, computed by noting which items the participant ended up with after the division of the items, and then adding

up the values for each of those items from that participant's initial item rating to get a total game score. Preliminary analyses indicated several outliers for game score, and upon further investigation one dyad was found to have errors in the recording of the items the participants had at the end of the negotiation, making computing a correct game score impossible. That dyad was dropped from all analyses in which game score was a variable. The average game score was 59.71 (*SD* = 12.40, range: 10-100) per individual across conditions and 119.43 (*SD* = 17.83, range: 60-167) per dyad. These scores indicate that dyads tended to "create value" during the negotiation, because the total possible points in the initial ratings of the items was 100 points.

Turning now to the multi-level modeling results, the null model indicated that only 3.4% of the variance in game score was attributable to the dyad-level variables (Intraclass correlation (ICC) = .034). I then created a main effects model to examine the effect of actor's and partner's empathic accuracy on the actor's game score. Figure 3 illustrates the proposed model in which both the actor's and partner's empathic accuracy scores interdependently affect the game score of the actor. Actor empathic accuracy and partner empathic accuracy were level-one (i.e., individual) predictors and there were no level-two (i.e., dyad) predictors, following this set of equations:

Level-1 Model:

$$GameScore_{ij} = \beta_{00} + \beta_{10}*(Actor\_EmpAcc) + \beta_{20}*(Partner\_EmpAcc) + e_{ij} \quad (1)$$

Level-2 Models:

$$\beta_{00} = \gamma_{00} + r_{0j} \quad (2)$$

$$\beta_{10} = \gamma_{10} \quad (3)$$

$$\beta_{20} = \gamma_{20} \quad (4)$$

Combined model:

$$\text{GameScore}_{ij} = (\gamma_{00} + r_{0j}) + \gamma_{10}(Actor\_EmpAcc) + \gamma_{20}(Partner\_EmpAcc) + e_{ij} \quad (5)$$

In the combined model, γ_{00k} represents the intercept, or the score for the participant with average scores for both actor's and partner's empathic accuracy, which are represented by γ_{10k} and γ_{20k} respectively. The random effects in the model are represented by e_{ij}, the individual variation, and by r_{0j}, the covariance in the dependent variable between the two dyad members. Because the variables were standardized to have means of 0 and standard deviations of 1 prior to being included in the model, the coefficients are interpreted as the change in standard deviation units in game score given a 1-standard deviation change in the predictor variable. The results of this model (Model 1, shown in Table 5) indicated there was no main effect of either actor's or partner's empathic accuracy on game score. Being more empathically accurate did not gain participants a significant number of points in the negotiation game, suggesting that Hypothesis 1 was not supported. There was also no partner effect, which indicates that having a partner who knows one's thoughts during a negotiation does not improve (or diminish) one's own score.

One major factor determining the number of points a person could score in this game might be due to the game design: participants attached their own values to the items, which meant partners could have perfectly correlated values for items, making the game a zero-sum game in which only one participant could get what he or she wanted. Or, participants could have perfectly uncorrelated values, allowing for a mutually beneficial outcome. Thus, the correlation between the initial item ratings by each participant within a dyad was computed and called "similarity". I added the similarity correlation (transformed to a Z score via Fisher's r-to-z transformation) to the model to

examine the effects of empathic accuracy on game score once similarity was accounted for. The full results of this model, found in Table 5 (Model 2), show that similarity was a significant predictor of game score (b = -.72, SE = .11) t(147.69) = -6.75, p < .001. The negative estimate indicates that the more similar partners' ratings for the items were prior to the negotiation, the lower their game scores were at the end of the negotiation. However, even after controlling for similarity in the ratings, there were no significant actor or partner effects of empathic accuracy on game score (see Table 5 for estimates).

There were no specific hypotheses about interactions between the dyad-level variables and actor and partner effects of empathic accuracy on game score, and indeed a model with actor empathic accuracy, partner empathic accuracy, similarity, and all the possible interactions with both gender and game condition revealed there were no interactions approaching significance, nor were there any significant main effects of gender or game condition on game score.

If empathic accuracy (inferring one's partner's specific thoughts) does not predict the personal gain in the negotiation, then perhaps item accuracy, or knowing what items one's partner values, might. Item accuracy was computed as the sum of squared differences between the ratings for each item rated by the participants. To find out which accuracy matters the most for getting a good score in the game, I created a new standardized model predicting the game score from item accuracy and empathic accuracy (total empathic accuracy) in the same model for direct comparison of the effects. This model showed that again, empathic accuracy was not a significant predictor of game score (b = .01, SE = .05, t(248.35) = 0.10, p = .92), and was actually slightly less predictive of game score than item accuracy (b = -.04, SE = .056, t(263.91) = -0.784, p =

.43), though neither could be relied upon as a basis for increasing (or decreasing) game scores post negotiation.

Another way to look at negotiation success would be to look not for a linear relationship between game score and empathic accuracy, but instead for a qualitative difference between those that won in the negotiation and those that didn't. A binary variable of winning or losing, computed by dummy coding a winner/loser variable based on the game score, was also examined in relation to empathic accuracy. Participants with the higher score in their dyad "won" (and in the compete condition, this "win" also determined who took home the items). I created a binary model adapted for APIM data using the GEE approach in SPSS, following the guidelines set forth by Loeys, Cook, De Smet, Wietzker, and Buysse (2014) to adapt the actor/partner model for categorical data. The outcome variable was the win/lose variable, which required the removal of the six dyads that tied to create this binary categorization. (The dyad with erroneous game scores was also removed). Actor and partner effects of empathic accuracy were entered as predictors of the likelihood of winning (winning was coded as 1, losing was coded as 0):

Full model:

$$\text{logit (Pr (Winning = 1))} = (\gamma_{00} + r_{0j}) + \gamma_{10}ActorEmpAcc + \gamma_{20}PartnerEmpAcc + e_{ij} \quad (6)$$

where the outcome was the probability of winning (winners were set as the reference group in the model), and the predictors are the grand-mean centered actor and partner empathic accuracy scores. The estimates of this model (Model 1) are presented in Table 6, along with a second model that includes similarity as well (Model 2). The results indicated that increases in empathic accuracy did not increase the probability of winning in the negotiation, which does not support Hypothesis 1.

Satisfaction with a negotiated outcome was considered another measure of the success for the negotiation as well. The same models above were thus used, substituting game score with satisfaction as the outcome. Table 7 gives the estimates from the null model, main effects model (Model 1), and model including similarity (Model 2). The ICC for satisfaction indicates little interdependence within dyads for ratings of satisfaction (ICC = .07). The main effects model that includes the actor and partner effects of empathic accuracy indicated that both actor's and partner's empathic accuracy significantly predicted satisfaction with the negotiation, though the effects are small (see Table 7 for estimates). Actors reported slightly higher satisfaction when they were more accurate and when their partners were more accurate. Like in the analyses for game score above, I created a new model that controlled for similarity in ratings. The results of that model indicated that a dyad's similarity in ratings did not predict satisfaction with the outcome of the game, and including satisfaction did not weaken the effects of actor's and partner's empathic accuracy.

Empathic Accuracy and Item Accuracy

Hypothesis 2 stated empathic accuracy should be positively correlated to other forms of accuracy, which in this study is the accuracy of guessing the partner's item ratings. I measured item accuracy in the form of the average sum of squares of the differences between the guess and the actual item rating, so smaller numbers indicate greater accuracy. The bivariate correlations between item accuracy and empathic accuracy (total and categorized by thought relevancy codes) are given in Table 8. Only those participants that have a score for the particular sub-category are included in the correlations. Table 8 shows that the total empathic accuracy scores, and the scores for

accuracy for non-evaluative thoughts, evaluative thoughts, and those two categories combined were not correlated to item accuracy. Curiously, there was a marginal correlation between accuracy for not-related thoughts and item accuracy, $r(188) = -.14$, $p = .052$. The negative correlation indicates participants with better item accuracy (and thus lower sums of squared differences) had higher empathic accuracy for thoughts that were coded as not being about items.

