



## WORKING PAPER SERIES

**Anger, Hostile Partners, and Decision Behavior 1 Running Head:  
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Anger, Hostile Partners, and Decision Behavior in a Fast-Paced  
Bargaining Task**

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**Abstract**

This study proposes that bargaining partners' emotional displays evoke emotion in each other. Each partner's emotion then acts as a source of goals for him or her in the bargaining session. Two experiments were conducted using a fast-paced bargaining task designed to provoke anger, a frequent emotion in contentious bargaining. Experiment 1 varied the hostility level of a partner (pleasant or hostile) in a computerized bargaining task. Hostile bargaining partners simultaneously engendered anger, increased use of threats, and some increase in deal harshness. Experiment 2 (n=52) used recall of angry and calm experiences to moderate both bargainers' use of threats and deal terms they offered. This pattern of results indicates that bargainers' feelings of anger in both experiments were sufficient to explain the observed behaviors. Strong emotions such as anger may offer a potent source of influence in many bargaining tasks.

## **Anger, Hostile Partners, and Decision Behavior in a Fast-Paced Bargaining Task**

Although infrequently addressed as a topic of research, it has long been recognized that emotions can play a pivotal role in bargaining (e.g., Bazerman & Neale, 1992; Raiffa, 1982; Lax & Sebenius, 1986). Based on the belief that others' emotional reactions can influence them to accept favorable deal terms, people in work roles such as sales, customer service, credit collections, and police interrogation are encouraged to instrumentally display emotion. For instance, credit collectors and police interrogators use angry emotional displays to instill unpleasant emotion in their targets that these targets will want to relieve by either paying up or confessing (Rafaeli & Sutton, 1991; Sutton, 1991). Bargainers also adopt emotions to inoculate themselves against their partners' emotional displays and prime themselves to behave in ways that are likely bring about a desired outcome. Credit collectors adopt an irritated, even angry attitude, toward debtors so that they do not unduly soften their terms in bargaining for a payment (Hochschild, 1983; Rafaeli & Sutton, 1991; Rock, 1973; Sutton, 1991). Simultaneously, collectors are cautioned to adopt calm feelings when debtors are displaying negative emotions toward them, so that they do not over-react (Sutton, 1991).

To what extent does a partner's emotional display influence a bargainer's behavior? How might this influence occur? Are bargainers' attempts at inoculation successful? Why or why not? With some exceptions (e.g., Barry & Oliver, 1996; Forgas, 1998; Hertel, 1999; Hertel, Neuhof, Theuer, & Kerr, in press), these questions have not been systematically addressed. One reason for this relative neglect may be that

multiple non-emotion-based explanations abound for behavior that might be attributed to emotion. For instance, theoretical explanations of the good-cop/bad-cop effect (see, Brodt & Tuchinsky, 2000; Hilty & Carnevale, 1993; Rafaeli & Sutton, 1991) in distributive bargaining have focused on negotiators' desire to reciprocate concessions (Cialdini, 1984; Hilty & Carnevale, 1993) and the effects of the tactic on individuals' cost-benefit evaluation of different offers (Brodt & Tuchinsky, 2000). They have not focused on negotiators' attempts to manipulate negative emotion in their targets to desired levels as suggested by some field studies (Hochschild, 1983; Rock, 1973; Sutton, 1991).

To begin to address the role of emotional display and emotional inoculation in bargaining, this study proposes an extension to Schwarz and Clore's emotion-as-information framework (Hertel, 1999; Hertel et al., in press; Raghunathan & Pham, 1999; Schwarz, 1990; Schwarz & Clore, 1983). In the emotions-as-information framework, individual decision makers use their feelings at the moment as a source of information regarding judgments about such things as overall well-being and risk assessment (Raghunathan & Pham, 1999; Schwarz, 1990). In the extension developed here, partners' emotional displays evoke emotion in the bargainer receiving them. The bargainer's emotion then acts as a source of goals in the interaction, for instance a goal to inflict punishment by asking for harsher terms when the bargainer is angry. These goals may compete with other goals and influence some behaviors more than others. Attempts at emotional inoculation act on these emotionally motivated goals directly.

The next section describes the theoretical motivation behind this framework in more detail. After that, Experiment 1 tests the emotional and behavioral effects of bargaining with hostile and pleasant partners in a time-pressured bargaining game.

Experiment 2 then examines the extent to which directly manipulating bargainers' feelings of anger while dealing with hostile partners mediates the behaviors observed in Experiment 1. The article concludes by noting the implications of the extended framework and experimental findings for future research as well as practice.

### **Emotion in Fast-Paced Bargaining**

Imagine that you are a telephone-based bill collector and that, each day, you must telephone 150 accounts, almost all of which you have not seen before (for a report on one such environment, see Gibson, Fichman, & Plaut, 1996). Each time you get a delinquent payer on the phone, your company would like you to get as much money in as short a time frame as possible. However, it has also given you leeway to negotiate down to a minimum amount in a specified maximum number of days. To help you goad delinquent payers toward better terms, the company has specified encouragements and threats you can use at your discretion.

You get someone on the phone. You make several bids. No matter what you say or how much you lower your offer, the target blames you for her situation. Sometimes she says yes to your offers but is just as likely to recant a few moments later. She makes no offers of her own. Although you try to remain calm, you feel more and more angry as the interaction continues. Simultaneously, you start to use more threats. You become less and less lenient in your terms.

This scenario highlights three features of emotions in real-time bargaining that have not yet been well addressed. First, bargaining partners' emotional display appears to be an important dynamic influence on each others' behavior. Most studies only focus on the continuing effects of emotions existing prior to a bargaining session and do not take into account how they can arise during bargaining and change the

bargaining context in real time (e.g., Barry & Oliver, 1996; Forgas, 1998, Experiments 1 and 2; Hertel, 1999; Hertel et al., in press). In one of the few studies addressing these dynamics, Forgas (1998, Experiment 3) notes that when subjects who feel happy are paired with subjects who feel more negative emotion, they tend toward less cooperative behavior than they do when paired with other happy subjects, and the reverse effect holds for subjects who feel more negatively. However, the mechanism behind this emotional influence has not been clarified.

