Self-Efficacy, Values, and Complementarity in Dyadic Interactions: Integrating Interpersonal and Social-Cognitive Theory

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Dyadic interactions were analyzed using constructs from social-cognitive theory (self-efficacy and subjective values) and interpersonal theory (interpersonal circumplex [IPC] and complementarity). In Study 1, the authors developed a measure of efficacy for interpersonal actions associated with each IPC region—the Circumplex Scales of Interpersonal Efficacy (CSIE). In Study 2, the authors used the CSIE and the Circumplex Scales of Interpersonal Values (which assesses the subjective value of interpersonal events associated with each IPC region) to predict the dominance expressed and satisfaction experienced by members of 101 same-sex dyads trying to solve a murder mystery. Structural equation modeling analyses supported both social-cognitive and interpersonal theory. A social-cognitive person-variable (dominance efficacy) and an interpersonal dyadic-variable (reciprocity) together predicted dominant behaviors. Likewise, both a social-cognitive variable (friendliness values) and an interpersonal variable (correspondence of friendliness efficacy) predicted satisfaction. Finally, both shared performance outcomes and dynamic interpersonal processes predicted convergence of collective efficacy beliefs within dyads.

Keywords: self-efficacy; values; complementarity; interpersonal circumplex

For several decades, both interpersonal theory and social-cognitive theory have been influential models of personality and bases for therapeutic interventions (Bandura, 1986; Horowitz, 2004). Yet, the two theories and their applications have developed in almost complete independence of one another (despite the fact that key contributors to each tradition, namely, the ones just cited, have had offices next to each other for decades). Reflecting our belief that interpersonal and social-cognitive approaches are highly compatible, the current article integrates and applies insights from both of these venerable traditions. Specifically, we use the key construct of interpersonal theory (the interpersonal circumplex) to organize and measure key constructs of social-cognitive theory (efficacy expectancies and subjective values) to predict and understand the interpersonal behaviors expressed and satisfaction experienced in unscripted, dyadic interactions.

Interpersonal Theory

Interpersonal circumplex. The interpersonal circle or interpersonal circumplex (IPC) has become the most widely adopted model for conceptualizing, organizing, and assessing interpersonal dispositions (Horowitz, 2004; Kiesler, 1983; Wiggins, 2003). The IPC is defined

by two orthogonal axes: a vertical axis (of dominance, agency, status, power, or control) and a horizontal axis (of friendliness, communion, solidarity, warmth, or love). Each point in the IPC space can be defined as a weighted combination of dominance and friendliness; in other words, the IPC provides a place for interpersonal characteristics reflecting all combinations of dominance and friendliness. Currently, most IPC inventories partition the circle into eight octants, as shown in Figure 1. As one moves around the circle, each octant reflects a progressive blend of the two axial dimensions. Also note that, by convention, each octant has a generic two-letter code (shown in parentheses).

Interpersonal complementarity. The IPC not only provides a framework for describing stable person variables but it also provides a framework for modeling interaction dynamics (Kiesler, 1996). Interpersonal theory states that one purpose of interpersonal behavior is to invite complementary responses from others (Horowitz et al., 2006). The most common and best supported model of complementarity is that complementary responses tend to be similar with respect to the horizontal dimension but opposing or reciprocal with respect to the vertical dimension of the IPC (Carson, 1969; Markey, Funder, & Ozer, 2003; Sadler & Woody, 2003). Thus, friendly behavior tends to invite friendly responses and distancing behavior tends to invite distancing responses; in contrast, dominant behavior tends to invite yielding responses and yielding behavior tends to invite dominant responses.

Interpersonal theory conceptualizes behavior during an interaction as a function of both person variables, such as interpersonal dispositions, and situation variables, the most important of which is the influence of each partner's behavior on the other (Kiesler, 1996). The current study therefore tests for both the effects of person variables and the dynamic effects of partner behavior on interactants' interpersonal behaviors.

Interpersonal satisfaction. Interpersonal theory further states that complementary interactions tend to be more rewarding than noncomplementary interactions (Carson, 1969; Kiesler, 1983). Imagine two people, A and B, are interacting. A's actions (e.g., smiling) invite a complementary response from B (e.g., smiling back). If B gives A the complementary response, then A is likely to experience positive feelings, but if B instead rejects A's invitation and gives a noncomplementary response (e.g., a neutral expression), then A is likely to experience negative feelings (Horowitz et al., 2006).

Empirical support exists for this proposition. For example, O'Connor and Dyce (1997) found that having complementary personalities predicted more positive regard and group integration among members of musical
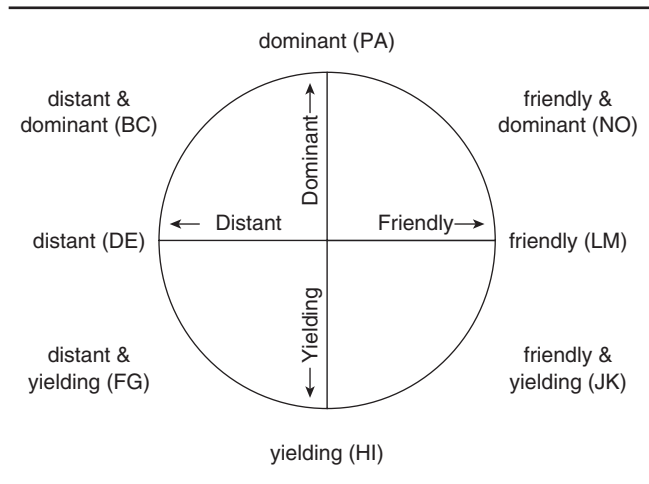

Figure 1   The interpersonal circumplex.

bands. Dryer and Horowitz (1997) found that complementarity with respect to dominance predicted satisfaction during and following interactions. Tiedens and Fragale (2003) found that complementarity with respect to nonverbal expressions of dominance (i.e., an expansive posture vs. a constricted posture) predicted comfort and liking for the other participant. Finally, Tracey (2004) found that interpersonal complementarity (particularly at the level of behavioral interchanges) predicted interpersonal evaluations in both therapy sessions and brief interactions between strangers. Therefore, the current study examined the effects of complementarity on not only interactants' behavior but also interactants' feelings about their interaction and each other.

Social Cognitive Theory

The conceptual frameworks of interpersonal theory and social cognitive theory are quite compatible. For example, a core construct of interpersonal theory is the interpersonal transaction cycle, in which "within any interaction between two or more individuals, the interpersonal behavior of each is simultaneously both a cause and an effect of the behavior of the other" (Wagner, Kiesler, & Schmidt, 1995, p. 938). Likewise, a core construct of social cognitive theory is triadic reciprocal interactionism, in which "behavior, cognitive and other personal factors, and environmental influences all operate interactively as determinants of each other" (Bandura, 1986, p. 23).

One apparent difference between the two conceptual frameworks is that interpersonal theory tends to be oriented largely around stable traits, whereas social-cognitive theory tends to focus on more specific, malleable cognitive variables, such as self-efficacies and values. However, when interpersonal theorists attempt to explain why interpersonal traits are stable and how they

can change, for example, through psychotherapy, they tend to invoke cognitive mediators, such as interpersonal expectancies. For instance, Carson (1982) discussed stability of interpersonal adjustment (including maladaptive styles) in terms of the person's underlying beliefs about what sorts of behavior will succeed with others and facilitate desired outcomes. It is of particular relevance, then, that two of the core individual-difference variables in social-cognitive theory are expectancies and subjective values (Mischel, 1973). The current article was designed to examine the relevance of these social-cognitive person variables—values and efficacy—to interpersonal theory.