The dyadic nature of the negotiation, in which revealing preferences for the items might incite a quid pro quo revelation of information from the other person, indicates that interdependence should be accounted for in this model as well, so I created a series of standardized APIM models predicting actor's empathic accuracy from actor's item accuracy and partner's item accuracy (using the sum of squared deviations measure). Each empathic accuracy score was modeled separately, and the results of those models are presented in Table 9. The ICCs, which were all determined from a null model, all ranged from .106-.249, with the notable exception of accuracy for only "non-evaluative" thoughts, which had an ICC of -.041. This suggests that the multilevel modeling approach is appropriate in almost all of these cases. In the case of total empathic accuracy scores, actor item accuracy was not a significant predictor (see Table 9 for all estimates). However, there was a small effect of partner's item accuracy on actor's empathic accuracy. The negative estimate suggests that the more accurate one's *partner* was at guessing one's item preferences, the more accurate one was at guessing one's partner's *thoughts* during the negotiation. That was the only significant parameter estimate in all of the models: when examining each kind of accuracy separately, neither actors' nor partners' item accuracy was predictive of empathic accuracy (see Table 9). These models,

combined with the correlations reported above, provided evidence that item accuracy had no relationship to empathic accuracy, and thus Hypothesis 2 was not supported.

Effects of Gender and Condition on Accuracy

Empathic accuracy. The third hypothesis stated that men's empathic accuracy would be higher in the competitive condition than in the cooperative condition, and the fourth hypothesis stated that women's empathic accuracy would be higher than men's in the cooperative context, but not significantly different in the competitive context. The means and standard deviations of empathic accuracy by condition in Table 3 were not in the hypothesized direction, because the averages for both men and women were actually higher in the cooperate condition than in the compete condition. The ICC for empathic accuracy (ICC = .204) suggests there is interdependence within dyads on empathic accuracy, and that the multilevel modeling would be appropriate. For this particular set of hypotheses, there were only between-dyad variables and the interaction between those variables, so APIM was not necessary for this analysis. The same mixed procedure was used to create a two-level model in SPSS, following this equation:

Level-1 Model:

$$\text{EmpAcc}_{ijk} = \beta_{00k} + e_{ijk} \quad (7)$$

Level-2 Model:

$$\beta_{00k} = \gamma_{00k} + \gamma_{01k}*(Gender_{jk}) + \gamma_{02k}*(Condition_{jk}) + \gamma_{03k}*(Gender*Condition_{jk}) + r_{0j} \quad (8)$$

Full model:

$$\text{EmpAcc}_{ijk} = (\gamma_{00k} + r_{0j}) + \gamma_{01k}*(Gender_{jk}) + \gamma_{02k}*(Condition_{jk}) + \gamma_{03k}*(Gender*Condition_{jk})) + e_{ijk} \quad (9)$$

Gender and negotiation condition were dummy coded, with women coded as 0, men coded as 1, and cooperate condition coded as 0, and compete condition coded as 1. Because both variables were dichotomous and effects coded, it wasn't necessary to use the standardized dependent variable in this case. The full results of this model are shown in Table 10. This model reveals that there was no significant effect of gender on empathic accuracy, b = -.16, SE = 2.84, t(151) = -.055, p = .956. Overall, women's empathic accuracy was not different from men's. A two-intercept model with dummy codes for men and women and the interactions with condition suggested the differences between men in the compete and cooperate condition and women in the compete and cooperate condition were not significant. The full model in Table 10 showed there was no significant effect of negotiation condition on empathic accuracy, b = -3.42, SE = 2.79, t(151) = -1.23, p = .22, and there was no significant interaction between gender and negotiation condition, b = 1.76, SE = 4.12, t(151) = .427, p = .67. These results do not support Hypotheses 3 or 4, and in fact suggest that perhaps men's accuracy increased rather than decreased during cooperation (a pattern that was descriptively – although not statistically – even more pronounced in women, who scored lowest in the competitive condition- see Figure 4).

Item accuracy. The examination of the effects of gender and condition on accuracy can be extended to item accuracy as well. I used the same model as above, this time predicting item accuracy (the sum of squared deviations) from the dyad-level variables of gender and treatment. The ICC for item accuracy (ICC = .33) suggests even more interdependence in item accuracy than in empathic accuracy. The intercept, in this case the average sum of squared deviations for women in the cooperate condition, was

66.5 (Range of item accuracy = 5.2 - 300). As in the case of empathic accuracy, there was no effect of gender, $M_{MaleCooperate}$ = 67.16, b = .66, SE = 9.52, t(151.27) = -.07, p = .945, no effect of negotiation condition, b = -8.7, SE = 9.26, t(151.39) = -.94, p = .349, and no interaction between gender and negotiation condition, b = 3.07, SE = 13.71, t(150.72) = -.22, p = .823. Regardless of how "accuracy" was measured, gender and treatment did not affect the outcome.

Individual Differences

The secondary aims of this study were to examine the relationship between individual differences in power and Machiavellianism and the gender and condition variables and how those variables affect accuracy.

Power. Hypothesis 5 posited an advantage in accuracy for those with low power, but only in the competitive condition. Power was measured using the Sense of Power scale (Anderson et al., 2012), which has two separate scales: the personal sense of one's own power (person's sense ofpower) and the willingness to use power. The two subscales were moderately correlated: r(306) = .37, p < .001. The hypothesis was based on the person's sense of power, so I created a separate model for each subscale.

I estimated a standardized APIM model predicting empathic accuracy from actor's personal sense of power, partner's personal sense of power, the dyad-level gender and condition variables, and the interactions (with the interaction between actor's personal sense of power and condition being the key effect for this hypothesis). I then ran a separate model with the same parameters but using personal sense of power as the predictor. Table 11 shows the results of both models. In the model including the participants' personal sense of power, there is no significant actor effect, but there is a

significant partner effect, b =. -21, SE = .09, t(292.96) = -2.19, p = .03. The more one's *partner* reports having a sense of power, the less accurate one is. Contrary to Hypothesis 5, there was no significant interaction between actor's personal sense of power and condition. In fact, no other parameters in the personal sense of power model were significant (see Table 11 for all estimates).

For the model including one's willingness to use power, there were no significant main effects; neither actors' nor partners' willingness to use power was predictive of empathic accuracy. The dyad-level variables gender and treatment were also not predictive of accuracy, consistent with models reported earlier. There was, however, one significant interaction: the interaction between gender and actor's willingness to use power was significant, such that an increase in men's willingness to use power resulted in increased empathic accuracy, b = .248, SE = .124, t(274.63) = 1.99, p = .047. Again, condition did not interact with actor's willingness to use power, thus providing no support for Hypothesis 5.

Machiavellianism. Hypothesis 6 stated that higher Machs would have higher empathic accuracy, but only in the competitive condition. I developed an APIM model predicting empathic accuracy from actor's and partner's Machiavellianism scores, gender, condition, and all of the possible interactions (standardized). As seen in Table 12, the hypothesized interaction between actor's Machiavellianism and condition was not significant, b = .054, SE = .191, t(295.8) = .283, p = .777, thus Hypothesis 6 was not supported. Interestingly, there was a significant partner effect, such that having a partner that was higher in Machiavellianism meant having a lower empathic accuracy score, b = -

.22, *SE* = .09, *t*(293.88) = -2.40, *p* = .017. There were no other significant effects in that model.