Second, as illustrated in the scenario, a specific negative emotion such as anger may have different implications for decision behavior (desire to punish) than another negative emotion such as fear (desire to escape; Barry & Oliver, 1996; Goldberg, Lerner, & Tetlock, 1999; Keltner, Ellsworth, & Edwards, 1993; Lerner & Keltner, in press; Raghunathan & Pham, 1999). Existing work in bargaining has tended to focus solely on whether displayed emotions are positive or negative without taking into account other characteristics specific to that particular emotion that drive behavior (Forgas, 1998; Hertel, 1999; Hertel et al., in press). Given recent work in decision behavior, focusing on the goals aroused by specific emotions such as anger appears to be required to fully account for emotion's influence.

Finally, emotion's role in the scenario is ambiguous. Is emotion epiphenomenal or a driver of bargaining behavior? Schwarz and others have proposed that emotions act as a source of information for decision making that may be overruled. Schwarz's subjects used their current mood in answering questions about satisfaction with their life as a whole, but could be made to ignore this information when its irrelevancy became apparent (Schwarz, 1990; Schwarz & Clore, 1983). Raghunathan and Pham (1999) observed similar behavior in subjects who consulted their feelings of anxiety

when assessing risk. By extension, emotion should also influence bargaining, depending on its strength and its perceived relevance in comparison to other decision inputs.

In summary, a framework to explain the influence of emotion in fast-paced bargaining must first account for how emotion influences bargainers as they interact with their partners. Second, when dealing with negative emotions, frequent in contentious negotiations, the framework must look at the specific emotions involved. Finally, the framework must allow for competition between emotions and other types of information as bargainers make and assess offers.

#### A Framework for Emotional Influences in Fast-Paced Bargaining

Figure 1 shows a simplified framework conforming to the constraints just outlined. The framework focuses on the decision making process that bargainers use as they generate individual offers in fast-paced tasks. The figure contains two pathways. The non-emotional pathway (solid lines) assumes that bargainers have available a set of explicit goals, the partner's response to their offer on the last speaker turn (Response to Offer), anything else the partner may have said (Partner Messages), as well as other cues and mental context (Other Context). All of these stimuli are direct inputs to the bargainer's interpretation of the situation (Situation Representation). The bargainer's situation representation may also contain carryover (indicated by the circular arrow) from how he or she has considered the situation up to this point in the conversation (Brodt & Tuchinsky, 2000; Hilty & Carnevale, 1993).

The emotional pathway of Figure 1 (tightly dashed arrows) shows that the partner's responses to offers, messages, and other context may also directly arouse emotions (Bechara, Tranel, & Damasio, 1997; Zajonc, 1980) inducing goals that also



feed in to the bargainer's situation representation. Further, the bargainer's situation representation itself may stimulate emotion (reverse arrow), creating an emotional feedback loop (Izard, 1993; LeDoux, 1996).

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Insert Figure 1 about here

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The bargainer's situation representation translates directly into offers and other communications such as threats. In the collector scenario outlined earlier, the full framework explains the collector's offer and threat behavior as possibly: (1) a function of emotional responses to the debtor's hostility and refusal to cooperate; (2) a function of specific goals the company has provided combined with observations of the debtor's cooperative behavior; or (3) some combination of the two.

Given the existence of emotional and non-emotional paths to explain behavior in Figure 1, one strategy for uncovering the potential contribution of the emotional path is to focus on factors that predominantly stimulate it alone. In this regard, there are two parts of the emotional path that bear closer examination. First are the links that may stimulate an emotional response, either from direct input or via the bargainer's situation representation. Second is the link between the goals induced by the emotion and the bargainer's behavior. We examine each of these two types of links in turn to derive predictions for empirical work. These predictions concern the effects of anger, a specific emotion that arises frequently when two parties are trying to divide a fixed pie.

We start with how a bargaining situation might arouse emotion. Forgas (1998) observes that pairing negotiators in opposite moods caused them both to evolve toward the other's behavior (a phenomenon documented in a much wider context as

emotional contagion by Hatfield, Cacioppo, & Rapson, 1994). Focusing on anger, several researchers suggest that unprovoked blame and hostility from one (angry) party tend to be antecedents of anger in the other (Lemerise & Dodge, 1993; Scherer, 1988; Smith & Ellsworth, 1985). Therefore, the first prediction to be tested empirically is that bargaining with hostile partners leads to increased feelings of anger (Lemerise & Dodge, 1993; Sutton, 1991).

Further in this regard, Rafaeli and Sutton (1991) observe that a partner's contrasting emotional displays may strengthen the impact of emotions on decision makers. When viewed in the light of a recent positive display, negative displays appear all the more negative due to psychological contrast (Cialdini, 1984). Therefore, the second prediction is that bargainers will feel more anger with hostile partners when they follow pleasant partners.

Turning to how emotion can affect bargaining behavior, once negative emotion has been elicited its influence on the bargainer's decision making appears to depend on three subprocesses (Luce, Bettman, & Payne, 1997; Mellers, Schwartz, & Ritov, 1997, 1999; Raghunathan & Pham, 1999). First, negative emotions engender their own characteristic appraisal patterns (Hertel, 1999; Hertel et al., in press; Izard, 1993; Scherer, 1988; Smith & Ellsworth, 1985). In the case of anger, it elicits the sense that an injustice has been perpetrated by a responsible party and that the person feeling anger can do something about it (Goldberg et al., 1999; Lerner & Keltner, in press; Keltner et al., 1993; Scherer, 1988; Smith & Ellsworth, 1985). These appraisal patterns then generate a set of action goals to put the situation right (Mellers et al., 1997, 1999; Raghunathan & Pham, 1999). Thus, angry bargainers are likely to feel that they should punish the other party (Goldberg et al., 1999; Keltner et al., 1993). Finally, these

emotion-induced goals interact with other inputs as the bargainer attempts to interpret the situation in formulating his or her offer (Luce et al., 1997; Oatley & Johnson-Laird, 1987; Raghunathan & Pham, 1999).