Interpersonal self-efficacy. In recent years, the most widely studied expectancies have been self-efficacy expectancies. Self-efficacy is a person's confidence in his or her own ability to perform a specific task or behavior successfully (Bandura, 1997). Accordingly, interpersonal self-efficacy is a person's confidence in his or her ability to perform a specific type of interpersonal behavior (e.g., giving orders or following orders). Across a wide variety of domains, people are more likely to do (and to persist in doing) what they believe they can do (for a comprehensive overview and review, see Bandura, 1997). Considerable research exists on the role of self-efficacy in educational, occupational, and medical domains, but not in the interpersonal domain. Therefore, one aim of the current article is to study the relationship between efficacy and behavior in the domain of interpersonal interactions. In accord with previous research on self-efficacy, we predict that people will be more likely to perform those interpersonal behaviors that they believe they can perform successfully.

Interpersonal values. A second aim of the current article is to study the relationship between interpersonal behaviors and interpersonal values. Values refer to the subjective importance a person ascribes to particular events. Therefore, interpersonal values refer to the importance a person ascribes to particular interpersonal events (e.g., giving orders or following orders).

Although some researchers use the term "values" to refer to global orientations, the current article uses the term values to refer to specific preferences akin to the subjective values of cognitive social learning theory (Mischel, 1973) and the incentive values of expectancy-value theory (Atkinson, 1964). Although some prefer the term "motives" (Horowitz, 2004), the term values follows McClelland's (1980, 1985) distinction between implicit motives (such as those measured by the Thematic Apperception Test) and explicit values (such as those measured, as in the current study, by self-report).

Both theory and research suggest that values should predict behavior and affect (Carver & Scheier, 1998).

Moreover, recent formulations of interpersonal theory emphasize how values or motives define the meaning and emotional impact of interpersonal behaviors for both actors and their interaction partners (Horowitz et al., 2006). However, as with efficacy, there is as yet little research specifically on the effects of interpersonal values on interpersonal behaviors and interpersonal satisfaction.

Collective efficacy. In our study, pairs of individuals worked together to solve a murder mystery. The individuals were highly interdependent because they believed that they would get paid twice as much if they solved the mystery correctly and solving the mystery correctly depended on communicating effectively (because each person had half the clues). To the extent that people perceive themselves to be interdependent, not only are self-efficacy beliefs influential but so are collective efficacy beliefs. Analogous to self-efficacy, collective efficacy is group members' confidence that their group can attain a specific outcome and has been shown to predict a group's goals, persistence, and performance (e.g., Mummendey, Kessler, Klink, & Mielke, 1999; Seijts & Latham, 2000; for an overview, see Bandura, 1997). Indeed, research suggests that whereas self-efficacy is a better predictor than collective efficacy of individual performance, collective efficacy is a better predictor of group performance, especially in highly interdependent groups (Gully, Incalcaterra, Joshi, & Beaubien, 2002). Therefore, the current study assessed collective efficacy in addition to self-efficacy and subjective values.

Group members tend to share similar collective efficacy beliefs (e.g., Mulvey & Klein, 1998; Myers, Payment, & Feltz, 2004). However, most research has used naturalistic groups (such as sports teams or work teams), making it difficult to assess the extent to which group process (as opposed to group performance) contributes to convergence in efficacy beliefs. Because participants in the current study were unacquainted, we were able to assess whether their interaction contributed to any convergence in collective efficacy beliefs.

Overview of the Research

To model the effects of interpersonal values and interpersonal self-efficacy required having adequate measures of interpersonal values and interpersonal self-efficacy. Whereas a comprehensive measure of interpersonal values already existed, a comprehensive measure of interpersonal self-efficacy did not. Therefore, in Study 1, we developed the Circumplex Scales of Interpersonal Efficacy (CSIE)—a measure of individuals' confidence in their ability to perform interpersonal behaviors associated with each region of the IPC. Then, in Study 2, we used the newly developed CSIE and the previously

TABLE 1:   CSIE SCALES AND RELIABILITY DATA

Scale Octant	Cronbach's α	Scale Items
PA (Dominant)	.83	I can be assertive; I can be forceful; I can speak up when I have something to say; I can take charge
BC (Dominant & Distant)	.78	I can be aggressive if I need to; I can keep the upper hand; I can tell them when I am annoyed; I can win any arguments or competitions
DE (Distant)	.73	I can be cold and unfriendly when I want to; I can be cruel when the situation calls for it; I can be tough; I can get them to leave me alone
FG (Yielding & Distant)	.66	I can be quiet; I can be submissive; I can disappear into the background when I want; I can hide my thoughts and feelings
HI (Yielding)	.74	I can avoid getting into arguments; I can avoid making them angry; I can be a follower; I can let others take charge
JK (Yielding & Friendly)	.75	I can be giving; I can be nice; I can follow the rules; I can get along with them
LM (Friendly)	.67	I can be helpful; I can fit in; I can soothe hurt feelings; I can understand their feelings
NO (Dominant & Friendly)	.70	I can be a leader; I can express myself openly; I can get them to listen to what I have to say; I can smooth over any difficulties

NOTE: $n = 367$. CSIE = Circumplex Scales of Interpersonal Efficacy.

developed measure of interpersonal values to test predictions derived from social-cognitive and interpersonal theory in the context of unscripted dyadic interactions.

STUDY 1

The purpose of Study 1 was to develop and assess the psychometric properties of a brief yet comprehensive measure of interpersonal self-efficacy—the CSIE. This measure was designed to assess individuals' confidence in their ability to enact interpersonal behaviors associated with each region of the IPC.

Method

Participants

University of Idaho students ($n = 378$; 159 men, 212 women, 7 unknown) participated for extra credit in various undergraduate classes.

Materials

Selection and presentation of CSIE items. The format of the CSIE followed the standard, commonly used format for self-efficacy scales recommended by Bandura (1996) where participants rate on 11-point scales how confident or sure they are that they can do certain specific behaviors. The original CSIE item pool consisted of 52 behaviors (see Table 1 for examples). The behaviors were similar to those found on other IPC measures such as the IIP-C (Alden, Wiggins, & Pincus, 1990) and so were expected to assess all regions of the IPC. Each behavior was placed at the end of the following stem: "When I am with others, I can . . . " For each item, the participants were asked to rate how sure they were that they could act that way with other people on a rating

scale ranging from 0 (*I am not at all confident*) to 5 (*I am moderately confident*) to 10 (*I am absolutely confident*). Thus, higher scores indicated greater self-efficacy.

Other interpersonal circumplex measures. The Circumplex Scales of Interpersonal Values (CSIV; Locke, 2000) consist of eight, eight-item scales that assess the value that respondents place on experiencing interpersonal stances associated with each octant of the IPC. For each item, respondents rate on a scale from 0 (*not important*) to 4 (*extremely important*) how important it is for them that they act or appear or are treated that way in interpersonal situations. The Inventory of Interpersonal Problems (IIP; Horowitz, Alden, Wiggins, & Pincus, 2000) is the most popular self-report measure of interpersonal problems. The IIP consists of eight, eight-item scales that assess problematic dispositions associated with each octant of the IPC. Respondents indicate how distressed they have been by each problem on a 0 (*not at all*) to 4 (*extremely*) scale. The octant scores of the CSIV and of the IIP have been shown to have adequate internal reliability, a circumplex structure, and convergent validity in relation to other interpersonal circumplex measures (Horowitz et al., 2000; Locke, 2000).

Procedure

The 52 potential CSIE items were either administered alone ($n = 227$) or along with the CSIV ($n = 34$) or along with both the CSIV and IIP ($n = 117$).

Results and Discussion

Internal Consistency and Structure

To create eight scales for the CSIE that conformed to a circumplex structure, we used a procedure used by previous investigators (e.g., Alden et al., 1990; Dryer &

Horowitz, 1997; Locke, 2000). (In the following analyses, we used only the $n = 367$ participants who responded to every CSIE item.) First, we correlated participants' responses to the items with one another and subjected the matrix of intercorrelations to a principal components analysis (PCA). Plotting the items according to their loadings on the first two factors produced an approximation of the interpersonal circumplex. Within each octant of that space, we selected four items on the basis of the item's communality and thematic content. Table 1 shows the items and Cronbach's α for each scale (the αs ranged from .66 to .83). A subsequent PCA on the eight CSIE scales showed that the first two factors explained 71.5% of the variance and the scale communalities ranged from .64 to .78.