Machiavellianism was also hypothesized to affect the participant's ability to get high value items for themselves: Hypothesis 7 stated that higher Machs would be able to get higher value items for themselves (and thus a higher game score) in the compete condition, but not the cooperate condition. In this APIM model, the same model as above was used to predict game score. Table 13 shows the full results of this model, in which there were no significant effects, showing that Hypothesis 7 was not supported.

CHAPTER IV

DISCUSSION

The main purpose of this study was to examine the usefulness of empathic accuracy in a negotiation situation. Empathic accuracy has not been shown to be particularly useful in a variety of other situations, such as in long-term relationships or in clinical settings (Hodges et al., 2015; Simpson et al., 2003; Stinson & Ickes, 1992), but perhaps a negotiation in which tangible gains were on the line would be one setting in which knowing what one's partner wants, what they think, and how they're feeling might lead to downstream positive effects for being accurate. Given that empathic accuracy has been shown to differ based on the motivating conditions, and those motivating conditions seem to differ with respect to gender (Hall & Schmid Mast, 2008; Hodges et al., 2011), competitive and cooperative motivations for the negotiation and the gender of the participants were examined as potential moderators for empathic accuracy. The main research questions, then, were twofold: How does empathic accuracy affect outcomes for the perceiver? And, what affects empathic accuracy? To answer these questions, I designed an experiment using a negotiation situation framed as either a competitive or cooperative game that allowed same-sex dyads to bargain over small prizes.

The first question about the effects of being accurate is one that is often discussed in research, but not often studied empirically (Hodges et al., 2015). It is assumed that being empathically accurate will lead to all manner of positive outcomes, and yet the results of this study suggest that being accurate did not result in any material gains. Contrary to the hypothesis, empathic accuracy was not related to getting better items in the negotiation or winning the negotiation. Knowing one's partner's thoughts and

feelings did not result in an increase in points scored in the negotiation, even when controlling for the possibility that participants had overlapping interests. Surprisingly, actor's empathic accuracy was not correlated to actor's item accuracy, or knowing how much one's partner valued the items. However, there was a partner effect suggesting that having a partner who knew what items the actor valued led to the actor's greater overall understanding of the partner's thoughts and feelings, perhaps because those partners vocalized their knowledge of the actor's wishes, making it easy for the actor to know what they were thinking. Alternatively, these pairs had higher rapport, potentially affecting both empathic accuracy and item accuracy. Interestingly, accurately guessing a partner's values for the items also did not lead to an increase in points scored during the negotiation, suggesting that empathic accuracy and item accuracy were separate and not related constructs – and yet neither of those constructs was related to doing better or worse in this negotiation situation.

This last finding is contrary to Thompson's (1991) findings that accuracy of a negotiation partner's payoff structure leads to improved scores in negotiations. There are several differences between typical negotiation studies and the way my study was designed that could account for these differences. First, the payoff structure in this study was generated by each participant, resulting in unique motivations for each person and unique combinations across dyads. In Thompson's (1991) study, the payoff structures were provided to the participants and were designed specifically to have opportunities for joint gain. Furthermore, it was the joint gain outcomes that were considered to be "better performance" in those studies, whereas in my study, the outcome measure was the

individual gain for each participant. This difference in classifying what counts as a "good outcome" may account for the differences in predictive value for item accuracy.

The payoff structures provided to participants in traditional negotiation research also creates a very clear goal for negotiators. If one is given a table of outcomes and sees that getting wheat and sheep provides no points, but wood and brick gain many points, then the goal is clear. In contrast, in my study, there may be many more acceptable outcomes, particularly if the participants were ambivalent about the items or if the real goal they had in the interaction was to make it to the end without seeming overly aggressive or unfriendly. The college sample, mostly from the same intro-level college classes, could have had a stronger goal to "get along" with a new person that they may see again. Indeed, feelings of competitiveness were much lower than feelings of cooperativeness generally, even though the competitive/cooperative manipulation appeared to be successful, with expected differences across condition groups. Participants also reported feeling extremely high levels of friendliness during the interaction, with every cell reporting a mean above 6.0 points on the seven-point "feeling friendly" item. In this way, the present study is more likely to correspond to everyday interactions with friends, such as deciding on where to eat or what movie to see, more so than corresponding to negotiations with business partners where a bottom line is known and stakes are higher. It may be that empathic accuracy is predictive of material gain in business situations, like Thompson's (1991) studies might suggest, but not so predictive in situations like the one created in my study, where the stakes were lower and there was potentially a wider range of acceptable outcomes.

What empathic accuracy *is* predictive of in this context might also point to the friendly, interpersonal nature of the interactions during the study. Empathic accuracy was related to being more *satisfied* with the outcome of the negotiation. Participants that were more accurate were more satisfied with the division of the items, and participants who had accurate partners were also more satisfied with the outcome. The correlations between the study variables show that thinking of themselves as similar to their partners, thinking that they would likely be friends with their partners, being happy with items, and being satisfied with the outcomes were all positively correlated with empathic accuracy, suggesting that empathic accuracy is connected to rapport and positive feelings about the interaction. Thus, it does appear that understanding one's counterpart, and being understood by one's counterpart, offered psychological gains if not material gains. In light of the evolutionary theories relating accurate understanding to survival, perhaps these psychological gains translate to gains in the health of the long-term relationship, which could have just as much, if not more, of an impact on fitness as resource gains. In terms of negotiation success, satisfaction with the result can be a very important outcome for negotiators, particularly if negotiators will have a continuing relationship (Curhan, Elfenbein, & Xu, 2006; Thompson et al., 2010). In negotiation skills trainings, one of the important pre-negotiation preparatory steps is to analyze the kind of relationship as it stands before the negotiation and how the negotiator hopes it to be after the negotiation (Patton, 2005). For the cases in which a friendly, respectful continuing relationship is desired, the party's satisfaction with the outcome would be of utmost importance to continue that relationship. While certainty about the direction of causality is difficult using this particular method, it does seem possible that being more accurate could lead to

these increases in rapport. It would be particularly useful for future negotiation researchers to examine if this positive relationship between empathic accuracy and satisfaction leads to more cooperative negotiations with the same parties in subsequent negotiations, leading to more joint gain over time.

As for the second main research question about the moderators of empathic accuracy, these data provide a clear story that neither gender nor treatment had any effect on empathic accuracy in this context, providing no support for my hypotheses. It was expected that men would have greater accuracy in the competitive condition than in the cooperate condition, but the means of the groups suggest men (and women) had slightly, but not significantly, higher empathic accuracy scores in the cooperative condition. Thus, the empathic accuracy scores were essentially the same across condition. The pattern of means also revealed that the means were in the expected direction for the competitive condition: men did have slightly higher accuracy than women in the competitive condition, but this difference was also not significant. Given the power analyses that suggested this study was adequately powered, it's not likely that this trend would reach significance even with more participants in the study. However, the pattern of means might hint that the overall context of the negotiation was somewhat motivating, given that previous empathic accuracy studies often find that men's accuracy is significantly lower than women's (Hodges et al., 2015).