Therefore, the third prediction is that angry bargainers will be more likely to attempt to punish their partners through harsher offer terms. However, although emotion-based goals may frequently be so strong that they have a substantive impact on action (Loewenstein, 1996; Raghunathan & Pham, 1999), Lemerise and Dodge (1993) have observed that children quickly learn societal prohibitions against expressing anger in ways that will directly harm others. Threats are a way of punishing without directly harming. Therefore, the fourth prediction is that angry bargainers will make more threats. A particularly strong test of both Predictions 3 and 4 is whether manipulating anger independently of the negotiation has an impact on bargainers' threats and offers. Such a test tends to preclude the argument that the emotion was merely a result of the situation representation that also produced the observed behavior in the negotiation session.

Two experiments test the preceding predictions as summarized in Table 1. Experiment 1 tests Predictions 1-2 for how anger is aroused in bargaining and also examines the extent to which dealing with hostile partners affects bargaining behavior (Predictions 3 and 4). Due to a potential confound in Experiment 1, Experiment 2 focuses on how independently inducing feelings of anger and calm affects bargaining behavior with hostile partners (Predictions 3 and 4).

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Insert Table 1 about here

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### **Experiment 1: Hostile and Pleasant Partners**

Experiment 1 was specifically designed to test: (1) the degree to which bargaining with hostile vs. pleasant partners evoked anger (Prediction 1); (2) whether the order in which bargainers experienced hostile and pleasant partners affected the level of anger they experienced with hostile partners (Prediction 2); (3) whether dealing with hostile partners, hypothesized to make bargainers angry, affected terms offered and threats (indirect test of Predictions 3 and 4).

Subjects (bargainers) negotiated under time pressure against computerized partners that were portrayed as other bargainers sitting on the opposite side of a divided room. These computer partners responded to bargainers' offers through a limited interface for eight contacts and displayed emotion in one of two predefined sequences, pleasant for four contacts and hostile for four contacts or the reverse.

This general procedure created a 2X2 design with one within-bargainers factor, pleasant or hostile partner, and one between-bargainers factor, sequence of partner emotional displays. Bargainers were measured on the deal terms they offered their partners and self-ratings of their emotional state.

#### Method

Sixty-four paid students from the University of Michigan participated as bargainers in this experiment. The entire experiment took place using computer interfaces.

Bargainers were informed that they were participating in a bargaining experiment where their partners were credit card debtors on the other side of a partition dividing the room. Bargainers were to take on the role of collectors working for a credit card

company or counselors working for a credit card counseling service (no significant main effects were attributable to work role in subsequent analyses). In either case, they were to get the debtor to pay as much on their credit card as soon as possible.

Bargainers were also told that they would periodically be asked to fill out a set of emotion scales, the affect grid (Russell, Weiss, & Mendelsohn, 1989) and the PANAS (Watson, Clark, & Tellegen, 1988), to help with an “unrelated” study. Bargainers then filled out the emotion scales for the first time.

On the affect grid, bargainers indicated their emotional state by clicking on a nine-by-nine grid with the horizontal axis representing the emotion’s pleasantness and the vertical the emotion’s arousal (degree of wakefulness; details are in Russell et al., 1989). On the PANAS, bargainers rated themselves on 20 words summarized by two dimensions, positive and negative affect (for details, see Watson et al., 1988). Words loading heavily on positive affect reflected the extent to which bargainers felt enthusiastic, active, and alert. Words loading heavily on negative affect indicated the degree to which bargainers experienced distress and unpleasurable engagement.

After this first presentation of the emotion scales, bargainers were given instruction on the bargaining task (see next section). Bargainers then bargained for four contacts with pleasant (hostile) partners, making twelve offers in each contact. After that, bargaining was paused, purportedly to analyze the data, and bargainers filled out the emotion scales again. Bargainers then completed another four contacts of bargaining with partners displaying emotions opposite to the emotions of the initial four contacts. Finally, bargainers filled out the emotion scales a final, third time.

### Task

Figure 2 shows the bargaining interface used in the experiment for each contact. As indicated by the “Debtor’s Bargaining Position” graph at the top of the figure, during each contact, bargainers made twelve offers and heard twelve responses from their partners (details of the offer-response interaction below). After each partner response, bargainers were given a four second limit in which to make their next offer, as derived from observations within an actual call center (Gibson et al., 1996). If bargainers exceeded the four second limit, a yellow screen covered the partner response area, and the partner threatened to hang up until the bargainer made an offer. Although no statistics were kept, experimenters observed that bargainers quickly adapted to the time limit.

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Insert Figure 2 about here

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Bargainers’ goal, on each speaker turn, was to get their partner to agree to as high a payment in as few days as possible. Even if bargainers got their partners to agree to a deal, they had to continue offering deals to the end of the contact in order to get their partner to: (1) continue to reaffirm the deal; (2) agree to a better deal if the bargainer thought he or she could get it; (3) agree to a lesser deal (not explicitly stated to bargainers but of relevance if partners tended to more often than not reject deals like the current deal).

To make offers, bargainers clicked on one of five dollar amounts (between \$100 and \$500 or \$150 and \$750, with the range \$100 to \$500 reported throughout the paper since range had no significant impact on behavior), a number of days (between

one and ten) in which the dollar amount had to be paid, and an encouragement or threat (encouragement: “Pay, it will get you back on track!” threat: “Pay, otherwise legal action may be taken!”), with all choice options counterbalanced. Once bargainers completed their selections, they clicked on the button labeled Talk. A female voice then stated the bargainer’s offer, including the threat or encouragement.

A male voice responded with the statements “Accept” or “Reject” followed by a further message that depended on whether the partner was pleasant or hostile. Pleasant partners went on to say, “I know you’re trying to help,” in the case of an accept and “But I know you’re trying to help,” in the case of a reject. Hostile partners went on to say, “But you know this is all your fault!” in the case of an accept and “This is all your fault!” in the case of a reject.