We conducted a randomization test of hypothesized order relations (Hubert & Arabie, 1987; Tracey, 2000) to formally test whether the CSIE met the criteria for a circumplex model. Perfect fit to a circular model requires that correlations of adjacent scales on the circle (e.g., DE and FG) exceed correlations of scales two octants apart (e.g., DE and HI), which in turn exceed those of scales three octants apart (e.g., DE and JK), which in turn exceed those of scales opposite on the circle (e.g., DE and LM). In total, a circular model makes 288 predictions about the relative magnitudes of correlations among 8 octant scales. (Correlations assumed to be equal, such as the relations of DE and LM vs. PA and HI, are not compared.) The program RANDALL (Tracey, 1997) computes the number of these predictions met in a particular sample and a correspondence index (CI; Hubert & Arabie, 1987) equal to the proportion of predictions met minus the proportion violated. The CI can range from –1.0 (all predictions violated) to 0.0 (50% of predictions met) to 1.0 (perfect fit). Running RANDALL on the mean-centered CSIE scales, 257 of the 288 predictions were met (CI = .78, $p < .001$), indicating significant conformity to a circular model.

Convergent Validity

In accordance with research showing positive and reciprocal relations between self-efficacy and interests or values (e.g., Affleck et al., 2001; Lent, Hill, & Hoffman, 2003; Tracey, 2002), we predicted convergence between individuals' interpersonal efficacies (the behaviors they are confident they can do) as measured by the CSIE and their interpersonal values (the behaviors they consider important) as measured by the CSIV. We also predicted convergence between their interpersonal efficacies and their interpersonal problems (the behaviors they do too little or too much) as measured by the IIP, for example, a person who has more problems with being too assertive than too unassertive is likely to be more confident that she can be assertive than unassertive.

Because the octant scales of the CSIV, CSIE, and IIP have a circumplex structure, we summarized the octant scales in terms of two underlying dimensions using the following trigonometric formulae: Dominance = $\Sigma S_i \sin\theta_i$ and Friendliness = $\Sigma S_i \cos\theta_i$, where S_i is the ith octant score, θ_i is the angle at the center of that octant, and the angles of the +C (communion) and +A (agency) octants were, respectively, 0° and 90°. We used the two dimension scores instead of the eight octant scores because (to the extent octants form a circumplex) the gain in parsimony outweighs the loss of information. (For further explanation of the mathematics of circumplex scales, see the appendix of Horowitz, 2004.) The correlations of the CSIE with the CSIV and IIP were, respectively, $r(139) = .47$ and $r(110) = .78$ for the dominance dimension and $r(139) = .43$ and $r(110) = .44$ for the friendliness dimension; all ps < .001. The level of convergence of the CSIE with the CSIV and IIP suggests that they measure distinct but related constructs.[1]

In summary, Study 1 demonstrated that the scales of the CSIE are internally consistent, conform to a circumplex structure, and show convergent validity with the scales of the IIP and CSIV.[2] Future research should evaluate the psychometric and circumplex properties of the CSIE in other populations. A limitation of the present study is that the PCA (used to select CSIE items that fit a circumplex structure) and the randomization test (used to confirm that the CSIE scales fit a circumplex structure) both used the same sample; therefore, as part of Study 2, we subjected the CSIE to another randomization test using an independent sample.

STUDY 2

Study 2 examined how the person-variables of interpersonal values and self-efficacy and the dyadic-variable of interpersonal complementarity predict interpersonal behaviors, feelings, and beliefs during unscripted problem-solving interactions. There were three main hypotheses. First, dominant and friendly values and efficacy should predict dominant and friendly behaviors. Second, according to the principle of interpersonal complementarity, differences between partners' dominance values or efficacy and similarities in partners' friendliness values or efficacy should predict satisfaction. Third, each partner's unshared preinteraction collective efficacy should predict the dyad's shared postinteraction collective efficacy.

Method

Participants

University of Idaho undergraduates (45 male-male pairs and 56 female-female pairs) participated for

monetary compensation. The two individuals in each pair did not know each other.

Decision Task

The decision task was based on one developed by Stasser and Stewart (1992), which has been used in various forms in several previous studies (e.g., Gruenfeld, Mannix, Williams, & Neale, 1996; Stasser, Stewart, & Wittenbaum, 1995; Stewart, Billings, & Stasser, 1998). This task is particularly useful for the present research because it quickly fosters a relatively high level of interaction. Participants read a series of interviews from a homicide investigation. These interviews were presented in a booklet that included other supporting materials, such as a list of characters, a map, and a newspaper article. The interviews contained 24 clues that were either incriminating or exonerating for each of the three suspects (A, B, and C). There were 6 incriminating clues about each suspect, but there were also 3 clues that exonerated A and 3 clues that exonerated B. Therefore, the set of clues was designed so that A and B could be eliminated as suspects and supported the conclusion that C alone had both the motive and the opportunity to commit the crime. Both participants had the same supporting materials but a different set of interviews. The 12 critical clues for reaching the correct answer were the 6 implicating the correct suspect (C) and the 3 clues exonerating A and the 3 clues exonerating B. The critical clues were divided as follows: Clue set A contained 3 clues implicating C, 5 clues implicating and 2 clues exonerating A, and 1 clue exonerating B; Clue set B contained 3 clues implicating C, 6 clues implicating and 2 clues exonerating B, and 1 clue implicating and 1 clue exonerating A. In essence, the subject with Clue Set A was the "suspect A expert" and the subject with Clue Set B was the "suspect B expert." The participants were told that they would both receive $5 just for coming to the experiment but that if their judgment of guilt was correct they would each receive an additional $5. (In actuality, all participants received the additional $5.)

Interpersonal circumplex measures. The current study used the same 64-item CSIV and 32-item CSIE described in Study 1 except that the instructions were modified slightly to increase the relevance of the responses to the experimental setting. Specifically, the CSIV asked participants to indicate for each item, "When working with others in a public setting, how important is it to me that I act or appear this way?" Likewise, the CSIE asked participants to indicate for each item, "How sure are you that you can act that way when working with others in a public setting?" The modified instructions did not undermine the scales' psychometric properties. For the CSIV, the Cronbach's αs ranged from .72 to .85 and a randomization test of hypothesized order relations showed that 287 of the 288 predictions were met (CI = .99, $p < .001$), indicating almost perfect conformity to a circular model. For the CSIE, the Cronbach's αs ranged from .72 to .81 and a randomization test of hypothesized order relations showed that 266 of the 288 predictions were met (CI = .85, $p < .001$), indicating significant conformity to a circular model. Therefore, we subjected the octant scores to the trigonometric formulae described above to extract overall scores for dominance and friendliness.

Procedure

The participants were seated at opposite ends of a rectangular table. First, they completed the CSIV and CSIE. Second, each participant privately read and reviewed the murder case information for 20 min. (A timer on the table displayed how much time was available to both participants.) Third, participants privately rated their preinteraction collective efficacy using (as in van Zomeren, Spears, Fischer, & Leach, 2004, Study 1) a single, situation-specific item: "How confident are you that you and your partner will pick the correct suspect in the time allowed?" on a –5 (*not at all confident*) to +5 (*very confident*) scale. Fourth, participants privately indicated which suspect they thought was guilty. Fifth, the participants were given 20 min to discuss the case and reach agreement on which one of the suspects was the murderer. During this interaction, they could refer to their own clue sets but could not exchange materials with their partners.

After the dyad reported their decision (but before they learned whether they were correct), each participant privately completed a postdiscussion questionnaire in which they answered the following questions on –5 to +5 scales: "How confident are you that you and your partner have made the right decision?" "How satisfied are you with your contribution to the decision-making process?" "How satisfied are you with your partners' contribution to the decision-making process?" "How satisfied are you with how you and your partner worked together?" "How interested would you be in working together with your partner in the future?" and "How interested would you be in spending time socially with your partner in the future?" The first item was the measure of postinteraction collective efficacy. The other five items were averaged to yield a measure of overall postinteraction satisfaction (Cronbach's α = .83).

