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INTERACTION GOALS AND SOCIAL INFORMATION PROCESSING: UNDERESTIMATING ONE'S PARTNERS BUT OVERESTIMATING ONE'S OPPONENTS

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The present experiments examined how the interaction goals of cooperation and competition affected social information processing. Study 1a and 1b evaluated whether people prefer to overestimate or underestimate another person's strengths when assessing a partner or an opponent. The findings indicated that people were inclined to underestimate how good their partners were but to overestimate how good their opponents were. In Study 2, consistent with the strategy selections from Study 1, the results showed that participants anticipating cooperation with another student remembered best information that was diagnostic of negative qualities than positive qualities. In contrast, participants expecting to compete with another student remembered best information that was diagnostic of positive qualities than negative qualities. In Study 3, participants had a chance to actively seek out information about a potential partner or opponent by selecting a subset of their behaviors to verify. The results provided a validation of the results from Study 2. The findings were discussed in terms of their implications for interpersonal and intergroup perception.

When people meet others for the first time, what do they notice and what information do they emphasize? Most likely, if they were to meet some people at a bar and casually chatted with them about the latest NASCAR

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race, they would, in all likelihood, remember different information than if they had interviewed these people for post–doctoral research positions. Information pertaining to intellectual creativity and academic potential should be more relevant when interacting with post–doctoral candidates than when talking to race car fans. However, for the car–racing fans, other information such as the types of cars they drive, their favorite race teams, and their knowledge about cars would be relevant information.

People's interaction goals can be quite specific, as the above examples illustrate. However, some goals are broader in nature and occur across a wide range of contexts. Examples of such goals include cooperating and competing with other people. Cooperation and competition are an integral part of everyday interaction, ranging from children's play, sports and games, work and business interactions, to intergroup relations and world politics. Thus, it is of interest and importance to examine how these broader goals affect social information processing. Before thinking about such outcomes, though, it is important to briefly outline how other researchers have approached the study of cooperation and competition.

Some research has shown, for example, that competition enhances the salience of intergroup distinctions, leading to greater bias and an increase in the perception of outgroup homogeneity (cf. Brewer, 1979). Cooperation and competition have also been investigated in the context of decision making and negotiation in mixed motive games (e.g., Bornstein & Rapoport, 1988; Hertel & Fiedler, 1994; Insko, Schopler, Hoyle, Dardis, & Graetz, 1990; Parks, Henager, & Scamahorn, 1996). Findings have shown, for example, that public appeal (Rosen & Haagen, 1998), discussion within groups (Bornstein & Rapoport, 1988), and increasing the salience of positive connotations of cooperation (Hertel & Fiedler, 1994) all increase cooperation. On the other hand, anonymity and low risk of social exclusion decrease cooperation (Kerr, 1999). These studies focus on delineating the conditions that foster cooperation and competition but do not address the social information processing strategies associated with these interaction goals.

ANTICIPATED INTERACTION, COOPERATION, COMPETITION, AND SOCIAL INFORMATION PROCESSING

The mere anticipation of having to interact with others has powerful effects on social cognition. For example, research has shown that expect-

ing to meet and interact with another person leads to more extensive information processing compared to control conditions (e.g., memorization condition) (Devine, Sedikides, & Fuhrman, 1989; Srull & Brand, 1983).

Another small body of research that has explored the interaction goals of cooperation and competition has shown that these interaction goals affect a target's attractiveness, leading to increased attention under anticipated cooperation but a decrease under anticipated competition (Tesser & Danheiser, 1978). The interaction goals of cooperation and competition have also been shown to lead to more thorough processing of target information (Neuberg & Fiske, 1987; Ruscher & Fiske, 1990). Neuberg and Fiske (1987) showed that participants who expected to cooperate with a previously hospitalized schizophrenic person did not engage in category–based processing but individuated the partner. Ruscher and Fiske (1990) presented participants with a competitive interaction and led them to form either a positive or negative competence–based expectancy. Then they allowed the participants to read information about their interaction partner that was either consistent, inconsistent, or irrelevant to the expectancy. They found that participants engaged in individuating processes, such as showing increased attention to inconsistencies and forming more varied impressions of the partner.

THE PRESENT CONCEPTUALIZATION

The current research approaches the study of cooperation and competition in a slightly different manner and construes them as guiding principles in people's selection of information processing strategy, which leads to overestimating or underestimating others' qualities. Much research in person perception and decision making suggests that people are risk averse—potential losses loom larger than potential gains (e.g., Kahneman & Tversky, 1979). Thus, when learning about a future partner under a cooperation goal or an opponent under a competition goal, a perceiver might selectively process information that is most indicative of potential losses. This would be adaptive because being aware of potential losses and dangers would allow the perceiver to prepare in advance to minimize the chance of loss, and if the risk seemed too large, to avoid the cooperation or competition to prevent loss.

Specifically, a perceiver who is sizing up a future partner can minimize potential losses by avoiding the overestimation of the partner's strengths. This can be done by being sensitive to information diagnostic of the partner's negative qualities. For example, if a person finds out that it is easy for a partner to lose enthusiasm after initial involvement with a project, he or she could anticipate the problem and attempt to reduce its negative impact on outcomes. In addition, the perceiver would also be motivated to attend to such weaknesses to decide how much to trust and rely on the partner. If the perceiver learned that the partner was weak in some skill, he or she could try to strengthen that skill in the self or at least be vigilant to any task that involved that skill (Williams & Karau, 1991; Wittenbaum, Vaughan, & Stasser, 1998). The cost of overestimating how good the partner is and failing to notice the partner's weaknesses is immense: if the person mistakenly thinks that the partner is hardworking and talented and therefore becomes complacent, the likelihood of failure is increased.

The interaction goal of competition puts the perceiver in a different position. A perceiver who is sizing up a future opponent can minimize potential losses by avoiding the underestimation of the opponent's strengths. This can be done by being sensitive to information diagnostic of the opponent's positive qualities. For example, if a person finds out that his opponent is highly skilled and hardworking, he could anticipate the challenge and attempt to reduce his chance of losing by working even harder and improving his own skills. Underestimating the opponent would undoubtedly increase the risk of defeat because the perceiver would be under–prepared for the competition.

Study 1a and 1b first tested the critical assumptions regarding how the interaction goal of cooperation would lead people to avoid overestimating how good their partners are, whereas the interaction goal of competition would lead people to avoid underestimating how good their opponents are. In a subsequent validation of our analysis, Study 2 examined how these interaction goals affected memory for behavioral information from different trait domains. Finally, Study 3 examined how the interaction goals affected the nature and amount of information people sought about their future partners/competitors.