In reality, the partner’s responses derived from the following reservation price (*Reservation*) calculated by a computer program:

$$Reservation = (Days\_Offered - 8) (Min\_Value) \quad (1)$$

where *Days\_Offered* was the number of days the bargainer offered, and *Min\_Value* was either \$100 or \$150.

The partner then responded based on the following simple decision rule based on *Reservation* :

$$Response = \begin{cases} \text{Accept with 75\% probability} & , \quad Dollar\_Offer \leq Reservation \\ \text{Reject with 75\% probability} & , \quad Dollar\_Offer > Reservation \end{cases} \quad (2)$$

where *Dollar\_Offer* was the bargainer’s dollar offer, and *Reservation* was as just described. Examining Equations (1) and (2), it is apparent that only three offers, the most lenient 6% of all possible offers, had a high likelihood of acceptance: *Min\_Value* in 9 days and *Min\_Value* or 2 (*Min\_Value*) in 10 days. Note further that bargainers’

threats and encouragements had no effect either on the partner's reservation price or decision rule.

### Results

We focus first on the effects dealing with hostile and pleasant partners had on bargainers' emotions. We then examine bargainers' threats and offers with hostile and pleasant partners. All analyses used 1 *df* contrasts and report the effect of when bargainers were dealing with hostile vs. pleasant partners as a difference score (Judd & McClelland, 1989, Chapter 14).

#### Emotions.

According to Prediction 1, bargainers should have experienced more anger with hostile than pleasant partners. Results from the PANAS confirmed this prediction. Bargainers reported significantly more negative affect, a marker for anger, when dealing with hostile partners as shown in Table 2(a) (*Diff* = 0.79,  $t_{60} = 2.69$ ,  $p < 0.01$ ). Further, individual scores for hostility and irritation, components of negative affect correlated with anger (Lemerise & Dodge, 1993; Sutton, 1991), were significantly higher (for hostility, *Diff* = 0.25,  $t_{60} = 2.42$ ,  $p < 0.02$ ; for irritation, *Diff* = 0.28,  $t_{60} = 2.24$ ,  $p < 0.03$ ). Reported fear also increased significantly (*Diff* = 0.09,  $t_{60} = 2.16$ ,  $p < 0.04$ ). The other emotion measures in Table 2 changed in directions that were consistent with anger (e.g., positive affect and feelings of pleasantness decreased) but were not significant.

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Insert Table 2 about here

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According to Prediction 2, bargainers who experienced hostile partners second should have experienced a larger difference in anger from when they were dealing with pleasant partners than bargainers who experienced hostile partners first because of the contrast created by the sequential display. Positive affect showed this effect, and it was highly significant (see the between-bargainers effect for the Difference column in Table 2(b),  $t_{60} = -3.98$ ,  $p < 0.001$ ). When experiencing hostile partners, bargainers who experienced them second in the sequence showed a much more negative difference in positive affect from when they were dealing with pleasant partners than did bargainers who experienced hostile partners first in the sequence. Looking at the components of positive affect individually, the interaction is significant for almost all of them, including enthusiastic ( $t_{60} = -2.99$ ,  $p < 0.05$ , using 1 *df* contrasts), interested ( $t_{60} = -2.61$ ,  $p < 0.01$ ), determined ( $t_{60} = -2.68$ ,  $p < 0.01$ ), excited ( $t_{60} = -3.57$ ,  $p < 0.001$ ), alert ( $t_{60} = -2.46$ ,  $p < 0.02$ ), active ( $t_{60} = -2.97$ ,  $p < 0.01$ ), strong ( $t_{60} = -2.27$ ,  $p < 0.03$ ), and attentive ( $t_{60} = -3.76$ ,  $p < 0.001$ ). The effect was not due to significant differences between bargainers in either negative or positive affect prior to the start of the experiment.

#### Bargaining Behavior.

Over all 8 negotiation contacts, bargainers succeeded in getting their partners to agree to pay an average of 31.77 times out of a maximum possible 96 times ( $s.d. = 8.17$ ). They asked on average for \$302.83 ( $s.d. = 71.09$ ) in 7.29 days ( $s.d. = 1.48$ ), and they used 36.05 negative education statements ( $s.d. = 16.49$ ).

According to Predictions 3 and 4, bargainers should have offered harsher terms to hostile than to pleasant partners and made more threats. In this task, harsher terms consisted of asking for more money, giving fewer days to remit the money, or both.

Table 3 shows how bargainers' bargaining behavior differed between hostile and pleasant partners. These results support Predictions 3 and 4. When bargainers dealt with hostile partners, they increased their use of threats by an average of 2.67 statements ( $t_{60} = 2.73, p < 0.01$ ). Bargainers also gave marginally fewer days grace to hostile partners than to pleasant ones ( $-0.23$  days,  $t_{60} = -1.89, p < 0.06$ ).

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Insert Table 3 about here

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### Discussion.

The pattern of results reported here is consistent with a model where dealing with hostile partners makes bargainers angry. Bargainers then use this anger as a source of goals for dealing with their partners. As a result, bargainers use more threats and ask partners to pay in fewer days.

Threats are significant both in the near and far terms. In the near term, as this experiment shows, hostile behavior raises the likelihood of hostile interaction. In the longer term, the hostile interaction may alter the likelihood of the parties actually sticking to the deal terms or being able to work effectively together again (Brodt & Tuschinsky, 2000).

An important feature of this experiment is that hostile and pleasant partners only differed in terms of the messages they said after accepting or rejecting offers. This approach contrasts with most good-cop/bad-cop experiments where the two roles frequently also differ in the deal terms they are willing to take. For the standard protocol in good-cop/bad-cop experiments, the confound of message and willingness to accept offers makes inference concerning whether emotion, reciprocation, or

cost-benefit appraisal is driving bargainers' response impossible (e.g., Brodt & Tuchinsky, 2000; Hilty & Carnevale, 1993).