Coding

The dyads' 20-min interactions were videotaped. Two (or, for 15 dyads, three) coders independently reviewed each videotape. The coders were not aware of interpersonal theory or the study's hypotheses. First, the

coders rated the participants' dominance (defined as "firm, confident, assertive, self-assured, persistent, forceful behavior") and friendliness (defined as "warm, nice, open, polite, kind, gentle, accommodating behavior") five times during the conversation (i.e., after every 4 min) on scales ranging from 1 (*not at all*) to 7 (*very*). To create a more stable index of dominance, we used the average of each coder's five dominance ratings; the same was done for friendliness.

Second, to assess how much each participant spoke, the coders recorded the start time and stop time of each verbal utterance. Talking time is a common and robust behavioral indicator of interpersonal dominance. A recent meta-analysis of studies involving face-to-face interactions found strong evidence that both interaction partners and observers rate people who talk more as more dominant (Mast, 2002). Likewise, an earlier meta-analysis of group interaction research found a strong tendency for the most talkative member to be chosen as the leader (Mullen, Salas, & Driskell, 1989).

The reliabilities of observers' ratings of participants' total talking time were excellent: .97 and .96 (for participants with Clue Set A and Clue Set B, respectively). The dominance and friendliness coded variables were mean-centered for each observer (to correct for possible differences in how observers used the scale). Interrater agreement was computed based on intraclass correlations (McGraw & Wong, 1996). The reliabilities of ratings of dominance were adequate: .69 and .74 (for Set A and Set B participants, respectively). However, the ratings of friendliness were not reliable (.43 and .40) and therefore we were unable to test hypotheses involving expressed friendliness.

Results and Discussion

Data Analyses

Following Sadler and Woody (2003), we used structural equation modeling to address the issues of statistical dependency and reciprocal causation that can exist in dyadic data. One issue in the current data set is whether the interaction partners are distinguishable or interchangeable (Kashy & Kenny, 2000). We treated them as distinguishable because the two partners were always given different information about the homicide investigation (either Clue Set A or Clue Set B). Because each partner received a very different set of clues, this information could have been shared more or less effectively, or not at all. Therefore, treating the dyads as distinguishable by clue set allows for explicit tests of whether there were differences between those who were given the two sets of interviews. All models were evaluated using Amos 5.0 (Arbuckle, 2003) using a maximum likelihood estimation

approach on the relevant covariance matrices. (The appendix shows the means, standard deviations, and correlations for the variables used in the models.)

Gender Differences

Interpersonal research often uses same-gender pairs to reduce unwanted variance due to interpersonal processes that may be elicited by mixed-gender situations (such as increases in awareness of gender roles and impression management). However, the use of same-gender pairs raises the question of whether differences exist between male-male and female-female dyads. Therefore, we conducted preliminary analyses to test the homogeneity of the covariance matrices of the major variables across the two types of dyads. For each of the analyses described below, constraining the measured variables' covariance matrices to be equal for male and female dyads did not reduce model fit (all $\Delta\chi^2$s *ns*, with one minor exception[3]). Because the matrices did not differ, to maximize statistical power, all subsequent analyses treated the male-male and female-female dyads as a single sample.

Predicting Expressed Dominance

Interpersonal theory predicts that when two previously unacquainted people are interacting, then their interpersonal behavior is a function of both their own interpersonal dispositions and their partner's behaviors. Figure 2 shows the structural model that the current study used to test these basic principles. Because the participants were unacquainted prior to this interaction, their dispositions (i.e., their efficacies and values) can influence each other only by means of the behaviors they manifest during this first interaction; therefore, the partner effect paths (from one person's disposition to the other person's behavior) were assumed to be zero. The indicators of expressed dominance (which, being a latent construct, is displayed as an oval) were, for each participant, time talking (in minutes) and observers' rating of dominance (averaged across rating times and mean-centered observer ratings). The dispositional predictors of expressed dominance were participants' overall dominance vectors on the CSIV and CSIE; these actor effects appear as the paths labeled a_1, a_2, b_1, and b_2. The final predictor of each participant's expressed dominance was the other participant's expressed dominance; these mutual-influence effects appear as the two vertical paths labeled c_1 and c_2. The reciprocal causation paths represent the idea that each person's behaviors simultaneously shape, and are shaped by, the dynamic interaction between them. The double-headed arrows indicate the covariation between the dispositional measures within each clue set. Finally, e_1 through e_4 are the errors due to imperfect measurement by the expressed dominance indicators, and Z_1 and Z_2 are the
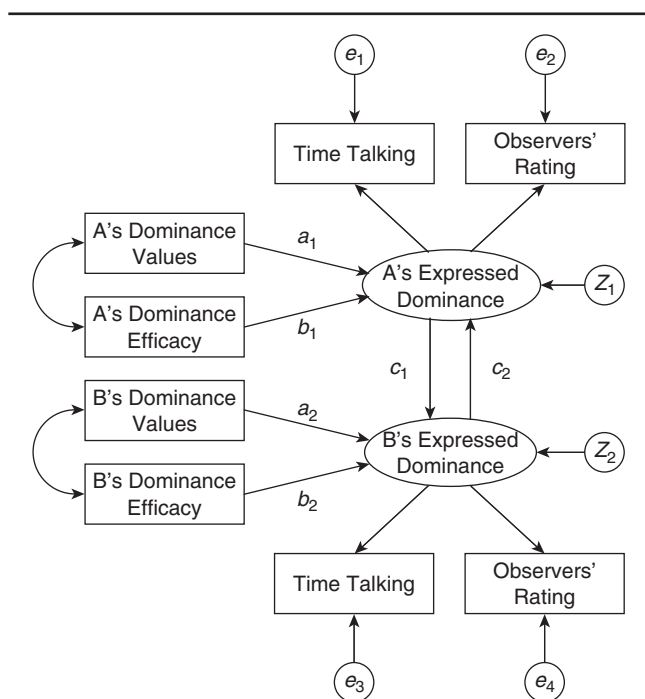
Figure 2 Model for expressed dominance as a function of dominance efficacy, dominance values, and reciprocity.
NOTE: The letters e_1 through e_4 represent error due to imperfect measurement by the indicators of expressed dominance and Z_1 and Z_2 represent unexplained variance in latent expressed dominance variables. Paths a_1, a_2, b_1, and b_2 represent effects of participants' values and efficacy on their situational behavior (actor effects) and paths c_1 and c_2 represent the effects of individuals' situational behavior on each other (mutual-influence effects).

unexplained variances in the latent expressed dominance variables. (For more explanation of this type of model, see Sadler & Woody, 2003.)

Our hypotheses are as follows. In accord with prior research on the effects of values and efficacy on behavior, the coefficients for the paths labeled a_1 and a_2 and b_1 and b_2 should be positive. These coefficients test the hypotheses that people who value dominant behaviors or who are confident they can enact dominant behaviors actually do enact dominant behaviors. On the other hand, because interpersonal theory predicts that dominant behavior invites yielding behavior and vice versa, the coefficients for the paths labeled c_1 and c_2 (showing the mutual influence of partners' dominant behaviors) should be negative. This model, as shown in Figure 2 with no further constraints, fit well, $\chi^2(16) = 23.98$, ns, comparative fit index (CFI) = 0.96, root-mean-square error of approximation (RMSEA) = 0.07.[4]

Having different sets of clues (incriminating different suspects) obviously affected what Clue Set A and Clue Set B participants said, and it might have affected the determinants of their respective interpersonal behaviors as well. To test this possibility, we constrained the following

to be equal for partner A and partner B: the effects of values (i.e., $a_1 = a_2$), the effects of efficacy (i.e., $b_1 = b_2$), and the mutual-influence effects (i.e., $c_1 = c_2$). We also constrained the paths from the latent variables to the indicators, the variance and covariance terms of the measured variables, and the variances of the error terms and disturbances (e_1 and e_3, e_2 and e_4, Z_1 and Z_2) to be equal for partner A and partner B; doing so yields more precise estimates because it doubles the information used to estimate the overall effects. Figure 3 shows the standardized estimates for this constrained model. The fit was still very good, $\chi^2(26) = 36.22$, ns, CFI = 0.95, RMSEA = 0.06, and was not significantly reduced compared to the completely unconstrained model, $\Delta\chi^2(10) = 12.24$, ns. Therefore, the effects of values on dominance behavior did not differ for partners with different clue sets, and neither did the effects of efficacy on dominance behavior.