STUDY 1A

We reasoned that people who are evaluating a potential partner should try to avoid the mistake of *overestimating* the partner's positive qualities

because, being generally risk averse, they should focus on potential losses that could arise from cooperating with an inferior partner. Thus, they should attempt to gather negative dispositional information about the partner. People who are evaluating a potential opponent should try to avoid the mistake of underestimating the opponent's positive qualities because, being risk averse, they should focus on potential losses that could arise from competing with a superior opponent. Thus, they should attempt to gather positive dispositional information about the opponent. To examine these predictions, participants in the first study were presented a fictitious scenario in which a person in the scenario had to learn about someone else with whom he was to cooperate or compete. Participants were then asked to evaluate the target's strategy, indicating how costly it would be for the target to overestimate or underestimate how good his partner or opponent was.

METHOD

Design and Participants

Eighteen students between 19–25 years old volunteered for the study without payment. They were approached on a university campus and asked if they would fill out a short questionnaire.

Materials and Procedure

Participants were informed that the study was a short psychology questionnaire dealing with interpersonal perception. They were given a questionnaire containing either the cooperation or the competition scenario. In the cooperation condition, the scenario read:

> Person X is about to meet someone with whom he will have to work together on a task. Person X has a few moments to find out what the other person is like. After the meeting, Person X will have to decide what strategy to take during the cooperation in order to achieve the most successful outcome.

In the competition condition, the scenario read:

> Person X is about to meet someone with whom he will have to compete on a task. Person X has a few moments to find out what the other person is like. After the meeting, Person X will have to decide what strategy to take during the competition in order to achieve the most successful outcome.

Participants then answered 2 questions. Those in the cooperation condition answered "How costly is it for Person X to mistakenly overestimate how good the partner is?" and "How costly is it for Person X to mistakenly underestimate how good the partner is?" on a 1 (not at all costly) to 7 (extremely costly) scale. Those in the competition condition answered the same items with the word "competitor" replacing the word "partner." The presentation order of the scenarios was counterbalanced. After they completed the questionnaires, the participants were debriefed and thanked for their participation.

RESULTS AND DISCUSSION

Participants' responses were submitted to a 2 (goal: competition, cooperation) × 2 (estimation: overestimation, underestimation) × 2 (question order) mixed ANOVA, with the second factor varying within subject. There was no main effect or interaction associated with question order and thus the order factor was dropped from the analysis. It was expected that overestimating how good one's partner is and underestimating how good one's opponent is would be deemed undesirable, and this was indeed the case. The only significant effect was the goal × estimation interaction, $F(1, 16) = 29.18$, $p < .001$. When expecting to cooperate, people judged that it was more costly to overestimate ($M = 5.56$) than underestimate ($M = 2.89$) one's partner, $F(1, 16) = 30.11$, $p < .001$. In contrast, people judged that it was more costly to underestimate ($M = 5.74$) than overestimate ($M = 2.94$) one's opponent, $F(1, 16) = 15.80$, $p = .001$.

The findings from Study 1a suggest that for cooperation, people deem it preferable to avoid overestimating how good the partner is, and for competition, to avoid underestimating how good the opponent is. One could argue that these results were obtained because participants were explicitly instructed to consider how costly it was to overestimate or underestimate the other person. By focusing people's attention on the costliness of their decisions, we might have led the participants to be more loss–focused than they would have been otherwise. Another feature of this study that requires further examination is whether asking participants to imagine the scenario from another's perspective instead of imagining themselves in the scenario might have affected the results. Much social psychological research has found differences between people's psychological processes when they are thinking about themselves versus others. For example, people tend to make situational causal attri-

butions for themselves but dispositional causal attributions for others (Jones & Nisbett, 1972). People pay more attention to unobservable and unintentional events when thinking about themselves, but observable and intentional events when thinking about others (Malle & Pearce, 2001). People's representations of themselves in memory are characterized by their own thoughts and feelings, whereas their representations of others are characterized by actions and appearances (McGuire & McGuire, 1986; Prentice, 1990). Although it is not perfectly clear how, it is possible that the findings from Study 1a might not occur if participants were asked to think of how they themselves would react. To rule out these alternative accounts, we conducted Study 1b to replicate the results of Study 1a.

STUDY 1B

The current study was identical to Study 1a save for two features. First, we asked the participants to judge how overestimating or underestimating the other person would affect their chances of success, instead of explicitly pointing to the costliness of the decision as in Study 1a. Second, we asked participants to imagine *themselves*, instead of others, in scenarios where they either had to cooperate or compete with another person.

METHOD

Design and Participants

Twenty students between 19–25 years old participated in this study. They were approached on a university campus and asked to fill out a short questionnaire.

Materials and Procedure

Participants were informed that the study was a short psychology questionnaire dealing with interpersonal perception. They were asked to imagine themselves in the following scenarios.

In the cooperation condition, the scenario read:

> You are about to meet Person X and both of you will have to work together. You have a few moments to find out more about Person X. After finding out more about what Person X is like, you will have to decide what strategy to

take during the cooperation in order to achieve the most successful outcome.

In the competition condition, the scenario read:

You are about to meet Person X and both of you will have to compete against each other. You will have a few moments to find out more about Person X. After finding out more about what Person X is like, you will have to decide what strategy to take during the competition in order to achieve the most successful outcome.

Participants then answered 2 questions. Those in the cooperation condition answered "If you were to overestimate how good your partner is, how would it affect your chances of achieving a successful outcome?" and "If you were to underestimate how good your partner is, how would it affect your chances of achieving a successful outcome" on a 1 (reduce chance of success) to 7 (increase chance of success) scale. The questions in the competition condition were the same with the word "opponent" replacing the word "partner." The presentation order of the scenarios was counterbalanced. After they completed the questionnaires, the participants were debriefed and thanked for their participation.

RESULTS AND DISCUSSION

Participants' responses were submitted to a 2 (goal: competition, cooperation) × 2 (estimation: overestimation, underestimation) × 2 (question order) mixed ANOVA, with the second factor varying within subject. There was neither a main effect nor interaction associated with question order, so it was dropped from the analysis. It was expected that people would judge that overestimating their partners and underestimating their opponents would reduce their chances of success. The results were consistent with the hypothesis. The only significant effect was the goal × estimation interaction, $F(1, 19) = 45.32$, $p < .001$. When expecting to cooperate, people judged that their chances of success would be lower if they overestimated their partners ($M = 2.00$) than if they underestimated their partners ($M = 4.10$), $F(1, 19) = 20.00$, $p < .001$. In contrast, people judged that their chances of success would be higher if they overestimated their opponents ($M = 4.30$) than if they underestimated their opponents ($M = 2.60$), $F(1, 19) = 41.85$, $p < .001$. These findings thus confirm those of Study

1a and indicate that people may be inclined to adopt different information processing strategies depending on their interaction goals.

