

Long and Short Routes to Success in Electronically Mediated Negotiations: Group Affiliations and Good Vibrations

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To understand why e-mail negotiations break down, we investigated two distinct elements of negotiators' relationships with each other: shared membership in a social group and mutual self-disclosure. In an experiment, some participants negotiated with a member of an outgroup (a student at a competitor university), whereas others negotiated with a member of an ingroup (a student at the same university). In addition, some negotiators exchanged personal information with their counterparts, whereas others did not. When neither common ingroup status nor a personalized relationship existed between negotiators, negotiations were more likely to end in impasse. These results are attributable to the positive influence of mutual self-disclosure and common group membership on negotiation processes and rapport between negotiators. © 1999 Academic Press

As we approach the 21st century, organizational decisions are increasingly made through negotiations over technological media such as e-mail, the telephone, and the fax machine. This change is driven by two facts: Transactions and alliances increasingly reach across the globe, and flatter organizational

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structures and flexible forms of contracting necessitate negotiation between decision makers. Because managers spend an increasing amount of their time communicating via technologies such as e-mail, the impact of these communication media on negotiation processes and outcomes is an important issue for organizational scholars to address, particularly from a prescriptive standpoint (see McKersie & Fongstad, 1997).

Organizational researchers have long noticed that managers prefer face-to-face communication over written communication when handling sensitive or complex joint decisions (Mintzberg, 1973). Face-to-face communication offers a more immediate two-way flow of information and access to nonverbal cues, making misunderstandings easier to avoid and easier to correct than in textual communication. The personal contact of a face-to-face interaction can strengthen a basis for trust. This is especially important in mixed-motive interactions, such as negotiations, where the expression of opposing demands and beliefs can easily lead to a spiral of increasing conflict. Indeed, theorists have speculated that conflict resolution via e-mail is characterized by misunderstandings that escalate because of the absence of a basis for trust in the e-mail interaction (Carnevale & Probst, 1997). Compared to a personal, face-to-face encounter, e-mail contact leaves a gap between the two negotiators, a gap that renders them vulnerable to mistrust and breakdowns of negotiation. Consistent with these arguments, initial negotiation studies comparing e-mail to conditions that allow visual and aural access reveal that e-mail negotiators take longer, feel less satisfaction, and perceive less fairness (Purdy, Nye, & Balakrishnan, 1997). In sum, although e-mail is becoming more important as a medium for negotiation, its advantages must be weighed against some distinct shortcomings.

The present study poses the question, Is there a way to successfully bridge the gap in e-mail negotiations? Specifically, we examine two elements of a relationship between negotiators that may provide potential routes toward success. One is shared membership in a social category, which should create ingroup trust and favoritism (Brewer, 1981). This is a long route to success because it would need to be established well before the actual conversation between negotiators. A potentially shorter route to success is personalized exchange before an e-mail conversation; negotiators can engage in mutual self-disclosure even if they never meet face-to-face, and disclosure may foster rapport that can enable cooperative interaction (Drolet & Morris, 1997).

HOW DOES E-MAIL IMPACT NEGOTIATION?

The effects of electronic communication media, such as e-mail, on social interaction and joint decision making have been studied for some time: Electronic communication has been investigated by researchers of brainstorming and group decision making. For example, groups using electronic technologies to generate solutions are more productive than groups interacting in traditional, face-to-face communication (Gallupe, Bastianutti, & Cooper, 1991). However, group decision making via technologically mediated discussion results in

a greater tendency toward outspoken advocacy and discord that ultimately results in delays and in more extreme, unconventional, or risky decisions (Kiesler & Sproull, 1992). These two research areas are relevant to our present concern because negotiation involves both processes of solution generation and decision making. From these findings we might expect that the difficulty in e-mail negotiations may lie not so much in negotiators' ability to generate creative solutions but in their ability to reach an agreement.

Negotiators are less likely to coordinate on collectively efficient solutions when exchanging written notes than in face-to-face communication, in part because face-to-face negotiators are more likely to reveal truthful information (Valley, Moag, & Bazerman, 1998). Negotiators are more likely to engage in mutual revelation of interests when communicating face-to-face, less likely to do so when communicating by telephone, and least likely to do so when communicating by written notes (Bazerman, Gibbons, Thompson, & Valley, 1998).

The impact of communication medium occurs even when the communication precedes the joint decision making task. For example, people cooperate more in a Prisoner's Dilemma game after they meet their opponents face-to-face than when they have only talked over the telephone (Drolet & Morris, 1995). Presumably, visual access to emotional cues in face-to-face meetings create more rapport (a state of shared positive affect and mutual interest in the dyad). And, indeed, cooperation is mediated by the level of rapport during the initial conversation between negotiators (Drolet & Morris, 1995). These findings suggest a reason that e-mail communication is more blunt and harsh than is face-to-face communication (Sproull & Kiesler, 1991). For these reasons, we believe that e-mail communication, like that of written notes, should result in more strained and negative communication between parties and less rapport between them.¹

In e-mail negotiations, a specific misunderstanding can lead to a downward spiral of mistrust and eventual impasse. There is less interpersonal rapport to cushion the effect of a specific misunderstanding. This analysis suggests that e-mail negotiation might be less vulnerable to impasse when supported by some basis for trust and rapport between the negotiators.

