

What is on Your Mind? Motivated Social Inference in Intergroup Contexts

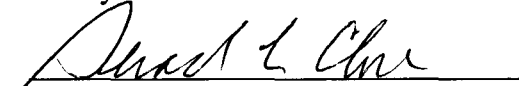

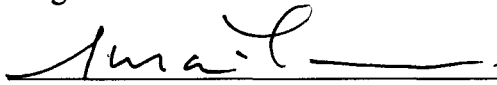
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Abstract

The present research examines how people make inferences about others' mental states in intergroup interaction, particularly when they are motivated to get along with an out-group member (i.e., have affiliative motivation). Three experiments were designed to examine whether the experience of affiliative motivation influenced the degree to which people infer the mental state of another person based on group-based knowledge (e.g., stereotypes) versus self-knowledge (i.e., what the self would do), and whether this relative use of group-based versus self-based inference may depend on the evaluative implications of a given inference strategy. It is hypothesized that because affiliative motivation evokes people's desire to see their interaction partner positively, this motivation should encourage the given inference strategy to the extent that the resulting inference is positive in nature. Concomitantly, affiliative motivation should inhibit the inference strategy when the strategy implies negative perceptions of the partner. When the predominant inference strategy is suppressed, people should resort to the other strategy. The examination of motivated social inference is consistent with growing research interest in how people make inferences in intergroup contexts to better understand the process by which people form expectations and behave in intergroup interaction.

Table of Content

Abstract	ii
Table of Content	iii
Acknowledgements	v
Chapter 1: Introduction	1
1.1 Overview	1
1.2 Background: Social inference in intergroup interaction	3
1.3 Motivated inference: The role of affiliative motivation	5
1.4 Motivated inference: Positivity bias	8
1.5 Overview of experiments	10
Chapter 2: Experiments	12
2.1 Experiment 1	12
Method	12
Results	16
Discussion	19
2.2 Experiment 2	20
Method	22
Results	27
Discussion	35
2.3 Experiment 3	37
Method	37
Results	41
Discussion	52

Chapter 3: General Discussion and Conclusion	52
3.1 General discussion	54
3.2 Conclusion	58
References	60
Appendix A	68
Appendix B	69
Appendix C	73
Appendix D	76
Appendix E	77
Appendix F	78
Appendix G	80

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Chapter 1

1. Introduction

1.1 Overview

Our social behavior is fundamentally related to our perception of others as active perceivers and intentional agents. In his influential work on person perception and interpersonal relations, Heider (1958) stated that “a person reacts to what he [or she] thinks the other person is perceiving, feeling, and thinking, in addition to what the other person may be doing” (p.1). This quote underscores the importance of knowing what other people are thinking and feeling in our social repertoire. In fact, researchers have pointed out that this ability to infer others’ mental states is crucial for carrying out meaningful social interaction (Baron-Cohen, 1995), as well as cultural learning and transmission (Tomasello, 1999).

Given that mental state inferences are indispensable in successful social interaction, a growing body of research has begun to examine social inferences in intergroup contexts and how these inferences affect interactions with out-group members (Frey & Tropp, 2006; Judd, Park, Yzerbyt, Gordijn, & Muller, 2005; Shelton & Richeson, 2005; Vorauer, Main, & O’Connell, 1998; Vorauer & Sakamoto, 2005). In their review on intergroup social inferences, Frey and Tropp (2006) pointed out that although research has established that inferences such as those about how others perceive the self can influence intergroup interaction, little is known about the ways in which people form these inferences. Based on research on social inference (Ames, 2004a; 2004b; Clement & Krueger, 2002), I suggest that self-based and group-based inference processing are two commonly-used and well understood

means of predicting others' likely thoughts and feelings in intergroup interaction.

Although research has shown that people tend to rely on self-knowledge (i.e., projection) to make inferences about in-group others (see Robbins & Krueger, 2005 for a review), people are more versatile in using self-knowledge and group-based knowledge to make inferences about out-group others (Ames, 2004a; Ames, 2004b).

The present research seeks to examine the relative use of these two types of knowledge as inference bases in the context of intergroup interaction in hope of better understanding the processes that occur in such interaction.

Specifically, I examine whether affiliative motivation, the desire to get along with others, moderates the extent to which people use self-based and group-based knowledge to make mental state inferences about their out-group interaction partner. There are theoretical reasons to believe that affiliative motivation may encourage group-based over self-based inference, as well as vice versa. In addition, the process by which affiliative motivation influences the relative use of group-based and self-based inference will also be examined. Although there are a number of possible mechanisms, I propose that affiliative motivation facilitates the use of a given inference strategy to infer the mind of an out-group partner to the extent that the resulting inference is positive in nature. This is because the goal to affiliate may evoke a desire to see the partner in a positive light, which I call positivity bias. The positivity bias hypothesis also suggests that when the inference strategy casts a negative light on the partner, affiliative motivation will constrain the use of that strategy and pursue other types of information to preserve positive perceptions of the partner.

1.2 Background: Social Inference in Intergroup Interaction

Knowing something about what others think and feel is integral to any successful social interaction. Imagine that you are watching a football game with a new acquaintance. It would be helpful to know whether the person knows little or much about football so that you could effectively communicate with the person about the game. The essentiality of social inference in interaction is well-established in research on interpersonal communication (Higgins, 1992; Krauss & Fussell, 1992), and these inference processes seem to occur quite automatically and operate with little cognitive effort (Kampe, Frith, & Frith, 2003). Of course, smooth interaction is not only facilitated by knowing other's objective knowledge level but also by knowing what others think and feel subjectively (Fletcher & Thomas, 2003; Ickes, 2004).

The study of social inference has also begun to receive growing interest among researchers of intergroup relations, because these inferences can facilitate or spoil positive intergroup experience (Frey & Tropp, 2006; Judd et al., 2005; Shelton & Richeson, 2005; Vorauer et al., 1998; Vorauer, Hunter, Main, & Roy, 2000; Vorauer & Sakamoto, 2005). Research has demonstrated that people infer different intentions behind in-group and out-group members' behaviors (Shelton & Richeson, 2005; Vorauer & Sakamoto, 2005), and infer that members of out-groups see their in-groups more negatively and stereotypically than members of their in-groups see themselves (Judd et al., 2005). So, although social inferences may help individuals to coordinate their interaction with out-group members, intergroup social inferences may create undue expectations about intergroup interaction. For example, Vorauer

and colleagues (1998) found that members of a majority group anticipated less enjoyment and more negative feelings about an intergroup interaction when they assumed that the member of a minority group held stereotypic perceptions of them. More interestingly, their own stereotypic perceptions and evaluations of the out-group member had no direct bearing on their expected enjoyment of the interaction (Vorauer et al., 1998), demonstrating the power of intergroup inferences. In short, people form expectations about intergroup interaction and explain relevant behavior based on their inferences about what the out-group partner is likely to think and feel. These intergroup inferences may powerfully influence people's decision to interact with out-group members or how they behave toward them. The question then is how are these inferences formed?

The present research sought to answer the question above by examining the inference strategies that people employ to understand the minds of others in intergroup interaction. In an interaction where participants have minimal prior contact, two inference bases are readily available for forming inferences: self-knowledge and group-based knowledge. On the one hand, research on social projection and false consensus provides ample evidence that people infer others' attitudes, preferences, and perceptions by assuming that others' experiences are similar to their own (e.g., Katz & Allport, 1931; Kruger, 1998; 2000; Ross, Greene, & House, 1977; Marks & Miller, 1987). In other words, people use knowledge about how they would think and feel to infer what others would think and feel in similar situations. On the other hand, a wealth of research on stereotyping demonstrates that people are also apt to use knowledge about the group to which others belong, such as

stereotypes, to make inferences about others' mental states (e.g., Duncan, 1976; Darley & Gross, 1983; Sagar & Schofield, 1980; see Kunda & Thagard, 1996 for a review). Because one's subjective experience is readily accessible through introspection, and expectations about different social groups can be activated automatically (Devine, 1989; Fazio & Olson, 2004), these two inference strategies provide the most efficient means to make mental state inferences in intergroup interaction.

1.3 Motivated Inference: The Role of Affiliative Motivation

Although a considerable amount of research has demonstrated that people tend to use self-knowledge, or projection, to make inferences about in-group others (Clement & Krueger, 2001; Robbins & Krueger, 2005), people are more versatile in using self-knowledge or group-based knowledge to make inferences about out-group others (Ames, 2004a; 2004b). The present research examines whether affiliative motivation, or the desire to get along with others, influences people's use of self-based versus group-based inference in intergroup interaction. Because in many interpersonal contexts people are motivated to get along and have a smooth and pleasant interaction with their partner -- even those who belong to an out-group -- such motivation may play an important role in governing inference processing to help them coordinate the interaction.

The consideration of affiliative motivation is also generally consistent with a functionalistic perspective on social cognition that suggests that inferences made in social interaction should be guided by the goals of the perceiver (Fiske, 1992; Stevens & Fiske, 1995; Hilton & Darley, 1991; Jones & Thibaut, 1958). Previous research

has made advances in understanding the role of accuracy or ingratiation motives in inference processing (Fiske, Lin, & Neuberg, 1999; Hilton & Darley, 1991; Jones, 1964), but the role of affiliative motivation is relatively unknown.

Given that researchers have suggested that the need for social affiliation is one of the fundamental motives of human social life and an organizing principle of various psychological phenomena (Baumeister & Leary, 1995; Fiske, 2003), affiliative motivation ought to guide inference processing in interpersonal situations. In fact, recent research has demonstrated that people who experience a greater need to belong are more sensitive to, and accurate at decoding, social cues such as emotional facial expressions and the valence of vocal tone (Pickett, Gardner, & Knowles, 2004). These authors suggest that these inferences allow people to detect any sign of social approval or rejection, which helps them to regulate their affiliative needs. Hence, the goal to affiliate may be a key motivating factor in inference processing.

Not only that affiliative motivation promotes inference processing in general, it may also encourage the use of a particular inference strategy during intergroup interaction. On the one hand, there are reasons to believe that affiliative motivation will encourage one to use group-based over self-based inference. For instance, affiliative motivation may increase the reliance on group-based inference over self-based inference particularly in intergroup contexts where group membership differences and stereotypes are more accessible in the mind (Cadinu & Rothbart, 1996; Frey & Tropp, 2006; Wilder, 1984). In addition, people who want to get along with their out-group interaction partner may also want to understand the partner better and use knowledge about the out-group such as stereotypes to fill in the knowledge

gap. Consistent with this notion, research suggests that people rely on stereotypes to infer the thoughts out-group members may have when preparing for an interaction with them (Kunda, Davis, Hoshino-Brown, & Jordan, 2003) or explaining unexpected behavior of out-group members (Kunda, Davies, Adams, & Spencer, 2002).

However, these studies do not definitively show that people were using group-based inference more than self-based inference because these studies did not measure self-based inference. These studies also did not manipulate affiliative motivation and it is unclear whether affiliative motivation played any role in the interaction.

Furthermore, although the research showed that people had increased activation of stereotypes in intergroup interaction, there was no direct evidence that people were actually using these stereotypes to inform the inferences.

On the other hand, there are also several reasons to believe that the reverse will occur such that affiliative motivation may encourage self-based inference over group-based inference in intergroup contexts. The motivation to get along with an out-group partner may minimize perceived differences and enhance perceived similarities between oneself and the partner. Research on the role of perceived similarities in mental states inference suggests that perceived similarity to a target person promotes the use of self-based knowledge to make inferences about the target (Ames, 2004a; 2004b). Moreover, research on projection has shown that people were more likely to project their traits and opinions onto attractive others than unattractive others (Marks & Miller, 1982), or when they expected to interact with the other than when they did not expect to meet the person (Miller & Marks, 1987). Assuming that people are generally more motivated to affiliate with attractive others than

unattractive others and experience a greater need to get along with others when they are expected to interact with them, these findings suggest that people may tend to rely on self-based knowledge to infer the mental states of an out-group interaction partner with whom they want to get along. However, this research did not manipulate affiliative motivation directly and therefore it is unknown whether such motivation does indeed increase perceived similarity to an out-group member, which leads to increased reliance on self-based inference.

As mentioned above, a few reasons may explain why affiliative motivation facilitates group-based inference or self-based inference about an out-group interaction partner. For example, people who are affiliatively motivated may experience the motive to better understand their partner, and thus use the inference strategy most likely to achieve such understanding (Kunda et al., 2003). The goal to affiliate with an interaction partner may also influence perceived similarity between the self and the partner and thus encourage or discourage the use of self-based or group-based inference (Ames, 2004a; 2004b). However, there may be another more interesting reason why affiliative motivation affects inference processing; that is, the motive to perceive the partner in a positive light, which I refer to as positivity bias.