As predicted by the principle of reciprocity of dominance, the mutual influence effects were significant and negative ($CR = -3.52$, $p < .001$). Also as predicted, dominance efficacy had a significant positive effect on expressed dominance ($CR = 2.94$, $p < .005$). However, the effect of dominance values was not significant ($CR = 0.67$, ns). Overall, the model explained 26% of the variance in expressed dominance.

Figure 3 also shows that dominance values and efficacy were strongly related ($r = .57$, $p < .001$). Consequently, values may not be a significant predictor in the model in Figure 3 due to variance shared with efficacy and may be a significant predictor when tested alone. Indeed, when efficacy was omitted from the model, the effect of dominance values on expressed dominance was significant ($\beta = 0.25$, $CR = 2.80$, $p = .005$), and the overall model fit well, $\chi^2(14) = 17.39$, ns, CFI = 0.96, RMSEA = 0.05, predicting 22% of the variance in expressed dominance. When values were omitted from the model, the effect of efficacy on expressed dominance remained strong ($\beta = 0.29$, $CR = 3.98$, $p < .001$), and the overall model fit well, $\chi^2(14) = 15.43$, ns, CFI = 0.99, RMSEA = 0.03, and continued to predict 25% of the variance in expressed dominance. In sum, as hypothesized, either values alone or efficacy alone was a significant predictor of expressed dominance. However, whereas efficacy explained unique variance in expressed dominance (i.e., not explained by the variance efficacy shares with values), values did not.

Predicting Dyadic Satisfaction

Interpersonal theorists such as Carson (1969) and Kiesler (1983) predict that people's satisfaction with their social interactions is a function of the complementarity of their interpersonal traits. Specifically, the more dissimilar two people are with regard to trait friendliness, the more pull they both experience to adjust away from their preferred styles, and hence the less satisfied
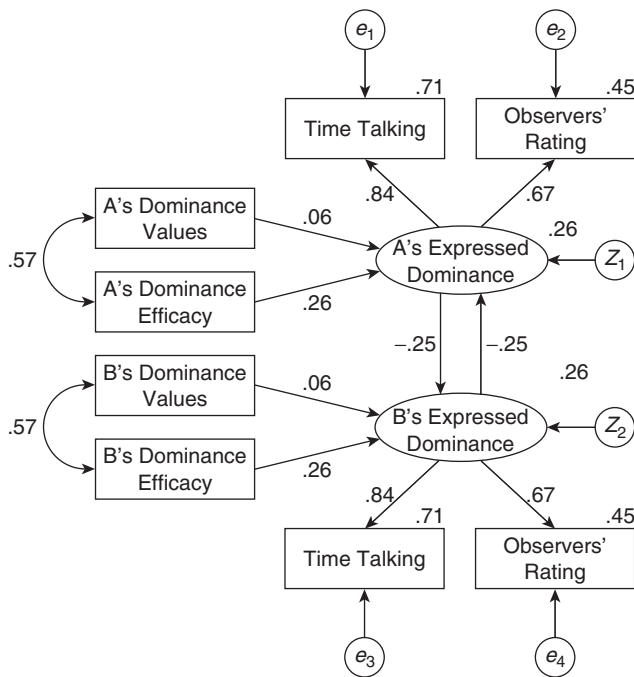
Figure 3 Expressed dominance as a function of dominance efficacy, dominance values, and reciprocity.

NOTE: The letters e_1 through e_4 represent error due to imperfect measurement by the indicators of expressed dominance and Z_1 and Z_2 represent unexplained variance in the latent expressed dominance variables. The displayed coefficients are standardized. The paths from latent expressed dominance to its indicators were significant at $p < .001$.

Figure 4 Model for dyadic satisfaction as a function of friendliness values and efficacy (and the absolute differences in partners' values and partners' efficacy).

NOTE: The letters e_1 and e_2 represent error due to imperfect measurement by the indicators of dyadic satisfaction and Z_1 represents unexplained variance in latent dyadic satisfaction. Paths a_1, a_2, b_1, and b_2 represent effects of partners' values and efficacy and paths c and d represent the effects of the absolute differences in partners' values and efficacy.

they should be with their interaction. Thus, we hypothesized that satisfaction would be inversely related to the dissimilarity between interactants' friendly dispositions.

Figure 4 shows the structural model we used to test the effects of participants' friendliness values and efficacy on satisfaction using absolute differences between interactants as the measure of dissimilarity. The six predictors of satisfaction (located on the left side of the model) were the partners' overall vectors for friendliness values (CSIV) and efficacy (CSIE) and the absolute differences between partners' values and between their efficacy. The double-headed arrows between these predictors reflect the covariation between the dispositional measures. Paths c and d represent the effects of differences between partners in values and efficacy, respectively, and paths a_1, a_2, b_1, and b_2 control for main effects of these variables, as advocated by Kenny and Cook (1999). Finally, e_1 and e_2 represent the error due to imperfect measurement by the indicators of dyadic satisfaction, and Z_1 represents unexplained variance in latent dyadic satisfaction.

The outcome variable, dyadic satisfaction, is a dyad-level latent variable indicated by the satisfaction ratings of partner A and partner B. Whereas the indicators of individual-level latent variables are from a single individual,
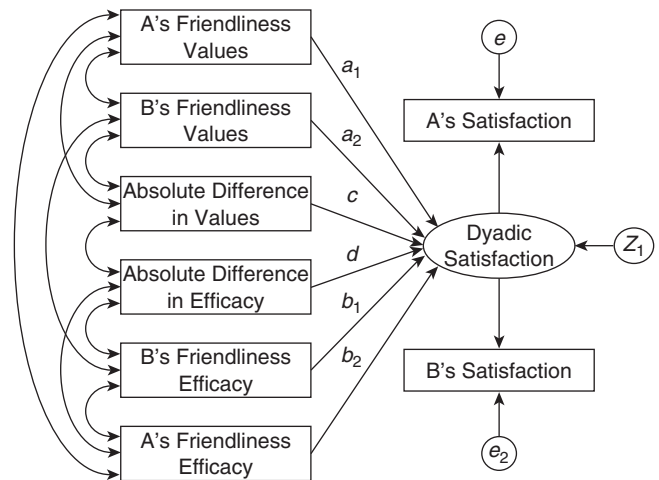
the indicators of dyad-level latent variables are from two individuals (Gonzalez & Griffin, 2002; Woody & Sadler, 2005). In general, dyad-level variables are those whose indicators (from each member) are not independent because of the influence of some variable that, on average, influences both members equally. Postinteraction satisfaction was conceptualized as a dyad-level variable because interpersonal theory suggests that both partners' satisfaction should be similarly affected by the shared experience of the degree to which their friendliness is correspondent. Based on the principle of complementarity, our hypotheses are that the paths labeled c (the effect of the absolute difference in partners' friendliness values) and d (the effect of the absolute difference in partners' friendliness efficacy) will be negative. For example, the lower the absolute difference in their values, the more similar their friendliness values are, and thus the higher their satisfaction should be.

The above model's fit was very good, $\chi^2(12) = 18.19$, ns, CFI = 0.95, RMSEA = 0.02. To test whether partners' different clue sets may have influenced the parameters of the model, we constrained the following to be equal for partner A and partner B: the main effects of values (i.e., $a_1 = a_2$), the main effects of efficacy (i.e., $b_1 = b_2$), the variances of the error terms (e_1 and e_2), and the variance and covariance terms for the measured variables. The fit was still good, $\chi^2(18) = 25.26$, ns, CFI = 0.94, RMSEA = 0.07, and was not significantly reduced compared to the unconstrained model, $\Delta\chi^2(6) = 7.07$, ns.