IMPROVING THE QUALITY OF ELECTRONICALLY MEDIATED NEGOTIATION

Given that abstinence from e-mail is not a viable option for most business people, what steps can be taken to improve the quality of negotiated interaction and, ultimately, the likelihood of mutually beneficial outcomes? We explore

¹ Interestingly, advocates of electronic communication technology in negotiation have drawn on studies of cases where the failure to transmit affective cues and personal details is advantageous. For example, a case study of a potentially contentious contract negotiation between labor and management representatives argued that communication via electronic media helped parties consider the issues separately from the personalities (Carmel, Herniter, & Nunamaker, 1993).

two methods: shared group membership and mutual self-disclosure. Below, we argue that these two methods engender distinct cognitive-motivational mechanisms. Specifically, common group membership may instigate cooperation that is rational and deliberate. In contrast, we argue that rapport built through mutual self-disclosure is more emotional and preconscious.

Shared Group Affiliation and Ingroup Trust

A well-established principle of social psychology is that people treat members of their own groups more favorably than members of outgroups, even when group categorizations are based on superficial factors (Oakes & Turner, 1980). This principle becomes particularly important when group members are separated physically and have fewer other cues to rely on other than their group membership. In a situation such as e-mail communication, individuals have fewer cues to interpret the actions, behaviors, and motivations of their partner, and may rely even more heavily on the assumptions provided by common group membership. When engaging in an e-mail exchange, one of the only definite facts known about the opponent is the other person's e-mail address, which can serve as a direct cue to their group affiliation.

People evaluate members of their own group more favorably than others (Rabbie & Horowitz, 1969; Tajfel, 1982), selectively remember favorable information about ingroups (Howard & Rothbart, 1980), and allocate rewards more to members of their ingroup than to members of outgroups (Tajfel, Billig, Bundy, & Flament, 1971). Evidence suggests that ingroup favoritism occurs even in negotiation (Thompson, Valley, & Kramer, 1995). People are less cooperative when dealing with outgroup members than with ingroup members, both in social dilemmas (Kramer & Brewer, 1984) and in ultimatum bargaining (Robert & Carnevale, 1997). People's positive expectations or trust of ingroup members seems to be the flip side of their negative expectations or distrust of outgroup members (Brewer, 1981). For these reasons, shared group membership may lead to mutual cooperation through deliberate rational judgment. Although the mechanism of positive expectations has been stressed by almost all researchers of ingroup favoritism, other, less cognitive mechanisms such as maintaining social identity may also result in greater cooperation among members of ingroups (Tajfel & Turner, 1979; Turner, 1987).

In electronically mediated negotiation, individuals are searching for clues which will give them insight into the opponent's goals and intentions, since the most common ingroup communication signals and symbols are absent. For this reason, knowledge of ingroup status may be particularly important in determining the nature of subsequent interaction. A communications medium which highlights the group membership of the participants as a salient feature may encourage these effects to surface even more strongly. We predict that shared group membership will increase the positive perceptions and trust between parties, and that this will lead to a greater likelihood of agreement between ingroup members.

Good Vibrations: Mutual Self-Disclosure and Rapport

In many instances, people are not members of the same group, but are nevertheless able to establish a level of rapport. This would seem to be a critical skill for the transnational negotiator or, for that matter, the modern manager who changes jobs frequently. How do people who are members of different groups build a foundation for their relationship? A general principle of social psychology is that self-disclosure between individuals leads to attraction and liking (Jourard, 1959). In fact, even superficial encounters in which people reveal relatively little about themselves can immediately lead to greater liking (Worthy, Gary, & Kahn, 1969). Positive feelings, in turn, lead to more cooperative agreements in negotiation (Baron, 1990; Carnevale & Isen, 1986; Kramer, Newton, & Pommerenke, 1993). Positive mood increases negotiators' intentions to cooperate with opponents and decreases their intentions to compete (Forgas, 1998). Barry and Oliver (1996) argue that negotiators who experience positive affect toward the counterpart are particularly likely to make more concessions.

Disclosure signifies the basis for a positive relationship. Not only does disclosure by others lead to greater liking for them, but self-disclosure leads to greater liking for those to whom one has disclosed (Collins & Miller, 1994). Furthermore, disclosure is rewarding and represents something of value. Disclosure triggers reciprocity norms that encourage mutual self-disclosure between parties (Collins & Miller, 1994). However, reciprocation of disclosure need not consist of immediate reciprocation in kind and may, in fact, more appropriately manifest itself in other acts of consideration or generosity (Berg & Archer, 1982).

We hypothesize that disclosure leads to greater rapport, more cooperation, and a higher probability of settlement in negotiation. Rapport is a dyad- or group-level affective state that arises from an entrainment of displays of affect, particularly nonverbal displays (Tickle-Degnon & Rosenthal, 1990). Dyadic rapport is like an affective feedback loop between two people in a conversation and plays a crucial role in enabling cooperative solutions in negotiation. In a simulated labor-management strike, conditions differing solely in the ability of participants to exchange facial expressions of emotion resulted in differing rates of costly delay in conflict resolution (Drolet & Morris, 1997, Experiment 1). Another study found that measures of dyadic rapport mediated the relationship between cooperation and communication medium (Drolet & Morris, 1997, Experiment 2). Furthermore, measures of rapport predict the cooperativeness in multiple-issue negotiation of both professional (Morris & Drolet, 1997, Experiment 1) and novice negotiators (Morris & Drolet, 1997, Experiment 2).

Although purely written communication media severely limit the opportunities for affective displays, opportunities for mutually reinforcing displays of emotion are not eliminated. Indeed, such displays, where they occur, may take on heightened importance in an impoverished medium like e-mail. We predict that mutual self-disclosure will lead to positive feelings and greater rapport between negotiators and that this will lead to a greater likelihood of agreement between them.