### **Experiment 2: Inducing Calm and Anger in the Face of Hostile Partners**

Experiment 1 only partially confirmed that anger acted as a source of information to bargainers for how they should have dealt with hostile partners. There are two potential discrepancies with this account. First, bargainers only registered significant changes in emotion on the PANAS and not the affect grid, drawing into question the strength of their emotional experience. A more direct and stronger manipulation of emotions could lead to a more consistent emotional experience, and thereby more consistent ratings.

Second, in Experiment 1, bargainers' emotions arose as a result of interacting with pleasant and hostile partners in a sequence. Bargainers could have simply been reciprocating the perceived non-cooperation in hostile partners' messages by taking a harder line (Hilty & Carnevale, 1993; Sutton, 1991) and then taken on the emotion most closely associated with the actions they took (Izard, 1993; LeDoux, 1996). However, if it can be shown that independently altering emotions moderated or mediated bargainers' behavior with hostile partners (Predictions 3 and 4 in Table 1), then some of the effects observed in Experiment 1 can be more firmly attributed to emotional influences.

A final problem with Experiment 1 is that bargainers may have been less inclined to ask for harsher deal terms with hostile partners because their lack of success convinced them that such efforts would be fruitless. Instructions to bargainers explicitly informed them that they should reduce dollars requested and increase days

grace in order to reach agreement with their partners.

To address these concerns, Experiment 2 used a 2X2 experimental design with one between-bargainers condition, calm or angry mood induction, and one within-bargainers condition, behavior before and after the mood induction task. Additionally, partners (debtors) more easily acceded to bargainers' bids.

### Method and Task

Fifty-two undergraduates from the University of Michigan were bargainers in this experiment. Experiment 2 introduced changes in the experimental procedure and bargaining task as follows. First, as regards procedure, bargainers only encountered hostile partners. There were also minor differences in the time-line and instructions. At the beginning of the experiment, bargainers were informed that they would be doing two experiments, a bargaining task and an "unrelated" life events inventory (actually used to surreptitiously induce mood in subjects). Bargainers then went directly to bargaining for one round of four contacts.

The experiment was then paused for "data analysis". During this pause, bargainers participated in the "unrelated" life events inventory experiment where they undertook the following three activities:

- filled out the affect grid and PANAS in order to measure emotions prior to actually filling out the inventory;
- completed the life events inventory, a task designed to induce either a calm or angry mood according to whether the subject was in the calm or angry condition (see Appendix A for the task which is based on a personal communication from N. Scwarz);
- filled out the affect grid and PANAS again to measure the effect of

participating in the inventory on subjects' emotions.

Once bargainers finished the three activities of this “unrelated” experiment, they completed the bargaining experiment by bargaining another round of four contacts.

#### Alterations to the bargaining task.

In Experiment 1, it was suggested that the difficulty of striking a deal with their partners may have caused bargainers to be less likely to ask for harsher terms when they were angry with them. There were two changes in the bargaining task that made partners (debtors) much more liberal in the terms that they would accept. Specifically, Equation (1) was substituted with the following equation to determine the partner's reservation price,

$$Reservation = (Days\_Offered - 2) (Min\_Value) \quad (3)$$

where all terms are as previously defined. Note from this equation, the reservation price was negative when less than two days were offered, \$0 at two days, *Min\_Value* at three days, increasingly linearly with the number of days after that until it reached the amount the partner owed. Additionally, Equation (2) was altered so that partner responded accept with 90% probability when the bargainer's dollar bid was at or below the reservation price and reject with 90% probability when above. With these changes, 60% of bargainers' possible offers were likely to be accepted.

#### Results

We first check that the life events inventory performed as expected and then turn to bargaining behavior.

#### Emotions.

The instructions for the life events inventory informed bargainers that the task was a filler, not related to the negotiation task, and that they were to recall an event from their past life. In spite of this instruction, five bargainers recalled events from the experiment, three in the anger condition and two in the calm condition. Otherwise, bargainers in the anger condition tended to recall a wrong that had been committed against them or a close family member, conforming with results found in previous work (Keltner et al., 1993; Smith & Ellsworth, 1985). Those in the calm condition recalled a variety of experiences where they felt relaxed, such as sunset.

Table 4 shows between bargainers measures for negative and positive affect after the life events inventory. As would be expected, bargainers in the anger condition felt significantly more negative affect than bargainers in the calm condition ( $t_{46} = 3.39, p < 0.01$ , using 1 *df* contrasts). Negative affect significantly increased after the life events inventory for bargainers in the anger condition (mean increase of 3.21,  $t_{24} = 5.21, p < 0.001$ ), while it did not significantly change for those in the calm condition.<sup>1</sup> For angry bargainers, the significant increase in negative affect was accompanied by significant increases in two components of negative affect that are markers for anger, irritability (mean increase of 0.92,  $t_{24} = 3.40, p < 0.01$ ) and hostility (mean increase of 1.35,  $t_{24} = 6.16, p < 0.001$ ), as well as nervousness (increase of 0.27,  $t_{24} = 2.23, p < 0.04$ ), distress (increase of 0.88,  $t_{24} = 3.67, p < 0.01$ ), and upset (increase of 1.42,  $t_{24} = 5.49, p < 0.001$ ). There were no significant effects on positive affect.

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Insert Table 4 about here

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As shown in Table 4(c), pleasantness produced similar results to negative affect. As would be expected, angry bargainers felt less pleasant than calm ones ( $t_{46} = -4.07$ ,  $p < 0.001$ ), and angry bargainers feelings of pleasantness decreased after the life events inventory (decrease of  $-2.27$ ,  $t_{24} = -6.18$ ,  $p < 0.001$ ) while those of calm bargainers did not significantly change. As shown in Table 4(d), all bargainers felt slightly more aroused after the life events inventory (mean increase of  $1.23$ ,  $t_{46} = 4.03$ ,  $p < 0.001$ ). Angry bargainers ( $M = 6.58$ ) were significantly more aroused than calm ones ( $M = 5.49$ ;  $t_{46} = 2.60$ ,  $p < 0.02$  for the difference).