If it really is the case that people when expecting to cooperate are poised to process and be vigilant about a partner's negative qualities (underestimation), it would be expected that in a different cognitive task those inclinations would also be expressed. For example, in learning about a potential partner who is described with negative and positive qualities, we should find that people expecting to cooperate are more likely to elaborate information diagnostic of the partner's negative than positive qualities. Similar outcomes should be expected under anticipated competition. If people who expect to compete are inclined to uncover an opponent's positive qualities (overestimation), then it would be expected that in a related cognitive task they would be more likely to elaborate information diagnostic of the opponent's positive than negative qualities. This is the issue we examined in the second study.

STUDY 2

Trait concepts differ in the degree to which they are negative–diagnostic or positive–diagnostic according to the schematic model of dispositional attribution (Reeder, 1985; Reeder & Brewer, 1979) and the cue–diagnosticity model of social perception (Skowronski & Carlston, 1987, 1989). The lay causal theories that people use to understand behaviors related to negative–diagnostic traits (e.g., morality–related traits) indicate that negative behaviors are caused by dispositional factors but that positive behaviors are caused by situational factors or a combination of both (Ybarra & Stephan, 1999; Ybarra, 2002). In contrast, the lay causal theories people use to understand behaviors related to positive–diagnostic traits (e.g., competence–related traits, but also other traits as we will describe presently) indicate that positive behaviors are caused by dispositional factors but that negative behaviors are caused by situational factors (Reeder & Fulks, 1980; but see Ybarra, 2001, 2002 for a different perspective).

If a cooperation interaction goal leads people to emphasize a future partner's negative qualities, then perceivers should focus on information related to negative–diagnostic traits. As a result, their information processing (e.g., attention to and elaboration of information) should be guided by the lay causal theories underlying such traits (negative behaviors are caused by dispositional causes and positive behaviors are

caused by situational causes) (Ybarra & Stephan, 1996; Ybarra & Stephan, 1999). Thus, people with a cooperation interaction goal should be likely to remember information consistent rather than inconsistent with the casual theory for the negative–diagnostic trait domain (i.e., good recall for positive behaviors caused by situational factors and negative behaviors caused by dispositional factors). Behaviors related to positive–diagnostic traits should be processed less well because this information is of little relevance to the goal of uncovering the partner's weaknesses. Therefore, it was expected that perceivers under a cooperation goal would not differentiate in memory between theory consistent and inconsistent behavioral information related to positive–diagnostic traits[1].

By comparison, if competition leads people to emphasize a future opponent's positive qualities, then perceivers should focus on information related to positive–diagnostic traits. As a result, their information processing (e.g., elaboration of information) should be guided by the lay causal theories underlying such traits (positive behaviors caused by dispositional causes and negative behaviors caused by situational causes). Thus, people with a competition interaction goal should better remember information consistent rather than inconsistent with the casual theory for the positive–diagnostic trait domain (i.e., good recall for positive behaviors caused by dispositional factors and negative valence behaviors caused by situational factors). Behaviors from the negative–diagnostic trait domain should not be well processed because this information is of little relevance to the goal of uncovering the opponent's strengths. Therefore, it was expected that perceivers under a competition goal would not show discrimination in their memory between theory consistent and inconsistent behavioral information related to negative–diagnostic traits.

A relevant question for sake of comparison is what kind of information would a simple impression formation goal lead perceivers to emphasize and remember? Some research on impression formation

1. The strategies of underestimating one's partner and overestimating one's opponent do not have to be deliberate and intentional. As Study 1b demonstrated, even people who were not consciously thinking about avoiding costs emerged with the same preferences for underestimating partners and overestimating opponents. Once the interaction goals trigger a preference for under– or overestimating the other person, the differences in information processing and memory may occur as a result of people's lay causal theories guiding the processing of available information.

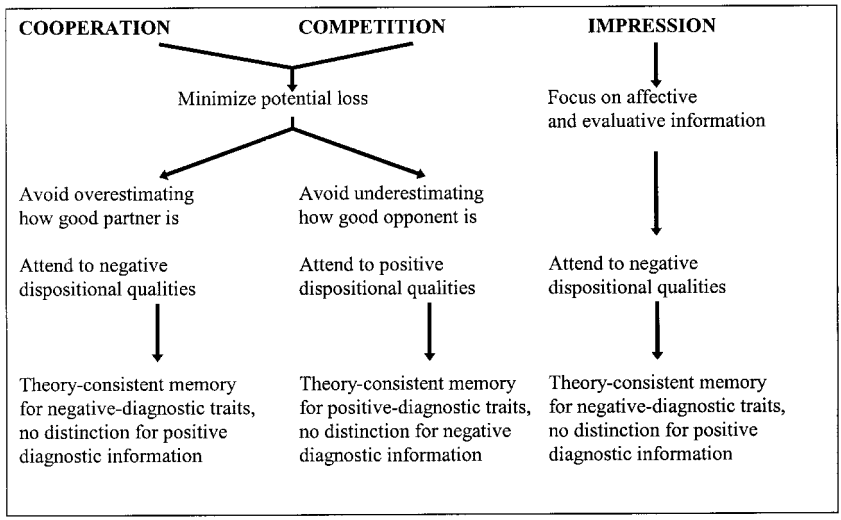

FIGURE 1. Summary of theoretical model.

suggests that people who are forming impressions focus more on the affective and general evaluative qualities of others (Levy & Dugan, 1960; Ybarra, 2001; Zajonc, 1980), and that they tend to make such evaluations based mainly on negative–diagnostic (morality–related) information (Wojciszke, Bazinska, & Jaworski, 1998). Thus, according to this perspective, people under a general impression formation goal should only attend to information related to the negative–diagnostic traits, similar to people with a cooperation goal (i.e., good recall for positive behaviors caused by situational factors and negative behaviors caused by dispositional factors). Behaviors from the positive–diagnostic trait domain should not be well processed because this information is of little relevance to the goal of forming general evaluative impressions. Therefore, it was expected that perceivers under an impression goal would not discriminate in their memory between theory consistent and inconsistent behavioral information related to the positive–diagnostic traits. The theoretical model is summarized in Figure 1.

Depending on the experimental group to which they were assigned, participants were told that they would either cooperate or compete with another participant. Then they learned about the other participant's behaviors, which were related to traits in the negative–diagnostic trait do-

main (honesty, helpfulness, and friendliness) and the positive–diagnostic trait domain (hardworking, image scoring). Image scoring refers to people engaging in costly positive behaviors to signal to others that they are valuable community members (Nowak & Sigmund, 1998; Wedekind & Milinski, 2000). Control participants learned the same material, but they were asked to form an impression of the person and were told that they would not interact with the other participant.