OVERVIEW OF EXPERIMENT

In summary, we have described two mechanisms, shared group membership and mutual self-disclosure, which are hypothesized to lead to success in e-mail negotiation. The purpose of our experiment was to examine how these two factors affect the process and outcomes of e-mail negotiations. We manipulated disclosure by providing participants, in one condition, personal information about the counterpart, including a picture and biographical information, as well as providing instructions to begin their interaction by having a non-task-related conversation and instructions on the written expression of emotion using “emoticons.” (Emoticons are character strings such as ;-) or :- (that convey emotion within an e-mail message.) The “ingroup” manipulation involved the following: Participants negotiated with someone in their own ingroup or organization, whereas others negotiated with someone from a rival organization (outgroup condition). In all conditions participants communicated exclusively by e-mail. We expected that personalizing self-disclosure and common ingroup membership would each serve to provide a basis for a positive relationship between negotiators and thereby reduce the rate of impasse. In summary, we hypothesize the following:

HYPOTHESIS 1: Common ingroup membership will reduce impasse rates relative to negotiators from rival groups.

Further, we hypothesize the following:

HYPOTHESIS 2: Mutual self-disclosure between negotiators prior to negotiation will reduce impasse rates relative to negotiators who did not share personal information.

Based on the prior evidence, we predicted that each ingroup favoritism and mutual self-disclosure may have their effects through different mediating processes. The simple model pictured in Fig. 1 outlines the relationships we expected to find in the data. In sum, we expected there to be two routes to successful performance in electronically mediated negotiations: one based upon common ingroup membership that may be mediated by positive perceptions of the opposing party, and another based on mutual self-disclosure that may be mediated by affective rapport.

METHOD

Participants

A total of 194 students participated in the study. All were full-time Master’s students in business school. Of the participants, 126 were students at Stanford University’s Graduate School of Business and 68 were students at the J.L.

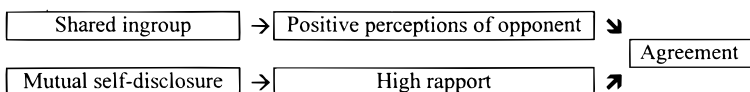


FIG. 1. Hypothesized model.

Kellogg Graduate School of Management at Northwestern University. The students participated in fulfillment of a class assignment in a negotiations course.

Design

The design was a 2×2 : Group Affiliation (same/competitor university) and Mutual Disclosure (high/low). A total of 68 Kellogg students were paired with 68 randomly selected Stanford students to form the outgroup condition, and the remaining Stanford students were randomly paired with other Stanford students to form the ingroup condition. Gender was balanced across roles and conditions. Participants were first randomly assigned to a same-sex negotiation partner. Following this, in a matched random assignment process, participants were assigned one of the two roles in the negotiation simulation so that each role was equally represented with Kellogg and Stanford students. Excluding two dyads which were dropped from the analyses due to incomplete data, there were 68 dyads in which the two negotiators were from different schools (outgroup) and 29 dyads in which the two negotiators were from the same school (ingroup). Dyads from the same school were not from the same class session, but were common members of a cohort of 350 students. Finally, dyads were randomly assigned to one of the two disclosure conditions: personalized (high disclosure) or depersonalized (low disclosure). Roughly half of all dyads (34 outgroup and 14 ingroup) were in the personalized condition. The other half (34 outgroup and 15 ingroup) were in the depersonalized condition.

Procedure

Participants were instructed to conduct a two-party negotiation exclusively via electronic mail. Each student received a packet of materials that contained a page of general confidential instructions and guidelines; role information; an e-mail address for the opponent; pre- and postnegotiation questionnaires; and in the personalized disclosure condition, additional personal information about the opponent.²

Participants in the personalized disclosure condition received three special instructions. First, in addition to their negotiating partner's name and e-mail address, each participant received a small, black-and-white face-book photograph of their partner, accompanied by standard biographical information (i.e., alma mater, undergraduate major, and interests or hobbies). These participants were also given a list of 11 "emoticons", or symbols commonly used to express emotion over electronic mail along with their definitions, e.g., ;-) for a winking smiley face or :-I for indifference (see Thompson, 1998, p. 280). Finally, participants in the personalized condition were explicitly instructed to have an initial "getting to know each other" communication with their partner before they

² For clarity of exposition, we use the term "opponent" to refer to the person with whom a given party negotiated. We did not use this term in any of the experimental materials.

began negotiating. This short exchange was to take place only via e-mail. Directions specified that participants should not talk about business (i.e., the negotiation) in this initial conversation, ensuring that it was a strictly social conversation. The goal was to have participants "break the ice." Thus, all communication between parties in both the personalized and depersonalized conditions took place via e-mail.

Participants were given their materials on a Monday and were instructed to complete the negotiation and all questionnaires and transcripts by Saturday.³

Negotiation Task

Participants engaged in a negotiation involving two managers within the same company, concerning the transfer of rights to a new technology (Bazerman & Brett, 1997). The negotiation contained both distributive and integrative elements: Whereas both parties were motivated to claim as much value for themselves as possible, parties had differing priorities such that concession by one party on a given issue could be traded for larger gains on another issue of more importance (see Froman & Cohen, 1970, for an elaboration of logrolling). This type of logrolling increases the joint value of the agreement, creating more profit that can be allocated between the two parties. The two parties had their payoffs explicitly defined. The maximum joint outcome was \$15.1 million. This represents the Pareto-optimal agreement. Both parties also had explicitly defined alternatives, should they fail to come to agreement. In case of impasse, the seller would obtain \$5 million, and the buyer would obtain \$0.