1.4 Motivated Inference: Positivity Bias

I define positivity bias a tendency to perceive others in a positive light particularly when one is motivated to affiliate with them. We know from the work on interpersonal relationships that people tend to see their romantic partners positively (Murray & Holmes, 1993; Murray, Holmes, Dolderman, & Griffin, 2000), and these positive illusions are beneficial to relationships (Murray, Holmes, & Griffin, 1996).

People also extend self-serving biases to close relationship partners with whom they are getting along well (Fincham, Beach, & Baucom, 1987). Beyond the realm of close relationships, people who have motivation to get along with a stigmatized person are more likely to attend to, or consider individuating information about, the partner beyond negative stereotypes associated with the stigma (Neuberg & Fiske, 1987; Neuberg, Judice, Virdin, & Carrillo, 1993; see Neuberg, 1996 for a review). These research findings suggest that when people are motivated to affiliate with others, they may also be motivated to see others positively and go beyond apparent negative information to give them the benefit of the doubt. I propose that this positivity bias is also likely to operate in the context of intergroup interaction and influence inference processing about an out-group partner.

In light of the positivity bias hypothesis, I hypothesize that affiliative motivation may encourage the use of a given inference strategy to the extent that the resulting inference is positive in nature but inhibits the use of the inference strategy when the resulting inference suggests negative perceptions about the partner. For example, if affiliative motivation promotes the use of group-based inference in intergroup interaction, it should occur only to the extent that the strategy yields positive inferences about the partner (e.g., stereotypes of the out-group are positive). In contrast, when the relevant group knowledge suggests negative perceptions of the partner (e.g., stereotypes of the out-group are negative), affiliative motivation may discourage the use of group-based inference and lead the perceiver to resort to other inference strategies such as self-based inference. In other words, the goal to affiliate

may motivate individuals to discount negative knowledge and consider other available information to determine how out-group members would think and feel.

In sum, the present research seeks to examine whether people who experience affiliative motivation toward an out-group interaction partner will rely more on self-based or group-based knowledge to infer the mental state of the partner. If affiliative motivation does influence people's relative use of self-based versus group-based inference in intergroup contexts, I will examine potential mechanisms by which this motivation affects the use of these inference strategies, such as the goal to understand, perceived similarity and positivity bias.

1.5 Overview of Experiments

Three experiments were designed to examine the relative degree to which people use self-knowledge versus group-based knowledge to infer the mental state of an out-group member (i.e., a student of a different major), when they experience affiliative motivation toward that person. Experiment 1 was designed to determine whether affiliative motivation influenced the extent to which people would use group-based versus self-based knowledge to infer the mental state of an out-group interaction partner. Participants who were either primed with affiliative goals or neutral concepts were asked to make inferences about the thoughts and feelings of an out-group partner with whom they expected to interact. The degree to which participants used self-knowledge or group-based knowledge to make those inferences was measured and compared (Ames, 2004a). After establishing role of affiliative motivation on inference processing in intergroup interaction, Experiments 2 and 3 were designed to examine potential mechanisms by which affiliative motivation

influenced the relative use of self-based and group-based influence such as the goal to understand, perceived similarity and the positivity bias hypothesis.

Chapter 2

2.1 Experiment 1

Method

Participants

Thirty-seven female undergraduate students participated in this experiment to partially fulfill a requirement for an introductory psychology course. Thirty-two of the participants identified themselves as Caucasian/White, three as Asian American/Asian, one as African American/Black, and one did not specify.

Procedure

Participants took part in the study one at a time. One of two female experimenters greeted participants upon arrival and obtained informed consent from the participants. The experimenter began by telling the participants that the present experiment examined how individuals thought about themselves and others when engaging in social interaction with students from a similar or different major. The experimenter then explained that participants would interact and play a game with another participant, who had not yet arrived. Before they met each other, they would complete a few tasks in separate rooms. There was actually no other participant; the cover story served to provide a focus for the affiliative motivation prime and a target for making inferences about whom they expected to meet.

First, the experimenter asked participants to complete a sentence unscrambling task that was ostensibly a warm-up task for the game they would play with their interaction partner. Half of the participants were randomly assigned to receive a version of the task that primed affiliative motivation and the other half

received a neutral version of the task, which will be described in more detail below. The experimenter then said that she would check whether the other participant had arrived as yet and would return shortly. To bolster the cover story that there was another participant, the experimenter said audibly and ostensibly to the newly-arrived interaction partner, “Are you here for an experiment?” as she was walking out of the room and closing the door behind her.

When the experimenter returned, she collected the completed sentence unscrambling task from the participants. She then explained that the following task involved exchanging information with their interaction partner. Participants were asked to complete a brief personal profile that their partner would also complete in the other room. After that, the participants would exchange profiles with the partner. While participants were filling out the profile, the experimenter left the room again, conspicuously checking on the partner.

After a while, the experimenter returned, collected the profile, and gave participants a profile supposedly completed by their interaction partner, handwritten in advance, and a questionnaire. Participants were asked to read through the profile and then complete the questionnaire that was designed to assess the strategies they used to infer their partner’s mental state in hypothetical situations. Upon completion of the questionnaire, the experimenter told participants that this was the end of the experiment and that no interaction would take place. The experimenter asked participants whether they had believed that they were going to be interacting with a partner and whether the profile of the ostensible interaction partner had been realistic. Finally, participants were thanked and debriefed. Two participants did not believe

that they were actually going to interact with another participant; therefore, their data were excluded, leaving 35 participants' data.

Materials

Sentence unscrambling task. This task was adapted from previous research on nonconscious goal priming (Chartrand & Bargh, 1996; Bargh & Chartrand, 2000). Participants arranged 20 sets of words into 20 grammatically correct sentences. For each set of words, they needed to exclude one word and change the verb tenses if necessary. Participants either complete a version of this task designed to prime affiliative motivation or a neutral version. The affiliative motivation prime version included three neutral word sets, and 17 word sets that included affiliative words and verbs (e.g., feel close, get along, like). See Appendix A for all items.

Partner's profile. Participants completed a brief personal profile in which they indicated their gender, date of birth, hometown, college graduation year, major/concentration, hobbies and interests, political views, future career, how their last summer was spent, and languages spoken. All participants received the same profile from their supposed interaction partner, a female first-year student majoring in history. This fictitious interaction partner was described to be neutral in political views, undecided on future career and waited tables in the past summer (See Appendix B-1). All participants thought the content was realistic. I chose the major of history as the social group membership because it is not associated with any cultural stereotypes that can inform the inferences participants are asked to make in the subsequent questionnaire, which I will explain below.

Inference Questionnaire. Participants read scenarios adapted from past research (Ames, 2004a). One scenario involved a student coming across a professor of an important class trying to fix a broken bike chain. Another scenario involved a student discussing a group project with a professor alone, without the presence of other group members. The intentions or thoughts of the students in these two stories are ambiguous with either altruistic or selfish motives being plausible. Then participants were presented with eight statements depicting various thoughts they and a typical history student could have in the situation (See Appendix C-1 and C-2 for scenarios and statements). These statements described altruistic motives, self-interested motives, or neutral mental states. Participants rated how much they agreed or disagreed with these statements on a Likert-type scale ranging from 1 (*Strongly disagree*) to 12 (*Strongly agree*). The order in which participants completed the set of questions about how they would think and the set about how a typical history student would think was counterbalanced across participants. Lastly, participants responded to these statements again, this time predicting what their partner would think. For simplicity, I will use the term *self-ratings* to refer to participants' ratings regarding how they would think in the situations, the term *typical student ratings* to those ratings of a typical history student, and the term *partner ratings* to those of the partner.

As the first test of the hypothesis, I would like to see whether participants would rely on what they thought a typical history student would think in those situations versus what they would think to make inferences about the partner. Therefore, I chose a group that was not associated with any stereotypes that could

inform the inferences. To ensure that history students were not perceived to be more or less altruistic or selfish, I asked a separate group of college students ($n = 16$) to rate how altruistic or selfish, along with other traits, they thought students in different majors are with a 5-point Likert scale (1 = *Not at all characteristic of the person*, 5 = *Extremely characteristic of the person*). One of the questions was about a typical history student. The results showed that the extent to which people thought about a typical history student as altruistic ($M = 2.50$, $SD = .89$) or selfish ($M = 2.31$, $SD = .79$) did not differ significantly, $t(15) < 1$.

Results

Data Reduction

To compute indices of the degree to which participants used self-based or group based knowledge to infer the mental states of their partner, self-ratings and typical student ratings were first centered, or subtract from the mean ratings, for each participant. These centered scores were simultaneously regressed on the partner ratings for each participant (Ames, 2004a). The simultaneous regression allowed me to estimate the variance of the partner ratings that was uniquely contributed by the self-ratings (self-based inference) and the typical student ratings (group-based inference). I repeated this procedure for each scenario. Four unstandardized regression coefficients were extracted and treated as dependent measures. The coefficients corresponding to the self-ratings indicated the degree to which participants projected their own responses onto their partner, and thus they will be used to indicate self-based inference. The coefficients corresponding to the typical student ratings indicated the degree to which participants used their expectancies

about history students (the social group) to infer their partner's thoughts and feelings, and thus they will be used to indicate group-based inference. Higher coefficients indicate the greater degree to which participants used that particular inference strategy.

Before I conducted the main analysis, I examined whether there was any problem of multicollinearity (i.e., high association among independent variables) because regression coefficients computed under this condition can be unstable, and could unduly affect the main analysis. Because multicollinearity is often associated with large standard errors (Berry, 1992; Cohen & Cohen, 1983), I first identified participants whose regression coefficients were associated with standard errors that were two standard deviations above the overall mean standard error in the sample. To confirm that these participants indeed showed multicollinearity between their self and typical student ratings, I then examined the tolerance level and excluded the data if it was less than .05. In this range of tolerance, the correlation between the self-ratings and typical student ratings was extremely high ($r > .95$). With a correlation this high, one cannot confidently differentiate between self-based and group-based inference. Following this procedure, four participants' data were excluded from the main analysis, leaving 31 participants in total.

Main Analyses

To examine whether affiliative motivation influenced the relative use of group-based versus self-based inference, I conducted a mixed model analysis of variance (ANOVA) with prime (affiliative vs. neutral) as the between-participants factor and inference strategy (self-based vs. group-based) and scenario (helping vs.

group project) as within-participant factors to determine whether the type of scenarios had an effect. No main or interaction effect was found with the scenario variable; therefore I combined the self-based and group-based coefficients across the two scenarios by averaging to simplify the analysis and results ($r = .62$ for self-based coefficients and $r = .50$ for group-based coefficients). Then, I submitted the averaged self-based and group-based coefficients to a mixed model ANOVA with prime (affiliative vs. neutral) as the between-participants factor and inference strategy (self-based vs. group-based) as the within-participant factor. There was only a significant interaction between prime and inference strategy, $F(1, 58) = 4.72, p = .04, \eta^2 = .07$ (see Figure 1). When participants were primed with affiliative motivation, they were more likely to use group-based inference ($M = 0.63, SD = 0.41$) than self-based inference ($M = 0.29, SD = 0.39$), $t(58) = 2.07, p = .05, \eta_p^2 = .13$. When participants were primed with neutral concepts, there was no reliable difference in the extent to which they used group-based ($M = 0.33, SD = 0.28$) versus self-based inference ($M = 0.53, SD = 0.30$), $t(58) = 1.05, p = .30$. The other simple contrast tests showed that participants primed with affiliative motivation were more likely to use group-based inference than those primed with neutral concepts, $t(58) = 2.30, p = .03, \eta_p^2 = .16$. There was also a trend suggesting that affiliative motivation suppressed the degree to which people used self-based inference, $t(58) = 1.87, p = .07, \eta_p^2 = .11$.