Figure 5 shows the standardized estimates for this constrained model. Friendliness values had a marginally significant positive effect on dyadic satisfaction ($CR = 1.79$, $p < .08$), indicating that members who valued warmth tended to have a positive influence on dyadic satisfaction, but friendliness efficacy did not have a significant effect ($CR = -0.23$, ns). Conversely, the absolute difference in friendliness values did not have a significant effect ($CR = 0.09$, ns) but the absolute difference in friendliness efficacy did ($CR = -2.00$, $p < .05$). In sum, the strongest finding was that (dyadic) similarity in friendliness efficacy predicted (dyadic) satisfaction. Overall, the model explained 23% of the variance in latent dyadic satisfaction.

Figure 5 also shows that friendliness values and efficacy were strongly related ($r = .52$, $p < .001$). Consequently, it is possible that the absolute difference in values would be a significant predictor if efficacy were omitted from the model. When values were tested alone, the overall model fit very well, $\chi^2(6) = 4.80$, ns, CFI = 1.00, RMSEA = 0.00, and predicted 14% of the variance in dyadic satisfaction. The main effect of friendliness values on satisfaction was significant ($\beta = 0.22$, $CR = 2.02$, $p < .05$) but the effect of the absolute difference in friendliness values was still not significant ($\beta = -0.13$, $CR = -0.80$). When efficacy was tested alone, the overall model fit continued to be satisfactory, $\chi^2(6) = 7.66$, ns, CFI = 0.90, RMSEA = 0.05, and predicted 17% of the variance in dyadic satisfaction. As in Figure 5, the main effect of efficacy was not significant ($\beta = 0.09$, $CR = 0.03$) but the effect of the absolute difference was ($\beta = -0.40$, $CR = -2.39$, $p < .02$). In sum, dyadic satisfaction was positively related to the members' communal values (but not self-efficacy) and to the similarity in members' communal self-efficacy (but not the similarity in values).

According to interpersonal theory, peoples' satisfaction should be related not only to the their levels of friendliness but also to their levels of dominance (Carson, 1969; Kiesler, 1983). Specifically, the more dissimilar two people are with regard to trait dominance, the more readily compatible their preferred styles (leader and follower), and hence the more satisfied they should be with their interaction. Thus, we next applied the foregoing model to dominance values and efficacy. In this case, paths c and d should be positive (rather than negative as in the friendliness model). The unconstrained model fit very well, $\chi^2(12) = 13.18$, ns, CFI = 0.99, RMSEA = 0.03. After setting all corresponding parameters for partner A and partner B equal, the fit was still good, $\chi^2(18) = 23.27$, ns, CFI = 0.94, RMSEA = 0.05, and was not significantly reduced compared to the unconstrained model, $\Delta\chi^2(6) = 10.09$, ns.

However, neither the main effects of dominance values or efficacy nor the absolute differences in values or efficacy had a significant effect on dyadic satisfaction, all $ps > .25$.[5] As noted earlier, dominance values and
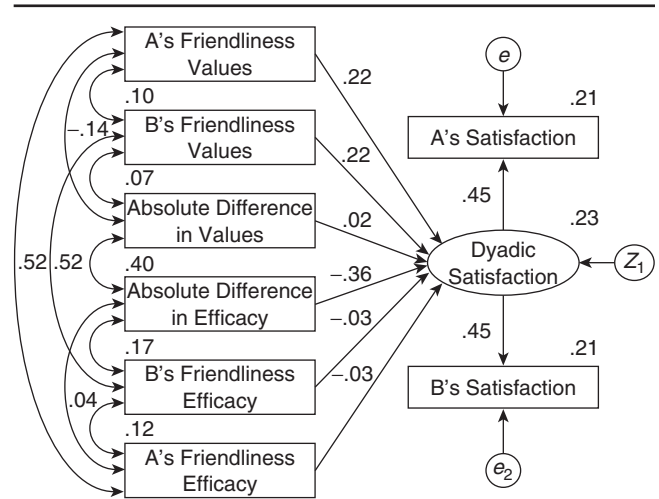

Figure 5   Dyadic satisfaction as a function of friendliness values and efficacy (and the absolute differences in partners' values and partners' efficacy).

NOTE: The letters e_1 and e_2 represent error due to imperfect measurement by the indicators of dyadic satisfaction and Z_1 represents unexplained variance in latent dyadic satisfaction. The displayed coefficients are standardized.

efficacy were strongly related ($r = .56$, $p < .001$). However, when values were tested alone, there were still no significant effects of values or differences in values ($ps > .20$). Likewise, when efficacy was tested alone, there were still no significant effects of efficacy or differences in efficacy ($ps > .20$). In sum, there was no support for the hypothesis that differences in dominance values or efficacy predict dyadic satisfaction.

Predicting Collective Efficacy

Participants were asked before the interaction, "How confident are you that you and your partner will pick the correct suspect in the time allowed?" and after the interaction, "How confident are you that you and your partner have made the right decision?" We expected partners to influence each others' collective efficacy through their verbal and nonverbal behaviors during the interaction; consequently, we expected that partners' efficacy would converge and that partners' preinteraction efficacy would predict the level at which it would converge. Because we conceptualized postinteraction collective efficacy as a shared dyadic belief that arises from the interaction, we modeled postinteraction efficacy (similar to satisfaction in the previous model) as a latent dyadic variable.

Figure 6 shows the standardized estimates for the structural model used to test these hypotheses. The letters e_1 and e_2 represent the error due to imperfect measurement by the indicators of dyadic efficacy, and Z_1 represents unexplained variance in latent dyadic efficacy. The paths from preinteraction to postinteraction efficacy, the

paths from the latent variables to the indicators, the variances of the measured variables, and the error terms were constrained to be equal for the two partners. The model fit very well, $\chi^2(5) = 6.32$, ns, CFI = 0.97, RMSEA = 0.05, and explained 19% of the variance in postinteraction dyadic efficacy. As expected, postinteraction efficacy was shared between partners (even though preinteraction efficacy was not) and was predicted by partners' preinteraction efficacy ($CR = 3.88$, $p < .001$).

Finally, whether the dyad had picked the correct suspect ($n = 49$, dummy coded as 1) or the incorrent suspect ($n = 52$, dummy coded as 0) was added to the preceding model as a possible predictor of dyadic efficacy and mediator of the effect of preinteraction efficacy. The expanded model fit very well, $\chi^2(5) = 8.33$, ns, CFI = 0.98, RMSEA = 0.04. Decision correctness had a positive effect on dyadic efficacy ($\beta = 0.29$, $CR = 2.66$, $p < .01$), indicating that at least some dyads were accurately assessing the quality of their decisions. The more important finding for the current article, though, was that preinteraction efficacy did not predict decision correctness ($\beta = -0.07$, $CR = -1.1$, ns) and the effect of preinteraction efficacy on dyadic efficacy was not reduced ($\beta = 0.32$, $CR = 4.27$, $p < .001$), indicating that decision correctness did not mediate the effect of preinteraction efficacy on dyadic efficacy.

GENERAL DISCUSSION

Predicting Expressed Dominance

In accord with social-cognitive theory, we hypothesized that dominance efficacy and values would predict dominant behaviors. In accord with interpersonal theory (Carson, 1969; Kiesler, 1983), we hypothesized that partners would show reciprocity with respect to expressed dominance. The results supported both hypotheses. Individuals' expressed dominance was a function of both their dominant dispositions (as indicated by the positive actor-effect paths) and their partner's dominant behaviors (as indicated by the negative mutual-influence paths). In short, expressed dominance was a function of both the individuals and the interaction they created.