Dependent Measures

There were three main data sources. The first was the actual negotiated outcome, whether negotiations ended in impasse or mutual agreement, and what agreement was reached. Second, all participants completed questionnaires prior to and just after the negotiation, assessing participants' perceptions of and feelings toward their opponents. Third, complete transcripts of all e-mail messages sent between negotiators were collected and coded, using a technique described below.

Questionnaire Data

To assess participants' feelings of rapport with their opponents, we included appropriate items from a mood measure (Carnevale & Isen, 1986) and an empathic feeling measure (Batson, Batson, Todd, & Brummett, 1995). To assess participants' perceptions of their counterparts, we included measures of liking (Gruen & Mendelsohn, 1986) and trust (Butler, 1991). In sum, we assessed participants' rapport-relevant feelings about the interaction and their perceptions or expectations of their opponent.

³ One class at Stanford was not given their materials until Tuesday.

The prenegotiation questionnaire was completed after reading the negotiations case materials, but prior to contact with the opponent. Participants responded to the questionnaire in an anticipatory fashion regarding the upcoming negotiation (e.g., “To what extent do you expect your partner may attempt to deceive you?”). The postnegotiation questionnaire was distributed with the package of materials, but was sealed separately. Participants were instructed not to open the seal on the postnegotiation questionnaire prior to completion of the negotiation. The postnegotiation questionnaire included the same items as the prenegotiation questionnaire, but questions were phrased in a retrospective fashion (e.g., “To what extent do you believe your partner attempted to deceive you?”).

The postnegotiation questionnaire also contained a measure of the social outcome of the negotiation. Two questions were intended to gauge the quality of the relationship established between the two negotiating parties. The first question asked, “Imagine that, in the future, you are in a vulnerable bargaining position in a dispute with company X. Imagine you can choose whether to negotiate the matter with the person who was your counterpart in this exercise or with an average executive from the company. Would you choose to negotiate with the person who was your counterpart today over an average executive from the company?” The second question asked, “If you had to work on another project together, do you sense that it would go smoothly?”

Process Measures of Negotiation Behaviors

The transcripts of each e-mail exchange were coded to examine the process of the negotiation. The coding unit was the thought (usually each sentence was coded as one thought, unless the sentence was long and complex). Our coding scheme contained 26 codes grouped into seven categories: (1) information sharing statements, (2) questions or information seeking statements, (3) arguments or persuasive remarks, (4) goal statements, (5) offers, (6) relationship statements, and (7) procedural statements.⁴ In addition, each message was given an overall code for affect—positive, negative, or neutral. This was a measure of expressed affect, which is to be distinguished from self-reported affect included on the questionnaires. All coding was accomplished by two trained judges, and disagreements were settled through discussion until consensus was reached. Coders were naive to the experiment’s purpose and hypotheses. In the personalized condition, the first, strictly social exchange between negotiators was not coded, because this was part of the manipulation rather than part of the negotiation per se. Two dyads in the ingroup/depersonalized condition failed to submit transcripts of their negotiations. These dyads were excluded from all subsequent analyses. The number of lines in each message was also counted as a measure of the total volume of communication.

⁴ The complete coding scheme is available on request from the authors.

RESULTS

Scale Construction

Based on the questionnaire data, we calculated composite measures of both negotiators' feelings of rapport and their perceptions of their negotiating opponents. The analysis was run using the postnegotiation questionnaire data and tested against the prenegotiation questionnaire data. The factor structure produced by the questionnaire was not meaningfully different for the two different data sources. To construct the scales, we performed a factor analysis on each of the two sets of items. For both sets of questions, the first factor accounted for about 30% of the variance. All items with factor loadings on the first factor above .6 in magnitude were included in the scales. The specific items that then went into the affective rapport and perceptions of opponent scales are listed in Table 1. Reliabilities (Cronbach's alpha) for the resulting measures are satisfactory, both before and after negotiation, ranging from .84 to .94. Reliability for the postnegotiation measure of relationship established is .82.

Manipulation Checks

The prenegotiation questionnaire served as a manipulation check for the picture and biographical information. This part of the disclosure manipulation had a significant influence both on self-reported affect and on perceptions of opponent. Self-reported affect was more positive in the personalized condition where participants had seen a picture of their opponents ($M = 4.11$, $SD = .69$) than among those in the depersonalized condition ($M = 3.45$, $SD = .70$), $F(1, 90) = 7.84$, $p < .01$. Likewise, reported perceptions of the other side were more positive when participants had seen a picture of their opponents ($M = 4.41$, $SD = .31$) than when they had not ($M = 4.10$, $SD = .35$), $F(1, 90) =$

TABLE 1
Questionnaire Measures

Affective rapport items (Describe self)	Perception items (Describe other)
Angry*	Irritating*
Annoyed*	Likable
Cold*	Positive
Disappointed*	Secretive*
Friendly	Selfish*
Frustrated*	Sincere
Pleasant	Trustworthy
Positive	Sense of shared trust
Compassionate	Deceptive*
Sensitive	Fair
Warm	

Note. * indicates item which was reversed-scored.

17.18, $p < .01$. In contrast, the group status of opponent failed to show a significant influence on either self-reported affect or perceptions of opponent.

All participants in the personalized condition completed the social conversation prior to the start of their negotiation.

