

## The Interpersonal Effects of Emotions in Negotiations: A Motivated Information Processing Approach

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Three experiments tested a motivated information processing account of the interpersonal effects of anger and happiness in negotiations. In Experiment 1, participants received information about the opponent's emotion (anger, happiness, or none) in a computer-mediated negotiation. As predicted, they conceded more to an angry opponent than to a happy one (controls falling in between), but only when they had a low (rather than a high) need for cognitive closure. Experiment 2 similarly showed that participants were only affected by the other's emotion under low rather than high time pressure, because time pressure reduced their degree of information processing. Finally, Experiment 3 showed that negotiators were only influenced by their opponent's emotion if they had low (rather than high) power. These results support the motivated information processing model by showing that negotiators are only affected by their opponent's emotions if they are motivated to consider them.

Negotiation is one of the most common and constructive ways of dealing with social conflict. It may be defined as the joint decision making between interdependent individuals with divergent interests (Pruitt, 1998). Most of us negotiate on a regular basis, for instance with our spouses about the division of household chores, with our children about how to spend the holidays, and with our students about task assignments in a research project. Although emotions are inherent to negotiation and social conflict (Davidson & Greenhalgh, 1999), and are crucial to understanding how individuals behave within bargaining situations (Barry, 1999), surprisingly little attention has been given to the role of emotions in negotiations. In this article we focus on the social effects of emotions in negotiation (i.e., the way negotiators respond to their opponent's emotions) and develop a motivated information processing model that accounts for these effects.

### Emotions in Negotiation

There are myriad definitions of *emotion*. However, most definitions point to three distinct features of emotion: physiological reactions, action tendencies, and subjective experience (Lazarus, 1991). Emotions differ from *moods* in that they are discrete (Russell & Feldman Barrett, 1999), of relatively high intensity and

short duration (Barry, 1999; Forgas, 1992; Oatley & Jenkins, 1996), and intentional, that is, directed at an object, person, or event (Frijda, 1993; Russell & Feldman Barrett, 1999). In this article we use the term *emotion* in the sense intended above, whereas *affect* is used as a superordinate construct that encompasses both moods and emotions (cf. Barry & Oliver, 1996).

Prior research has mostly focused on the *intrapersonal* effects of affect (moods and emotions) in negotiation, that is, the influence of a negotiator's emotional state on his or her own behavior. For example, positive affect has been shown to increase concession making (R. A. Baron, 1990), stimulate creative problem solving (Isen, Daubman, & Nowicki, 1987), increase joint gains (Allred, Mallozzi, Matsui, & Raia, 1997; Carnevale & Isen, 1986), increase preferences for cooperation (R. A. Baron, Fortin, Frei, Hauver, & Shack, 1990), reduce the use of contentious tactics (Carnevale & Isen, 1986), and increase the use of cooperative negotiation strategies (Forgas, 1998). Conversely, negative affect has been shown to decrease initial offers (R. A. Baron et al., 1990), decrease joint gains (Allred et al., 1997), promote the rejection of ultimatum offers (Pillutla & Murnighan, 1996), increase the use of competitive strategies (Forgas, 1998), and decrease the desire to work together in the future (Allred et al., 1997).

These studies show quite consistently that negotiators experiencing positive affect tend to be more cooperative and conciliatory, whereas negotiators in a negative affective state tend to be more competitive and reluctant to make concessions. Although this research has greatly improved our understanding of the interplay between a negotiator's affective state and his or her cognitions and behavior, it has ignored the fact that negotiation is a social phenomenon—negotiators' emotions influence not only themselves, but also their counterparts. Recently, several scholars have emphasized the importance of the *interpersonal* effects of emotions in negotiations (e.g., Adler, Rosen, & Silverstein, 1998; Barry, 1999; Barry, Fulmer, & Van Kleef, in press; Barry & Oliver, 1996; Davidson & Greenhalgh, 1999; Morris & Keltner, 2000; Thomp-

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son, Medvec, Seiden, & Kopelman, 2001; Thompson, Nadler, & Kim, 1999; Van Kleef, De Dreu, & Manstead, 2004), arguing that emotions have important social functions and consequences. Most notably, emotions convey information about how one feels about things (Ekman, 1993; Scherer, 1986), about one's social intentions (Ekman, Friesen, & Ellsworth, 1972; Fridlund, 1994), and about one's orientation toward other people (Knutson, 1996). In this way, emotions can serve as incentives or deterrents for other people's behavior (Klinnert, Campos, Sorce, Emde, & Svejda, 1983): Negative emotions serve as a call for mental or behavioral adjustment, whereas positive emotions serve as a cue to stay the course (Cacioppo & Gardner, 1999).

This shift in focus from the intrapersonal effects to the interpersonal effects of emotions has resulted in a number of articles on different aspects of the interpersonal effects of emotions in negotiation (see, e.g., Barry, 1999; Barry & Oliver, 1996; Kopelman, Rosette, & Thompson, 2001; Sinaceur & Tiedens, 2004; Thompson et al., 2001; Van Kleef et al., 2004). Most relevant for our present purposes are the studies by Van Kleef et al. (2004) and Sinaceur and Tiedens (2004). In a computer-mediated negotiation task with a simulated opponent, Van Kleef et al. (2004, Experiment 1) provided participants with information about the opponent's emotional state (angry, happy, or no emotion) at three time points during the negotiation. Consistent with the social functions perspective outlined above, participants with an angry opponent placed lower demands and made larger concessions than did participants with a nonemotional opponent, whereas participants with a happy opponent placed higher demands and made smaller concessions. Sinaceur and Tiedens (2004) examined the effects of anger using a different paradigm and obtained similar results. In face-to-face negotiations, they instructed one negotiator in each dyad to show either anger or no emotion. In line with the results obtained by Van Kleef et al. (2004), Sinaceur and Tiedens found that participants conceded more to an angry as opposed to a nonemotional counterpart. Thus, results from research in different experimental settings (i.e., computer-mediated and face-to-face) point to the powerful social impact of anger and happiness on negotiation behavior. These findings are strongly compatible with the social functions perspective, because they show that anger triggers behavioral adjustment (i.e., larger concessions) by serving as a negative reinforcer of other people's behavior, whereas happiness triggers smaller concessions by serving as a positive reinforcer.