#### Bargaining Behavior.

Over all eight contacts in Experiment 2, bargainers succeeded in getting their partners to agree to pay an average of 59.22 times out of a maximum possible 96 ( $s.d. = 15.61$ ). They asked on average for \$378.13 ( $s.d. = 74.15$ ) in 6.5 days ( $s.d. = 1.43$ ), and they used 34.04 threats ( $s.d. = 1.43$ ). The only apparent trend not attributable to experimental manipulation was that all bargainers asked for more money between the first and second set of four contacts ( $t_{46} = 3.33$ ,  $p < 0.01$ , using 1  $df$  contrast).

According to Prediction 4, angry bargainers should have used more threats than calm ones. This prediction was not supported in the between-bargainers measures, although the means were in the correct direction. However, there was ample support for Prediction 4 in how bargainers in the two conditions changed their behavior after the life events inventory. As evident in Table 5(a), bargainers in the anger condition increased their use of threats significantly more than bargainers in the calm condition ( $t_{46} = 2.33$ ,  $p < 0.03$ ). Underlying this interaction, bargainers in the anger condition significantly increased the number of threats they used (average increase of 4.15,

$t_{24} = 2.21, p < 0.04$ ) while those in the calm condition did not change significantly.

This difference was not a response to success or failure in the task because bargainers' increased use of threats was not predicted by their success rate in the first set of four contacts when it was added as a covariate. Therefore, Prediction 4 is confirmed in that angry bargainers increased their use of threats while calm bargainers did not.

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Insert Table 5 about here

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Supporting Prediction 3, bargainers also showed differences by condition in how they changed their days offers although no comparisons between angry and calm bargainers were significant. As shown in Table 5(b), after the life events inventory, angry bargainers lowered the number of days they offered significantly more than calm bargainers ( $t_{46} = -2.92, p < 0.01$ ). Underlying this interaction, angry bargainers offered significantly fewer days (average decrease of  $-0.58$  days,  $t_{24} = -3.35, p < 0.01$ ), while calm bargainers did not significantly change their days offer. The change in days was marginally influenced by bargainers' success rate in the first set of four contacts when that was entered as a covariate ( $t_{45} = -1.69, p < 0.10$ ), but emotion condition remained significant ( $t_{45} = -2.55, p < 0.02$ ).

#### Mediation Analysis.

Earlier it was shown that the anger condition increased negative affect. If anger is inducing goals to use threats, negative affect, as a marker for anger, should be a significant predictor of the increase in threats used. If anger is playing an intermediary role, then the coefficient for emotion condition should become insignificant when negative affect is added (Baron & Kenny, 1986). When placed in a



regression with emotion condition, negative affect remained a significant predictor of change in threats ( $t_{45} = 2.25, p < 0.03$ ) with emotion condition becoming insignificant. The same result holds with pleasantness substituted for negative affect. Holding all else equal, the number of threats bargainers used with hostile partners in this experiment was influenced by the level of anger they experienced which was itself influenced by the life events inventory.

### Discussion

Experiment 1 showed that dealing with hostile bargaining partners produced increases in negative affect and two markers associated with anger, hostility and irritability. With hostile partners, bargainers increased their use of threats and decreased the number of days they were willing to give as would be predicted for anger in the framework shown in Figure 1. However, as also suggested by this framework, the causes for bargainers' changes in negotiation behavior were ambivalent. Bargainers could have just been feeling anger as a side effect of their situation representation.

Experiment 2 demonstrated that increasing anger alone is sufficient to produce the main effects observed in Experiment 1. Angry bargainers increased the amount of threats they used and significantly lowered the number of days they were willing to give their partners to pay (Predictions 4 and 3). Threats evoked the possibility of punishment, and reducing the number of days was clearly against the partner's preferences. They were both punitive behaviors of the sort that can be attributed to anger as shown in a number of prior studies (e.g., Goldberg et al., 1999; Keltner et al., 1993). These behaviors were not due to trying to make up for perceived poor performance in the first half of the experiment prior to the life events inventory. The coefficient for emotion condition remained significant after adding first-half

performance into the equation.

The effect of the anger condition cannot be attributed to a specific scenario bargainers recalled nor to the possibility that the anger condition made them think more about the specific task itself than calm bargainers. Bargainers recalled their own idiosyncratic scenarios that were unrelated to the task in all but five cases. Of those five cases, three were in the anger condition and two in the calm condition.

Further strengthening the case that anger played a causal role in the effects observed in Experiment 2, when bargainers' reports of negative affect were included with emotion condition in a regression to predict use of threats, negative affect remained significant and emotion condition became insignificant. Bargainers' feelings of anger accounted for threat behavior. Others have observed similar mediating effects for emotion in deciding between job options (Luce et al., 1997) and choosing between gambles (Mellers et al., 1997, 1999).

In short, all of the main effects seen in Experiment 1 with hostile partners were demonstrated by bargainers in Experiment 2 in the anger condition. Dealing with hostile partners increases feelings of anger which is a driver of threat behavior and harsher deal terms.

### **General Discussion**

The experiments reported here show that emotional display and emotional inoculation have significant impacts on bargaining behavior. The experiments also provide evidence that both of these tactics can arouse specific emotions. These emotions then elicit goals that the bargainer tries to achieve. In Experiment 1, hostile partners aroused anger in bargainers, and these bargainers offered more threats and harsher deal terms.

These results notwithstanding, as indicated by the emotion in bargaining framework (Figure 1), a difficulty in attributing causality to emotion is that emotion can easily just be a side effect of a situation representation that also leads to the actions taken. This difficulty in determining causality has been noted by others who have hypothesized a role for emotion similar to that shown in Figure 1 (e.g., Barry & Oliver, 1996; Raghunathan & Pham, 1999). Experiment 2 addressed this difficulty by independently varying affect through recall of past angry and calm experiences. Bargainers in the anger condition were significantly more angry than bargainers in the calm condition, and they displayed a similar pattern of bargaining behavior to bargainers dealing with hostile partners in Experiment 1. In other words, Experiment 2 demonstrated that differences in anger were sufficient to cause the effects observed in Experiment 1.