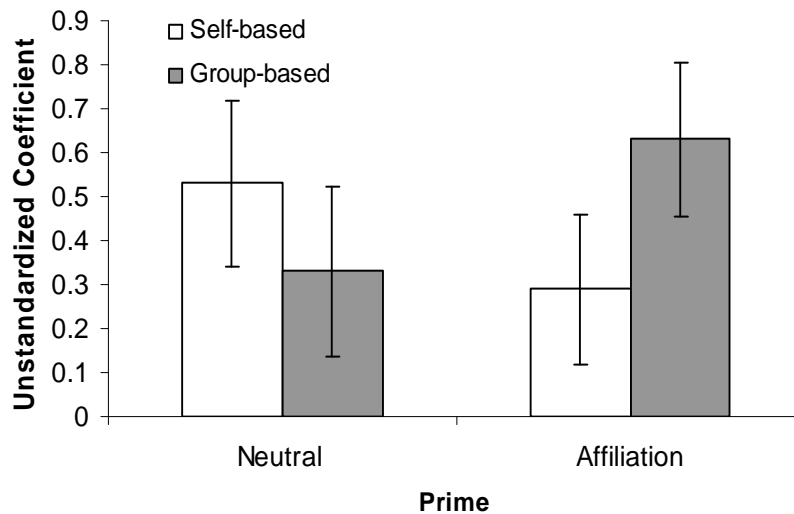


Figure 1. Inference strategies by affiliative motivation in Experiment 1

Discussion

When participants were motivated to affiliate with an interaction partner from a different social group, they used group-based knowledge to infer the partner's mental state to a greater extent than self-based knowledge. When they did not have affiliative motivation toward the partner, participants relied on self-based and group-based roughly to an equal extent. This finding suggests that the motivation to get along with an out-group partner encourages the use of group-based knowledge to make mental state inferences about the person. The results are generally consistent with models of meta-cognitions about the self in intergroup contexts (Frey & Tropp, 2006) and the link between perceived similarity and mental state inference strategies (Ames, 2004a; 2004b). These models suggest that group-based inference may be a more commonly-used inference strategy than self-based inference in intergroup

contexts. Because people tend to overestimate differences, or underestimate similarities, between themselves and out-group members (Cadinu & Rothbart, 1996; Wilder, 1984), perceived dissimilarity based on differences in group membership might call out for reliance on group-based knowledge over self-knowledge in making mental state inferences about an out-group partner (Ames, 2004a; also see Frey & Tropp, 2006). However, the results suggest that the reliance on group-based inference over self-based is more likely to occur when people are motivated to get along with the out-group partner. Therefore, intergroup inferences may be driven by interpersonal goals.

2.2 Experiment 2

Experiment 2 was designed to replicate and extend the findings in Experiment 1. First, I examined whether the results in Experiment 1 will be replicated when the group-based knowledge of the interaction partner is a cultural stereotype that can inform the inferences. For example, if the social group to which the interaction partner belongs has been associated with being altruistic, affiliative motivation should enhance the reliance on this group-based knowledge to a greater extent than self-based knowledge. In addition, I examined potential mechanisms by which affiliative motivation influences the relative use of self-based and group-based inference. These mechanisms include perceived dissimilarity, goal to understand, perceived accuracy of inference bases and positivity bias. As mentioned earlier, the motivation to affiliate may increase perception of dissimilarity to the out-group partner and thus increase reliance on group-based inference (Ames, 2004a; 2004b). It is plausible that people pay greater attention to dissimilarity because the information may help them

prepare for potential differences. Affiliation may also activate the goal to understand the partner, which leads to increased reliance on stereotypical expectancies to gain insight about the partner's mental state (Kunda et al., 2003). In a related vein, people who are motivated to affiliate with their partner may think that group-based knowledge is a more accurate base to assess the mental states of an out-group partner and hence show a greater reliance on the inference strategy.

Also, I will test the positivity bias hypothesis, which suggests that affiliative motivation will facilitate the use of a particular strategy (i.e., group-based inference) to the extent that it casts a positive light on the partner. This is because people who are motivated to get along with the partner may try to see the person positively in consistent with their motive to get along with them. If this is the case, it is expected that affiliative motivation will encourage group-based inference when the relevant knowledge or stereotypical expectancy about the out-group implicates positive inferences about the out-group partner. However, when the relevant knowledge or stereotypical expectancy about the out-group implicates negative inferences, affiliative motivation may constrain the degree to which people use group-based inference. Under this circumstance, people may resort to using self-knowledge because this inference base should allow them to maintain positive perceptions of the partner, given that people often think positively of themselves (e.g., Dunning, Meyerowitz, & Holzberg, 1989).

It is important to note that other mechanisms mentioned above do not make a specific prediction with respect to the valence of group-based knowledge. For example, if increased perceived dissimilarity with the partner accounts for an

increased reliance on group-based inference when affiliative motivation is engaged, there is no reason why the valence of group-based knowledge should make a difference. In other words, if the valence of group-based knowledge does influence the impact of affiliative motivation on the relative use of group-based vs. self-based inference, it is highly likely that positivity bias is at work.

Method

Participants

One hundred and seven undergraduate students (40 men, 67 women) participated in this experiment to partially fulfill a requirement, or gain extra credit, for a psychology course. Seventy-one participants identified themselves as White/Caucasian, seven as Black/African American, 19 as Asian/Asian American, six as Hispanic, three as Middle Eastern, and one identified as “Other”.

Procedure and Materials

The procedure for this experiment was similar to Experiment 1, except for some additional measures and the group membership of the supposed interaction partner. Participants arrived at the laboratory one at a time and were greeted by one of six female experimenters. After providing informed consent, participants were told that they would interact and play a game with another participant who had not yet arrived. Then, the experimenter gave them one of the two versions of a sentence unscrambling task that either primed affiliative motivation or neutral concepts as in Experiment 1. The experimenter then ostensibly went to check on the other participant.

Following the sentence unscrambling task, participants completed a personal profile that was supposed to be exchanged with their partner. After the experimenter ostensibly administered the same task to the partner, she returned and collected the profile from the participant. She then mentioned that the other participant had started the experiment a little late and was still completing the profile. While waiting for the partner, the experimenter gave participants a word completion exercise and told them that this was another warm-up task for the game. This word completion exercise was actually used to measure the accessibility of concepts related to the goal to understand. For this exercise, participants completed as many of the 24 word stems as they could in three minutes. Twenty of the word stems could be completed with words that are related to the concept of understanding (e.g., understand, comprehend, infer, See Appendix D). The number of understanding words participants completed was used to indicate the extent to which this goal was activated and accessible to them.

The experimenter returned after three minutes with a personal profile supposedly completed by the interaction partner. Based on this profile, half of the participants expected to interact with a student majoring in commerce and the other half expected to interact with a student majoring in education. I chose these two majors because stereotypes of these two groups are associated with specific positive or negative mental state inference about the partner in the inference task to follow. As in Experiment 1, participants read two scenarios about the behavior of two main characters, which could be explained by altruistic or selfish motive. Because education students are often thought to be more altruistic than selfish, using this

group-based knowledge should yield positive perceptions about the partner (e.g., helping the professor for altruistic reasons). In contrast, commerce students are often thought to be more selfish than altruistic, and thus using this group-based knowledge should suggest negative perceptions about the partner (e.g., helping the professor with a self-interested motive).

The nature of the stereotypes associated with these two groups was confirmed by the pilot test mentioned in Experiment 1. In addition to asking about perceptions of a typical history student, participants in this pilot test also rated how altruistic or selfish they thought a typical commerce student is and a typical education student is, along with other traits. Again, they rated the traits on a 5-point Likert-type scale (1 = *Not at all characteristic of the person*, 5 = *Extremely characteristic of the person*). As expected, a typical commerce student was thought to be more selfish ($M = 3.75$, $SD = 0.86$) than altruistic ($M = 1.88$, $SD = 0.89$), $t(15) = 4.86$, $p < .01$. In addition, a typical education student was thought to be more altruistic ($M = 4.40$, $SD = 0.57$) than selfish ($M = 1.60$, $SD = 0.91$), $t(14) = 8.98$, $p < .01$. I also asked participants to rate how positive or negative these two traits along with other filler traits were on a 7-point Likert-type scale (1 = *Very negative*, 7 = *Very positive*). Also as expected, being altruistic was thought to be a much more positive characteristic ($M = 6.31$, $SD = 1.35$) than being selfish ($M = 1.50$, $SD = 1.27$), $t(15) = 7.67$, $p < .01$. Thus, using group-based knowledge to make inferences in the subsequent scenario should yield positive inferences about an education partner, but this strategy should yield negative inferences about a commerce partner.

To manipulate the partner's group membership, the partner's profile was slightly modified from that in Experiment 1 to reflect a commerce or education student accordingly. The education partner was described as wanting to be a school counselor in the future and planned to work in a summer camp in the upcoming summer, whereas the commerce partner was described as wanting to work in investment banking or finance in the future and was looking for an internship in a financial or accounting firm in the upcoming summer. Other than these details, the rest of the profile was exactly the same between these two conditions. All participants thought the profiles were realistic (See Appendix B-2, B-3). If participants happened to be a commerce or education student themselves, the experimenter would give them the profile depicting someone of the other major to ensure that they would always expect to interact with someone from a different group.

When participants received their partner's profile, they also received the inference questionnaire as in Experiment 1 but with some additional measures. First, participants responded to 10 statements about their impression of the partner and expectations about the interaction on a 12-point Likert-type scale (1 = *Strongly disagree* to 12 = *Strongly agree*). Specifically, two items assessed how similar they thought they were to the partner (Cronbach's $\alpha = .95$). One item assessed how similar they thought they were to students in the partner's major, and another one assessed how similar they thought the partner were to students in his or her major. Then, they rated how much they agreed with three statements about their intention to affiliate with the partner (Cronbach's $\alpha = .83$), and another three statements about their

intention to understand their partner in the upcoming interaction (Cronbach's $\alpha = .85$). See Appendix E for the exact wording of these statements.

Following those scales, participants completed the inference strategy assessment described in Experiment 1. Participants read two scenarios and responded to statements in the same format as in Experiment 1. The scenario about the group project was slightly modified to make the intention of the main character more ambiguous (See Appendix C-3) but the one about the bicycle chain remained identical. After participants made their predictions about their partner's thoughts and feelings, they were asked to indicate their confidence about their estimates on a 7-point Likert-type scale (1 = *Not at all confident* to 7 = *Very confident*), as well as their perceived accuracy also on a 7-point Likert-type scale (1 = *Not at all accurate* to 7 = *Very accurate*). In addition, to examine whether participants were aware of their use of different inference strategies, they answered the following two questions on a 7-point Likert-type scale (1 = *Not at all* to 7 = *Very much*): "How much did you infer what your partner would think based on what you would think in those situations?" and "How much did you infer what your partner would think based on what you think a typical student in your partner's major would think?" Finally, the experimenter conducted a funneled debriefing with the participants. Three participants identified the affiliative theme in the sentence unscrambling task, thought that the task was related to other tasks they completed, and were suspicious about interacting with another participant. The data of these three individuals were not included in the following analyses.

Results

Data Reduction

Participants' ratings from the inference assessment task were treated in the same manner as in Experiment 1. Regression analyses yielded four unstandardized regression coefficients, each corresponding to the degree to which participants used group-based or self-based knowledge to infer what their partner would think and feel in the two scenarios. I followed the same procedure described in Experiment 1 to detect multicollinearity. Five participants showed high standard errors of their regression coefficients (i.e., two standard deviations above the mean) with a tolerance level less than .05. These participants were not included in the analyses. Two other participants provided invariant responses and their coefficients could not be computed. In total, 98 participants' data remained in the analyses. Because the scenarios did not have an impact on the results as a within-participant factor, I averaged the coefficients of group-based and self-based inference across the two scenarios as in Experiment 1.

Main Analysis

Inference strategy. The averaged regression coefficients were submitted to a mixed model analysis of covariance (ANCOVA) with inference strategy (self-based vs. group-based inference) as the within-participant factor and with prime (affiliative motivation vs. neutral) and partner's major (commerce vs. education) as between-participants factors. Since there were a number of experimenters, I also controlled for experimenter effects by entering the different experimenters as covariate. There was an interaction between inference strategy and major, $F(1, 186) = 4.63, p = .03, \eta^2 =$

.05, but this interaction was also moderated by prime, $F(1, 186) = 6.00, p = .02, \eta^2 = .06$ ¹¹. To decompose the three-way interaction, I examined the results with the education and commerce partner separately.