Furthering the understanding of the processes underlying the effects of anger and happiness, Van Kleef et al. (2004, Experiment 2) showed that these effects result from *tracking* (see Pruitt, 1981). Negotiators used their opponent's emotions to infer the location of his or her limits and subsequently used this information to make a counteroffer. In other words, negotiators who were confronted with an angry opponent estimated the opponent's limit to be high, and to avoid costly impasse, they placed low demands and made large concessions. Conversely, negotiators with a happy opponent judged the opponent's limit to be low, felt no need to concede to avoid impasse, and accordingly placed high demands and made small concessions. In conjunction with the previously described research on the social functions of emotions, these findings suggest that the interpersonal effects of anger and happiness are the result of a process of strategic decision making on the part of the emotion-perceiving negotiator. In other words, negotiators use the

information about the other's emotion to design their own negotiation strategy.

Negotiating is a complex and cognitively taxing venture. Negotiators need to keep in mind their own preferences and limits and, at the same time, monitor the opponent's behavior, try to locate his or her limits, and combine all this information to design an optimal strategy. The question that arises is whether negotiators are motivated to mobilize their scarce cognitive resources to pay attention to, scrutinize, and process the strategic information that is provided by the opponent's emotions. In the following section, we provide an overview of the literature pertaining to motivation and information processing in negotiations and propose that the degree to which negotiators will be influenced by their opponent's emotions will depend on their motivation to process the strategic information implicit in those emotions.

### Motivated Information Processing

According to so-called dual-process models, individuals can process information in either a quick, effortless, and heuristic way or in a more effortful, deliberate, and systematic manner (for overviews, see Chaiken & Trope, 1999; Kruglanski & Thompson, 1999; Smith & DeCoster, 2000). Whether individuals will engage in such systematic and thorough information processing depends on their *epistemic motivation*—the desire to develop and maintain a rich and accurate understanding of the world, including the negotiation task (De Dreu & Carnevale, 2003; Kruglanski, 1989; Kruglanski & Ajzen, 1983).

Epistemic motivation can be rooted in individual differences. For instance, individuals differ in their chronic need for cognitive closure (Kruglanski & Webster, 1996; Webster & Kruglanski, 1994). Individuals at the high need for closure end of the continuum are characterized by considerable cognitive impatience. They tend to process less information before committing to a position or a course of action, and they are likely to leap to judgment on the basis of incomplete information. Individuals low in need for closure, on the other hand, prefer to suspend judgment until they have processed all the available information or until time and energy are depleted (Kruglanski & Ajzen, 1983; Kruglanski & Webster, 1996; Mayseless & Kruglanski, 1987).

Epistemic motivation may also vary as a function of the situation. De Dreu and Carnevale's (2003) review of the literature suggests that epistemic motivation is increased when a task is perceived as attractive (Webster, 1993) or personally involving (Eagly & Chaiken, 1993; Petty & Cacioppo, 1986), when one is held accountable for one's judgments and decisions (Eagly & Chaiken, 1993; Lerner & Tetlock, 1999; Petty & Cacioppo, 1986; Tetlock, 1992), and when outcomes are framed as losses (De Dreu, Carnevale, Emans, & Van de Vliet, 1994; Dunegan, 1993). Examples of conditions that have been shown to decrease epistemic motivation include environmental noise (Kruglanski & Webster, 1991), mental fatigue (Webster, Richter, & Kruglanski, 1996), time pressure (De Dreu, 2003; Freund, Kruglanski, & Shpitajzen, 1985; Heaton & Kruglanski, 1991; Jamieson & Zanna, 1989; Kruglanski & Freund, 1983; Sanbomatsu & Fazio, 1990), and power (Fiske, 1993; Fiske & Dépret, 1996; Goodwin, Gubin, Fiske, & Yzerbyt, 2000; Neuberg & Fiske, 1987).

The consequences of having high versus low epistemic motivation have been investigated in a large number of contexts, resulting

in convergent evidence as to its effects on a multitude of dependent variables. Among other things, heightened epistemic motivation has been shown to stimulate hypothesis generation (Mayseless & Kruglanski, 1987), decrease the tendency to assimilate judgments to primed constructs (Ford & Kruglanski, 1995), decrease the selective use of information (Stuhlmacher & Champagne, 2000), reduce judgmental confidence (e.g., Kruglanski & Webster, 1991), discourage the use of stereotypes and heuristics (e.g., De Dreu, 2003; De Dreu, Koole, & Oldersma, 1999; Fiske & Neuberg, 1990; Kruglanski & Freund, 1983), focus information search on diagnostic rather than prototypical information (Kruglanski & Mayseless, 1988), decrease the support for chosen alternatives (Zakay, 1993), reduce the tendency to reject opinion deviates (Kruglanski & Webster, 1991), reduce the reliance on fixed-pie perceptions in negotiations (De Dreu, 2003; De Dreu, Koole, & Steinel, 2000), and increase the tendency to engage in systematic information processing (De Dreu, 2003; De Dreu et al., 1999; Mayseless & Kruglanski, 1987). This list is by no means exhaustive, but it suffices to characterize the general effect of epistemic motivation, which is to increase individuals' deliberate, thoughtful, and systematic information processing. This brief overview also reveals that previous research on epistemic motivation has not addressed the potential influence of these variables on the way in which individuals process and act on other people's *emotions*. The aim of the present research is to fill this void by investigating the moderating influence of epistemic motivation on the interpersonal effects of anger and happiness in negotiations.