The hypothetical model behind the prediction that empathic accuracy would increase for men in the competitive condition did suggest that motivation was a key factor in increasing accuracy. The preliminary manipulation check showed that men felt more competitive overall than women, and women felt more cooperative than men,

which is in the expected direction if competitive and cooperative feelings are considered a proxy for motivation. To explore this idea further, I ran two additional models to examine the effects of participants' reports of feeling competitive and cooperative on empathic accuracy. These exploratory models were run separately for competitive and cooperative feelings, and included the standardized actor and partner effects, the between-dyad predictors gender and condition, and the cross-level interactions, as well as the three-level interaction between the actor effect, gender, and condition. The results of this model, shown in Table 14, revealed a significant actor-condition interaction for competitive feelings, indicating increased accuracy for more competitive people in the competitive condition. Interestingly, when controlling for competitive feelings and the remaining effects in the model, the effect of condition became significant as well, such that participants were less accurate in the compete condition. The model for cooperative feelings revealed a significant actor effect, suggesting that the more cooperative participants felt the more accurate they were. This time, there was no significant interaction with condition, suggesting that cooperative feelings were useful across both negotiation frames. There was an interesting marginal partner-condition interaction that suggests that men's accuracy suffered in the compete condition when their partners felt more cooperative. It must be said that it is possible that these exploratory findings, or any of the non-hypothesized effects found in the results, could be the result of Type 1 error given the number of analyses involved in this study.

All of these findings do suggest that feelings about the interaction had an effect on empathic accuracy, which does partially support my hypothetical model -- if we believe the competitive and cooperative feelings to be analogous to how motivated the

participants were. The subjective competitive and cooperative feelings are likely just a piece of that motivation construct, but not the whole picture. Together, the lack of support for the overall condition effect and the evidence provided by the subjective feelings point toward a situation that may not have been strong enough to elicit effects from everyone, particularly those with other motives. Future studies that involve real interactions should include some measure of personal relationship-building motivations in addition to competitive or cooperative ones, such as belongingness or measures of agreeableness. Furthermore, a neutral comparison group would reveal more about the motivating effects of both the competitive and cooperative conditions, and should also be included in future research should it work in the design. Notably, the initial design for this study included plans for such a control condition, but it was dropped for pragmatic reasons, given the number of participants and challenges in running the study.

The individual differences I examined were also not related to empathic accuracy or the outcome of the negotiation as I expected, but did reveal some interesting findings. I expected that participants with a low personal sense of power would be more accurate in the competitive condition, based on previous research that showed that low-power individuals were more likely to search for individuating information when dealing with competitive partners (De Dreu & Van Kleef, 2004). The current study did not fall in line with that previous research: individual differences in a personal sense of power did not interact with condition to affect accuracy. However, there was a significant partner effect suggesting that participants were less accurate at guessing the thoughts of a partner who reported a higher sense of power. This result is also inconsistent with Snodgrass and colleagues' (1998) finding that higher-power individuals were easier to read. However,

this result does echo the findings on Machiavellianism, which suggested that participants were less accurate the more Machiavellian their partner was. Both of these findings together suggest that individual differences are more related to target readability than mind-reading abilities, which is in line with recent research on empathic accuracy (Lewis, 2014; Snodgrass et al., 1998). In this case, participants who both see themselves as someone who has power and think it's appropriate to use information to manipulate others to get what they want are less readable to their partners, which indicates they may be using different kinds of strategies in the negotiation, perhaps withholding information more often than their counterparts. However, it does not appear to be the case that these people alter their strategy depending on the context, because neither effect interacted with game condition. There was, however, an unexpected interaction between gender and the willingness to use power. Men who reported being more willing to use power were also more accurate at guessing the thoughts and feelings of their partners. Perhaps men who are more proactive about getting what they want see being accurate as a way to accomplish that goal, and are indeed motivated to be more accurate.

Methodological Considerations

It is important to point out that these conclusions are made about empathic accuracy as measured in this study - which was measured using an operationalization that creates a difficult task for participants. To be accurate using this measure, one must recognize, with no help from multiple choice options, the exact contents of their partner's thoughts and feeling at an exact moment, and then again at another moment, and so on. It may be that this particular operational definition has more drawbacks than predictive validity, despite all the many assumptions about the good empathic accuracy measured in

this manner should do us. First among these drawbacks, this methodology is time and resource intensive, making participants go through an arduous task of living through an experience three times - once in real time, then twice reliving it via a recording to report thoughts and then inferences. This increases the amount of time participants are in the lab, and distances the participants' ratings of subjective feelings or any other measurements researchers might take about the event from the event itself. Second, the logistics of measuring empathic accuracy, with accuracy for an event measured after the event (even only just after) creates a problem with temporal precedence. Though the accuracy is "during" an event, the measurement of it happens afterwards, which is potentially problematic if researchers are trying to make a strong causal argument about causes or effects of empathic accuracy.

Empathic accuracy researchers must do the hard work of disentangling the reasons why this particular operationalization is not predictive of positive downstream outcomes. I expected to see some effects of empathic accuracy on outcomes that have been shown with other accuracy measures, but found none. However, those other results were notably found using different samples and accuracy measurements. Many negotiation studies are run with samples of MBA students, who are more likely to have negotiation training, or at least be primed with a more win/lose attitude toward exercises with others, given the number of role plays that are included in business training programs (Thompson et al., 2010). To truly know if it's the measure or the sample, it would be interesting to replicate this study using a sample of MBA students or professional negotiators during real negotiations. These two groups may not follow the same politeness norms as college undergrads participating in a study as part of a class

assignment. Similarly, it would be enlightening to try using the same study methods used in the current study (e.g., Ickes' 1993 paradigm for measuring empathic accuracy), but also use standard negotiation paradigms with pre-determined payoff structures, to see if results fall more in line with the negotiation literature. The present study allowed the participants to create their own payoff structures for the explicit purpose of interpreting the empathic accuracy scores as a measure of inferring *real* thoughts and feelings during the interaction without the added layer of meta-thinking about a role-play. It is unclear if the accuracy for thoughts during a role-play would be as generalizable or even as interpretable as accuracy for thoughts made during an organic and unscripted interaction, hence the creation of a scenario in the current study where participants were personally invested and made their own decisions. However, this freedom to create their own payoff structure might have created a more fluid and changeable situation in this study than the typical negotiation in which a job salary or a business deal or some other "higher stakes" outcome is a known and fixed goal. Participants may have changed their mind about how much they wanted an item, or conceded the items they wanted in an effort to be friendly and accommodating. Future laboratory studies might use a typical role-play scenario with this measure of empathic accuracy to compare the pattern of results with this study and with negotiation studies that have found that accuracy leads to better negotiation outcomes (Thompson, 1991). Better still would be field studies examining empathic accuracy of real negotiators during real negotiations, which would prevent the issue of interpreting accuracy for thoughts during a role-play. Controlling the goals of the negotiation might more tightly create a pattern of results more similar to those in previous negotiation literature (Thompson, 1991; Thompson et al., 2010).

If future studies that use the empathic accuracy paradigm in more tightly controlled negotiation settings still do not find that empathic accuracy has the kind of predictive validity that researchers in evolutionary social cognition, close relationships, clinical, and negotiation fields predict, we might need to revisit the use of this particular measurement of empathic accuracy. Perhaps the Ickes (1993) methodology is *too* stringent of a measure and requires too much of participants to be useful. Maybe the benefits of being accurate don't come with being perfect, but come with being close enough- that is, the "gist" of what people are thinking may actually be more useful than the exact thoughts, which might contain more noise than useful info that others may act upon. Some studies have experimented with variations on the Ickes (1993) paradigm to stop the tape at equally spaced-out intervals to report a thought for that moment (Lewis, et al., 2012; Verhofstadt, Buysse, Ickes, Davis, & Devoldre, 2008), but this methodology could also be used to try to capture the "gist" of what someone is thinking by asking them to report on their thoughts more generally over that chunk of time.