When the partner was thought to be an education student (positive inferences), participants primed with neutral concepts tended to use group-based inference ($M = 0.57, SE = 0.06$) to a greater extent than self-based inference ($M = 0.37, SE = 0.06$), $t(186) = 1.75, p = .08, \eta_p^2 = .03$. This difference became stronger when participants were primed with affiliative motivation ($M = 0.69, SE = 0.06$ for group-based inference, $M = 0.34, SE = 0.05$ for self-based inference), $t(186) = 3.45, p < .01, \eta_p^2 = .11$ (see Figure 2a). The other contrast comparison showed that the degree of using self-based inference was not different between neutral prime and affiliative motivation prime, $t(186) < 1, p > .60$. Although there was a slight increase in the use of group-based inference after being primed with affiliative goals, the difference was not reliable, $t(186) = 1.37, p = .17$. In sum, as expected, when knowledge of the group to which the partner belonged suggested positive inferences about the partner, affiliative motivation seemed to enhance the reliance on group-based inference over self-based inference.

¹¹ I also conducted the analysis with gender as a factor. The expected three-way interaction was marginally significant ($p = .08$) but was not moderated by gender. The pattern of this interaction and simple effects remained the same. There was a prime, inference and gender interaction, $F(1, 179) = 3.91, p = .05$. Male participants were particularly more likely to use group-based inference than self-based inference in the neutral prime condition, $t(179) = 2.72, p = .01$. Because this effect did not differ across majors, I will not discuss it further.

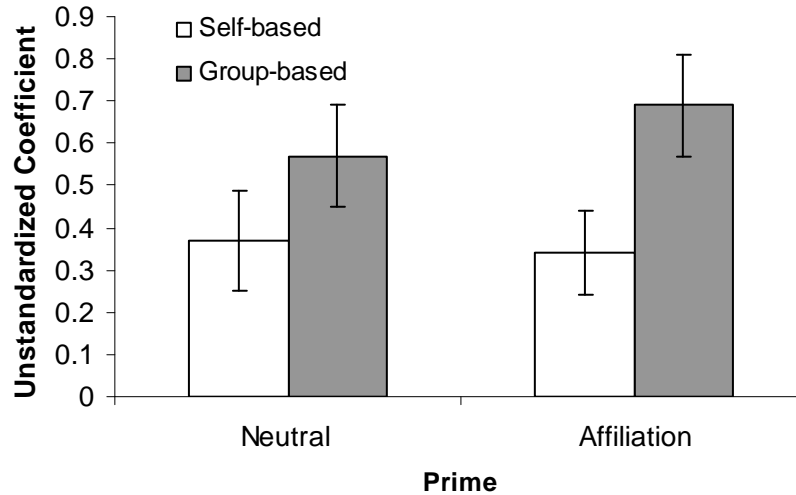


Figure 2a. Inference strategies by affiliative motivation with the education partner in Experiment 2

In contrast, a different pattern of results emerged when the partner was thought to be a commerce student. When participants were primed with neutral concepts, they used group-based inference ($M = 0.58$, $SE = 0.07$) to a greater extent than self-based inference ($M = 0.34$, $SE = 0.06$), $t(186) = 1.98$, $p = .05$, $\eta_p^2 = .04$. Although the difference did not reach a significant level, participants who were primed with affiliative motivation somewhat used self-based inference ($M = 0.50$, $SE = 0.06$) more than group-based inference ($M = 0.32$, $SE = 0.06$), $t(186) = 1.58$, $p = .12$, $\eta_p^2 = .03$. Compared to participants primed with neutral concepts, the affiliative motivation priming reduced the use of group-based inference, $t(186) = 2.68$, $p < .01$, $\eta_p^2 = .07$, but increased the use of self-based inference, $t(186) = 1.98$, $p = .05$, $\eta_p^2 = .04$ (see Figure 2b). In other words, in support of the positivity bias hypothesis, people who had the goal to affiliate with their out-group partner were reluctant to use group-based inference when the resulting inferences suggested negative perceptions

of the partner. However, when affiliative motivation was not engaged, the negative implications of the inference did not seem to affect their use of group-based knowledge as an inference base.

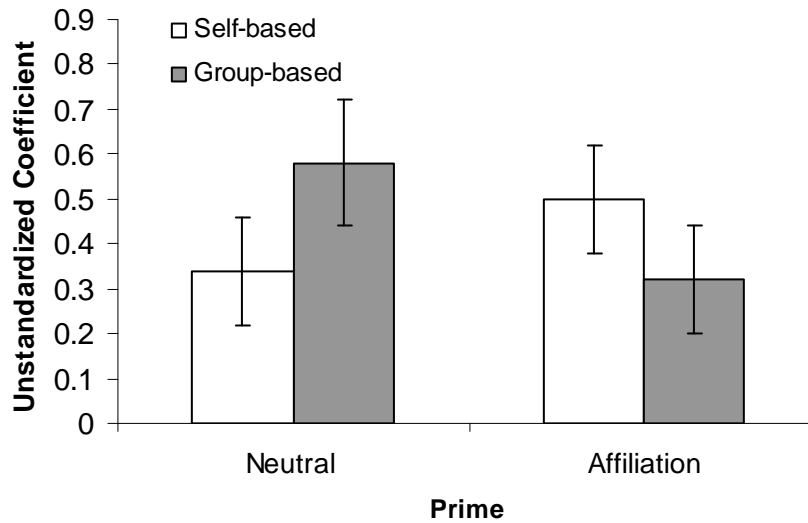


Figure 2b. Inference strategies by affiliative motivation with the commerce partner in Experiment 2

Self-report of inference strategy. Participants' self-report of the extent to which they used the self and the partner's major as inference bases were submitted to the same mixed model analysis of covariance (ANCOVA) with self-reported inference strategy (self-based vs. group-based inference) as the within-participant factor and with prime (affiliative motivation vs. neutral) and partner's major (commerce vs. education) as between-participants factors, controlling for the effect of experimenter. There was a main effect of major, $F(1, 183) = 5.33, p = .02, \eta^2 = .05$, but it was moderated by inference strategy, $F(1, 183) = 9.44, p < .01, \eta^2 = .09$.

Participants reported that they were more likely to use the partner's major to make inferences about their partner's mental state when the partner was thought to be an education student ($M = 5.35$, $SE = 0.19$) than a commerce student ($M = 4.34$, $SE = 0.21$), $t(183) = 3.59$, $p < .01$. However, they did not report using the self to make inferences as a function of the major of the partner ($M = 5.01$, $SE = 0.18$ vs. $M = 4.92$, $SE = 0.17$) for commerce and education partner respectively), $t(183) < 1$. No other effects were found, F 's < 1.25 , p 's $> .20$. Thus, participants did not seem to be consciously aware of the influence of affiliative motivation on their relative use of self-based and group-based inference.

Positive Inferences

According to the positivity bias hypothesis, I hypothesized that the goal to affiliate with the partner might motivate participants to see their partner in a positive light, and thus led them to use an inference strategy that would provide inferences consistent with this goal. This hypothesis also suggests that people may make more positive inferences about the partner when they experience the motivation to affiliate with that person. In other words, participants with affiliative motivation might tend to infer that the partner had more altruistic than selfish thoughts and intentions. To examine this prediction, I first computed a score that would indicate the extent to which participants have positive perceptions of their partner, namely the extent to which they thought the partner would have more altruistic intentions than selfish intentions. This score was generated by subtracting the average rating of items that suggested the partner would have selfish intentions and thoughts from those that suggested the partner would have altruistic intentions and thoughts in the two

scenarios. Higher numbers indicated more positive inferences about the partner. To control for individual differences in general positive evaluation about the self and others, I repeated this procedure with the self-ratings and typical student ratings and submitted the three positivity indices to a factor analysis to capture the shared variance of these ratings. The factor analysis yielded one factor and I used the resulting factor score as a control for general positive evaluations.

I then submitted the positivity score of the partner to a 2 (prime) x 2 (major) ANOVA, controlling for general positive evaluations (i.e., the factor scores) and the effect of experimenter. The results showed that people made more positive inferences about the education partner ($M = 3.11$, $SE = 0.13$) than the commerce partner ($M = 2.71$, $SE = 0.14$), $F(1, 92) = 4.08$, $p = .05$, $\eta^2 = .04$. There was also a hint that participants had more positive inferences about the partner after being primed with affiliative motivation ($M = 3.04$, $SE = 0.13$) versus neutral prime ($M = 2.78$, $SE = 0.14$) but the effect was not reliable, $F(1, 92) = 1.93$, $p = .17$. The interaction between affiliative motivation and prime were not significant, $F(1, 92) < 1$, $p > .30$.

Other Mechanisms

Perceived similarity. The relationship between affiliative motivation and the relative reliance on group-based and self-based inference might be explained by perceived dissimilarity to the partner or students in the partner's major. To examine this possibility, ratings of perceived similarity to the partner and students of the partners' major were submitted to a MANCOVA with prime and the partner's major as between-participant factors, controlling for the effect of experimenter. There were

no effects on perceived similarity to the partner, F 's (1, 93) < 1.80, p 's > .18.

Contrary to the dissimilarity hypothesis, there was a trend that participants thought that they were more similar to students of their partner's major when they were primed with affiliation ($M = 4.93$, $SE = 0.32$) than neutral concepts ($M = 4.15$, $SE = 0.34$), $F(1, 93) = 2.83$, $p = .10$, but there were no other effects. There were also no effects of prime and major on perceived similarity of the partner to other students of the same major, F 's < 1, p 's > .40. Thus, it appeared that perceived similarity could not explain the effect of affiliative motivation on the relative use of group-based versus self-based inference found in the main analyses.

Accessibility of understanding concepts. An alternative explanation of the relationship between affiliative motivation and the use of different inference strategies was that the affiliation prime might automatically activate the goal to understand the partner, which in turn guided inference processing. The activation of the understanding goal was indicated by the number of understanding word stems participants were able to complete in the word completion exercise. The number of understanding words was analyzed with the ANCOVA with prime and the partner's major as between-participant factors, controlling for the effect of experimenter. Interestingly, participants primed with affiliative motivation tended to complete fewer understanding related words ($M = 1.83$, $SE = 0.21$) than those primed with neutral concepts ($M = 2.37$, $SE = 0.23$), $F(1, 93) = 3.13$, $p = .08$. Thus, affiliative motivation did not seem to make the goal to understand more accessible; in fact, it somewhat reduced the accessibility of these concepts.

Self-report intention to understand and affiliate with the partner. To examine whether participants were aware of their goal to affiliate or to understand their partner, separate composites capturing self-reported intentions to understand and affiliate with the partner were submitted to the same MANCOVA. There were no significant effects, $F's < 1.50$, $p's > .20$. Although some participants were able to identify the affiliative theme in the sentence unscrambling task, the absence of any effect on this measure suggested that people might not be consciously aware of the purpose of the priming task.

Confidence and perceived accuracy. Finally, another explanation of why affiliative motivation influenced the relative use of group-based versus self-based inference might due to participants' confidence and perceived accuracy about their inference bases. To capture that, participants were asked to rate their confidence and perceived accuracy about their estimates of what the self and a typical student in their partner's major would think. For the estimates about the self, only level of confidence was asked. The confidence and accuracy ratings were submitted to the same MANCOVA described above with prime and partner's major as between-participant factors, controlling for the effect of experimenter. Overall, participants thought their typical student ratings were more accurate when the major was education ($M = 4.50$, $SE = 0.13$) than when the major was commerce ($M = 3.95$, $SE = 0.14$), $F(1, 93) = 8.70$, $p < .01$, $\eta^2 = .08$. They also felt more confident about their estimates for the education partner ($M = 4.71$, $SE = 0.14$) than those for the commerce partner ($M = 4.19$, $SE = 0.16$), $F(1, 93) = 5.87$, $p = .02$, $\eta^2 = .06$. In addition to the main effects of major, participants also thought their typical student ratings were

somewhat more accurate when they were primed with affiliative motivation ($M = 4.40$, $SE = 0.13$) than neutral concepts ($M = 4.05$, $SE = 0.14$) regardless of the partner's major, $F(1, 93) = 3.71$, $p = .06$, $\eta^2 = .03$. Participants were also more confident about the self-ratings after they were primed with affiliative motivation ($M = 5.97$, $SE = 0.10$) than neutral concepts ($M = 5.66$, $SE = 0.11$), $F(1, 93) = 4.46$, $p = .04$, $\eta^2 = .04$. There was no interaction effect between prime and major on these measures, $F's < 1$, $p's > .50$. Overall, the confidence and perceived accuracy ratings did not correspond to the differences in the relative use of group-based versus self-based inference in the experimental conditions. Therefore, perceived confidence and accuracy of the inference bases could not fully explain why affiliative motivation influenced the use of different inference strategies.