### Present Research

Prior research by Van Kleef et al. (2004) on the interpersonal effects of anger and happiness on concession making suggests that these effects are mediated by cognitive processes that require some degree of information processing on the part of the emotion-perceiving negotiator. Negotiators monitor their opponent's emotions, use those emotions to estimate the opponent's limits, and modify their demands according to the presumed location of those limits. As a result, negotiators concede more to an angry opponent than to a happy one. Because of the cognitive nature of this process, it can be predicted that the effects of the opponent's emotions will be moderated by the focal negotiator's motivation to consider the strategic information that is provided by those emotions. Thus, the central proposition of the current research is that epistemic motivation determines the extent to which negotiators will be influenced by their opponent's emotions. Below we report three experiments that tested this proposition, each using a different operationalization of epistemic motivation. In Experiment 1, participants' dispositional need for cognitive closure was assessed, and they were subsequently confronted with an angry, a happy, or a nonemotional opponent. In Experiment 2, epistemic motivation was manipulated through time pressure, and participants negotiated with either an angry or a happy counterpart. Finally, in Experiment 3, epistemic motivation was manipulated by varying participants' power, and they were again confronted with an angry or a happy opponent. To further confidence in the generalizability of our theory and results, we decided to test our hypotheses within different populations (undergraduate students in Experiments 1 and 2 and managers from a variety of organizations in Experiment 3). To demonstrate that our findings are not limited to one partic-

ular experimental paradigm, we tested our theory using both laboratory experiments (Experiments 1 and 2) and a scenario study (Experiment 3).

### Experiment 1

Previous research has shown that negotiators with an angry opponent make lower demands than do those with a nonemotional opponent, whereas those with a happy opponent make higher demands (Sinaceur & Tiedens, 2004; Van Kleef et al., 2004). On the basis of the literature on epistemic motivation and information processing, we expected that this effect would be stronger for individuals low in dispositional need for cognitive closure (i.e., high epistemic motivation) than for individuals high in need for closure (i.e., low epistemic motivation). Furthermore, because of the nature of the emotion manipulation (see below), we expected that the effect of the opponent's emotion for participants with a low need for closure would become stronger after each negotiation round (cf. Van Kleef et al., 2004). Thus, we predicted a three-way interaction between the opponent's emotion, the participant's need for closure, and negotiation round, such that only participants with a low (as opposed to a high) need for closure would make lower demands to an angry opponent than to a happy one, and that this effect would become stronger after each consecutive round (Hypothesis 1).

### Method

#### *Participants and Experimental Design*

A total of 115 male and female undergraduate students at the University of Amsterdam participated either in partial fulfillment of a course requirement or for monetary compensation (10 Dutch guilders, approximately US\$4; participants who were paid did not differ in their responses from those who received course credits). The experimental design included the opponent's emotion (anger vs. happiness vs. no emotion) and the participant's need for cognitive closure (high vs. low) as between-participants variables and demand level as the main dependent variable. Participants were randomly assigned to the experimental conditions, and the experimenters were blind to this assignment.

#### *Procedure*

For each session, 6 to 8 participants were invited to the laboratory. On arrival, participants were welcomed to the experiment and seated in separate cubicles in front of a computer. From that point on, all instructions, questionnaires, and experimental tasks were presented on the computer screen. To facilitate the manipulation of the opponent's emotion (see below), the experimenter led participants to believe that the purpose of the study was to find out how knowledge about one's opponent's intentions affects negotiation processes in a situation in which the negotiating parties cannot see each other. Subsequently, they were instructed that they would engage in a computer-mediated negotiation with another participant (whose behavior was in fact simulated by the computer). The experiment consisted of four parts: the assessment of need for closure, a filler task, the negotiation, and a postnegotiation questionnaire.

*Assessment of need for closure.* Need for closure was assessed through a validated (De Dreu et al., 1999) Dutch translation of the original Need for Cognitive Closure Scale (NFCS) developed by Webster and Kruglanski (1994). Participants received a 42-item questionnaire to be scored on 5-point Likert scales (1 = *totally disagree* to 5 = *totally agree*). The questionnaire was introduced as a pilot study of the ways people think

about different situations. Examples of items from the NFCS are (a) "I think that having clear rules and order at work is essential for success," (b) "I don't like to go into a situation without knowing what I can expect from it," (c) "I usually make important decisions quickly and confidently," (d) "I like to know what people are thinking all the time," and (e) "I do not usually consult many different opinions before forming my own view." To reduce possible carryover effects from the need for closure assessment onto the negotiation task, we then gave participants a 5-min filler task that consisted of a number of unrelated questions. After these questions had been answered, the negotiation task was introduced.