These variations provide promising avenues to explore, but there has not yet been a rigorous comparison of the different variations by looking at the same kinds of outcomes, so it's hard to say which has more predictive validity at this point. My belief is that what is necessary for success in a negotiation, and many other kinds of conflict resolution for that matter, is an accurate understanding of the deeper interests of the parties that allows for a more complete understanding of the satisfactory outcomes, which is the basis for the negotiation style popularized by Fisher and Ury (1981). To measure accuracy for deeper interests, researchers might combine the methodology for measuring accuracy for payoff structures and moment-to-moment thoughts and feelings about

different negotiation offers or behaviors in the negotiation. For example, each party might make a checklist of the most important issues for them and guess the most important issues for the other party, and then say overall what issues the parties might have been trying to satisfy with each new offer, both for themselves and for the other party. That kind of data could also be combined with accuracy about how each party reacted to new offers in a more global sense, e.g. "They seemed displeased with this part of the offer, but they liked that portion." Going forward, research in the area of what *kinds* of accuracy are most useful would be a worthwhile endeavor.

CHAPTER V

CONCLUSIONS

Accurately reading the thoughts of others may not produce gains in a material sense, but it might make for a happier and more satisfying experience during a negotiation. Neither gender nor the framing of the negotiation as either competitive or cooperative had an effect on how accurately participants read their partners or how well they did in the negotiation, suggesting that men and women performed equally well in this particular negotiation. Though the results were not completely in line with results evolutionary social scientists might have predicted based on the functional basis of our social cognition in terms of outsmarting foes and gaining resources, the results might suggest that accuracy is related to the one useful outcome for the situation. In this case, empathic accuracy was related to satisfaction and rapport-types of variables in a situation that was particularly friendly and potentially the first interaction in an on-going relationship, making friendliness and trust more important than getting high-valued items. Moving forward, research examining the usefulness of empathic accuracy should carefully consider the kind of accuracy that might be most useful for the kind of situation examined.

APPENDIX A

NEGOTIATION QUESTIONNAIRE (IN COLLECTION ORDER)

The following items were scored on a 1 (*not at all*) to 7 (*very much*) scale:
I felt competitive and wanted to beat my partner
I felt like I was cooperating with my partner
I felt like I was having fun playing the game
I felt like my interactions with my partner were friendly
I felt excited about getting to take home my items if I succeeded at the task

The following items were scored using the scales as identified for each one:
How happy are you with the items that you ended up with in the game (regardless of if you get to take them home or not)?
1 (*very unhappy*) to 7 (*very happy*)
How satisfied are you with the division of the items?
1 (*very unsatisfied*) to 7 (*very satisfied*)
Who do you think ended up with better items; you or your partner?
(*me*) (*my partner*)
How likely is it that you would be friends with your partner?
1 (*very unlikely*) to 7 (*very likely*)
How similar do you think you are to your partner?
1 (*not at all similar*) to 7 (*very similar*)

The following items were scored on a 1 (*very little*) to 7 (*a lot*) scale:
How much did it feel like you were self-disclosing to your partner?
How much did it feel like your partner was self-disclosing to you?
How much did you trust your partner?
How much do you think your partner trusted you?

The following items were scored on a 1 (*not truthful*) to 7 (*very truthful*) scale:
How truthful do you think your partner was during the conversation?
How truthful were you during the conversation?

The following items were scored using the scales as identified for each one:
How frequently did you find yourself trying to think about what your partner was thinking about during the conversations?
1 (*not at all*) to 7 (*very frequently*)
How well did you know your partner before today?
1 (*did not know them*)
2 (*not very well*)
3 (*acquaintance*)
4 (*know fairly well*)
5 (*know very well*)
6 (*close friends with partner*)

APPENDIX B

COMPETE AND COOPERATE MANIPULATIONS

Competitive condition

Today, you're going to play a game. The game is for you to divide up these 10 items. You win the game by negotiating the best "pile" of items for yourself. You can't just grab an item for your pile; you both have to agree on the way the items are divided up. So, if for example you both want one object, you could negotiate to let the other person have it in exchange for *two* items that you like. You don't have to have the same number of items at the end.

However, if you can't agree on a division, then no one wins.

We'll determine the winner afterwards, by adding up the value of the items in each of your piles. If you're the winner (that is, your pile is worth the most), you'll get to take home your whole pile. The loser doesn't get anything. And if you can't both come to an agreement about how to divide the objects up, you both lose.

You have 7 minutes to negotiate.

Cooperative condition

Today you're going to play a game. The game is for you to divide up these 10 items. You win the game by dividing the objects between the two of you, in a way that you both are happy with. You can't just grab an item for your pile; you both have to agree on the way the items are divided up. So, if for example you both want one object, you could negotiate to let the other person have it in exchange for *two* items that you like. You don't have to have the same number of items at the end.

If you do come to an agreement, you both win, and you'll both get to take home your whole pile of items.

However, if you can't both come to an agreement about how to divide the objects up, you both lose and you don't take anything home.

You have 7 minutes to negotiate.

Table 1

Type and frequency of disagreements in the item coding scheme for thoughts

Disagreement	Count	Percentage
CCB	438	26.50%
No Disagreement	373	22.57%
AAC	211	12.76%
CCA	211	12.76%
BBC	203	12.28%
Complete Disagreement (ABC)	126	7.62%
AAB	53	3.21%
BBA	38	2.30%
Total	1653	100.00%

Note: Table shows all the possible disagreement types between the coders for the item relevancy coding (A = not related to items, B = about item but not evaluative, C = evaluating specific item). There were three coders for each thought.

Table 2

Frequencies of item relevancy thought codes by condition

	Not Related	Non-Evaluative	Evaluative	Total
Compete	224	148	480	852
Cooperate	161	172	468	801
Men	183	143	423	749
Women	202	177	525	904
Total	385	320	948	1653

Table 3

Descriptive Statistics by Condition

	Women Cooperate *M (SD)*	Men Cooperate *M (SD)*	Women Compete *M (SD)*	Men Compete *M (SD)*	All *M (SD)*
Competitive	1.63 (1.18)	2.32 (1.74)	3.28 (1.82)	3.67 (1.89)	2.65 (1.83)
Cooperative	6.47 (0.80)	6.40 (0.90)	6.15 (1.01)	5.75 (1.15)	6.22 (1.00)
Satisfied	6.08 (1.06)	5.94 (0.99)	5.69 (1.09)	5.30 (1.35)	5.78 (1.15)
Machiavellianism	3.08 (0.57)	3.40 (0.52)	3.09 (0.36)	3.35 (0.59)	3.21 (0.54)
Narcissism	2.81 (0.53)	3.18 (0.46)	2.89 (0.43)	3.11 (0.53)	2.98 (0.51)
Psychopathy	2.06 (0.55)	2.48 (0.64)	1.99 (0.50)	2.34 (0.58)	2.20 (0.60)
Sense of Power	5.00 (0.75)	5.12 (0.65)	4.88 (0.72)	4.80 (0.87)	4.96 (0.75)
Use Power	3.85 (0.81)	4.34 (0.94)	4.00 (0.76)	4.13 (0.93)	4.06 (0.87)
Empathic Accuracy	37.65 (15.25)	37.49 (17.73)	34.23 (16.02)	35.83 (16.53)	36.33 (16.33)
Game Score[a]	58.98 (14.00)	57.65 (11.65)	61.74 (11.36)	60.45 (12.06)	59.71 (12.40)

[a]Two participants with errors in their game scores have been removed from this average.