Discussion

Conceptually replicating and extending the results in Experiment 1, people used group-based inference over self-based inference even when the group-based knowledge is stemming from widely-held cultural stereotypes associated with the social group of their partner. Moreover, the results also lend support to the positivity bias hypothesis that people rely more on group-based inference than self-based inference to the extent that the group-based knowledge suggests positive inferences about the partner, when affiliative motivation is engaged. When group-based inference implies negative perceptions of the partner with whom they want to get along, people reduced their reliance on this strategy and slightly increased their use of self-based inference. However, when examining the degree of positivity in participants' inferences about the partner directly (i.e., inferred the partner to having

more altruistic intentions than selfish intentions), the data did not provide strong support that people made more positive inferences about the partner when they had affiliative motivation than when they did not experience this motivation.

Nevertheless, the results also did not provide any support for other mechanisms such as perceived dissimilarity, the goal to understand, or perceived accuracy and confidence of inference bases. Finally, it is also important to note that participants did not report using group-based inference and self-based inference strategically as a function of affiliative motivation. The lack of ability to introspect suggests that the effect of affiliative motivation operates automatically.

When people did not have affiliative motivation, they uniformly used group-based inference regardless of evaluative implications of the inference strategy. This finding was somewhat different from Experiment 1 where there was no reliable difference between group-based inference and self-based inference in the neutral condition. The different origins of group-based knowledge across the two experiments may explain this inconsistency. In Experiment 1, there was no clear stereotype with respect to whether a history student would think altruistically or selfishly. Thus, people might consider self-knowledge and group-based knowledge as equally informative about the partner, when no affiliative motivation is engaged. However, in Experiment 2, knowledge about the out-group stemmed from widely-known stereotypes about the altruism and selfishness of commerce and education students. People might consider stereotypes to be a more informative base of inference than their own thoughts. As such, the group-based knowledge overrode the informational value of self-knowledge when no affiliative motivation was engaged.

2.3 Experiment 3

Experiment 3 is a conceptual replication of Experiment 2. In Experiment 2, the evaluative implications of group-based inference were manipulated through existing stereotypes associated with the partner's out-group memberships; in Experiment 3, the evaluative implications of group-based inference will be directly manipulated. As in Experiment 2, people are expected to rely on group-based inference more than self-based inference when they have affiliative motivation toward the out-group partner, to the extent that the resulting inferences are positive in nature. When the resulting inferences are negative, people should inhibit the use of group-based inference and resort to self-based inference. There is no clear prediction about which inference strategy participants will use in the neutral condition. On the one hand, it may replicate the findings in Experiment 2 in that people will rely on group-based knowledge regardless of the evaluative implications of the inference strategy. However, it is also possible that there will be no difference because I will use the same social group (i.e., history students) as in Experiment 1. Nonetheless, the results in this experiment will provide clues as to what might be happening when people are in a neutral motivational state.

Method

Participants

One hundred and eleven undergraduate students (42 men and 69 women), who were not currently a student in History, participated in this experiment to partially fulfill a requirement for a psychology course. Seventy-four participants identified

themselves as White/Caucasian, eight as Black/African American, 17 as Asian/Asian American, three as Hispanic, one as Middle Eastern, and one as multiethnic.

Procedure

The procedure of this experiment was very similar to Experiment 1. Participants were told that they would interact and play a game with a student of a different major but they would complete several tasks alone before meeting the person. After participants agreed, the experimenter administered the sentence unscrambling task to prime affiliative motivation or neutral concepts as a warm-up task for the game. Then, the participants completed a brief personal profile that was to be exchanged with their partner. As in Experiment 1, all participants expected to interact with a history student and received a profile supposedly completed by the student. They also received the questionnaire that assessed their inference strategies similar to the one used in Experiment 2.

After giving instructions about the profile and the questionnaire, the experimenter appeared to decide that while the participants were reviewing the profile, they might as well receive the information that they would later read. The experimenter glimpsed at the partner's profile and pretended to search through a pile of envelopes to find the one with the word "History" written on it. The experimenter handed the envelope to the participants and told them that inside the envelope was a preliminary summary of a pilot study about how other students rated history students on different personality traits, which was meant to help them prepare for the interaction later. This procedure was how the valence of group-based knowledge was manipulated. The results presented on the summary sheet were actually rigged to

lead participants to believe that history students were either perceived to be more altruistic or selfish. The details of this summary will be described in more detail below (See also Appendix F). After that, the experimenter left participants alone to complete the questionnaire. After completion, they were informed that the other participant was still working on the questionnaire and were asked to complete a final questionnaire that they would need to complete later anyway. When the participants completed the final questionnaire, the experimenter announced that the experiment was over and there would be no interaction. The experimenter proceeded to conduct a funneled debriefing and thanked them for their participation.

Materials

Motivation priming. Participants experienced affiliative motivation or neutral priming by completing the sentence unscrambling task as in Experiments 1 and 2 (Appendix A).

Partner's profile. The personal profile supposedly completed by the other student was the same as in Experiment 1, except that the category about political views was excluded to avoid any influence of political beliefs (Appendix B-4). All participants received the same profile.

Group-based knowledge about history students. To manipulate the valence of group-based knowledge, participants saw a summary of trait ratings about a typical history student supposedly given by others in a different study. Participants were randomly assigned to receive one of two versions. On the positive version, participants saw that a typical history student was rated relatively higher on the trait “altruistic” but lower on the trait “selfish,” along with other filler traits. In contrast,

on the negative version, participants saw the same summary but a typical history student was rated relatively higher on the “selfish” trait but lower on the “altruistic” trait (Appendix F-1, F-2). These ratings were intended to lead participants to think that history students were either more altruistic than selfish or vice versa, and inferences made based on this group-based knowledge should yield positive or negative inferences about the partner. The summary ratings of filler traits were the same across conditions. The difference in ratings between altruistic and selfish between the two conditions was identical; therefore, participants saw that history students were thought to be more altruistic or more selfish to an equal extent.

Inference questionnaire. Participants completed the social judgment questionnaire as in Experiment 2. Before they read the scenarios, they first answered questions about their perceptions of the partner and expectations of the interaction. Because I did not find any effect on the understanding and affiliation items in Experiment 2, I dropped those items in this experiment, and replaced them with questions about participants’ expectations and liking toward the partner to capture positivity bias (Appendix G). The two items about liking toward the partner were combined by computing the average (Cronbach $\alpha = .89$), and the same was done to the other two items measuring participants’ expectations of the interaction (Cronbach $\alpha = .88$). Higher numbers indicated more liking and positive expectations about the interaction. Following these questions, they read and responded to statements about the two scenarios as in Experiment 2 (Appendix C-1, C-3).

Final questionnaire. For manipulation check, participants were asked to recall the average ratings of the traits they read on the summary sheet about others’

perceptions of typical history students. They were presented with a dotted line with the number 1 to 5 marked along the line for each trait; the scale points were separated by 10 hyphens indicating tenth of a point. Essentially, it was presented in the same format as they saw on the summary sheet. Participants marked where the ratings fell on the scale for each trait and the ratings were recorded up to one decimal point. Following that, participants indicated the degree to which they thought the information they read about on the summary sheet was valid and whether it matched their perceptions about students in their partner's major by marking their ratings on a 1 to 5-point continuous scale in the format described above (1 = *Not at all valid/Not at all*, 5 = *Very valid/Very much*). Participants also answered an open-ended question about their thoughts about the summary sheet. Because it is critical that participants believed the information about history students to ensure success of this manipulation, their answers to these questions would help determine which of them believed or did not believe the summary information. Those who did not believe the information or thought it was suspicious would be excluded from the analysis. After they answered these questions about the summary sheet, participants indicated to what extent they made inferences about the partner based on what they or a typical history major would think. As in Experiment 2, this question measured whether they were aware of using one inference strategy more than the other. Finally, they reported whether they personally have friends in the major of their partner (i.e., history).

Results

Manipulation Check

Participants were asked to recall the average ratings on the summary sheet ostensibly about others' perceptions of history students. The recalled ratings on the altruistic and selfish traits were analyzed with an analysis of variance (ANOVA) with prime (neutral vs. affiliative motivation) and valence of group-based knowledge (altruistic/positive vs. selfish/negative) as between-participants factors. Consistent with the manipulation, those in the altruistic condition recalled higher ratings on the trait altruistic ($M = 3.69$, $SD = 0.76$) than the trait selfish ($M = 2.51$, $SD = 0.78$), $F(1, 107) = 64.73$, $p < .001$, $\eta^2 = .36$. Similarly, those in the selfish condition recalled higher ratings on the trait selfish ($M = 3.35$, $SD = 1.02$) than the trait altruistic ($M = 1.98$, $SD = 0.55$), $F(1, 107) = 89.09$, $p < .001$, $\eta^2 = .45$. These results suggest that participants were aware of the manipulated differences. In addition, participants primed with affiliative motivation were more likely to recall higher ratings across both traits ($M = 3.32$, $SD = 0.97$) than those primed with neutral concepts ($M = 2.90$, $SD = 0.93$), $F(1, 107) = 5.30$, $p = .02$, $\eta^2 = .03$.

More importantly, crucial to the success of the manipulation was whether participants believed the summary statistics about history students. I examined the ratings participants provided about the validity of the summary and how much the summary statistics matched their own perceptions. I also examined their open-ended responses about their thoughts on the summary. The scores on the validity ranged from 1 to 4.5 with a median of 2.5, and the scores on the matching question ranged from 1 to 5 with a median of 3. These ranges indicated that a number of participants did not believe the summary or thought that it did not match their perceptions of history students. These suspicious participants posed the risk of responding to the

inference task differently and increasing noise in the data. To resolve this issue, participants who did not think the statistics were valid or thought the ratings did not match their perception of history students (i.e., provided a rating of < 2 on a scale of 5 to either question) were removed from the analysis. Twenty-eight participants met this criterion. Additionally, three participants clearly stated they were suspicious of the summary (e.g., “thought it was fake”, “inaccurate”). These 31 participants’ data will be excluded from the following analyses. Chi-square analysis indicated that these participants and the remaining participants did not differ by priming condition, valence of group-based knowledge or whether they have friends in history ($\chi^2 < 1$, $p = .79, .48, .82$ respectively). During the funneled debriefing, two participants identified the theme of the sentence unscrambling task, thought that the theme was meant to affect how they completed the following questionnaire and was suspicious that they were actually going to interact with another person. These two participant was also excluded form the analyses, leaving 78 participants in total.

Inference Strategy

Participants’ ratings on the inference assessment task were treated in the same manner as in Experiments 1 and 2. Regression analyses yielded four unstandardized regression coefficients, each corresponding to the degree to which participants used group-based or self-based knowledge to infer what their partner would think and feel in the two scenarios. I followed the same procedure described in Experiment 1 to detect multicollinearity. Two participants showed high standard errors of their regression coefficients (i.e., two standard deviations above the mean) with a tolerance level less than .05. Therefore, these participants were not included in the analyses. In

total, 76 participants' data remained in the analyses. Because the scenarios did not impact the results as within-participant factor, I averaged the coefficients of group-based and self-based inference across the two scenarios as in Experiments 1 and 2.

The averaged regression coefficients were then submitted to a mixed model analysis of covariance (ANCOVA) with inference strategy (self-based vs. group-based inference) as the within-participant factor and with prime (affiliative motivation vs. neutral) and valence of group-based knowledge (altruistic/positive vs. selfish/negative) as between-participants factors. Because there were five different experimenters who differed in terms of gender and ethnicity, I also controlled for experimenter effects by entering the different experimenters as covariate. There was an interaction between inference strategy and valence of group-based knowledge, $F(1, 141) = 10.65, p < .01, \eta^2 = .12$, but more importantly, there was the expected interaction between prime, inference strategy and valence of group-based knowledge, $F(1, 141) = 3.77, p = .056, \eta^2 = .04$. To decompose the three-way interaction, I examined the simple effects by the valence of group-based knowledge.

When participants thought history students were more altruistic than selfish (positive group-based knowledge), participants primed with neutral concepts seemed to use group-based inference ($M = 0.54, SE = 0.07$) to a greater extent than self-based inference ($M = 0.36, SE = 0.05$), but the difference was not reliable, $t(141) = 1.56, p = .13, \eta_p^2 = .03$. However, this difference became stronger when participants were primed with affiliative motivation ($M = 0.58, SE = 0.09$ for group-based inference, $M = 0.26, SE = 0.06$ for self-based inference), $t(141) = 2.35, p = .02, \eta_p^2 = .07$ (see Figure 3a). The other contrast comparison did not show any reliable differences

between neutral prime and affiliative motivation prime for self-based and group-based inference, $t's(141) < 1.18, p > .20$. In sum, replicating the results in Experiment 2, when knowledge of the group to which the partner belonged suggested positive inferences about the partner, affiliative motivation enhanced people's reliance on group-based inference.