Other studies of unscripted interactions also have found evidence of reciprocity of dominance (Markey et al., 2003; Sadler & Woody, 2003). In contrast, studies of interactions with confederates have yielded mixed results—with some studies finding reciprocity (e.g., Tiedens & Fragale, 2003), others not finding reciprocity (e.g., Bluhm, Widiger, & Miele, 1990), and still others finding reciprocity for some types of dominance but not others (e.g., Blumberg & Hokanson, 1983; Strong et al., 1988). Taken together, these results raise the
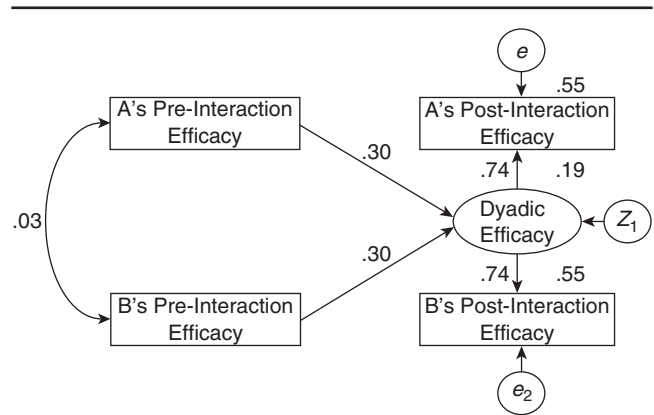

Figure 6 Dyadic (postinteraction) efficacy as a function of preinteraction efficacy.

NOTE: The letters e_1 and e_2 represent error due to imperfect measurement by the indicators of dyadic efficacy and Z_1 represents unexplained variance in latent dyadic efficacy. The paths from preinteraction to postinteraction efficacy were constrained to be equal as were the paths to the indicators of postinteraction efficacy. The displayed coefficients are standardized.

question: To what extent is reciprocity of dominance due to gradual, progressive, two-way negotiations that are precluded by scripting one interactant's behavior rather than immediate, reflexive, one-way reactions to others' yielding or dominant stances? Future research on reciprocity may be more illuminating if it allows unscripted interactions in which both partners are free to respond spontaneously to the other's behavior.

In accord with prior research on self-efficacy, we found that greater self-efficacy for enacting dominant than yielding behavior predicted the expression of more dominant behavior. Likewise, in accord with prior research on values, placing more value on dominant than yielding behavior also predicted more dominant behavior. Thus, either values alone or efficacy alone predicted expressed dominance.

However, when the effects of efficacy and values were tested simultaneously, only efficacy predicted dominant behavior. A similar pattern of results has emerged in other studies comparing the effects of efficacy and values. Most relevant is Lee (1984), in which participants rated how confident they were that they could respond assertively and how positive or negative it would be for them to respond assertively, and then judges rated the assertiveness of participants' responses to simulated assertiveness situations. As in our study, Lee (1984) found (a) when tested separately, both variables predicted assertiveness, (b) they were positively correlated, and (c) when they were tested simultaneously, only efficacy predicted assertiveness. Thus, in both Lee's study and our study, the variance shared by efficacy and values predicted behavior, but efficacy also

explained unique variance in interpersonal behavior that was not explained by values.

More generally, Bandura (1986) concludes that "in analyses that statistically control for the effects of the various factors, perceived self-efficacy predicts performance much better than expected outcomes in such diverse activities as phobias, assertiveness, smoking cessation, athletic feats, sales performances, and pain tolerance" (p. 393). Bandura (1997) hypothesizes that self-efficacy for successfully completing a particular behavior predicts behavior better than does the expected value of that behavior because people will not attempt the behavior if they do not believe they can complete it successfully (regardless of the expected rewards from that behavior). For example, if a person does not believe she can assert herself effectively, she will not try to assert herself, even if she believes that asserting herself will lead to increases in her pay and her self-worth. Our results are consistent with this hypothesis.

Predicting Dyadic Satisfaction

Interpersonal theory posits that complementary exchanges tend to be more satisfying than noncomplementary ones (Carson, 1969; Kiesler, 1983). Consequently, we hypothesized that interactants who were more similar in their dispositions to be friendly would feel more positively about their interaction and about each other. The findings for self-efficacy supported the complementarity hypothesis: Greater similarity in members' self-efficacy for acting friendly versus aloof predicted greater dyadic satisfaction. The implication of this result is that people who are more confident they can be tough than nice and people who are more confident they can be nice than tough may be unlikely to create a mutually satisfying working relationship.

The findings for values, however, did not support the complementarity hypothesis: Dyads who were more similar in how much importance they placed on acting friendly versus aloof were not more satisfied. Instead, these values appeared to have a simple positive effect on dyadic satisfaction. This finding suggests that people who valued communion were more motivated to create satisfying working relationships, regardless of whether their partner shared those values.

It is possible that this main effect of communal values on satisfaction may depend on the situation. In our study, the situation required behaviors that were congruent with communal values, namely, cooperative sharing of information with an equal. In contrast, communal values may not enhance dyadic satisfaction in situations that require behaviors that are discordant with communal values. For example, if task success requires partners to attend to individual tasks without communicating for periods of time, then communal people who keep seeking contact with their partners may end up irritating their partners and getting frustrated themselves.

The effect of similarity in communal values also may depend on the situation. For example, consider the following CSIV items: "It is important that . . . they show concern for how I am feeling" (from the +C octant) and "It is important that . . . I not show I care about them" (from the –C octant). Someone who holds the first value and someone who holds the second value are likely to become frustrated with each other in the context of an ongoing personal relationship, where these values may be particularly relevant; however, they are unlikely to become frustrated in the context of a brief, task-focused interaction such as that used in the current study.

Interpersonal theory also posits that complementarity with respect to dominance will be satisfying (Carson, 1969; Kiesler, 1983). If so, greater dissimilarity in partners' dispositions toward dominance should predict greater dyadic satisfaction. However, our data did not support this hypothesis. O'Conner and Dyce (1997) also found the effects of complementarity on attraction and cohesion to be stronger for friendliness than dominance in their study of musical bands and suggest that this fits with other findings showing that personality similarities predict outcome variables such as satisfaction more consistently than do personality differences.

Two additional explanations are worth considering. First, the effects of dominance may depend on the situation. For example, reciprocity of dominance may be a more important predictor in situations in which the outcomes depend on a stronger differentiation of roles (e.g., where having both people involved in planning and directing activity would interfere with efficiency and effectiveness). A second potential moderator is rigidity. People feel less satisfied with even brief interactions with rigid or inflexible partners (Tracey, 2005). Of course, the most rigid interaction partners are those whose behaviors are scripted by an experimenter. Perhaps that is why some of the clearest demonstrations of lack of complementarity causing discomfort, disliking, and hostility derive from experiments in which the partner was a confederate whose behaviors were scripted to be consistently dominant (e.g., Shechtman & Horowitz, 2006; Tiedens & Fragale, 2003).

Predicting Collective Efficacy

Partners' collective efficacy beliefs were unrelated before interacting but were related after interacting,

converging at a level predicted by their individual preinteraction collective efficacy judgments. Thus, a dynamic interpersonal process shaped shared collective efficacy beliefs. As mentioned earlier, this type of transactional cycle is a key construct of both interpersonal and social-cognitive theory. Elucidating the verbal behaviors (e.g., explicit expressions of confidence or doubt) and nonverbal behaviors (e.g., engaged postures, resigned sighs) through which partners communicate collective efficacy beliefs will be an interesting challenge for future research.

Both theory and research suggest that actual performance is also an important determinant of collective efficacy (Bandura, 1997; Goddard, 2001) and the current study did in fact find that dyads who had made the right decision reported greater dyadic efficacy. That the effect of unshared (preinteraction) collective efficacy beliefs on shared (postinteraction) collective efficacy beliefs was independent of the effect of performance raises some interesting questions. One question is, What happens when performance feedback and interpersonal feedback are in conflict? For example, when your partner expresses hope even while your collective performance suggests despair, which will have more influence on your collective efficacy beliefs? A second question is, Does the origin of the belief matter? For example, are dyadic efficacy beliefs that are based on past performance stronger determinants of partners' efforts and outcomes than dyadic efficacy beliefs that are based on interpersonal communication and contagion? Or, at least with respect to predicting behavior, are all collective efficacy beliefs created equal?