Table 4

Correlations between study variables

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.	17.	18.	19.	20.	21.	22.	23.	24.
1. Empathic Accuracy	–	.02	-.03	.04	.02	.09	.08	-.04	.04	**.12**	**.16**	**.14**	**.20**	.08	.02	.05	.04	.03	.05	.10	.09	.06	**.17**	.08
2. Game Score		–	-.05	**-.34**	**.15**	-.07	.09	-.08	-.05	**.16**	**.18**	-.06	.02	**.15**	**.18**	.07	-.01	.09	**.16**	.06	.00	-.02	.00	.02
3. Item Accuracy			–	-.07	-.06	**.12**	-.05	.08	-.11	-.05	-.02	.05	-.01	-.10	**-.17**	-.05	.00	-.02	.01	-.03	-.10	.04	.00	-.02
4. Item Similarity Correlation				–	.00	.10	-.06	.03	.11	-.07	-.03	.02	.08	-.08	-.11	-.04	.03	-.02	-.07	-.08	.05	.10	.00	-.03
5. Felt Competitive					–	**-.28**	**.23**	**-.26**	**.13**	.05	**-.14**	-.11	-.05	-.03	.01	**-.28**	**-.22**	-.06	**-.13**	**.20**	**.12**	**.17**	**.12**	**.33**
6. Felt Cooperative						–	.07	**.49**	.06	.11	**.28**	**.15**	**.12**	-.07	-.07	**.18**	**.22**	**.22**	**.12**	-.06	-.10	-.03	**.14**	-.02
7. Having Fun							–	**.16**	**.37**	**.25**	.10	**.22**	**.20**	**.15**	**.13**	**.22**	**.20**	**.15**	**.14**	**.22**	.04	-.01	-.01	.10
8. Felt Friendly								–	.04	**.12**	**.19**	**.28**	**.19**	-.01	.01	**.31**	**.31**	**.27**	**.32**	.01	-.10	**-.12**	.03	**-.14**
9. Excited to Take Items									–	**.38**	**.13**	.02	.02	.03	.03	.06	.06	**.13**	.03	.10	.03	.11	.05	**.17**
10. Happy With Items										–	**.52**	**.13**	.02	.07	.07	**.14**	.07	**.19**	**.14**	.09	.02	-.02	**.14**	.05
11. Satisfied with Outcome											–	.07	.01	.05	.11	**.33**	**.23**	**.30**	**.32**	-.02	.00	**-.14**	.04	-.10
12. Likely Friends												–	**.61**	**.17**	**.14**	**.32**	**.29**	**.18**	.10	**.15**	-.10	**-.16**	.11	-.09
13. Perceived Similarity													–	**.22**	**.15**	**.26**	**.26**	**.16**	.11	.10	-.05	**-.14**	-.02	-.08
14. Actor Self-Disclosing														–	**.62**	**.20**	**.17**	**.11**	.08	.09	-.03	.00	-.01	.01
15. Partner Self-Disclosing															–	**.28**	**.23**	**.19**	**.13**	.01	.04	.00	.00	.04
16. Trusted Partner																–	**.81**	**.43**	**.32**	-.06	-.09	**-.25**	-.09	**-.22**
17. Trusted by Partner																	–	**.35**	**.26**	-.06	-.08	**-.17**	-.01	**-.15**
18. Perceived Partner Truthfulness																		–	**.61**	-.09	-.04	**-.13**	.04	-.07
19. Actor Truthfulness																			–	-.08	-.04	**-.20**	.01	-.11
20. Meta-thinking																				–	.08	.01	.04	.08
21. Number of Thoughts																					–	.08	.04	.03
22. Machiavellianism																						–	**.13**	**.44**
23. Sense of Power																							–	**.37**
24. Use Power																								–

Correlations in bold are significant at the >.05 level.

Notes: 3. Item Accuracy is the sum of the squared deviations between the actor's guess and the partner's actual item rating. 4. The Similarity Correlation is the correlation between the actor's and partner's initial item ratings, transformed via Fisher's r-to-z transformation.

Table 5

Standardized parameter estimates for game score predicted by empathic accuracy

	Null Model	Model 1	Model 2
Fixed Effects			
Intercept	.02	.04	.19
SE	.06	.06	.05
t(df)	.41(151.26)	.71(149.26)	3.53(148.04)
p-value	.68	.48	.001**
Actor Empathic Accuracy		.01	.02
SE		.06	.05
t(df)		.21(286.89)	.39(270.42)
p-value		.83	.70
Partner Empathic Accuracy		-.06	-.05
SE		.06	.05
t(df)		-1.07(286.86)	-.96(270.39)
p-value		.29	.34
Similarity			-.72
SE			.11
t(df)			-6.75(147.69)
p-value			>.001**
ICC	.037	-.001	-.131

**$p < .001$

Table 6

Fit statistics and parameter estimates for binary logistic APIM model predicting the likelihood of winning from empathic accuracy and similarity

Parameter	Model 1	Model 2
Likelihood[a]	403.46	400.87
Actor Empathic Accuracy	0.009	0.009
SE	0.008	0.008
Wald χ^2	1.28	1.19
df	1	1
p	.26	.28
Partner Empathic Accuracy	-0.009	-0.009
SE	0.008	0.008
Wald χ^2	1.28	1.19
df	1	1
p	.26	.28
Similarity		4.32E-17
SE		.00
Wald χ^2		.
df		1
p		.00**

[a]Likelihood is the Quasi Likelihood under Independence Model Criterion (QIC)
**$p < .001$

Table 7

Standardized parameter estimates of models predicting satisfaction with outcome from empathic accuracy

	Null Model	Model 1	Model 2
Fixed Effects			
Intercept	-.00	-.01	.01
SE	.06	.06	.06
t(*df*)	-.06(151.25)	-.12(150.09)	.16(149.85)
p-value	.95	.91	.87
Actor Empathic Accuracy		.14	.14
SE		.06	.06
t(*df*)		2.37(289.81)	2.39(289.44)
p-value		.02*	.02*
Partner Empathic Accuracy		.12	.12
SE		.06	.06
t(*df*)		2.09(289.76)	2.11(289.4)
p-value		.04*	.04*
Similarity			-.09
SE			.13
t(*df*)			-.65(148.9)
p-value			.52
ICC	.07	.03	.04

*$p < .05$

Table 8

Correlations between Empathic Accuracy (and its subcomponents) and Item Accuracy

	1	2	3	4	5	6
1. Item accuracy	–	-.03	-.14	.02	-.05	-.06
2. Total Empathic Accuracy (EA)		–	.58**	.53**	.76**	.84**
3. EA Not-Related Thoughts			–	-.15	.11	.08
4. EA Non-Evaluative Thoughts				–	.03	.68**
5. EA Evaluative Thoughts					–	.85**
6. EA Non-Evaluative and Evaluative Combined						–

**$p < 0.01$ (2-tailed).

Table 9

Parameter estimates for models predicting empathic accuracy from item accuracy

	Inferred Thought Code				
	All	Not related	Non-evaluative	Evaluative	Evaluative and non-evaluative combined
Fixed Effects					
Intercept	.00	-02	-.00	-.02	-.01
SE	.06	.07	.08	.07	.06
t(*df*)	.02(148)	-.25(116.81)	-.02(101.09)	-.27(135.59)	-.12(146.02)
p-value	.98	.80	.98	.79	.91
Actor Item Accuracy	.01	-.13	.03	-.03	-.04
SE	.06	.09	.08	.06	.06
t(*df*)	.1(292.28)	-1.55(169.39)	.33(146.52)	-.57(265.27)	-.71(285.15)
p-value	.92	.12	.74	.57	.48
Partner Item Accuracy	-.12	-.14	-.03	-.06	-.05
SE	.06	.08	.08	.06	.06
t(*df*)	-2(292.28)	-1.75(169.14)	-.44(143.24)	-.93(265.02)	-.77(285.17)
p-value	.05*	.08	.66	.36	.44
ICC	.204	.106	-.041	.249	.212

*significant at the < .05 alpha-level

Note: ICC reported is from a null model.