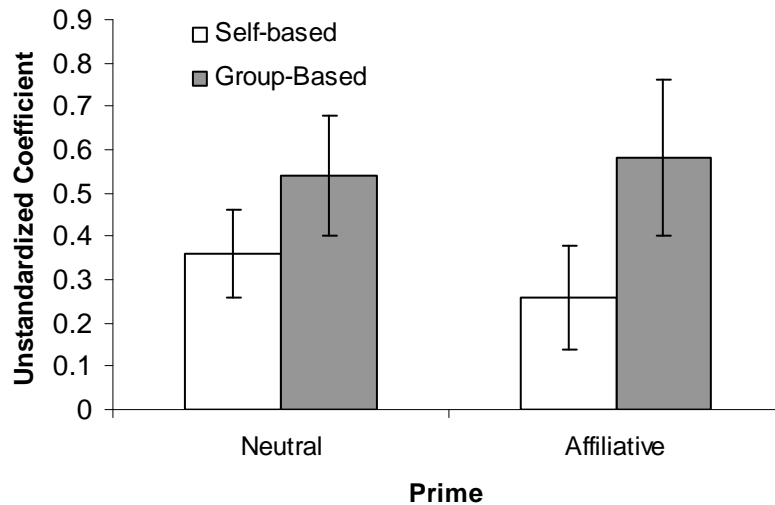


Figure 3a. Inference strategies by affiliative motivation with positive group-based knowledge in Experiment 3

Conceptually replicating Experiment 2, a different pattern of results emerged when history students were thought to be more selfish than altruistic. When participants were primed with neutral concepts, there was no difference in their use of group-based inference ($M = 0.40, SE = 0.08$) versus self-based inference ($M = 0.39, SE = 0.06$), $t(141) < 1, p > .90$. In contrast, participants who were primed with affiliative motivation used self-based inference ($M = 0.56, SE = 0.06$) more than group-based inference ($M = 0.21, SE = 0.08$), $t(141) = 2.76, p < .01, \eta_p^2 = .10$.

Compared to participants primed with neutral concepts, the affiliative motivation priming somewhat reduced the use of group-based inference, $t(141) = 1.64, p = .10, \eta_p^2 = .04$, and increased the use of self-based inference, $t(141) = 2.01, p = .05, \eta_p^2 = .05$ (see Figure 3b). In other words, people who had the goal to affiliate with their out-group partner were reluctant to use a group-based inference strategy when the resulting inferences suggested negative perceptions of the partner. However, when affiliative motivation was not engaged, there was no difference in the use of group-based versus self-based inference.

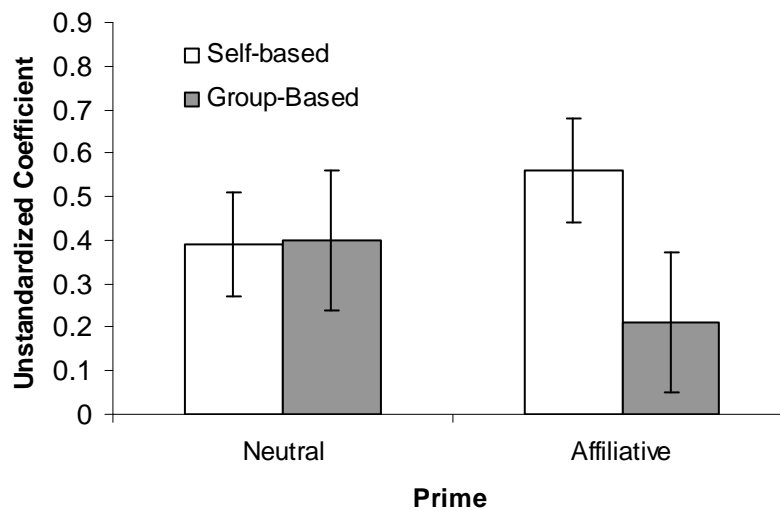


Figure 3b. Inference strategies by affiliative motivation with negative group-based knowledge in Experiment 3

Self-report of inference strategy. The same mixed model ANCOVA was repeated with participants' self-report of the extent to which they used the self and the partner's major as inference bases as dependent variables; inference strategy (self-based vs. group-based inference) was the within-participant factor, and prime

(affiliative motivation vs. neutral) and valence of group-based knowledge (positive vs. negative) were between-participants factors, controlling for the effect of experimenters. In general, participants reported using the self as a base of inference ($M = 4.87$, $SE = 0.14$) to a greater extent than the major of the partner ($M = 4.03$, $SE = 0.16$), $F(1, 141) = 6.75$, $p < .01$, $\eta^2 = .08$. There was also a marginal interaction between valence of the group-based knowledge and inference strategy, $F(1, 141) = 3.52$, $p = .07$, $\eta^2 = .04$. Participants reported that they were more likely to use the self as a base of inference ($M = 5.01$, $SE = 0.21$) than the major of the partner ($M = 3.72$, $SE = 0.24$) when history students were perceived as selfish, $t(141) = 3.80$, $p < .001$, $\eta_p^2 = .17$. There was no substantial difference in reported use of self-based versus group-based inference when history students were perceived as altruistic ($M = 4.73$, $SE = 0.20$ vs. $M = 4.34$, $SE = 0.23$), $t(141) < 1$, $p > .20$. No other effects were found, F 's < 1.15 , p 's $> .20$. Thus, participants did not seem to be consciously aware of the influence of affiliative motivation on their relative use of self-based and group-based inference.

Measures of Positivity Bias

Positive inferences. As in Experiment 2, to further examine the positivity bias hypothesis, I examined whether people made more positive inferences about their partner when affiliative motivation was engaged because such motivation was thought to increase the desire to see the partner in a positive light. I computed a score that indicated the extent to which participants thought the partner would have more altruistic than selfish thoughts. Higher numbers indicated more positive inferences about the partner. As in Experiment 2, I also repeated this procedure with the self-

ratings and typical student ratings and submitted the three positivity indices to a factor analysis. I then used the factor score that captured the shared variance of these ratings as a control for the general tendency to evaluate the self and others positively in the analysis. The positivity score of the partner was submitted to a 2 (prime) x 2 (valence of group-based knowledge) ANCOVA, controlling for general positive evaluations (i.e., the factor scores) and the effect of experimenters. Unlike Experiment 2, there was no significant effect on the actual inference measures, F 's (1, 70) < 1, p > .30.

Then, I examined the self-report measures of participants' liking toward the partner and their positive expectations about the interaction with the partner prior to the inference assessment task. Because these items were assessed before the inference task, they provided more direct measures of the positivity bias presumably evoked by affiliative motivation. I submitted these measures to the 2 (prime) x 2 (valence of group-based knowledge) MANCOVA, controlling for the effect of experimenters. Although I found no reliable effects on liking, there was an interaction effect between prime and valence of group-based knowledge on expectations about the interaction with the partner, $F(1, 71) = 7.45$, $p = .01$, $\eta^2 = .09$. Participants who were led to believe that history students were selfish had slightly more positive expectations about the interaction when primed with affiliative motivation ($M = 9.53$, $SE = 0.27$) than neutral concepts ($M = 8.70$, $SE = 0.30$), $t(71) = 2.01$, $p = .05$, $\eta_p^2 = .07$. Interestingly, those who were led to believe that history students were altruistic showed slightly less positive expectations about the

interaction when primed with affiliative motivation ($M = 8.65$, $SE = 0.31$) than neutral concepts ($M = 9.40$, $SE = 0.27$), $t(71) = 1.83$, $p = .07$, $\eta_p^2 = .05$.

Mediation Analyses. Mediation analyses were conducted to examine whether expectations about the interaction mediated the effect of prime on the degree to which participants used self-based or group-based inference. Mediation was examined through computing the product term between the regression coefficients of prime predicting the mediator, positive expectations of the interaction, and the coefficients of the mediator predicting the use of one of two inference strategies while controlling for the effect of prime. Mediation is present when the product term is significantly different from zero (Baron & Kenny, 1986; MacKinnon, Warsi, & Dywer, 1995; Preacher & Hayes, 2004). Following this procedure, I found no mediation effect of positive expectations about the interaction when participants received positive group-based knowledge about history students. In other words, the decrease in positive expectations as a function of affiliative motivation in the positive inferences group was not related to the degree to which participants relied on group-based or self-based inference. Although I also did not find mediation effect on group-based inference when they received negative group-based knowledge about history students, there was a hint of such effect on self-based inference, Sobel $z = 1.44$, $p = .16$. In other words, it appeared that positive expectations about the interaction might have mediated the effect of affiliative motivation on the promotion of using self-based inference when history students were thought to be perceived in a negative light. (See Figure 4).

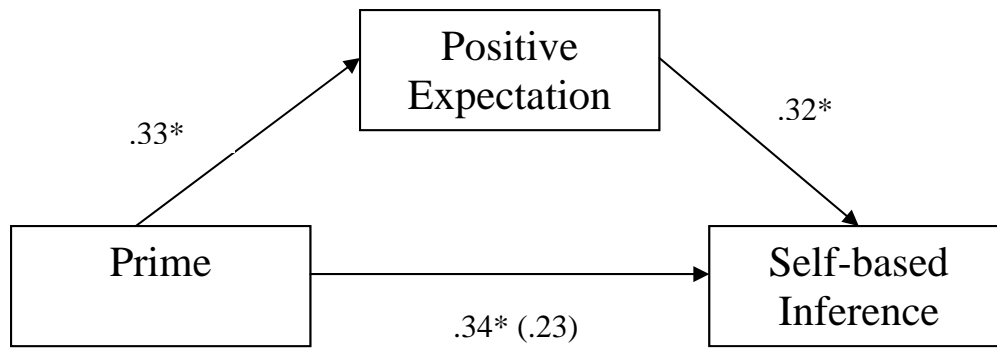


Figure 4. Mediation analysis of positive expectations about interaction in Experiment 3

Because the mediation analysis did not reach a conventional significant level, I conducted a bootstrapping simulation to increase power to examine such effect. Following the procedure recommended by Shrout and Bolger (2002), a sample of $N=1000$ was randomly drawn with replacement from the dataset among the condition where participants received negative information about history students. For each drawn sample, the product term that indicated the mediation effect was computed. The distribution of all the simulated product terms yielded an overall mean at .06 with a standard error of .04, and a 90% confidence interval of .003 to .142. Because the confidence interval excluded 0, the result suggested that mediation was present. Thus, people who had affiliative motivation had more positive expectations about the interaction, which then promoted their use of self-based inference.

Other Mechanisms

Perceived similarity. As in Experiment 2, I examined whether affiliative motivation influenced perceived similarity to the partner or members of the out-group, which then affected the relative use of group-based versus self-based

inference. Ratings of perceived similarity to the partner and students of the partners' major, as well as similarity between the partner and students of history major in general were submitted to a MANCOVA with prime (affiliative motivation vs. neutral) and valence of group-based knowledge (positive vs. negative) as between-participant factors, controlling for the effect of experimenter. Participants thought the partner was more similar to other history students in general when history students was perceived to be more altruistic ($M = 7.96$, $SE = 0.34$) than selfish ($M = 6.82$, $SE = 0.35$), $F(1, 71) = 5.43$, $p = .02$, $\eta^2 = .10$, while no other effects were found on this item, $F's < 1$, $p's > .30$. There was also a small trend that participants primed with affiliative motivation found themselves less similar to the partner ($M = 5.85$, $SE = 0.31$) than when they received the neutral prime ($M = 6.48$, $SE = 0.30$) but the effect was not reliable, $F(1, 71) = 2.08$, $p = .15$. There was no other effects on perceived similarity to the partner, $F's(1, 71) < 1$, $p's > .30$, nor was there any effect on perceived similarity to students in history major in general, $F's < 1$, $p's > .30$. In sum, affiliative motivation did not significantly affect perceived similarity to the partner and the out-group.