**Negotiation task.** The negotiation task was one previously used by Van Kleef et al. (2004) and adapted from De Dreu and Van Lange (1995; see also Hilty & Carnevale, 1993). The task captures the main characteristics of real-life negotiation (i.e., multiple issues differing in utility to the negotiator, information about one's own payoffs only, and the typical offer-counteroffer sequence). In the current version, participants learned that they would be assigned the role of either buyer or seller of a consignment of mobile phones (all participants were assigned to the seller role) and that their objective was to negotiate the price, the warranty period, and the duration of the free-service contract of the phones. Participants were then presented with a payoff chart (see Table 1) that showed them which outcomes were most favorable to them, and they were told that their objective was to earn as many points as possible. As can be seen in Table 1, price for Level 9 (\$110) yielded a 0 payoff and for Level 1 (\$150) yielded a 400 payoff (i.e., increments of 50 points per level). For warranty period, Level 9 (9 months) yielded a 0 payoff, and Level 1 (1 month) yielded a 120 payoff (i.e., increments of 15 points per level). Finally, for duration of service contract, Level 9 (9 months) yielded a 0 payoff, and Level 1 (1 month) yielded a 240 payoff (i.e., increments of 30 points per level). Participants were told, "You can see that the best deal for you is 1-1-1, for a total outcome of 760 points (400 + 120 + 240)." The corresponding payoff table for the other party was not displayed, and participants were told only that it differed from their own.

To enhance participants' involvement in the negotiation task, they were informed that points would be converted to lottery tickets at the end of the experiment, and the more points earned, the more lottery tickets obtained, and the greater the chance of winning a 100-guilder (approximately US\$40) prize. To emphasize the mixed-motive nature of the negotiation, participants were told that only those who reached an agreement would participate in the lottery. Thus, on the one hand there was an incentive to earn as many points as possible, whereas on the other hand there was an incentive to reach an agreement.

After a short pause during which the computer supposedly assigned buyer and seller roles to the participants, all participants were assigned the role of seller. They were told that the buyer (i.e., the opponent) would make

the first offer and the negotiation would continue until an agreement was reached or until time ran out. Just before the negotiation started, participants learned that an additional goal of the study was to examine the effects of having versus not having information about the opposing negotiator's intentions. They read that the computer had randomly determined that they would receive information about the intentions of the opponent without the opponent knowing it and that the opponent would not receive information about their intentions.

After these instructions, the negotiation started and the buyer (i.e., the computer) made a first offer. Over the negotiation rounds the buyer proposed the following levels of agreement (for price – warranty – service): 8-7-8 (Round 1), 8-7-7 (Round 2), 8-6-7 (Round 3), 7-6-7 (Round 4), 7-6-6 (Round 5), and 6-6-6 (Round 6). Past research has shown that this preprogrammed strategy has face validity and is seen as intermediate in cooperativeness and competitiveness (De Dreu & Van Lange, 1995). A demand by the participant was accepted if it equaled or exceeded the offer the computer was about to make in the next round. Thus, for example, if the participant demanded 7-6-6 in Round 4, this demand was accepted by the computer since its next offer (in Round 5) would have been 7-6-6. After the sixth round, the negotiation was interrupted regardless of whether participants had reached an agreement (cf. De Dreu & Van Lange, 1995; Van Kleef et al., 2004). Following Tripp and Sondak (1992), participants who reached an agreement before Round 6 ( $n = 10$ ) were excluded from the sample to allow for repeated-measures analyses. (However, retaining these participants yielded a similar pattern of results.)

**Manipulation of the opponent's emotion.** In the current research, we chose to manipulate the opposing negotiator's emotion in the context of a computer-mediated negotiation in which parties could not see each other and communicated via computers (see, e.g., De Dreu & Van Lange, 1995; Hilty & Carnevale, 1993; Moore, Kurtzberg, Thompson, & Morris, 1999). Participants were led to believe that the purpose of the study was to find out how knowledge about one's opponent's intentions affects negotiation processes and outcomes. After the first, third, and fifth negotiation rounds, participants received information about "the intentions of the buyer," which contained the manipulation of the buyer's emotion. Participants had to wait for about 1.5 min while the buyer was supposedly asked to reveal what he or she intended to offer in the next round and why. After this short wait, participants received the answer supposedly given by the buyer, which was presented in a separate box, in a different font, and contained some minor typing errors to enhance experimental realism. The buyer's intentions were held constant across conditions and contained the buyer's intended offer for the next round. That is, after Round 1 the buyer wrote "I think I will offer 8-7-7," which would indeed be the buyer's next offer. The buyer's intention information also contained an emotional statement which constituted the experimental manipulation. It was stressed that the buyer did not know that his or her "intentions" were revealed to the participant. This was done to lead the participant to believe that he or she was receiving information about the *real* emotions of the opponent and not faked, inhibited, or exaggerated emotions. Thus, participants were led to believe that the emotion statements they received reflected the emotions as experienced by the opponent at that time and not emotions that were altered for self-presentational or strategic reasons.