METHOD

Design and Participants

Ninety–one students participated in the study for course credit. They were randomly assigned to the cooperation, competition, or control (impression formation) condition. All of the participants were presented with behaviors with a positive or negative valence from the negative–diagnostic and positive–diagnostic trait domains, and these behaviors were linked to either explicit dispositional or situational attributions. Thus, the overall design of the study was a 3 (interaction goal: cooperation, competition, control) × 2 (trait domain: positive–diagnostic, negative–diagnostic) × 2 (behavior valence: positive, negative) × 2 (attribution: dispositional, situational) mixed design, with the first factor varying between participants and the latter three factors varying within participants. The participants were randomly assigned to conditions and were run in non–interacting groups of two to six.

Stimulus Materials

The behavioral information that the participants processed was presented on a cassette tape allegedly recorded by another participant. The gender of the speaker on the tape and that of the participant were always the same. Each tape contained 20 behavioral statements, half of which were negative and half positive in valence. Also, half of the behaviors were linked to dispositional attributions and half to situational attributions. Twelve of the statements pertained to negative–diagnostic traits (e.g., "I entered a concert through the fire exit" [negative valence], "I sent my sister a present and a birthday bouquet" [positive valence]). Eight of the statements pertained to the positive–diagnostic traits (e.g., "I missed morning lectures" [negative valence], "I reported a crime" [positive valence]).

Our choice of the traits hardworking and image scoring was deliberate because it allows us to show that perceiver's attention to a target's strengths (overestimation) is not confounded with emphasizing information about the target's competence. For example, it is usually assumed that there is an inverse relationship between the amount of work a person engages in and the presence of the related ability (Darley & Goethals, 1980; Jones, 1989), but being hardworking should still signal a positive quality, a strength. In addition, image scoring refers to people engaging in costly positive behaviors, such as extreme levels of philanthropy, to enhance their reputation and status (Wedekind & Milinski, 2000; McAndrew, 2002). It is completely unrelated to competence but its diagnosticity is in line with that of a positive–diagnostic trait.

The behavior stems (no attributions) were pretested to ensure that they were indeed regarded as positive or negative–diagnostic. Thirty participants rated each behavior on how common they are. For example, one item queried them as to "What percentage of college students do you think *enter a concert through the fire exit?*" (6–point scale with 0–10%, 10–30%, 30–50%, 50–70%, 70–90%, and 90–100%). For positive–diagnostic traits, behaviors that are positive in valence should be less common (and hence more diagnostic of the actor's dispositions) than behaviors that are negative in valence, whereas for negative–diagnostic traits, behaviors negative in valence should be less common (and hence more diagnostic of the actor's dispositions) than behaviors positive in valence. Results showed an interaction effect that confirmed our classification of the behaviors into the respective positive and negative–diagnostic categories, $F(1, 29) = 49.13$, $p < .001$. For the positive–diagnostic traits, positive valence behaviors ($M = 2.81$) were judged to be enacted less often than negative valence behaviors ($M = 3.76$), $F(1, 29) = 19.61$, $p < .001$. For the negative–diagnostic traits, negative valence behaviors ($M = 2.94$) were judged to be enacted less often than positive valence behaviors ($M = 3.31$), $F(1, 29) = 7.103$, $p = .012$.

Two sets of materials, both containing the same 20 behavior stems, were created. Each behavior stem was matched with a dispositional attribution in one set and a situational attribution in the other set. For example, in set A the behaviors "I didn't help my dad with yard work because I wanted to stay inside to watch TV" [negative behavior in negative–diagnostic domain with dispositional attribution], "I sent my sister a present and a birthday bouquet because my grandmother asked me to do it" [positive behavior in negative–diagnostic domain with situational

attribution], "I missed morning lectures because my roommate played pranks with my alarm clock" [negative behavior in positive–diagnostic domain with situational attribution], and "I worked as a research assistant because I am very interested in the subject matter" [positive behavior in positive diagnostic domain with dispositional attribution] would be counterbalanced in set B with different causal attributions. These included "I didn't help my dad with yard work because he couldn't find the keys to the tool shed" [situational attribution], "I sent my sister a present and a birthday bouquet because I wanted to give her a pleasant surprise" [dispositional attribution], "I missed morning lecture because I don't feel like waking up for them" [dispositional attribution], and "I worked as a research assistant because my professor said I had to do it" [situational attribution]. As will be described below, the valence of the behaviors and attributions (dispositional vs. external) were manipulated independently to ensure that subsequent differences in recall of theory–consistent or inconsistent information could not simply be due to an artifact based on the memorability of the particular behaviors.

The two sets of stimuli were presented to 17 participants for pretesting. One participant misunderstood how to use the response scale and was dropped from the analysis. Participants were first presented with the behavior stems and were asked to rate how favorable each behavior was on a 7–point scale, with higher values indicating greater favorability. Then they were presented with the same behavior stems linked to either a dispositional or situational attribution and were asked to judge the locus of causation for the behaviors on a 7–point scale, with higher values indicating more dispositional causation. The responses were submitted to a 2 (valence) $\times$ 2 (attribution) within–subject ANOVA. For the valence judgments, the positive behaviors in both stimulus sets ($M_{\text{set A}} = 5.44, M_{\text{set B}} = 5.59$) were judged as more favorable than the negative behaviors ($M_{\text{set A}} = 2.84, M_{\text{set B}} = 2.15$), $F_{\text{set A}}(1, 8) = 34.16, p < .0004, F_{\text{set B}}(1, 8) = 97.82, p < .0001$. For the second set of judgments, a main effect for attribution was obtained for both sets of stimuli. Behaviors linked to dispositional attributions ($M_{\text{set A}} = 5.75, M_{\text{set B}} = 6.46$) were judged to be more dispositionally caused than behaviors linked to situational attributions ($M_{\text{set A}} = 2.35, M_{\text{set B}} = 2.98$), $F_{\text{set A}}(1, 8) = 45.74, p < .0001, \mathrm{F}_{\text{set B}}(1, 8) = 158.26, p < .0001$. No other main effects or interaction effects were obtained. The two sets of stimuli were presented under three different randomization schemes.

PROCEDURE

Upon arrival at the lab, the participants were provided the cover story for the study, in which they were told that the study would examine how personal information would affect subsequent interactions between strangers. They were told that another set of participants was recording some personal information on a tape for them to listen to. To increase the credibility of the tape contents, participants were told that the participants recording the tape had been asked to provide distinct personal information about "things that they have done in the past few weeks." Additional information about the experiment, including whether they were in the cooperation, competition, or control (impression formation) condition, was given to each participant in a sealed envelope so that the experimenter could remain blind to the conditions. Experimental group participants were told that after they listened to a tape with personal information recorded by another participant, they would get a chance to meet them in either a cooperative or competitive setting. Control participants were informed that they had been randomly assigned to the control group and would listen to some information about a previous participant instead of having an interaction with them.