Negotiated Outcomes

To test the hypothesis that negotiated outcomes were a function of the experimental manipulations, we compared impasse rates across experimental conditions. A disproportionate number of impasses occurred in the outgroup/depersonalized condition: of the 14 impasses among the 95 dyads, 10 (71% of impasses) occurred in the outgroup/depersonalized condition (see Table 2), and this pattern deviates significantly from the null hypothesis of proportional distribution of impasses in all conditions, $\chi^2(1) = 8.15$, $p < .01$.

To test the significance of the impasse rate in the outgroup/depersonalized condition, we used a z-test to test the difference between the observed and the expected proportions. Fifteen percent of all dyads failed to reach agreement. The 29% impasse rate in the outgroup/depersonalized condition is significantly above this 15% baseline rate, $z = 3.33$, $p < .01$. None of the other three cells differ significantly from the 15% baseline. At first glance, the higher rate of impasses in the outgroup/depersonalized condition than in the other three conditions looks like an interaction effect between the independent variables, in which the two factors combine in a subadditive manner in reducing impasse rates. However, this pattern almost certainly reflects a ceiling effect. The rate of agreement is virtually 100% in the three cells where one of the two bases of a relationship is present, and hence there is no room for the ingroup/personalized cell to be higher than the two cells with solely one factor present. Although

TABLE 2

**Number of Impasses and Mean Value of Joint Outcome (in Millions of Dollars)
As a Function of Intergroup and Interpersonal Relationship**

Personalized	Depersonalized	Totals
	Ingroup	
$N = 14$	$N = 13$	$N = 27$
1 impasse (7%)	1 impasse (8%)	2 impasses (7%)
\$13.89 ^b ($SD = 2.61$)	\$13.31 ^b ($SD = 2.71$)	\$13.61 ($SD = 2.62$)
	Outgroup	
$N = 34$	$N = 34$	$N = 68$
2 impasses (6%)	10 impasses (29%)	12 impasses (18%)
\$13.93 ^b ($SD = 2.42$)	\$11.83 ^a ($SD = 4.49$)	\$12.88 ($SD = 3.73$)
	Totals	
$N = 48$	$N = 47$	$N = 95$
3 impasses (4%)	11 impasses (22%)	14 impasses (15%)
\$13.92 ($SD = 2.45$)	\$12.24 ($SD = 4.11$)	\$13.08 ($SD = 3.46$)

Note. a and b superscripted means are significantly different from each other by *t*-test ($p < .10$, one-tailed).

the result leaves ambiguous precisely how the two factors combine in reducing impasses, the pattern does support the general expectation that both of the factors suffice to mitigate impasse rates.

We then examined the value of the joint outcomes in those dyads that came to agreement. The joint value of the negotiated agreement averages \$14.48 MM ($SD = .80$) for the 81 dyads who came to agreement (recall that the maximum joint score was \$15.1 MM). Because the greatest deviations from efficient agreements occurred in cases of impasse, a dummy variable for impasse accounts for 96% of the variance in joint outcomes. The pattern of joint outcome across conditions, then, roughly mirrors that of impasse rates (see Table 2).

Questionnaire and Process Measures

The means, standard deviations, and intercorrelations among the dependent variables are shown in Table 3. To investigate the dynamics that produced outcome differences, we first compared the questionnaire and process data at the dyad level across all four experimental conditions. The results of the overall MANOVA are significant ($p < .05$). This MANOVA includes all the pre- and postnegotiation questionnaire items and all 26 coding categories. These analyses reveal a main effect for ingroup/outgroup status of opponent, $F(47, 43) = 2.65, p < .01$, and a main effect for the disclosure manipulation, $F(47, 43) = 2.07, p < .01$. The disclosure by group status interaction effect is not significant, $F(47, 43) = .83, ns$.

To assess the question of whether Stanford students differed from Kellogg students, a second MANOVA was run on individual-level data. This analysis again reveals main effects for disclosure and ingroup/outgroup manipulations, but no significant effect for school, $F(40, 111) = 1.217, ns$. There are no significant differences between students from the two schools, controlling for condition. None of the interaction effects are significant.

Questionnaire data. Based on the significant overall MANOVA described above, we examined specific differences between conditions. All remaining effects were calculated at the dyad level. First, we analyzed the social outcome of negotiations with a measure of whether negotiators felt that a relationship had been established. A 2×2 ANOVA on the postnegotiation measure of relationship established reveals marginally significant main effects for the independent variables of disclosure, $F(1, 91) = 3.04, p = .09$, and group status, $F(1, 91) = 3.72, p = .06$. The interaction term is not significant, $F(1, 91) = .07, ns$. These measures, of course, are not affected by the ceiling effect that affected the impasse rate results. The finding of main effects of the manipulation support the interpretation of the impasse rate results in terms of two independent effects.

Repeated-measures ANOVAs were used to analyze the questionnaire measures. These analyses reveal a between-subjects effect of the disclosure manipulation: Participants in the personalized condition reported both more positive feelings toward and perceptions of their opponents both before and

TABLE 3
Means, Standard Deviations, and Intercorrelations between the Dependent Variables