Limitations and Conclusions

Any research finding is more readily generalized to some situations than others. Because we studied strangers interacting for 20 min, we can be more confident in generalizing our findings to interactions of similar length between strangers than to either very brief encounters or close or ongoing relationships. Likewise, because the strangers were engaged in solving a novel problem, we can be more confident in generalizing our findings to novel problem-solving situations than to situations that either are not problem-focused or involve familiar activities (where one individual may have greater expertise and experience). Clarifying the boundary conditions for complementarity effects remains an important task for future research.

In addition, limited interjudge reliability in the present study prevented the analysis of expressed friendliness. One possible problem was that the structured, detail-focused, problem-solving task suppressed readily observable friendly and unfriendly behaviors. In support of this explanation, observers' ratings of friendliness were in fact notably less variable than their ratings of dominance. Therefore, future research on expressed friendliness may wish to use tasks that focus participants less on the task and more on each other. Also, our participants (who faced each other across a small table) were better able to observe nonverbal expressions of friendliness than were our coders (who watched videotapes of participants' profiles). Therefore, future research on expressed friendliness also may wish to make recordings that retain (and to train observers to code) the nonverbal information that was available to partners during their interaction.

Despite these limitations, the present findings provided support for both social-cognitive and interpersonal theory. The social-cognitive person-variables of self-efficacy and subjective values (operationalized as ratings of confidence and importance) were direct predictors of expressed dominance and dyadic satisfaction, respectively. The interpersonal dynamic process of complementarity, that is, reciprocity of dominance and similarity of friendliness, also predicted expressed dominance and dyadic satisfaction, respectively. Finally, both shared performance outcomes and dynamic interpersonal processes caused the convergence of collective efficacy beliefs.

The current article's synthesis of interpersonal theory and social-cognitive theory is clearly embodied in its assessment devices: the CSIE and CSIV. Following social-cognitive theory, the CSIE and CSIV assess efficacy expectancies and subjective values associated with specific categories of behavior (and can be targeted to specific situations, such as our asking participants to evaluate each behavior "when working on a task in a public setting"). Following interpersonal theory, the CSIE and CSIV conceptualize and organize these person variables in terms of the interpersonal circumplex. We hope the CSIE and CSIV will be useful tools for future investigations of the role of self-efficacy and subjective values in shaping how people act and feel during dynamic interpersonal interactions.

Finally, we believe that the present study illustrates some of the considerable potential for further integration of interpersonal theory and social-cognitive theory. To social-cognitive theory, interpersonal theory offers a very well mapped-out domain of interpersonal behaviors and the highly generative concept that each partner's behavior in an interaction constitutes the environment for the other person. To interpersonal theory, social-cognitive theory offers important person variables that should help explain both stability and change in interpersonal traits. Hence, mutual influence would benefit both theories.

APPENDIX

TABLE A1: Correlation Matrix, Means, and Standard Deviations of Dominance Values, Efficacy, Observer Ratings, and Time Talking

	ADomV	BDomV	AdomE	BDomE	ADomO	BDomO	ATT	BTT
ADomV	1.000							
BDomV	0.064	1.000						
ADomE	0.633	−0.024	1.000					
BDomE	0.054	0.509	−0.022	1.000				
ADomO	0.186	0.066	0.309	−0.151	1.000			
BDomO	0.026	0.222	−0.142	0.202	−0.242	1.000		
ATT	0.164	0.019	0.240	0.034	0.554	−0.215	1.000	
BTT	−0.072	0.154	−0.117	0.263	−0.210	0.578	−0.367	1.000
M	0.814	1.008	−0.768	−0.500	−0.093	0.096	7.284	7.250
SD	1.626	1.253	2.126	2.197	0.763	0.812	2.114	1.917

NOTE: The values are full information maximum likelihood estimates. ADomV = A's Dominance Values, BDomV = B's Dominance Values, ADomE = A's Dominance Efficacy, BDomE = B's Dominance Efficacy, ADomO = A's Dominance Observer-Rated, BDomO = B's Dominance Observer-Rated, ATT = A's Time Talking, BTT = B's Time Talking.

TABLE A2: Correlation Matrix, Means, and Standard Deviations of Friendliness Values, Efficacy, Absolute Differences, and Satisfaction

	AFriV	BFriV	AfriE	BFriE	AbsE	AbsV	ASatis	BSatis
AFriV	1.000							
BFriV	0.157	1.000						
AFriE	0.562	0.044	1.000					
BFriE	0.096	0.537	0.185	1.000				
AbsE	−0.161	0.013	−0.099	0.204	1.000			
AbsV	−0.302	0.140	−0.231	0.117	0.422	1.000		
ASatis	0.180	0.208	0.073	0.072	−0.298	−0.071	1.000	
BSatis	0.065	0.045	−0.047	0.072	−0.064	−0.077	0.210	1.000
M	2.838	3.067	1.223	1.515	1.878	1.629	3.440	3.648
SD	1.479	1.683	1.909	1.754	1.428	1.279	1.007	1.083

NOTE: The values are full information maximum likelihood estimates. AFriV = A's Friendliness Values, BFriV = B's Friendliness Values, AFriE = A's Friendliness Efficacy, BFriE = B's Friendliness Efficacy, AbsV = Absolute Difference in Friendliness Values, AbsE = Absolute Difference in Friendliness Efficacy, ASatis = A's Satisfaction, BSatis = B's Satisfaction.

TABLE A3: Correlation Matrix, Means, and Standard Deviations of Preinteraction and Postinteraction Efficacy and Decision Correctness

	APreE	BPreE	APostE	BPostE	CorrDec
APreE	1.000				
BPreE	0.028	1.000			
APostE	0.359	0.110	1.000		
BPostE	0.218	0.218	0.548	1.000	
CorrDec	0.031	-0.187	0.176	0.177	1.000
M	2.198	2.614	2.970	3.079	0.485
SD	1.449	1.386	1.743	1.578	0.500

NOTE: The values are full information maximum likelihood estimates. APreE = A's Preinteraction Efficacy, BPreE = B's Preinteraction Efficacy, APostE = A's Postinteraction Efficacy, BPostE = B's Postinteraction Efficacy, CorrDec = Correct Decision.

NOTES

1. Another approach to measuring interpersonal self-efficacy was taken by Paulhus and Martin (1987), who developed the Battery of Interpersonal Capabilities (BIC). The original BIC asked respondents to rate on scales ranging from *not at all* (1) to *very much* (7) "how likely is it that you could be [an interpersonal trait] if the situation requires it?" More recent versions ask respondents to rate on scales ranging from 1 (*totally incapable*) to 7 (*easily capable*) "how capable are you of being [an interpersonal trait] when the situation calls for it" (Hofsess & Tracey, 2005). The Circumplex Scales of Interpersonal Efficacy (CSIE) and BIC differ in two crucial ways. First, the BIC asks about general traits from Wiggins's (1979) Interpersonal Adjective Scales; the CSIE asks about more specific actions. Second, the BIC octant scales contain only two items and, in Hofsess and Tracey (2005), five of the BIC octant scales had αs below 0.6; the CSIE scales contain four items and, in our samples, none of the CSIE scales had αs below 0.6.

2. Copies of the Circumplex Scales of Interpersonal Values (CSIV) and CSIE can be obtained from the authors or from www.class.uidaho.edu/klocke/inventories.htm.

3. The one exception was a difference in 1 of the 10 variances and covariances in the postinteraction efficacy covariance matrices for male versus female dyads: Male Clue Set B participants had a significantly lower variance in postinteraction efficacy than did female Clue Set B participants. Because there was no such difference in the variances for postinteraction efficacy for Clue Set A participants, we dismissed this one discrepancy as a trivial difference.

4. Allowing the residual terms Z_1 and Z_2 to covary did not improve the fit, indicating that the covariance between the disturbances was not statistically significant and the specified variables account for the interdependence in the data.

5. In structural equation modeling, the fit of the model indicates how well the estimated parameters reproduce the sample covariance matrix. This evaluation is not related to the strength of any particular effect. Therefore, it is possible for a model to fit well but for none of the effects to be statistically significant.

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