After the first negotiation round, participants in the angry-opponent condition received the following information: "This offer makes me really angry," followed by the intention statement "I think I will offer 8-7-7," which was the same for all conditions. In the happy opponent condition, participants read "I am happy with this offer," followed by the same intention statement. In the control condition, participants only received the intention statement. After the third and fifth negotiation rounds participants again received an emotional statement and an intention. Table 2 displays all statements used in the experiment. (Note that the intended offer always matched the true offer subsequently made by the opponent.) The emotional statements have been successfully pretested and used in previous research

Table 1  
*Participants' Payoff Chart*

Level	Price of phones		Warranty period		Service contract	
	Price (\$)	Payoff	Warranty	Payoff	Service	Payoff
1	150	400	1 month	120	1 month	240
2	145	350	2 months	105	2 months	210
3	140	300	3 months	90	3 months	180
4	135	250	4 months	75	4 months	150
5	130	200	5 months	60	5 months	120
6	125	150	6 months	45	6 months	90
7	120	100	7 months	30	7 months	60
8	115	50	8 months	15	8 months	30
9	110	0	9 months	0	9 months	0

*Note.* Prices in Dutch guilders were converted to U.S. dollars and rounded to the nearest US\$5.

Table 2  
*Statements Used for the Manipulation of the Opponent's  
 Emotion in Experiments 1 and 2*

Opponent's emotion	Statement
After Round 1	
Angry	This offer makes me really angry, I think I will offer 8-7-7.
Happy	I am happy with this offer, I think I will offer 8-7-7.
Nonemotional	I think I will offer 8-7-7.
After Round 3	
Angry	This is really getting on my nerves. I am going to offer 7-6-7.
Happy	This is going pretty well so far. I am going to offer 7-6-7.
Nonemotional	I am going to offer 7-6-7.
After Round 5	
Angry	I am going to offer 6-6-6, because this negotiation pisses me off.
Happy	I am going to offer 6-6-6, because I feel good about this negotiation.
Nonemotional	I am going to offer 6-6-6.

*Note.* Statements were pretested and have been translated from Dutch. Deliberate typing errors were left out.

(see Van Kleef et al., 2004), and they have yielded results that have been replicated in a face-to-face setting (Sinaceur & Tiedens, 2004). Therefore, we are confident about the external validity of the findings obtained within this paradigm. We return to this method, and its advantages and disadvantages, in the General Discussion.

**Dependent measures.** The main dependent variable was level of demand in Rounds 1 through 6. To check the adequacy of the manipulation of the opponent's emotion, participants were asked to indicate on a 7-point scale how angry, irritated, happy, and satisfied they thought their opponent had been during the negotiation (e.g., "The opponent appeared angry during the negotiation," 1 = *totally disagree* to 7 = *totally agree*). The items designed to measure perceived anger and irritation correlated substantially ( $r = .84$ ) and were combined into a single index of perception of the opponent's anger. Similarly, the items pertaining to happiness and satisfaction were combined into an index of perception of the opponent's happiness ( $r = .77$ ).

## Results

### Treatment of the Data

Following Kruglanski et al.'s (1997) recommendation, we combined the responses on the 42 items of the NFCS into an aggregate score, on which a median split was performed. The NFCS has good internal reliability ( $\alpha = .83$ ), and the median split ( $Mdn = 2.95$ ) yielded 13 to 20 participants per condition. Overall ratings on the NFCS did not differ across the three emotion conditions (anger:  $M = 2.89$ ,  $SD = 0.33$ ; happiness:  $M = 2.90$ ,  $SD = 0.43$ ; no emotion:  $M = 3.02$ ,  $SD = 0.34$ ),  $F(2, 102) = 1.39$ , *ns*.

The offers made by participants in each round were transformed into an index revealing the negotiator's total level of demand for each negotiation round (i.e., the number of points demanded in that round, summed across the three negotiation issues of price, warranty, and service; see Table 1). All analyses were computed using the full-factorial design.

### Manipulation Check

If the manipulation of the opponent's emotion was successful, we should find an interaction between the opponent's emotion and the participant's rating of their opponent's emotion, such that ratings *within* each emotion condition are higher for the corresponding emotion than for the other emotion (i.e., a within-participants manipulation check) and that ratings *between* the emotion conditions are higher for the intended emotion than for the other emotion (i.e., a between-participants check). To test whether this was the case, we submitted participants' perceptions of the opponent's emotion to a 3 (opponent's emotion: angry vs. happy vs. nonemotional)  $\times$  2 (participant's perception of the opponent's emotion: angry vs. happy) mixed-model analysis of variance with repeated measures on the second factor. (Need for closure was also included as an independent variable in the analysis, but yielded no significant effects.)

Results showed the predicted interaction between the opponent's emotion and the participants' perception of the opponent's emotion,  $F(2, 99) = 122.45$ ,  $p < .01$  ( $\eta^2 = .71$ ). Participants in the angry-opponent condition rated the opponent as significantly more angry ( $M = 5.71$ ,  $SD = 1.64$ ) than did participants in the happy opponent ( $M = 1.91$ ,  $SD = 0.90$ ) or nonemotional opponent ( $M = 2.81$ ,  $SD = 1.12$ ) conditions, all three means differing from each other at  $p < .05$  according to a Tukey's honestly significant difference (HSD) multiple-range test. Similarly, participants with a happy opponent rated the opponent as happier ( $M = 5.20$ ,  $SD = 1.22$ ) than did participants with an angry ( $M = 1.81$ ,  $SD = 0.86$ ) or a nonemotional ( $M = 3.48$ ,  $SD = 1.15$ ) opponent. Again, all three means differed from each other at  $p < .05$ . Further, paired-sample *t* tests revealed that ratings within the different emotion conditions were indeed higher for the intended emotion than for the other emotion: Participants in the angry-opponent condition rated their opponents as more angry than happy ( $M = 5.71$  vs.  $M = 1.81$ ),  $t(34) = 10.20$ ,  $p < .01$ , and those in the happy opponent condition rated their opponents as more happy than angry ( $M = 5.20$  vs.  $M = 1.91$ ),  $t(37) = 10.76$ ,  $p < .01$ . In the nonemotional opponent condition there was no significant difference. Analysis of variance (ANOVA) revealed no main effect of the opponent's emotion and no interaction,  $F_s < 1$ , *ns*. Together, these results indicate that the manipulation of the opponent's emotion was successful.