Participants in the cooperation condition read that they would engage in a "Community Simulation Game," in which they and their assigned partners "will work together to try to maximize the number of points for your team .... The team with the highest points will receive a prize." The cooperative nature of the interaction was emphasized with repeated use of the word "partner." In contrast, participants in the competition condition read that they would engage in a "Wall Street Simulation Game," in which they would "compete against [their] competitor to maximize [their] own profit (points) and minimize their opponent's profit. .... The person with the highest points will win a prize." The competitive aspect of the upcoming interaction was emphasized further with repeated use of the words "competitor" and "opponent." This type of reward structure manipulation has been used to study cooperation and competition by other researchers (Deutsch, 1973).

Participants in the control condition read that they would listen to a tape that had been recorded in a previous experimental session. They were told to form an impression of the person, using the information from the tape, as part of a "standardization" procedure for the experiment. To bolster the believability of the cover story, participants then

read about the importance of maintaining strict confidentiality of the information they were about to listen to on the tape. They were asked to sign a confidentiality form to agree not to disclose the personal information about the other participant once they left the experiment. As a manipulation check, all participants then completed a "log sheet" in which they described briefly whether they were or were not going to meet the other participant and the tasks in which they were expected to engage.

After listening to the tape, the participants engaged in a five–minute distraction task [evaluate their introductory psychology class] to reduce working memory effects. A surprise recall task followed the distraction task. Participants were asked to recall as much of the content from the tape as they could. They were given 10 minutes to complete this task, and then they were probed for suspicion. Participants were then debriefed, given course credit, and thanked for their participation.

RESULTS

A judge, blind to the experimental conditions, credited participants with correctly recalling a statement if their reproduction captured the gist of both the originally presented behavior stem and the associated causal attribution. Similar to Ybarra and Stephan (1996), half credit was given when participants only remembered the behavior stem, but no credit was given if participants failed to remember the behavior stem. Recalled items that only contained the behavioral stem but not the attribution accounted for only 6% of the total amount of information recalled. The recall data yielded the same patterns if analyzed without crediting recall that only involved the behavioral stem.

Data from fourteen participants, equally distributed between conditions ($\chi^2(1, 14)= .93$, p = n.s.), were excluded from the analysis because they either failed the manipulation check (did not believe that there would be an interaction or did not believe the recording on the tape was authentic). The analysis to be reported produced similar results to the one when these participants were included.

To aid presentation of the interaction effects, the recall data were labeled according to two categories within each trait domain. For both the negative–diagnostic and positive–diagnostic trait domains, the recalled behavioral statements were classified as "theory consistent" or "theory

inconsistent," referring to whether or not they were consistent with the causal theories of the respective domains[2]. The effects of interaction goals on the processing of the different behaviors were analyzed separately for the negative–diagnostic trait domain and the positive–diagnostic trait domain. Since there were 12 behavior statements from the negative–diagnostic trait domain and 8 behavior statements from the positive–diagnostic trait domain, the number of items recalled in each category was converted to a proportion for the analysis.

Recall of Behaviors from the Negative–Diagnostic Trait Domain

It was expected that participants who anticipated cooperation with the other person (that they listened to on the tape) would focus on the negative–diagnostic trait domain (e.g., honesty, helpfulness, friendliness) because information from this trait domain should allow them to uncover their partners' negative qualities. This consideration should not be active for the participants in the competition group. Participants in the impression formation group were expected to focus on the negative–diagnostic trait domain because this trait domain should be highly accessible and should provide information for making evaluative judgments during impression formation (Wojciszke et al., 1998). Thus, only participants in the cooperation and impression formation conditions should better remember theory–consistent over theory–inconsistent information in the negative–diagnostic trait domain.

Participants' recall scores were submitted to a 3 (interaction goal: cooperation, competition, impression formation) × 2 (behavior valence: positive vs. negative) × 2 (attribution type: dispositional vs. situational) mixed design ANOVA, with repeated measures on the latter two factors. The analysis yielded an interaction of valence and attribution, $F(1,$

2. The analysis categorizing recalled information as "theory–consistent" and "theory–inconsistent" showed the same pattern of results as when valence (positive, negative) and attribution (dispositional, situational) were examined as separate factors. In all cases where theory–consistent recall was greater than theory–inconsistent recall, participants recalled more of both types of theory–consistent information more than both types of theory–inconsistent information (e.g., in negative–diagnostic domain, recall of positive behaviors with situational attributions would be more than positive behaviors with dispositional attributions, and recall of negative behaviors with dispositional attributions would be more than negative behaviors with situational attributions.) Presenting them as theory–consistent versus theory inconsistent–recall did not conceal other effects but facilitated presentation of the data in relation to the hypothesis.

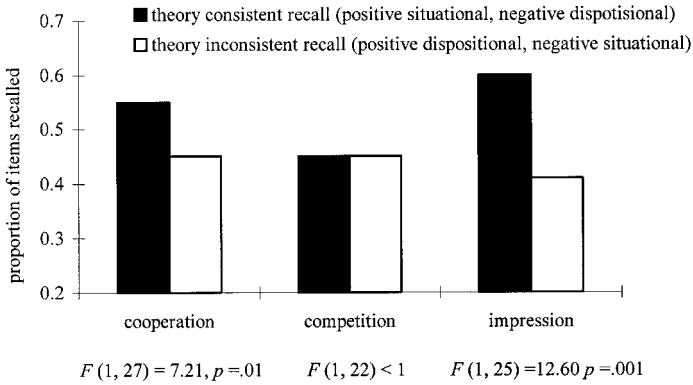

FIGURE 2. Proportion of attributed behavioral information in the negative-diagnostic trait domain recalled in the three conditions.

74) = 13.38, $p < .0005$. This interaction effect indicated that theory–consistent recall (negative behaviors with dispositional attributions and positive behaviors with situational attributions) ($M = .54$) was higher than theory–inconsistent recall (positive behaviors with dispositional attributions and negative behaviors with situational attributions) ($M = .43$). This interaction was qualified by a 3–way interaction that implicated the interaction goal factor, $F(2, 74) = 3.82$, $p < .03$. The recall patterns for the three interaction goal conditions are presented in Figure 2. Consistent with expectations, the participants with a cooperation goal showed higher theory–consistent recall ($M = .55$) than theory–inconsistent recall ($M = .45$) in this domain (negative–diagnostic), $F(1, 27) = 7.21$, $p < .01$. It was expected that participants expecting to compete with an opponent would not discriminate between theory consistent and inconsistent information in memory. The analysis confirmed this prediction. These participants showed equivalent levels of theory consistent ($M = .45$) and theory inconsistent recall ($M = .45$), $F(1, 22) < 1$. Finally, also as expected, participants in the impression formation group displayed greater theory consistent recall ($M = .60$) than theory inconsistent recall ($M = .41$) for the negative–diagnostic domain, $F(1, 25) = 12.60$, $p = .001$.