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Outcome data																
1. Impasse		-.98*	-.09	-.08	-.50*	-.20*	-.47*	-.16	-.21*	.01	.13	.09	.01	-.09	.10	.01
2. Joint value			.11	.06	.50*	.24*	.47*	.18	.21*	-.01	-.12	-.12	.00	-.08	-.03	.07
Questionnaire data																
3. Rapport items (before negotiation)				.54*	.48*	.37*	.32*	.16	.37*	.04	-.14	.00	-.11	.34*	.01	.07
4. Perceptions of other (before negotiation)					.29*	.28*	.19	.05	.22*	.09	-.04	.02	-.07	.23*	.00	.02
5. Rapport items (after negotiation)						.63*	.76*	-.03	.44*	-.09	-.31*	.00	-.02	.24*	-.12	-.04
6. Perceptions of other (after negotiation)							.66*	.00	.36*	-.05	-.17	-.09	-.05	.15	-.09	.08
7. Relationship established								.03	.42*	-.04	-.26*	.04	-.02	.10	-.21*	-.02
Process data																
8. Total number of lines									.06	.02	.07	-.21*	-.31*	-.15	.01	.17
9. Expressed affect										-.07	-.44*	.07	-.27*	.49*	-.03	-.32*
10. Information-seeking statements (per 100 message lines)											-.05	.09	.14	-.12	-.02	.08
11. Argument/persuasive statements (per 100 message lines)												-.07	.12	-.21*	-.22*	.04
12. Goal statements (per 100 message lines)													.19	.04	-.30*	-.19
13. Offers (per 100 message lines)														-.05	-.17	.02
14. Relationship statements (per 100 message lines)															.18	-.41*
15. Procedural statements (per 100 message lines)																-.08
16. Information sharing statements (per 100 message lines)																
Variable:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Mean:	0.15	13.08	4.89	4.25	4.47	4.43	4.89	154.1	0.34	3.46	14.59	1.57	5.12	25.61	12.76	12.52
Std. Dev.:	0.36	3.46	0.73	0.36	1.02	0.43	1.34	72.38	0.27	2.56	6.11	1.32	2.46	11.45	6.70	6.12
Minimum:	0	5	1	1	1	1	1	0	-1	0	0	0	0	0	0	0
Maximum:	1	15.1	7	7	7	7	7	—	1	—	—	—	—	—	—	—

Note. The maxima and minima listed in the table are theoretical and not actual (i.e., they specify the most extreme possible outcomes, not actual results).

* $p < .05$.

after negotiation than did participants in the depersonalized condition (F values (1, 90) > 7, p values < .01). Neither the main effect for group status of opponent nor its interaction with disclosure is significant. In addition, within-subjects contrasts reveal that perceptions of opponent grew significantly more favorable over the course of the negotiation in all conditions, $F(1, 90) = 10.42$, $p < .01$. However, affective measures of rapport significantly worsened over the course of the negotiation, $F(1, 90) = 10.10$, $p < .01$.

Transcript analysis. Recall that the coding process used 26 codes in seven coding categories: (1) information sharing, (2) information seeking, (3) arguments, (4) goal statements, (5) offers, (6) relationship statements, and (7) procedural statements. Each message also received an overall code for expressed affect. A 2×2 factorial ANOVA analysis of total number of lines of communication reveals that participants who negotiated with the outgroup wrote significantly more to each other before coming to agreement than did those who negotiated with the ingroup. Ingroup dyads sent an average of 129.48 lines ($SD = 60.58$) over the course of the negotiation, compared with 163.9 lines for the outgroup ($SD = 74.73$), $F(1, 91) = 4.65$, $p < .05$.

Further analyses all were run controlling for total number of lines written to avoid confounding the character of the interaction with the volume of communication. These analyses reveal a small number of other process variables that were influenced by the independent variables. (See Table 4 for an overview of process data.) Dyads in the personalized condition made more relationship statements over the course of their negotiations ($M = .28$ per line sent, $SD = .18$) than did dyads in the depersonalized condition ($M = .21$ per line sent, $SD = .097$) $F(1, 90) = 6.01$, $p < .05$. Note that this difference only includes communication following the first, strictly social conversation. The greatest difference between the two conditions occurred in relationship statements that personalized the self by offering personal details (one of four types of relationship statements). This seems to have been a clear consequence of participants in the personalized condition beginning their negotiation with a social conversation. They had already exchanged personal details, so making reference to them again may have been natural.

Analyses reveal a number of differences between ingroup and outgroup dyads. Relative to those who negotiated with the outgroup, those who negotiated with the ingroup: (1) revealed more preferences for negotiable issues ($M = .063$ per line sent, $SD = .03$, vs $M = .039$ per line sent, $SD = .021$), $F(1, 90) = 11.57$, $p < .05$; (2) asked more information-seeking questions ($M = .046$ per line sent, $SD = .038$, vs $M = .032$ per line sent, $SD = .029$), $F(1, 90) = 4.43$, $p < .05$; and (3) made fewer procedural statements ($M = .10$ per line sent, $SD = .05$, vs $M = .26$ per line sent, $SD = .17$), $F(1, 90) = 6.98$, $p < .05$. This pattern of results suggests that ingroup dyads shared more assumptions and found it easier to exchange information than did outgroup dyads. There is also a significant disclosure by group status interaction effect on offers, $F(1, 91) = 8.5$, $p < .01$.