### Demand Level

Demands in Rounds 1 through 6 were submitted to a 3 (opponent's emotion: anger vs. happiness vs. no emotion)  $\times$  2 (participant's need for closure: high vs. low) mixed-model ANOVA with the opponent's emotion and participant's need for closure as between-participants variables and demands in Rounds 1 through 6 as a repeated-measures variable (a regression analysis with need for closure as a continuous variable yielded results similar to those reported below). Recall that we predicted a three-way interaction between the opponent's emotion, the participant's need for closure, and negotiation round, such that participants with a low (as opposed to a high) need for closure would make lower demands with an angry opponent than with a happy opponent and that this effect would increase over time (cf. Van Kleef et al., 2004). To facilitate understanding of our findings, we first report main effects

and lower order interactions, and then turn to the results pertaining to Hypothesis 1.

**Preliminary analyses.** First, ANOVA yielded a main effect of negotiation round,  $F(5, 495) = 253.41, p < .01$  ( $\eta^2 = .72$ ), indicating that participants' demands declined over time (Round 1:  $M = 656, SD = 74$ ; Round 2:  $M = 596, SD = 83$ ; Round 3:  $M = 556, SD = 87$ ; Round 4:  $M = 522, SD = 90$ ; Round 5:  $M = 498, SD = 99$ ; Round 6:  $M = 480, SD = 104$ ). This main effect reflects negotiators' tendency to decrease their demands in the course of the negotiation.

Second, we obtained a significant interaction between the opponent's emotion and negotiation round,  $F(10, 495) = 2.73, p < .01$  ( $\eta^2 = .08$ ). Inspection of the means indicated that participants with an angry opponent conceded most between the first and sixth negotiation rounds (distance traveled:  $M = 205, SD = 87$ ), followed by participants with nonemotional opponents (distance traveled:  $M = 173, SD = 88$ ). Smallest concessions were made by participants who negotiated with a happy opponent (distance traveled:  $M = 151, SD = 90$ ). This finding replicates previous research by Van Kleef et al. (2004).

Third, the analysis yielded a marginally significant interaction between the opponent's emotion and need for closure,  $F(2, 99) = 2.43, p < .10$  ( $\eta^2 = .05$ ). Simple-effects analysis revealed a significant multivariate effect of the opponent's emotion for participants with a low need for closure, indicating that participants with an angry counterpart placed lower average demands than did those with a happy counterpart ( $M = 513, SD = 86$ , and  $M = 593, SD = 71$ , respectively),  $F(2, 99) = 5.58, p < .01$  ( $\eta^2 = .18$ ). Participants with a nonemotional opponent took an intermediate position ( $M = 573, SD = 72$ ) that did not differ significantly from the other two conditions according to a Tukey's HSD multiple-range test. Simple-effects analysis revealed no effect of the opponent's emotion for participants with a high need for closure ( $542 < Ms < 553, 54 < SDs < 94$ ),  $F(2, 99) < 1, ns$ .

**Hypothesis test.** As hypothesized, the effects described above were qualified by a significant three-way interaction between the opponent's emotion, the participant's need for closure, and negotiation round,  $F(10, 495) = 2.09, p < .03$  ( $\eta^2 = .06$ ), indicating

that the interactive effect of the opponent's emotion and negotiation round on level of demand is moderated by participant's need for cognitive closure. In accordance with Hypothesis 1, simple-effects analyses showed that the interaction between the opponent's emotion and negotiation round was significant for participants with a low need for closure,  $F(10, 495) = 3.07, p < .01$  ( $\eta^2 = .12$ ), but not for participants with a high need for closure,  $F(10, 495) = 1.23, ns$ . As can be seen from Figure 1, participants with a low need for closure were strongly influenced by the opponent's emotion, causing the different emotion conditions to diverge more after each consecutive round. Planned comparisons revealed that by Round 6 all contrasts were significant and in the predicted direction: Participants made lower demands to an angry opponent than to a nonemotional one ( $M = 431$  and  $SD = 80$  vs.  $M = 488$  and  $SD = 115$ ),  $t(49) = 1.64, p < .05$  (one-tailed), and they made higher demands to a happy opponent than to a nonemotional one ( $M = 549$  and  $SD = 103$  vs.  $M = 488$  and  $SD = 115$ ),  $t(49) = 1.72, p < .05$  (one-tailed). As expected, participants with a high need for closure were unaffected by the opponent's emotion (both  $ts < 1, ns$ ).

### Discussion

The results of Experiment 1 replicate and extend previous findings. First, we replicated Van Kleef et al.'s (2004) finding that negotiators make lower demands to an angry opponent than to a happy one and that this effect increases over rounds. Furthermore, this effect was qualified by the predicted interaction with need for cognitive closure. Participants with a low need for closure were strongly affected by the opponent's emotion, but those with a high need for closure remained unaffected. These results are consistent with the assertion that negotiators need to be motivated to consider the opponent's emotions, and process the strategic information that they provide, to be influenced by them. As such, the present findings are in line with a motivated information processing model of the interpersonal effects of emotions.