Recall of Behaviors from the Positive–Diagnostic Trait Domain

It was anticipated that participants who expected to compete with the opponent would focus on the positive–diagnostic trait domain (e.g., hardworking, image scoring) because information from this domain is diagnostic of the opponents' strengths. These considerations should not be active for the cooperation goal and control participants. Thus, only participants in the competition condition were expected to show better recall for theory consistent over theory inconsistent information in the positive–diagnostic trait domain.

Similar to the previous analysis, participants' recall scores for behaviors and attributions in the positive–diagnostic trait domain were submitted to a 3 (interaction goal: cooperation, competition, impression formation) × 2 (behavioral valence: positive vs. negative) × 2 (attribution type: dispositional vs. situational) mixed design ANOVA, with repeated measures on the latter two factors. The analysis yielded a main effect for behavior favorability, $F(1, 74) = 16.20$, $p < .0001$, which indicated that negative behaviors ($M = .99$) were better recalled than positive behaviors ($M = .70$). The analysis also yielded an effect for attribution type, $F(1, 74) = 12.48$, $p < .0007$. This effect indicated that situationally attributed behaviors ($M = .49$) were better recalled than dispositionally attributed behaviors ($M = .36$). There was also a goal × attribution interaction, $F(2, 74) = 3.39$, $p < .01$. This effect reflected the tendency for participants in the cooperation and competition conditions to recall more situationally attributed (Ms = .53 and .58, respectively) than dispositionally attributed behaviors (Ms = .37 and .31, respectively). Participants in the impression formation condition remembered situationally attributed behaviors ($M = .37$) to the same extent as dispositionally attributed behaviors ($M = .39$).

As we found for the negative–diagnostic trait domain, there was an interaction of behavior favorability and attribution type, $F(1, 74) = 9.19$, $p < .003$. There was higher theory consistent recall (positive behaviors with dispositional attributions and negative behaviors with situational attributions) ($M = .47$) than theory inconsistent recall ($M = .40$). Of greater interest, the 3–way interaction including interaction goal was marginally significant, $F(2, 74) = 2.72$, $p < .07$. The recall patterns for the three interaction goal conditions are summarized in Figure 3. Closer inspection of the recall patterns indicates that participants expecting to compete with an opponent distinguished among the information in the positive–diagnostic trait domain. They displayed greater theory consistent ($M = .56$)

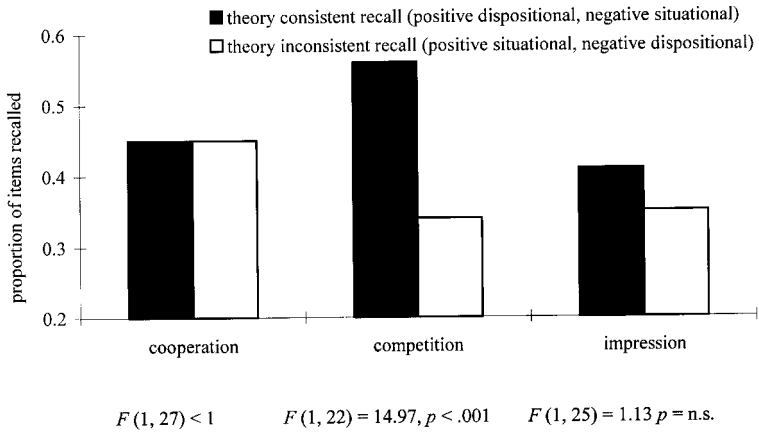

FIGURE 3. Proportion of attributed behavioral information in the positive-diagnostic trait domain recalled in the three conditions.

than inconsistent recall (M = .34), $F(1, 22) = 14.97$, $p < .001$. Participants who expected to cooperate with the partner did not distinguish among the information from the positive–diagnostic trait domain and displayed an equal amount of theory consistent and inconsistent recall (Ms = .45). Participants in the impression formation group displayed similar levels of theory–consistent (M = .41) and inconsistent recall (M = .35) as well, $F(1, 25) = 1.13$, p = n.s.

DISCUSSION

The findings from Study 2 indicated that participants who had a cooperation interaction goal, similar to participants in the impression formation condition, showed no discernible memory patterns for the positive–diagnostic trait domain but had better theory consistent recall than theory inconsistent recall for the negative–diagnostic trait domain. This latter effect indicated that participants in the cooperation condition better remembered negative, dispositionally attributed and positive, situationally attributed behavioral information. This memory pattern is similar to the misanthropic person memory effect found by Ybarra and Stephan (1996). This pattern of recall casts people in a negative light by giving them more blame and less credit than their behaviors would sug-

gest. In the current study, participants in the competition condition showed no distinction in memory for behavioral information in the negative–diagnostic trait domain, but in the positive–diagnostic trait domain they displayed better theory–consistent recall than theory–inconsistent recall. This represented a heretofore undocumented pattern with participants showing better memory for positive, dispositionally attributed and negative, situationally attributed behavioral information. This memory pattern is the reverse of misanthropic person memory and thus might be called "philanthropic person memory" because the information tends to cast people in a positive light by giving them credit for doing well and dismissing their shortcomings.

In general, what is noteworthy about the present findings is that people in the cooperation condition preferentially processed and recalled negative information about someone with whom they were to play cooperatively. The information participants in the competition condition preferentially processed and recalled about an opponent was, in contrast, positive. These counter–intuitive findings follow directly from the current analysis, which posits that when a person is to cooperate with a partner, the prevailing strategy is to assess a potential partner's weaknesses, which are most likely to be signaled in the negative–diagnostic trait domain. However, when a person is to compete with an opponent, the prevailing strategy is to assess the competitor's strengths. These cues are most likely to be discerned in the positive–diagnostic trait domain (Reeder & Brewer, 1979; Skowronski & Carlston, 1989).

It might be argued that the present findings do not reflect the posited mechanisms associated with the underestimation of a partner's weaknesses and the overestimation of an opponent's strengths. Instead, the findings could reflect the tendency in people to find important in a partner social warmth qualities such as honesty, helpfulness, and friendliness, but competence–related qualities such as hardworking in an opponent. Although not implausible, there are several aspects of this explanation that render it untenable.