Table 10

Parameter estimates for model predicting empathic accuracy from gender and condition

Parameter	Estimate	*SE*	*df*	*t*	*p*
Intercept	**37.65**	**1.92**	**151**	**19.59**	**.00**
Gender	-0.16	2.84	151	-0.06	.96
Condition	-3.42	2.79	151	-1.23	.22
Gender * Condition	1.76	4.12	151	0.43	.67

Note: Values in bold is significant at the $p < .01$ level.

Table 11

Parameter estimates for models predicting empathic accuracy from personal sense of power and use of power

Parameter	Estimate	*SE*	*df*	*t*	*p*
Sense of Power					
Intercept	0.10	0.12	144.00	0.85	.40
Actor Sense of Power	0.11	0.10	292.96	1.19	.23
Partner Sense of Power	**-0.21**	**0.10**	**292.96**	**-2.19**	**.03**
Gender	0.00	0.18	144.00	-0.03	.98
Condition	-0.24	0.17	144.00	-1.37	.17
Actor SP * Partner SP	-0.06	0.07	144.00	-0.88	.38
Actor SP * Gender	0.12	0.12	292.50	1.06	.29
Actor SP * Condition	0.01	0.12	292.81	0.12	.91
Partner SP * Gender	0.08	0.12	292.50	0.64	.52
Partner SP * Condition	0.16	0.12	292.81	1.36	.17
Gender * Condition	0.16	0.26	144.00	0.63	.53
Use of Power					
Intercept	0.06	0.12	144.00	0.52	.61
Actor Use of Power	-0.05	0.10	282.31	-0.53	.60
Partner Use of Power	-0.05	0.10	282.31	-0.53	.60
Gender	-0.02	0.19	144.00	-0.09	.93
Condition	-0.20	0.17	144.00	-1.17	.24
Actor UP * Partner UP	-0.10	0.06	144.00	-1.61	.11
Actor UP * Gender	**0.25**	**0.12**	**274.63**	**2.00**	**. 05**
Actor UP * Condition	0.01	0.12	284.31	0.07	.94
Partner UP * Gender	0.06	0.12	274.63	0.49	.62
Partner UP * Condition	0.08	0.12	284.31	0.70	.49
Gender * Condition	0.11	0.26	144.00	0.41	.68

Note: Values in bold are significant at the $p < .05$ level.

Table 12

Parameters for model predicting empathic accuracy from Machiavellianism

Parameter	Estimate	*SE*	*df*	*t*	*p*
Intercept	-0.02	0.07	147.81	-0.30	0.77
Actor Machiavellianism	0.05	0.10	294.34	0.46	0.65
Partner Machiavellianism	**-0.22**	**0.09**	**293.88**	**-2.40**	**0.02**
Actor Mach * Condition	0.05	0.19	295.80	0.28	0.78
Partner Mach * Condition	0.21	0.12	293.39	1.72	0.09
Actor Mach * Gender	0.12	0.15	295.14	0.75	0.45
Partner Mach * Gender	0.09	0.12	293.40	0.72	0.47
Actor Mach * Gender * Condition	-0.13	0.25	295.87	-0.50	0.62

Note: Values in bold are significant at the $p < .05$ level.

Table 13

Parameter estimates for model predicting game score from Machiavellianism

Parameter	Estimate	*SE*	*df*	*t*	*p*
Intercept	0.00	0.07	146.20	-0.07	.95
Actor Machiavellianism	-0.10	0.10	285.88	-0.94	.35
Partner Machiavellianism	0.05	0.09	282.81	0.51	.61
Actor Mach * Condition	0.03	0.19	290.46	0.18	.86
Partner Mach * Condition	-0.15	0.12	290.94	-1.23	.22
Actor Mach * Gender	0.15	0.16	290.80	0.99	.33
Partner Mach * Gender	-0.09	0.13	290.99	-0.69	.49
Actor Mach * Gender * Condition	-0.18	0.25	289.85	-0.70	.48

Table 14

Exploratory analyses predicting empathic accuracy from competitive and cooperative feelings

Parameter	Estimate	*SE*	*df*	*t*	*p*
Competitive Feelings					
Intercept	-0.01	0.13	167.55	-0.06	.96
Actor Competitive	-0.29	0.16	288.51	-1.84	.07
Partner Competitive	0.07	0.12	287.54	0.54	.59
Gender	0.09	0.14	172.89	0.62	.54
Condition	**-0.30**	**0.15**	**150.29**	**-1.98**	**.05**
Actor Competitive * Gender	0.33	0.20	288.98	1.67	.10
Partner Competitive * Gender	0.05	0.12	287.65	0.39	.69
Actor Competitive * Condition	**0.49**	**0.20**	**289.95**	**2.46**	**.01**
Partner Competitive * Condition	0.08	0.13	289.79	0.58	.56
Actor Competitive * Gender * Condition	-0.36	0.27	289.50	-1.35	.18
Cooperative Feelings					
Intercept	-0.01	0.11	147.52	-0.10	.92
Actor Cooperative	**0.28**	**0.13**	**282.98**	**2.12**	**.04**
Partner Cooperative	0.04	0.11	273.12	0.35	.73
Gender	0.07	0.13	149.82	0.52	.61
Condition	-0.11	0.14	144.04	-0.81	.42
Actor Cooperative * Gender	-0.07	0.19	287.80	-0.37	.71
Partner Cooperative * Gender	-0.33	0.17	287.99	-1.93	.06
Actor Cooperative * Condition	-0.03	0.12	282.85	-0.23	.82
Partner Cooperative * Condition	0.11	0.12	283.30	0.85	.40
Actor Cooperative * Gender * Condition	0.09	0.25	283.56	0.37	.71

Note: Values in bold are significant at the $p < .05$ level.