A limitation of Experiment 1 is that epistemic motivation was measured (by means of need for closure) rather than manipulated.

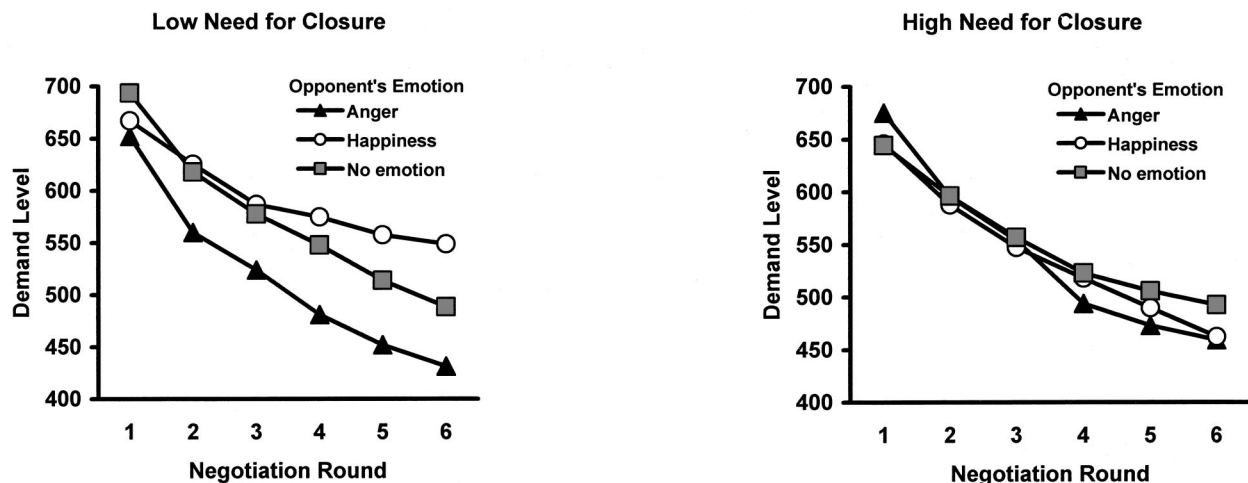


Figure 1. Demand level as a function of the opponent's emotion, participants' need for cognitive closure, and negotiation round in Experiment 1.

Thus, although the results are consistent with our theory, we cannot rule out the possibility that they are caused by some unknown third variable that we did not take into account. Furthermore, the fact that need for cognitive closure was assessed prior to the negotiation task carries with it the possibility that, in spite of the filler task, participants' responses to the NFC questionnaire may have carried over to the negotiation task and influenced their behavior. Finally, Experiment 1 provides no direct evidence for the mediating role of information processing. To overcome these limitations, we conducted a second experiment in which epistemic motivation was manipulated (through time pressure, see below), and information processing was measured.

## Experiment 2

The first objective of Experiment 2 was to replicate the findings obtained in Experiment 1 in a context with situationally induced epistemic motivation. Of the many variables that affect epistemic motivation, time pressure is one of the most well-known (De Dreu, 2003; Freund et al., 1985; Heaton & Kruglanski, 1991; Jamieson & Zanna, 1989; Kruglanski & Freund, 1983; Sanbomatsu & Fazio, 1990). Kruglanski and Freund (1983) reviewed evidence suggesting that time pressure intensifies the tendency to seek cognitive closure, which negatively affects information processing depth and causes individuals to fall prey to, among other things, primacy effects, ethnic stereotyping, and numerical anchoring. In a negotiation study, De Dreu (2003) showed that time pressure reduces individuals' (self-reported) motivation to process information and increases the reliance on inadequate decision heuristics. On the basis of these findings and the results of Experiment 1, we hypothesized that time pressure would moderate the interpersonal effects of anger and happiness on concession making. Thus, we predicted that, over negotiation rounds, negotiators would make increasingly lower demands to an angry opponent than to a happy opponent, but only under low (rather than high) time pressure (Hypothesis 2).

The second objective was to shed more light on the process underlying the moderating effect of epistemic motivation. As discussed in the introduction, research has shown that under high time pressure less systematic information processing takes place (e.g., Carnevale, O'Connor, & McCusker, 1993; De Dreu, 2003; Kruglanski & Freund, 1983). Consistent with this finding, research on time pressure in negotiation has documented that high levels of time pressure typically result in less integrative agreements (e.g., Carnevale & Lawler, 1986; Druckman, 1994; Pruitt & Drews, 1969; Yukl, Malone, Hayslip, & Pamin, 1976), reflecting the fact that information about the other party's preferences is less well processed under conditions of high time pressure. In a similar vein, De Dreu (2003) found that time pressure promoted a motivated closing of the mind, which resulted in a reduced motivation to encode new, relevant information about the opponent's preferences and priorities. Together, these findings strongly suggest that negotiators are less likely to engage in systematic information processing when there is high rather than low time pressure. Thus, building on the assumption that negotiators need to process the information that is provided by the opponent's emotions to be influenced by them, we predicted that the interpersonal effects of anger and happiness on participants' concessions in the course of the negotiation ("distance traveled") would be moderated by time

pressure (cf. Hypothesis 2) and that this moderating effect would in turn be mediated by participants' degree of information processing (Hypothesis 3).