Confidence and perceived accuracy. I also examined whether participants' confidence and perceived accuracy of their inference bases changed as a function of affiliative motivation and valence of group-based knowledge. Ratings of perceived accuracy and confidence about participants' estimates about what a typical history student or the self would think and feel were submitted to the same MANCOVA described above. Consistent with the findings in Experiment 2, participants thought their estimates of a typical history student were more accurate ($M = 4.23$, $SE = 0.17$)

when they were led to believe history students were perceived to be more altruistic than more selfish ($M = 3.57$, $SE = 0.17$), $F(1, 71) = 7.65$, $p = .01$, $\eta^2 = .10$. They also reported feeling more confident about their typical student ratings when they thought history students were more altruistic ($M = 4.39$, $SE = 0.18$) than selfish ($M = 3.68$, $SE = 0.19$), $F(1, 71) = 7.30$, $p = .01$, $\eta^2 = .09$. There was a small trend that participants felt more confident about the self-ratings when they thought history students were altruistic ($M = 5.83$, $SE = 0.12$) versus selfish ($M = 5.54$, $SE = 0.13$) but the difference was only marginally significant, $F(1, 71) = 2.75$, $p = .10$, $\eta^2 = .04$. There was no main effect of prime or interaction between prime and valence of group-based knowledge on these measures, $F's < 1$, $p's > .30$. As such, affiliative motivation did not influence confidence and perceived accuracy of inference bases and thus these constructs could not satisfyingly explain the relationship between affiliative motivation and the relative use of group-based versus self-based inference found in the main analyses.

Discussion

The results of this experiment replicated the key findings in Experiment 2. People tended to use group-based knowledge to infer what their out-group partner was likely to think and feel when they experienced affiliative motivation toward them and when the group-based knowledge implicated positive perceptions of the partner. When the group-based inference strategy implicated negative perceptions of the partner, participants restrained from using that strategy and resorted to using self-based inference. The effect of valence of group-based knowledge on the relative use of group-based versus self-base inference lends support to the positivity bias

hypothesis. Although participants did not report liking the partner more as a function of affiliative motivation or make more positive inferences about the partner, they reported having more positive expectations about the interaction with the partner when they experienced such motivation and when the group-based knowledge were negative. Moreover, increased positive expectations about the interaction seemed to relate to increased reliance on self-based inference in the negative group-based knowledge condition. Meanwhile, as in Experiment 2, I found no consistent evidence that perceived dissimilarity and perceived accuracy and confidence of inference bases influenced the relationship between affiliative motivation and the use of different inference strategies.

While I found consistent effects of affiliative motivation on the use of group-based versus self-based inference, the results were less consistent when participants did not experience affiliative motivation. Unlike Experiment 2 but replicating the finding in Experiment 1, participant in the neutral condition did not significantly rely on self-based or group-based inference to a greater extent. The null finding in the neutral condition suggests that people may rely on both inference strategies equally when the group-based knowledge is not considered to be widely-held beliefs about the out-group to which the partner belongs. Future research may examine whether people are more apt to use group-based knowledge to infer the out-group partner's mental state when the knowledge is thought to be widely held in the absence of affiliative motivation.

Chapter 3

3.1 General Discussion

In three experiments, I demonstrated that when people are motivated to get along with an out-group member, they used group-based knowledge to infer the likely thoughts and feelings of the person to the extent that the inferences are positive in nature. Moreover, when group-based knowledge suggested negative inferences, affiliative motivation inhibited the use of group-based inference but encouraged the use of self-based inference. These findings also lend support to the positivity bias hypothesis that states that the motivation to get along with an out-group partner prompts people to see their partner positively, which then influences the ways in which people make inferences about them. Interestingly, when people do not have affiliative motivation, the results were somewhat inconsistent, as I found no difference in the use of group-based versus self-based inference in Experiments 1 and 3 but greater use of group-based inference in Experiment 2. Because I made use of cultural stereotypes as the bases of group-based knowledge in Experiment 2 but not in the other experiments, it could be that people tended to use group-based inference when relevant cultural stereotypes are made accessible by the out-group membership of the partner in the absence of motivational influence. Future research should examine this question in greater detail.

The present research provided strong evidence that affiliative motivation moderates the inference strategies that people use to understand others' minds. The current findings are consistent with previous research that affiliative needs are related to the extent to which people seek to understand others' subjective experience such as

emotions (Pickett et al., 2004). However, the current research presents a different perspective in that affiliative motivation may not only amplify the need to make inferences about others but also govern the type of inference processing that people use to make those inferences. Moreover, as suggested by positivity bias hypothesis, affiliative motivation evokes people's desire to see their partner positively and thus lead them to use a particular inference strategy that will most likely cast their partner in a positive light. Consistent with this expectation, the results showed that affiliative motivation encouraged the use of group-based inference over self-based inference when relevant knowledge of the out-group was perceived to be positive, but encouraged the use of self-based inference over group-based inference when the group knowledge was negative. Meanwhile, other mechanisms such as perceived dissimilarity, goal to understand and perceived accuracy did not yield consistent results, and thus these constructs did not satisfyingly explain the relationship between affiliative motivation and the relative use of group-based versus self-based inference in this series of experiments.

Although the main findings generally favored the positivity bias explanation, I struggled to obtain consistent direct evidence that people were indeed motivated to see their partner more positively when they were primed with affiliative motivation. For example, in Experiments 2 and 3, people did not make more positive inferences about the partner when they had affiliative motivation than when they were in neutral motivational state. In Experiment 3, there was no evidence that people were motivated by affiliative concerns to see the partner more positively as they did not report liking the partner more. However, I found that affiliative motivation enhanced

positive expectations of the interaction when the group-based knowledge implicates negative perceptions of the partner. The increase in positive expectations also somewhat related to the promotion of using self-based inference when the group-based knowledge was negative, as shown in the mediation analysis. Although there was a trend that people had less positive expectations about the interaction when the group-based knowledge was positive, it did not relate to the degree to which they used group-based or self-based inference. These findings suggest that positive bias may manifest on the expectations of the interaction with the partner rather than the perceptions of the partner. This is reasonable because it may be difficult for perceivers to decide whether they will like the partner or make specific judgments about how positive that person is with limited information, but it is probably easier to construct how well the interaction will go. In hindsight, liking toward the partner may be a consequence of, rather than the precursor of, using of a particular inference strategy. For example, using self-based inference may generate a closer feeling with the partner than thus increase liking, whereas using group-based inference may create greater psychological distance from the partner and thus decrease liking.

Additionally, the results also suggest that positivity bias of the interaction may occur only when the group-based knowledge implies negative perceptions of the partner. It could be that when the group-based knowledge is negative, affiliatively motivated perceivers actively adjust their expectations to maintain a positive outlook of the interaction, but no adjustment is needed when the group-based knowledge is already positive; it is given that the interaction will go relatively smoothly. Hence, affiliative motivation simply facilitates the use of group-based inference when the

group-based information is positive. It is still puzzling that affiliative motivation somewhat reduced positive expectations of the interaction when the group-based knowledge is positive (Experiment 3) even though it did not related to the use of different inference strategies. Future research is needed to confirm whether this is a consistent pattern of results. It is possible that the desire to get along with a member of an out-group that is highly regarded produces some anxiety about the interaction.

While examining the mechanism by which affiliative motivation guides inference processing is important, future research should also venture to examine broader implications of affiliative motivation and inference processing on the success and failure of intergroup interaction. Although affiliative motivation encourages people to use positive group-based knowledge to make inferences about out-group members, this process still poses the risk of using stereotyping that may reinforce erroneous beliefs about the partner leading to negative consequences. For example, affiliative motivation may encourage applying positive gender stereotypes such as beliefs that women are communal to infer women's thoughts and feelings in contexts where these traits are devalued (Glick & Fiske, 2001). Thus, the ramifications of affiliative motivation and social inferences should be examined carefully and considered within specific contexts.

In light of the implications of affiliative motivation and intergroup inferences, it is also important to consider who is making inferences and what types of inferences are being made. This is because the use of group-based over self-based inference may lead to different outcomes in intergroup interaction depending on who is making those inferences. To illustrate this more concretely by integrating the present findings

with past research on meta-perception of the self and one's in-group (Frey & Tropp, 2006; Judd et al., 2005; Vorauer, 2006), affiliative motivation may reduce one's expectations that out-group members will perceive the self in a negatively stereotypic way. This reduction can potentially increase positive intergroup experience and intention to engage in intergroup contact on the part of majority or non-stigmatized group members. However, the same process may be costly for members of social groups that should be wary of negative stereotypes that others may hold about them. For instance, affiliative motivation may lead members of a stigmatized group to be less vigilant of the negative stereotypic views that others may hold about them and detract their ability to recruit compensation strategies to disconfirm these undesirable views or avoid unpleasant interaction (Miller & Myers, 1998; Kaiser & Miller, 2001; Shelton, 2003). Therefore, motivated inference may lead to different outcomes for perceivers and targets of negative stereotypes.

In sum, the examination of inference processing in intergroup contexts is an important line of work because it has great potential to increase our understanding about how people think, feel, and behave in intergroup interaction. This understanding should shed light on finding effective strategies to dismantle barriers hindering positive intergroup experience.

3.2 Conclusion

The present research demonstrated that people rely more on group-based knowledge than self-knowledge to infer the subjective thoughts and feelings of an out-group interaction partner, particularly when they have affiliative motivation toward that person. Moreover, affiliative motivation will only encourage group-based

inference when it implicates positive perceptions of the partner. When the inference strategy suggests negative perceptions of the partner, affiliative motivation inhibits group-based inference and increases self-based inference. These findings illustrate that people have various tools to help them understand others' minds and use them in the service of the goals that they have in social interaction. Examining how people make social inferences about others' mental states in intergroup contexts can be an important step toward a better understanding of intergroup interaction.

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Appendix A

Sentence Unscrambling Items

Affiliative motivation primes

1. close can to Jane Adam feels
2. I to her get along considered wanted with
3. like I life outlook Rachel's
4. Peter observes occasionally television watches (N)
5. I feel Joey comfortable guess with
6. sent I email it over letter (N)
7. maintain others I get along to with want
8. Lisa friend Mary's wants story to be
9. sky Lauren is friend good a
10. eating like together I with friends
11. likes Joe really going jam
12. birds she with me cooperates
13. Christine feels Joey close guess to
14. I smooth blimp interaction with want to have him
15. know she travel wanted him to
16. Lisa friend Mary's wants story to be
17. a Lauren is style cook bad (N)
18. to Sally is Harry similar style
19. I relate that can to her today
20. bond I with him picture want to

Neutral primes

1. ball throw toss silently the
2. he observes occasionally people watches
3. ate she it selfishly all
4. prepare the gift wrap neatly
5. the push wash frequently clothes
6. somewhat prepared I was refer
7. picked throw apples hardly the
8. they obedient him often know
9. helpless it hides there over
10. send I mail it over
11. a smile what parrot great
12. ball the hoop toss normally
13. saw hammer the train he
14. maintain she to composure try
15. the machine wash frequently clothes
16. sky the seamless red is
17. a have June holiday wedding
18. salad I make green tasty
19. she line leads the guess
20. have wing a butterfly I

Appendix B-1

Experiment 1: Interaction Partner's Personal Profile (Answers were handed written)

Gender:	Female
Date of Birth:	Feb. 7 th , 1985
Hometown:	Annapolis, MD
Graduation Year:	2007
Major/Concentration:	History
Hobbies and Interests:	Reading, hanging out with friends, and listening to music
Political Views:	Independent
Future Career:	Undecided
How Summer was Spent:	Waiting tables
Languages:	English and Spanish

Appendix B-2

Gender:	Female
Date of Birth:	Feb. 7 th , 1985
Hometown:	Annapolis, MD
Graduation Year:	2008
Major/Concentration:	Commerce
Hobbies and Interests:	Reading, listening to music, hanging out with friends
Future Career:	Investment banking, something related to finance
Plans for summer:	An internship in a financial or accounting firm
Languages:	English and Spanish

Appendix B-3

Gender:	Female
Date of Birth:	Feb. 7 th , 1985
Hometown:	Annapolis, MD
Graduation Year:	2008
Major/Concentration:	Education
Hobbies and Interests:	Reading, listening to music, hanging out with friends
Future Career:	School counselor
Plans for summer:	Substitute teacher or summer camps
Languages:	English and Spanish

Appendix B-4

Gender:	Female
Date of Birth:	Feb. 7 th , 1987
Hometown:	Annapolis, MD
Graduation Year:	2009
Major/Concentration:	History
Future Career	Undecided
Hobbies and Interests:	Reading, listening to music, hanging out with friends
How last summer was spent:	Waiting tables and went to beach
Languages:	English and Spanish

Appendix C-1

(Adopted from Ames, 2004a)

Alice is walking across campus one day after classes, and comes across a person crouching next to a bicycle. It's obvious that the chain on the bicycle has come off, and the person is struggling to repair it. The chain is greasy and dirty, and the person is getting messy, but doesn't appear to be having any luck with it. Alice notices that the person is actually a professor in one of her most important classes. She pauses, stops, and then goes over and begins helping. She finishes fixing the chain for the professor. The professor thanks her and Alice smiles and continues on her way.