First, without any mention of competence or social warmth, the findings from Study 1a and Study 1b showed the predicted patterns — people were poised to seek an opponent's strengths but a partner's weaknesses. Second, we selected the positive–diagnostic traits so that they would not be related to competence, especially the trait of image scoring. Finding out that a person reported a crime to the police should be of little relevance in assessing a person's competence. In addition, it is

usually assumed that there is an inverse relationship between effort and competence (Darley & Goethals, 1980; Jones, 1989). Thus, being hard-working may actually be a cue that a person is not very competent.

Finally, research indicates that people remember goal–consistent information better than goal inconsistent information (Anderson & Pichert, 1978). This would suggest that participants in the cooperation condition, for example, should have had better memory for social warmth information than other types of information, but instead they tended to remember information indicative of social coldness and immorality. So for different reasons, the alternative account is lacking in explaining the memory patterns for Study 2 and the strategy selection patterns from Study 1a and Study 1b.

We conducted the first three studies to investigate whether people tend to underestimate their potential partners and overestimate their potential opponents. In Studies 1a and 1b participants were asked to indicate, in the absence of concrete behavioral information, how they or somebody else would be affected by either overestimating or underestimating their partners or opponents. In Study 2 we assessed participants' memory after they read a list of behaviors. To further validate our conceptualization, we conducted Study 3 to investigate the type of information participants would actively seek out regarding their future partners or opponents.

STUDY 3

With limited amounts of time and cognitive resources, people often need to seek and process only a subset of all the information that is available to them. If interaction goals indeed affect the type of information people elaborate and remember, as the findings from Study 2 suggested, then interaction goals may also affect people's information seeking patterns. Various studies lend preliminary support to the idea that goals affect people's information seeking strategies. For example, research has shown that people desired more information when evaluating someone perceived as a date than someone who was not perceived as a date (Leone & Leone, 1984). Other research has shown that people sought more trait–related information and less appearance–related information when they expected the other person to be a co–worker or a friend than if they expected the other person to be a potential date (Shaw & Steers, 1996).

It has also been shown that, depending on the goals of the perceiver, people who hold an a priori expectation sometimes seek information that confirms their initial expectation (e.g., Snyder & Swann, 1978), but at other times seek information to determine if the initial expectations are correct (e.g., Bassok & Trope, 1984; Trope & Bassok, 1983). People who have a goal that places a value on accuracy or accountability prefer to seek information that allows them to determine whether the initial expectations are accurate. Other research has shown that people prefer diagnostic questions (e.g., "Do you like to work alone?") to leading questions (e.g., "What situations have you been in where you wished that you could have been more talkative?") when they are given an information–seeking goal, but prefer leading questions to diagnostic ones when they are given an impression–verification goal (Leyens, Dardenne, & Fiske, 1998). In sum, these studies suggest that perceivers' goals can play a significant role in information seeking patterns.

How might the interaction goals of cooperation and competition affect information seeking? In this study, we asked participants to imagine themselves in a scenario in which they would either cooperate or compete with another person. Participants were given a chance to choose from a list of behaviors a subset to determine whether or not those behaviors had actually been committed by their future partner/opponent. Since cooperation should lead people to be sensitive to their potential partners' weaknesses, it was expected that participants who expected to cooperate would select more behaviors related to the negative–diagnostic than the positive–diagnostic trait domain for verification. In contrast, because competition should lead people to be sensitive to their potential opponents' strengths, it was expected that participants expecting competition would select more behaviors related to the positive–diagnostic trait domain than the negative–diagnostic trait domain for verification. The last experiment tested this hypothesis.

METHOD

Design and Participants

Forty students participated in the study. They were approached on a university campus and asked if they would volunteer to fill out a short questionnaire. They were randomly assigned to the cooperation or competition condition. All of the participants were presented with positive and negative behaviors from the negative–diagnostic and

positive–diagnostic trait domains. Thus, the overall design of the study was a 2 (interaction goal: cooperation, competition) × 2 (trait domain: positive–diagnostic, negative–diagnostic) × 2 (behavior valence: positive, negative) mixed design, with the first factor varying between participants and the latter two factors varying within participants.

Stimulus Materials

Participants read 24 behaviors (no attributions), half of which were negative and half positive in valence. Twelve of the statements pertained to negative–diagnostic traits and 12 of the statements pertained to the positive–diagnostic traits. For this study, we added behaviors to the stimulus set used in Study 2 to create a set with an equal number of behaviors from the two trait domains. Thus, we pre–tested the behaviors again to ensure that they were indeed regarded as positive or negative–diagnostic. Twenty participants rated the behaviors on how common they were. For example, one item queried them as to "What percentage of college students do you think *have an essay published in a collegiate Economics magazine?*" (6–point scale with 0–10%, 10–30%, 30–50%, 50–70%, 70–90%, and 90–100%). For positive–diagnostic traits, behaviors with positive valence should be less common (and hence more diagnostic of the actor's dispositions) than behaviors with negative valence, whereas for negative–diagnostic traits, behaviors with negative valence should be less common (and hence more diagnostic of the actor's dispositions) than behaviors with positive valence. Results showed an interaction effect that confirmed our classification of behaviors, $F(1, 19) = 48.537$, $p < .001$. For the positive–diagnostic traits, positive behaviors were judged to be enacted less often ($M = 1.71$) than negative behaviors ($M = 2.79$), $F(1, 19) = 62.47$, $p < .001$. For the negative–diagnostic traits, negative behaviors were considered less common ($M = 2.24$) than positive behaviors ($M = 2.90$), $F(1, 19) = 18.13$, $p < .001$.

Procedure

Participants were each given a questionnaire that asked them to either imagine that they were to cooperate or compete with another person. The cooperation scenario read:

> You will be cooperating with Person A in an upcoming task. The goal is to maximize the number of points the two of you will get on the task. You and

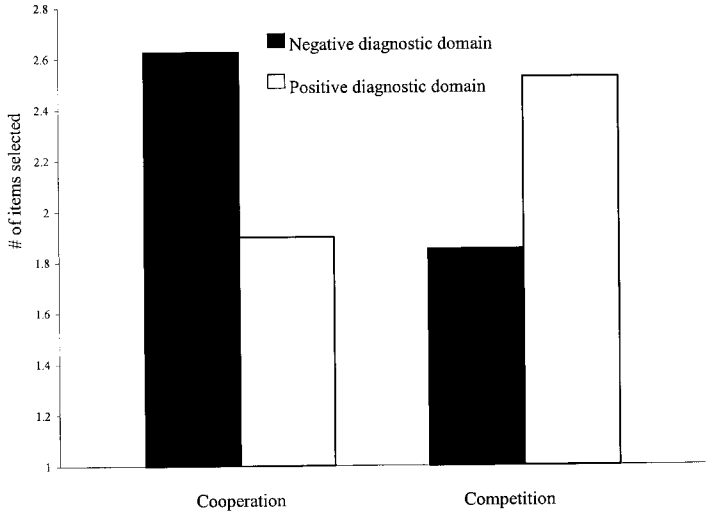

FIGURE 4. The number of behaviors participants who expected to cooperate or compete selected for verification about their future partner/opponent.

your partner (Person A) will have to work together to succeed on the task. If you and your partner were to earn more than 300 points, both of you will receive a prize.