TABLE 4
An Overview of Process data, by Condition

Variable	Personalized		Depersonalized		ANOVA results		
	Ingroup	Outgroup	Ingroup	Outgroup	Personalization	Group status	Pers. by grp. status
Argument/persuasion	13.8 (7.4)	14.8 (7.0)	12.4 (4.1)	15.6 (5.1)	$F(1, 91) = .05$, <i>ns</i>	$F(1, 91) = 2.2$, <i>ns</i>	$F(1, 91) = .61$, <i>ns</i>
Information sharing	11.9 (6.6)	11.3 (5.4)	11.3 (5.9)	14.4 (6.4)	$F(1, 91) = .90$, <i>ns</i>	$F(1, 91) = .91$, <i>ns</i>	$F(1, 91) = 2.0$, <i>ns</i>
Goal statements	2.0 (1.7)	1.0 (1.0)	2.2 (1.7)	1.7 (1.2)	$F(1, 91) = 2.0$, <i>ns</i>	$F(1, 91) = 6.0$, $p < .05$	$F(1, 91) = .16$, <i>ns</i>
Questions/information seeking	5.0 (2.9)	3.1 (2.2)	3.7 (2.8)	3.1 (2.5)	$F(1, 91) = 1.2$, <i>ns</i>	$F(1, 91) = 4.5$, $p < .05$	$F(1, 91) = 1.4$, <i>ns</i>
Offers	6.5 (3.3)	4.1 (1.8)	4.9 (2.2)	5.6 (2.4)	$F(1, 91) = 2.6$, <i>ns</i>	$F(1, 91) = 2.6$, <i>ns</i>	$F(1, 91) = 8.5$, $p < .01$
Procedural remarks	10.7 (5.5)	14.5 (6.9)	9.2 (3.9)	13.2 (7.3)	$F(1, 91) = .90$, <i>ns</i>	$F(1, 91) = 6.8$, $p < .05$	$F(1, 91) = .01$, <i>ns</i>
Relationship statements	25.5 (9.1)	30.1 (11.7)	24.5 (13.5)	21.6 (10.1)	$F(1, 91) = 3.5$, $p = .06$	$F(1, 91) = .11$, <i>ns</i>	$F(1, 91) = 2.2$, <i>ns</i>

Note. Numbers listed are mean number of statements for every 100 lines of written communication (standard deviations are in parentheses).

Mediational Analyses

In an attempt to understand the dynamics that led dyads to impasse, we conducted logistic regressions to assess whether the effect of the manipulations on impasse was mediated by our measures of two different motives for cooperation. As may be seen in Table 5, a term contrasting the depersonalized/outgroup cell with the other three cells is a significant predictor of impasse (Table 5, model 1). Likewise, the depersonalized/outgroup term is correlated with affect-based rapport ($r = -.29, p < .01$). Postnegotiation measures of affect-based rapport show a strong relationship with impasse (Table 5, model 2). When rapport is added to the logistic regression using the independent variables to predict impasse, it reduces the effect of the independent variables to insignificance (Table 5, model 3). Rapport, then, satisfies Baron and Kenny's (1986) criteria for a variable that statistically mediates the effect of independent variables on a dependent variable. The same relationship does not hold for measures of perception of opponent (Table 5, model 4). Perception of opponent does not mediate the relationship between the independent variables and impasse (see Table 5). Hence, the results suggest that the tendency toward impasse in negotiations that took place in the absence of either group-based or dyad-based basis for the relationship is more a matter of affect than cognition and more a deficiency of good feelings about the counterpart than a deficiency of positive perceptions.

To understand the negotiation behaviors that contributed to different levels of rapport, another series of regression equations were calculated predicting postnegotiation reports of affective rapport. Three process variables correlate significantly with postnegotiation measures of affective rapport, after downward adjustment of the critical value of p for the 26 correlations calculated (p crit. = .002). These three predictors of rapport are expressions of positive affect, ultimatums, and threats. Positive affect expressed during the negotiation is correlated with outcome measures of rapport ($r = .44, p < .002$). Ultimatums were offers such as, "\$8 million is my last offer. Take it or leave it." Ultimatums reduced rapport ($r = -.36, p < .002$). Finally, threats were references to one's alternative to negotiation, such as, "If you can't give me the deal I'm looking

TABLE 5

Logistic Regression Equations Predicting Impasse, Showing the Beta-Weights for the Various Predictors

Predictor	Model 1	Model 2	Model 3	Model 4
Depersonalized by outgroup	-1.79**		-1.39	-1.58*
Affect-based rapport		-1.76***	-1.72***	
Perceptions of opponent				-.99
Model chi-square	8.72**	25.87***	29.57***	10.42***

* $p < .05$.

** $p < .01$.

*** $p < .001$.

for, I can always produce this product without your help and make \$5 million.” The occurrence of threats was negatively correlated with rapport ($r = -.40$, $p < .002$). However, the independent variables only predict one of these process variables, expressed affect. In fact, expressed affect, as measured by the tone expressed in written messages, mediates the effect of the independent variables on postnegotiation measures of affective rapport (see Table 6). When expressed affect is included in the equation, the independent variables no longer predict affective rapport (model 3). This relationship holds, even after controlling for the other process measures (model 4).

DISCUSSION

Personal disclosure and ingroup affiliation positively affected negotiators' ability to reach agreement in electronic negotiations. Despite the informationally impoverished medium of electronic mail, people who negotiated with members of their own ingroup and/or engaged in mutual self-disclosure with their opponents were more likely to come to agreement. However, negotiations between people who had not engaged in disclosure and who did not share the same ingroup faced communication and rapport difficulties that were associated with significantly higher impasse rates.

We hypothesized that both shared ingroup status and self-disclosure would increase rates of agreement, and indeed, both reduced impasse rates relative to the outgroup/depersonalized condition. In fact, both methods virtually eliminated the likelihood of impasse. Recall that we had originally predicted two main effects, one for group status and one for disclosure. The results support our hypotheses, but reveal an interaction, which we had not predicted. We would have predicted that agreement rates would have been higher in the personalized/ingroup condition than in any other condition. However, since the rate of impasse is nearly zero in both the personalized/outgroup and depersonalized/ingroup conditions, it is not possible for the rate of agreement to be higher than 100% in the personalized/ingroup condition. One explanation

TABLE 6

Regression Equations Predicting Postnegotiation Affective Rapport, Showing Beta-Values for the Various Predictors

Predictor	Model 1	Model 2	Model 3	Model 4
Depersonalized by outgroup	-.29**		-.16	-.14
Expressed affect		.44***	.39***	.30**
Ultimatums				-.20*
Threats				-.22*
Model <i>R</i> -squared	.083**	.19***	.22***	.33***
Overall <i>F</i>	8.39**	22.31***	12.80***	11.27***

* $p < .05$.