What would you have felt in this kind of situation if you/a typical student in your partner's major/your partner were Alice?

Use this scale to indicate how much you agree or disagree with the following statements.

1	2	3	4	5	6	7	8	9	10	11	12
Strongly disagree											Strongly agree

- ___ I/ a typical student in your partner's major/ your partner would have wanted to help any person in need. (Altruistic)
- ___ I/ a typical student in your partner's major/ your partner would have hoped I would get a better grade for helping. (Selfish)
- ___ I/ a typical student in your partner's major/ your partner would have felt shy about interacting with the professor. (Neutral)
- ___ I/ a typical student in your partner's major/ your partner would have been sad to see someone struggling. (Altruistic)
- ___ I/ a typical student in your partner's major/ your partner would have wanted to impress the professor to get a better grade. (Selfish)
- ___ I/ a typical student in your partner's major/ your partner would have thought the professor was dumb for not being able to fix the bike alone. (Neutral)
- ___ I/ a typical student in your partner's major/ your partner would have felt excited about a chance to be recognized by the professor. (Selfish)
- ___ I/ a typical student in your partner's major/ your partner would have cared more about being nice than getting a better grade. (Altruistic)

Appendix C-1

(Adopted from Ames, 2004a)

Emily has been working with two other people in her public policy class on a difficult team project. They all worked long hours on a proposal for a public policy program and each one contributed creative ideas that were part of the final proposal. The whole team was looking forward to making a presentation to the class about their new ideas. Before the day of the presentation, Emily was walking through the department and saw the professor of the class. The professor came over and exchanged greetings. He asked what was new and Emily told him briefly about the team's proposal. The professor was extremely impressed and continued pressing for more information. The professor loved the proposal and said that Emily would be in line for extra credit.

What would you have felt in this kind of situation if you/a typical student in your partner's major/your partner were Emily?

Use this scale to indicate how much you agree or disagree with the following statements.

1	2	3	4	5	6	7	8	9	10	11	12
Strongly disagree											Strongly agree

- ___ I/ a typical student in your partner's major/ your partner would have wanted to share credit with the others. (Altruistic)
- ___ I/ a typical student in your partner's major/ your partner would have been pleased about this chance to talk with the professor. (Neutral)
- ___ I/ a typical student in your partner's major/ your partner would have believed this was a great opportunity to improve one's grade in the class. (Selfish)
- ___ I/ a typical student in your partner's major/ your partner would have been willing to sacrifice my own interests for the sake of other teammates. (Altruistic)
- ___ I/ a typical student in your partner's major/ your partner would have not really cared what happened to other teammates. (Selfish)
- ___ I/ a typical student in your partner's major/ your partner would have wanted to do well in the class more than anything else. (Selfish)
- ___ I/ a typical student in your partner's major/ your partner would have believed other teammates would also be recognized for this work. (Neutral)
- ___ I/ a typical student in your partner's major/ your partner would have felt bad about explaining the proposal without other teammates there. (Altruistic)

Appendix C-3

(Adopted and Modified from Ames, 2004a)

Dan has been working with two other people in her class on a difficult team project. They all worked long hours on a proposal for the project and each one contributed creative ideas that were part of the final proposal. The whole team was looking forward to making a presentation to the class about their new ideas. Before the day of the presentation, Dan was walking through the department after finalizing some details on the presentation and saw the professor of the class. The professor came over and exchanged greetings. He asked what was new and Dan told him briefly about the team's proposal and that he was doing final touch-up on the presentation. The professor was very impressed and praised Dan for doing such a wonderful job.

What would you have felt in this kind of situation if you/a typical student in your partner's major/your partner were Dan?

Use this scale to indicate how much you agree or disagree with the following statements.

1	2	3	4	5	6	7	8	9	10	11	12
Strongly disagree											Strongly agree

- ___ I/ a typical student in your partner's major/ your partner would have wanted to share credit with the others. (Altruistic)
- ___ I/ a typical student in your partner's major/ your partner would have been pleased about this chance to talk with the professor. (Neutral)
- ___ I/ a typical student in your partner's major/ your partner would have believed this was a great opportunity to improve one's grade in the class. (Selfish)
- ___ I/ a typical student in your partner's major/ your partner would have been willing to sacrifice my own interests for the sake of other teammates. (Altruistic)
- ___ I/ a typical student in your partner's major/ your partner would have not really cared what happened to other teammates. (Selfish)
- ___ I/ a typical student in your partner's major/ your partner would have wanted to do well in the class more than anything else. (Selfish)
- ___ I/ a typical student in your partner's major/ your partner would have believed other teammates would also be recognized for this work. (Neutral)
- ___ I/ a typical student in your partner's major/ your partner would have felt bad about explaining the proposal without other teammates there. (Altruistic)

Appendix D

Word Completion Task (Target words are in parentheses)

You will have 3 minutes to try to complete as many of the following word fragments as possible. Try your best!

F I _ _ (FIND)

S Y M _ _ _ _ _ (SYMPATHY)

G _ _ (GET)

C _ N C _ _ V _ (CONCEIVE)

D I S _ _ _ _ (DISCERN)

A P _ R _ _ _ _ D (APPREHEND)

L _ _ R _ (LEARN)

S U _ _ _ _ T

G _ T _ _ R (GATHER)

C _ G N _ _ A _ T (COGNATE)

S _ N _ _ (SENSE)

U N _ _ R _ _ _ _ _ (UNDERSTAND)

K N _ _ (KNOW)

T _ _ K

C _ T _ _ (CATCH)

I N _ E _ (INFER)

S _ _ (SEE)

G _ A S _ (GRASP)

R _ C K _ _ (RECKON)

D _ _ P

R E _ L _ _ E (REALIZE)

F _ C _ _

F _ G _ _ E (FIGURE)

C _ M P _ _ _ _ _ D
(COMPREHEND)

Appendix E

Using the following scale, please indicate the degree to which you agree or disagree with the statements about your impression of your partner and how you feel about the upcoming interaction with this person. We understand that you don't have a lot of information to go with but try your best. Your answer is confidential and will not be viewed by your partner.

1	2	3	4	5	6	7	8	9	10	11	12
Strongly disagree										Strongly agree	

Similarity items (Subtitles are not shown on actual questionnaire):

- ___ I have a lot in common with my partner.
- ___ I think that I am similar to students in my partner's major.
- ___ I am similar to my partner.

Intention to get along or affiliate items:

- ___ I want to have smooth interaction with my partner.
- ___ I will try to make a connection with my partner.
- ___ I want to get along with my partner.

Intention to understand the partner items:

- ___ I want to know more about my partner in the upcoming interaction.
- ___ I will try to see my partner's point of view.
- ___ I will try to understand my partner's thoughts and feelings.

Appendix F-1

Pilot Study 1: Perceptions of Students in Different Disciplines
Preliminary results summary

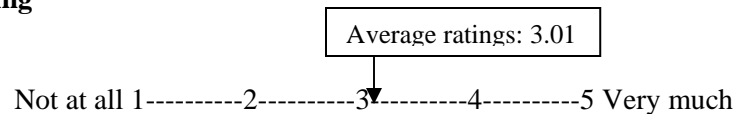
Brief Description: This pilot study examined new emerging perceptions of students in different disciplines. Students rated the extent to which they thought the following traits (and more) applied to students in specific majors on a 1 to 5 point scale. A rating of '1' indicated the respondent did not think that trait applied to those students, whereas a rating of '5' indicated the respondent thought that trait applied to those students.

Sample size: 15 respondents

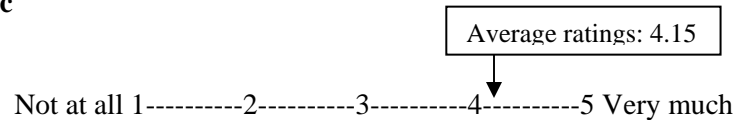
Rated Major: _____History_____

Participants Read: "Please indicate the degree to which you think the following traits apply to students in History."

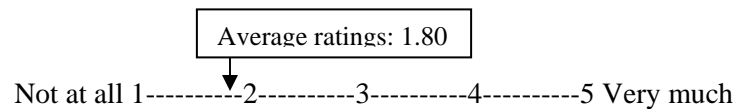
1. Easy-going



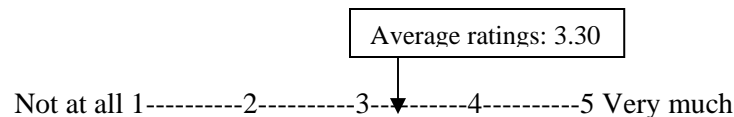
2. Altruistic



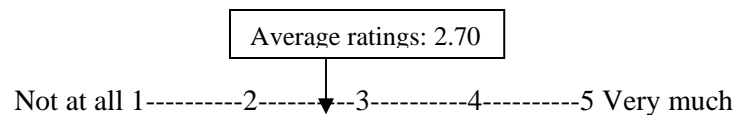
3. Selfish



4. Persistent



5. Successful



If you would like to see more of these results, please contact jlun@virginia.edu.

Appendix F-2

Pilot Study 1: Perceptions of students in different disciplines
Preliminary results summary

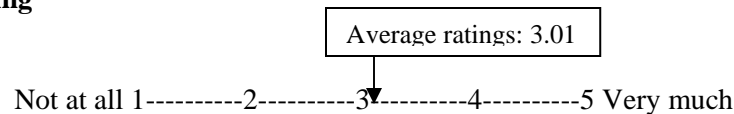
Brief Description: This pilot study examined new emerging perceptions of students in different disciplines. Students rated the extent to which they thought the following traits (and more) applied to students in specific majors on a 1 to 5 point scale. A rating of '1' indicated the respondent did not think that trait applied to those students, whereas a rating of '5' indicated the respondent thought that trait applied to those students.

Sample size: 15 respondents

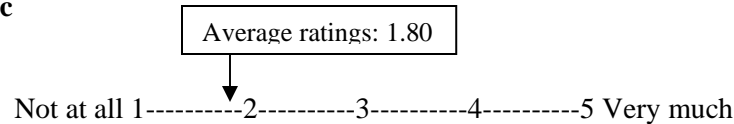
Rated Major: _____History_____

Participants Read: "Please indicate the degree to which you think the following traits apply to students in History."

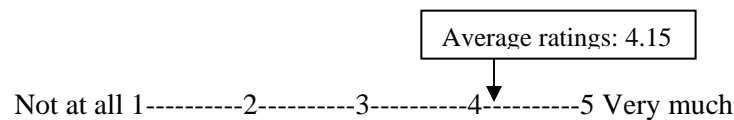
1. Easy-going



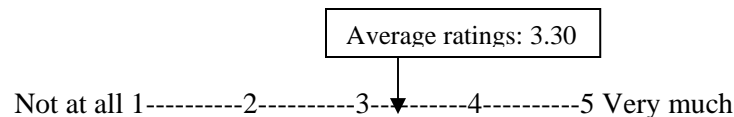
2. Altruistic



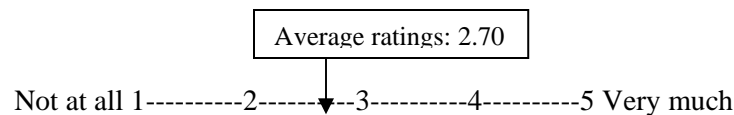
3. Selfish



4. Persistent



5. Successful



If you would like to see more of these results, please contact jlun@virginia.edu.

Appendix G

Using the following scale, please indicate the degree to which you agree or disagree with the statements about your impression of your partner and how you feel about the upcoming interaction with this person. We understand that you don't have a lot of information to go with but try your best. Your answer is confidential and will not be viewed by your partner.

1	2	3	4	5	6	7	8	9	10	11	12
Strongly disagree										Strongly agree	

Similarity items (Subtitles are not shown on actual questionnaire):

- ___ I have a lot in common with my partner.
- ___ I think that I am similar to students in my partner's major.
- ___ I am similar to my partner.

Perceptions and expectations about the partner:

- ___ I think that I will like my partner.
- ___ I think that my partner is a likable person.
- ___ I think that the interaction will go well.
- ___ I think that my partner and I will get along well.