This result is significant. One's emotional experience of a partner affects how one behaves toward that partner in predictable ways. One can control behavior by recalling in-depth past emotional experiences that may mitigate or reinforce it. These observations suggest that, in situations where emotional displays are a reliably observed facet of behavior, one has to take emotional influence into account. For instance, accounts of the good-cop/bad-cop effect that do not take emotion experienced while dealing with both roles are potentially missing an important cause of the effects reported (e.g., Brodt & Tuchinsky, 2000; Hilty & Carnevale, 1993).

#### Limitations and Future Work

The work reported here relates to decision makers (bargainers) working under time pressure with a limited interface to their partner. There are several limitations to this work that suggest possibilities for future research. First, the time pressure and

limited interface themselves may have kept bargainers from exploring more creative problem solutions. A specific effect of time pressure may have been to limit bargainers' processing style to the simple see-react paradigm depicted in Figure 1. With less time pressure, the more careful decision strategy under negative emotion observed by several researchers might have overridden bargainers' tendency to use more threats and harsher deal terms on the spur of the moment (see, Hertel, 1999; Hertel et al., in press; Schwarz & Bohner, 1996). Future work should explore the extent to which reducing time pressure and offering more alternatives might change bargainers' behavior.

However, this recommendation is not intended to deemphasize the study of decision making under time pressure. An important application area of this work is to customer service roles. Increases in customer service productivity over the last ten years have made it so that customer service agents have less time to interact, not more. Furthermore, machine interfaces, not too dissimilar from the one used in this research, have come to play an increasing role in customer service organizations, particularly for low profit customers. Therefore, additional examination of decision making under time pressure and with limited interfaces is called for. One particularly fruitful area for this research might be in the health care industry where professionals experience time pressure in much more complex situations involving strong emotions and have started using Web forums and email to communicate.

Second, an area inviting future research is the emotion in negotiation framework's claim that there are two paths to influencing negotiation behavior. Similarly to a strategy recently employed by others (Goldberg et al., 1999; Hertel et al., in press; Raghunathan & Pham, 1999), the work reported here focused almost entirely

on manipulations designed to explore the contributions of the emotional pathway in order to establish its existence. A question left unanswered is the importance of the emotional pathway relative to the non-emotional pathway. Observational evidence (e.g., Hochschild, 1983; Rafaeli & Sutton, 1991) suggests the emotional pathway is important and dominant in some instances, and such views have recently been voiced in theories concerning preferences for gambles (Mellers et al., 1997; Raghunathan & Pham, 1999). However, some recent empirical work, while affirming the significance of emotions, has suggested that emotion-based accounts provide only slightly better explanations of decision behavior than non-emotion based explanations (e.g., Mellers et al., 1997). In this regard, future work such as that suggested for health care where the activities that might be categorized as negotiation involve, in addition to strong emotions, multiple conflicts between third-party payer, patient, and provider interests could provide fruitful extensions to the work reported here.

### Conclusion

This study examined the effects of emotions in fast-paced environments. With the penetration of telecommunications and Internet technology, decision makers are increasingly called upon to perform in such fast-paced environments, be they dealing with customers in interactive web sites or call centers. Both emotional display and a decision makers' internally generated emotions affect negotiating behavior in these types of environments.

This study provided evidence that these effects could be accounted for by a framework in which an emotional pathway cued goals that then influenced behavior. A simple recommendation for controlling behavior that comes from this framework is to recall in-depth situations that made you feel an emotion that you now want to emulate.

Future work should focus on the importance of the emotional pathway relative to non-emotion based processing and further elaborate the behaviors that specific emotions such as fear, anger, joy, and happiness engender. Such work can then lead to further recommendations for controlling behavior in emotion-rich interactive tasks.

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### **Appendix A: Life events inventory**

The following text was used in the mood induction task. Subjects were asked to describe past situations that either made them enraged or (very calm).

I'm Mike Hoexter. As part of my research, I am developing a life-events inventory. To sample what happens to people we ask many participants to report on just one event in some detail. Help us with that by telling us about an event in your life that made you feel enraged (very calm).

1. Please take a minute to re-live this event in your minds eye. What happened? What was it that made you feel enraged (very calm)? (approx. 100 words)
2. What is the most vivid image that comes to mind when you think of that event? (approx. 100 words)
3. What thoughts went through your mind as the event unfolded? How did you feel while this was going on? (approx. 100 words)
4. Can you remember your bodily reactions? What were they? (approx. 100 words)
5. Please take a moment to briefly summarize what happened to make you feel enraged (very calm), the images that came to mind, the thoughts and how they made you feel and your bodily reactions. (approx. 100 words)

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**Footnotes**

<sup>1</sup>There was a significant main effect for increase in negative affect across all bargainers ( $t_{46} = 3.68, p < 0.001$ ), but as indicated by the present analysis, this overall increase is entirely due to the increase for bargainers in the anger condition.

Table 1

Summary of Empirical Predictions

	Prediction	Experiment
P1	Bargaining with hostile partners will lead to increased feelings of anger.	1
P2	Bargainers will feel more anger with hostile partners when they follow pleasant partners.	1
P3	Angry bargainers will offer harsher terms to their partners.	1 and 2
P4	Angry bargainers will make more threats to their partners.	1 and 2

Table 2

Bargainers' emotion self-ratings in Experiment 1 after dealing with hostile and pleasant partners (columns) crossed by order (rows).

	Hostile	Pleasant	Difference
Hostile-Pleasant	7.07	5.93	1.14
Pleasant-Hostile	7.99	7.54	0.45
Mean	7.53	6.74	0.79

(a) Negative affect

	Hostile	Pleasant	Difference
Hostile-Pleasant	5.03	5.13	-0.10
Pleasant-Hostile	4.53	4.72	-0.19
Mean	4.78	4.92	-0.14

(c) Pleasantness

	Hostile	Pleasant	Difference
Hostile-Pleasant	14.70	13.73	0.97
Pleasant-Hostile	13.04	15.25	-2.20
Mean	13.87	14.49	-0.62

(b) Positive affect

	Hostile	Pleasant	Difference
Hostile-Pleasant	5.63	5.59	0.03
Pleasant-Hostile	5.53	6.19	-0.66
Mean	5.58	5.89	-0.31

(d) Arousal



Table 3

Experiment 1 Bargaining Results: Terms offered to hostile and pleasant partners (columns) crossed by order (rows).