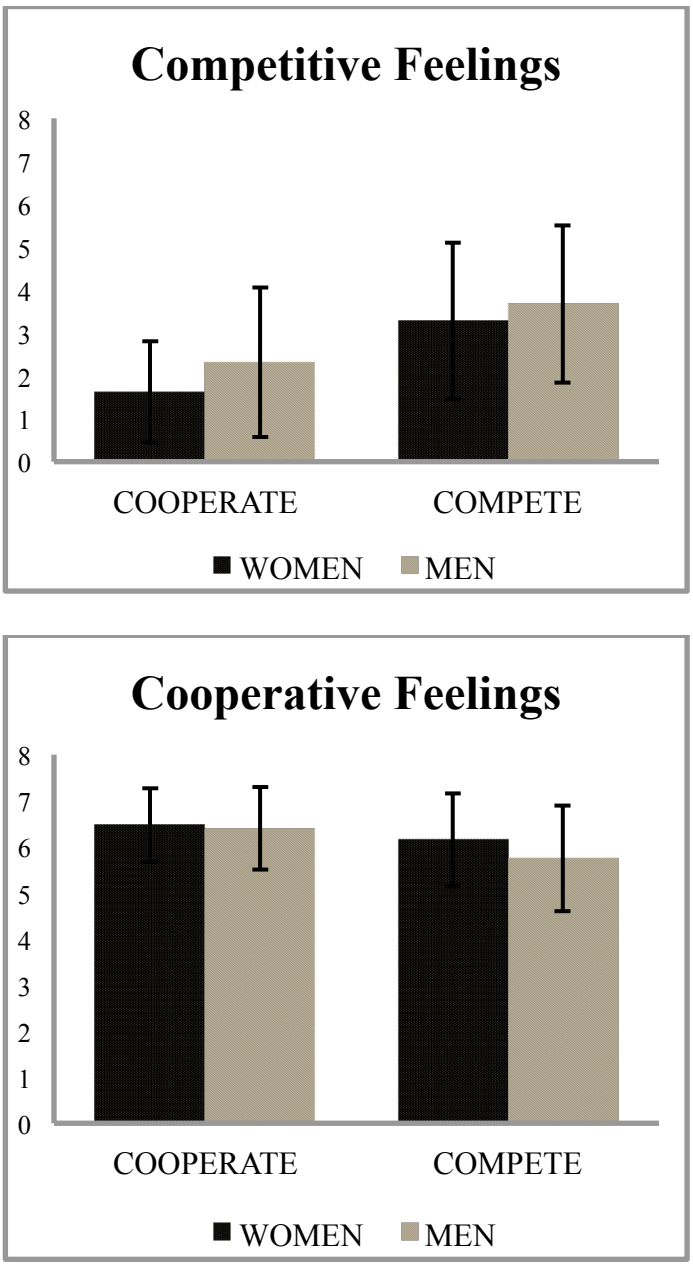

Figure 1. Mean subjective feelings of competitiveness and cooperativeness across condition. Error bars represent standard deviations.

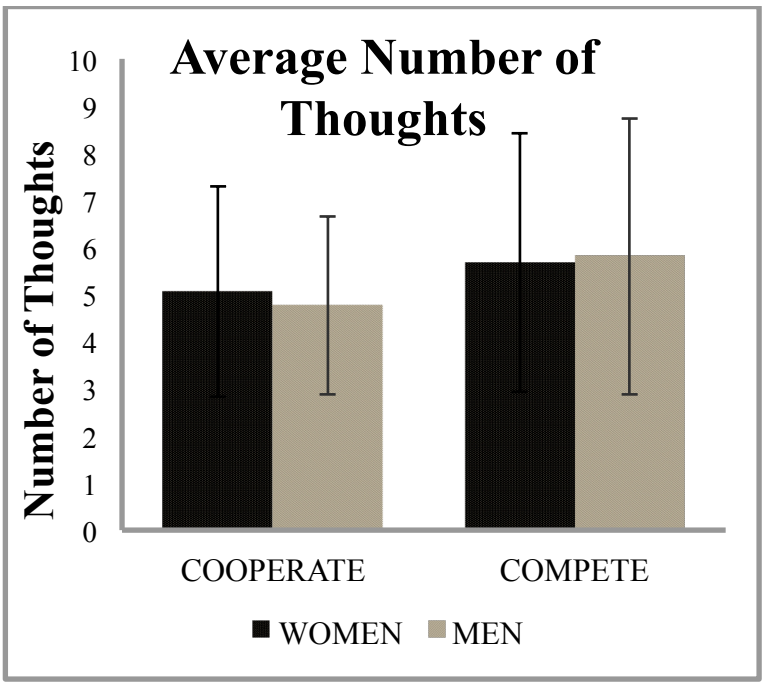

Figure 2. Mean number of thoughts across condition. Error bars represent standard deviations.

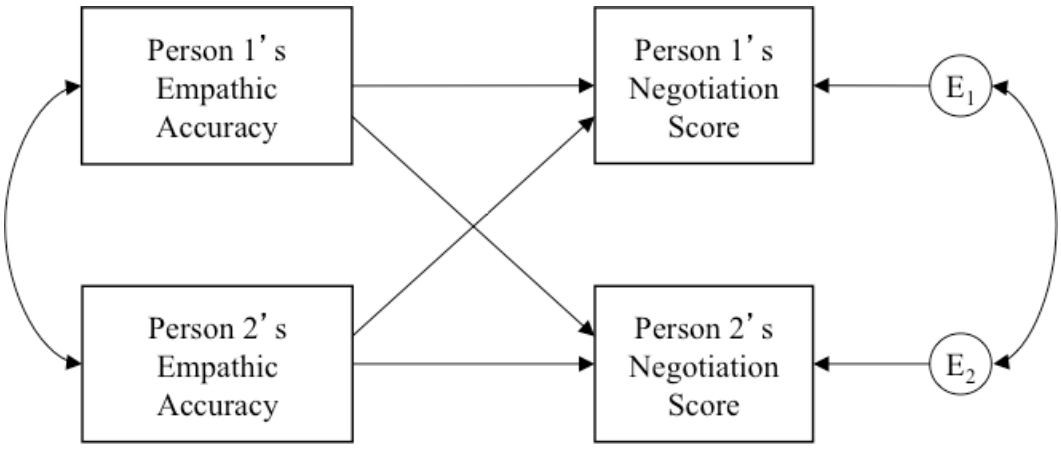

Figure 3. Actor-Partner Interdependence model prediction negotiation scores from actor's and partner's empathic accuracy scores.

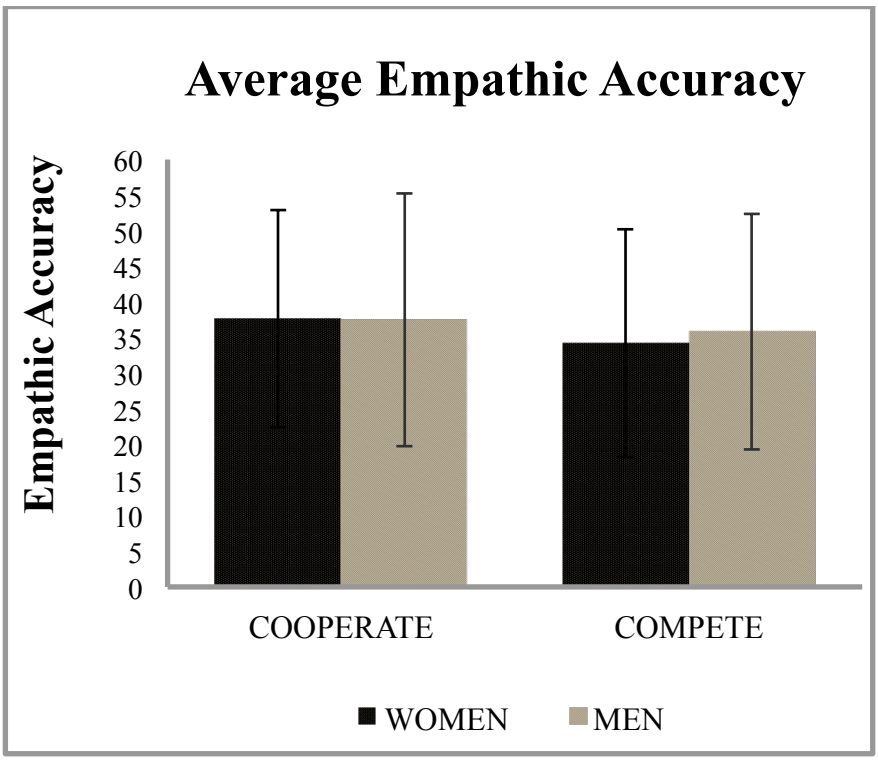

Figure 4. Mean empathic accuracy across condition. Error bars represent standard deviations.

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