The competition scenario read:

You will be competing with Person A in an upcoming task. The goal is to maximize the number of points you get and minimize the number of points your opponent (Person A) gets. You will have to compete against your opponent (Person A) to succeed on the task. The person who has more points will receive a prize.

Participants in both conditions were then asked to imagine that, "before beginning the cooperation/competition, you have a chance to learn about your partner/opponent (Person A) so that you can decide what strategy to take during the cooperation/competition in order to achieve the most successful outcome." They were then given the list of 24 behaviors and were told that some of these behaviors had actually been enacted by the targets whereas others had not. They were asked to choose 9 of the behaviors to find out if their partner/opponent had actually engaged in those behaviors. After they made their selections, participants were debriefed and thanked for their participation.

RESULTS

Participants' selections of behaviors were submitted to a 2 (interaction goal: cooperation, competition) × 2 (trait domain: positive–diagnostic, negative–diagnostic) × 2 (behavior valence: positive vs. negative) mixed design ANOVA, with repeated measures on the latter two factors. Consistent with the hypothesis, the analysis yielded an interaction of trait domain and interaction goal, $F(1, 38) = 8.241$, $p = .007$ (Figure 4). This interaction effect indicated that participants who expected to cooperate selected more behaviors from the negative–diagnostic trait domain ($M = 2.625$) than the positive–diagnostic trait domain ($M = 1.900$), $F(1, 19) = 3.937$, $p = .062$. In contrast, participants who expected to compete selected more behaviors from the positive–diagnostic domain ($M = 2.525$) than the negative–diagnostic domain ($M = 1.850$), $F(1, 19) = 4.368$, $p = .050$.

The only other effect was a marginal interaction of interaction goal × valence, $F(1, 38) = 3.459$, $p = .071$. This effect was based on two trends showing that cooperation participants wished to verify fewer negative ($M = 2.10$) than positive behaviors ($M = 2.43$). In contrast, competition participants wished to verify fewer positive ($M = 1.93$) than negative behaviors ($M = 2.45$).

DISCUSSION

The findings from Study 3 indicated that people who had a cooperation interaction goal were more interested in their potential partner's behaviors related to the negative–diagnostic trait domain, whereas people who had a competition interaction goal were more interested in their potential opponents' behaviors related to the positive–diagnostic trait domain. These findings are congruent with the notion that people tend to underestimate potential partners and overestimate potential opponents, consistent with the findings of the previous two studies.

GENERAL DISCUSSION

Study 1a and Study 1b showed that people anticipating cooperation preferred to underestimate rather than overestimate how good their partners were and people who anticipated competition preferred to overestimate rather than underestimate how good their opponents were. Study 2 demonstrated the important role of interaction goals in social information processing by showing how cooperation and competi-

tion goals can determine the type of information (positive–diagnostic or negative–diagnostic) people focus on and give additional processing to. People who expected to cooperate with the other person focused on and tended to remember information from the negative–diagnostic trait domain. In contrast, people who expected to compete focused on information from the positive–diagnostic trait domain. When people only intended to form a general impression of others, they focused on negative–diagnostic information. Study 3 further validated our conceptualization by showing that people who anticipated cooperation with another person sought more information from the negative–diagnostic trait domain, whereas people who anticipated competition sought more information from the positive–diagnostic trait domain.

The current framework is applicable not only to interpersonal interactions, but also possibly to intergroup interactions as well. Although intergroup judgments are not always negative (Tajfel & Turner, 1979), in general outgroup members tend to be treated unfairly (Turner, Brown, & Tajfel, 1979), are more likely to be perceived as homogenous (Linville, Fischer & Salovey, 1989; Ostrom & Sedikides, 1992), and their negative behaviors tend to be perceived as representative of the group's negative "collective disposition" (Pettigrew, 1979). Consistent with the research on ingroup–outgroup bias, Ybarra, Stephan, and Schaberg (2000) found evidence of misanthropic memory when people were perceiving outgroup members but not when they were perceiving ingroup members.

It may be useful to apply the current research on interaction goals to the processing of outgroup information because intergroup contact is often competitive or perceived to be competitive (Rabbie & Wilkens, 1971). The current research suggests that people who expect to *compete* with outgroup members might focus on the positive–diagnostic traits of their outgroup opponents instead of focusing on their negative–diagnostic qualities. By focusing on the positive–diagnostic traits, people should be more likely to remember positive behaviors with dispositional attributions and negative behaviors with situational attributions. This leads to a counter–intuitive prediction that people may also be more likely to make positive than negative dispositional inferences about their opponents.

This prediction runs counter to previous findings that have shown that competition tends to increase the salience of group boundaries and accentuates intergroup bias (e.g., Bettencourt, Brewer, Croak, & Miller,

1992; Johnson & Johnson, 1985; Sherif, 1958). This difference could potentially be resolved by noting that philanthropic information processing under the competition goal in the current studies was elicited when the perceivers were sizing–up the opponent *before* actual competition. During this initial period of evaluation, it should be more important to discover the opponents' strengths so that one can avoid underestimating the opponent. However, after a competition, people may no longer need to size up the opponent. Instead, since competition should have led to an increase in the salience of group boundaries, there might be an increase in the need to enhance the ingroup and derogate the outgroup. This should revert people's focus to negative–diagnostic information about the outgroup, which would lead to misanthropic memory and other negativity effects. Therefore, the current analysis would suggest that philanthropic processing would be obtained before competitive contact, whereas misanthropic processing would occur after competitive contact.

In sum, the present research suggests that interaction goals affect whether people adopt a general strategy to either underestimate their partners or to overestimate their opponents. The adopted strategy then operates in conjunction with the implicit causal theories held by perceivers to determine how information is processed. The current findings indicate that the concerns and needs of people expecting to cooperate, counter–intuitively, may lead them to seek negative information about others, while the concerns and needs of people who expect to compete may lead them to seek positive information about others. These results point to the importance of incorporating perceivers' goals and informational content into our understanding of person memory and social information processing.

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