	Hostile	Pleasant	Difference
Hostile-Pleasant	18.88	14.75	4.13
Pleasant-Hostile	19.84	18.63	1.22
Mean	19.36	16.69	2.67

(a) Number of threats

	Hostile	Pleasant	Difference
Hostile-Pleasant	7.27	7.43	-0.16
Pleasant-Hostile	7.07	7.37	-0.30
Mean	7.17	7.40	-0.23

(b) Days grace

	Hostile	Pleasant	Difference
Hostile-Pleasant	296.48	317.25	-20.76
Pleasant-Hostile	301.95	295.64	6.32
Mean	299.22	306.45	-7.22

(c) Dollars demanded

Table 4

Experiment 2 emotion measures before and after inducing calm or anger.

	Before	After	Aft. – Bef.
Anger	6.05	9.26	3.21
Calm	6.35	6.49	0.14
Diff.	-0.30	2.77	3.07

(a) Negative affect

	Before	After	Aft. – Bef.
Anger	5.62	3.35	-2.27
Calm	5.78	5.74	-0.04
Diff.	-0.16	-2.39	-2.23

(c) Pleasantness

	Before	After	Aft. – Bef.
Anger	15.83	16.41	0.58
Calm	16.14	16.56	0.42
Diff.	-0.31	-0.15	0.16

(b) Positive affect

	Before	After	Aft. – Bef.
Anger	5.00	6.58	1.58
Calm	4.59	5.49	0.90
Diff.	0.41	1.09	0.68

(d) Arousal

Table 5

Experiment 2 bargaining measures before and after inducing calm or anger

	Before	After	Aft. – Bef.
Anger	16.65	19.80	4.15
Calm	16.88	15.85	-1.03
Diff.	-1.23	3.95	5.18

(a) Number of threats

	Before	After	Aft. – Bef.
Anger	6.98	6.40	-0.58
Calm	6.28	6.56	0.28
Diff.	0.70	-0.16	-0.86

(b) Days grace

	Before	After	Aft. – Bef.
Anger	363.78	387.82	24.04
Calm	372.82	396.95	24.13
Diff.	-9.04	-9.13	-0.09

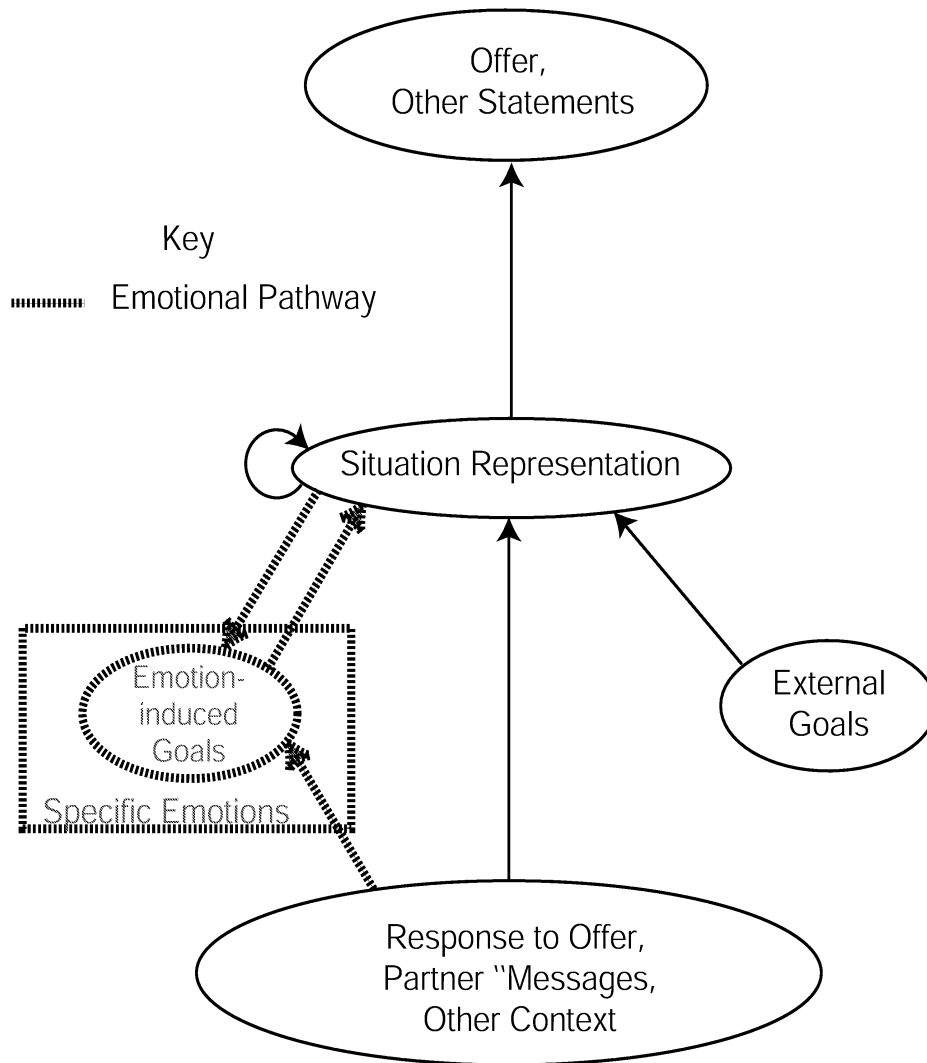
(c) Dollars demanded

**Figure Captions**

Figure 1. A simplified framework illustrating emotion's role in bargainers' decision processes.

Figure 2. Interface used for bargaining task. The partner has just responded to the bargainer's first offer.

Anger, Hostile Partners, and Decision Behavior, Figure 1



Anger, Hostile Partners, and Decision Behavior, Figure 2