** $p < .01$.

*** $p < .001$.

for the observed pattern in results is that a ceiling effect in rates of agreement turned two main effects into what appears to be an interaction.

Although the data support our main hypotheses, the mediating processes were not consistent with our expectations. Both the ingroup status and mutual self-disclosure appear to influence negotiated outcomes via affect-based rapport. In addition, the expression of positive affect is a critical mediating factor essential to the development of rapport. The observed pattern, then, is summarized in Fig. 2. People negotiating with an outgroup member and in the absence of personalized exchange expressed more negative affect during the negotiation and developed less rapport.

Because we measured rapport following negotiation, the causal direction between rapport and impasse is indeterminate. However, there are reasons to think that rapport is a cause, and not a consequence, of impasse. First, the construct of rapport is logically related to the important process variables that were correlated with impasse, namely expressions of affect, ultimatums, and threats. And in fact, the process measures are correlated with rapport more strongly than they are correlated with impasse, suggesting that they share more underlying variance. Second, these process measures preceded the actual occurrence of impasse. Third, rapport statistically mediates the relationship between the process variables and impasse. However, these arguments aside, the rapport–impasse relationship necessitates further testing.

The results of our study support and extend those of Drolet and Morris (1997), who documented the causal priority of rapport in enabling coordination on solutions to mixed-motive conflicts. The present study extends this line of research in two important ways. First, it documents the importance of rapport in a very different communication medium, in which emotional exchanges take a quite different form. Face-to-face contact between negotiators is not always necessary to build rapport. Some social, personalizing contact between negotiators communicating via written media can build rapport, as can common ingroup membership. There appears to be more than one path to rapport.

Second, the present study points to the importance of rapport between negotiators in the ability to come to agreement. Negotiators in the present study had a wide bargaining zone, and impasse was a highly inefficient outcome. Nevertheless, nearly one-third of dyads in the outgroup/low disclosure condition failed to reach agreement. Whereas Drolet and Morris (1997) documented the relationship between rapport and integrative outcomes, the present study contained so many impasses that they overwhelmed what modest variance there was in the joint value of successful agreements.

Increases in the likelihood of impasse notwithstanding, we might expect that when agreement does occur, negotiations that take place via e-mail can be as integrative as those that take place face-to-face. E-mail negotiations have some distinct advantages: E-mail allows negotiators as much time between messages

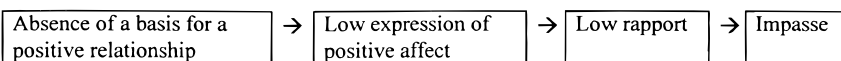


FIG. 2. The observed pattern in relationships between variables.

as they need to calculate the values of various outcomes and to consider the best counteroffers, and complete transcript of the communication allows for more careful information acquisition. Indeed, some recent experimentation has found no difference in the integrativeness of outcomes achieved in e-mail versus face-to-face negotiations (Barsness & Tenbrunsel, 1998; Croson, in press; Purdy et al., 1997).

Our results are also consistent with prior evidence on preplay contact between parties in social dilemmas. For example, Kerr, Garst, Lewandowski, and Harris (1997) demonstrate that communication between parties leads to the development of social identity that promotes cooperation. Furthermore, they demonstrate that it is the emotional social aspect of communication that is important, not simply the formation of social contracts or the consequences of violating social contracts. Thus, contrary to rational expectations theory, the emotional aspect of communication is key in affecting behavior, not the rational-contractual aspect.

Our investigation documents some of the pitfalls for negotiations in which there is very little contact between parties. This research took place at the bottom end of the spectrum of media richness. We cannot conclude that personal contact between negotiators will always improve their chances of agreement. Our manipulation of mutual self-disclosure, consisting of a picture, small biography, and get-acquainted exchange, was rather minimal, yet it had powerful effects. Furthermore, it is possible that an even smaller amount of mutual self-disclosure than that used in the present investigation would be sufficient.

Affect also plays an important role in the present findings. Expressed affect in the negotiation was associated with lower affect-based questionnaire measures of rapport and with impasse. Negative moods preceded impasse. This finding indirectly supports and extends the body of research indicating the strong relationship between positive affect and negotiated outcomes. For example, Carnevale and Isen (1986) found that positive affect increased the integrative quality of agreements. Even when negotiators do not engage in the contentious behaviors that appear to be one consequence of negotiating face-to-face (Carnevale & Isen, 1986), all negotiations include a competitive component, and negotiation can trigger both arousal and negative emotions. There is evidence that negative emotions combined with arousal lead people to engage in risky and self-destructive behavior (Leith & Baumeister, 1996). In the present experiment, those negotiators in the outgroup/low disclosure condition engaged in risky negotiation strategies, such as offering threats and ultimatums, with lower expected values.

The present findings hold out hope for the potential of electronically mediated negotiations. As organizations respond to the globalization of markets by expanding around the world, face-to-face communications will have to give way to technologically mediated communications. Where those interactions occur between representatives from different groups who know very little about each other, the evidence presented here suggests that building rapport and positive affect between negotiators may increase their chances of coming to agreement.

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