## Method

### Participants and Experimental Design

A total of 103 male and female undergraduate students at the University of Amsterdam participated in the study either in partial fulfillment of a course requirement or for monetary compensation (7 euros, approximately US\$7; participants who received monetary compensation did not differ in their responses from those who received course credits). The  $2 \times 2$  factorial design included the emotion of the opponent (anger vs. happiness) and time pressure (high vs. low) as between-participants variables and demand level as the main dependent variable. The participants were randomly assigned to the experimental conditions.

### Procedure

The procedure was the same as in Experiment 1, except for the fact that need for closure was manipulated through time pressure, rather than measured. Twelve participants reached an agreement before the sixth round of the negotiation and were dropped from the analyses (cf. Tripp & Sondak, 1992). However, including these participants in the analyses did not change the pattern of results.

*Manipulation of time pressure.* Before the start of the negotiation, participants were told that they would be allowed 10 min to complete the negotiation. In the low time pressure condition, it was added that past research using this negotiation task had shown that 10 min is "plenty of time to reach an agreement" and that there is "no need to hurry." In the high time pressure condition, participants were told that past research had shown that 10 min is "barely enough time" to reach an agreement and that they should "keep this in mind" during the negotiation. Just before the negotiation started, this information was briefly repeated ("You have 10 minutes to reach an agreement, which is [plenty of time] / [rather tight]"). Similar manipulations of time pressure have been successfully used in the past by De Dreu (2003) and Mosterd and Rutte (2000).

*Dependent measures.* As in Experiment 1, participants' demands in Rounds 1 through 6 were transformed into an index of the participant's total level of demand in each round. Additionally, participants completed a postnegotiation questionnaire, which included manipulation checks as well as a number of items designed to measure participants' appraisal of the opponent's limit, information processing, and, for exploratory purposes, satisfaction with the negotiation and willingness to engage in future interaction. All items were scored on 7-point Likert scales, ranging from 1 = *totally disagree* to 7 = *totally agree* (except where otherwise indicated).

Compared with Experiment 1, we used two additional items for the manipulation check of the opponent's emotion ("The opponent appeared aggravated during the negotiation" and "The opponent appeared joyful during the negotiation"). Thus, participants' perceptions of the opponent's anger were now measured with three items, which were averaged into a single index of perception of the opponent's anger ( $\alpha = .95$ ). Participants' perceptions of the opponent's happiness were also measured with three items, which were combined into an index of perception of the opponent's happiness ( $\alpha = .93$ ).

The manipulation of time pressure was checked with six items. We included one item to check whether participants correctly recalled the instructions they had received regarding negotiation time ("According to prior research, is 10 minutes usually enough time to complete the negotiation?"; 1 = *definitely not* to 7 = *definitely*). The remaining five items measured to what extent participants actually experienced time pressure during the negotiation (e.g., "During the negotiation I felt that I had only

limited time to think"; "During the negotiation I had enough time to make my decisions," reverse scored; "During the negotiation I felt that I had to hurry"). The five items were combined into an Experienced Time Pressure Scale ( $\alpha = .91$ ).

Participants' estimates of the opponent's limits were measured using six items, two for each issue ("What do you think was the buyer's lowest acceptable offer on [price / warranty / service]?"; "How far do you think the buyer would be prepared to go on [price / warranty / service]?"). Responses could range from 1 (*extremely low limit*) to 9 (*extremely high limit*; see Table 1). The six items were averaged into a single index of appraisal of the opponent's limit ( $\alpha = .84$ ).

Information processing was assessed by eight items (e.g., "During the negotiation, I hardly thought about my demands," reverse scored; "During the negotiation, I paid a lot of attention to the information about the buyer's intentions"; "During the negotiation, I made my decisions without thinking too much," reverse scored; "During the negotiation, I tried to consider all the available information before placing a demand"). The items were averaged into an index of participant's information processing ( $\alpha = .77$ ).<sup>1</sup> As a more indirect and unobtrusive measure of information processing, we also calculated the net amount of time participants spent negotiating. This was done by recording the total negotiation time (in seconds) over the six rounds of the negotiation and then subtracting forced waiting times. The resulting index provides an objective indication of the amount of time participants spent thinking about their opponent's emotion and about their own strategy. This index was significantly positively correlated with self-reported information processing ( $r = .34, p < .01$ ).

Participants' satisfaction with the negotiation was measured by two items ("I am satisfied with the course of the negotiation" and "I have a good feeling about the negotiation"), resulting in a two-item index of satisfaction with the negotiation ( $r = .71$ ). Willingness to engage in future interaction with the opponent was assessed with three items ("I would be interested in negotiating again with this buyer"; "I would like to avoid future negotiation with the buyer," reverse scored; "I would like to do business with the same buyer in the future"). These three items were combined into an index of desire for future interaction ( $\alpha = .86$ ).

## Results

### Manipulation Checks

**Opponent's emotion.** The adequacy of the manipulation of the opponent's emotion was checked in the same way as in Experiment 1. Thus, we conducted a 2 (opponent's emotion: angry vs. happy)  $\times$  2 (participant's perception of opponent's emotion: angry vs. happy) ANOVA, with repeated measures on the second variable. (Time pressure was also included in the analysis; this yielded no significant effects.) Again, results revealed an interaction between the opponent's emotion and participants' perceptions of the opponent's emotion,  $F(1, 87) = 300.60, p < .01$  ( $\eta^2 = .78$ ). Participants in the angry-opponent condition rated their opponents as significantly more angry ( $M = 5.74, SD = 1.26$ ) than did those in the happy-opponent condition ( $M = 1.99, SD = 0.94$ ). Similarly, participants with a happy opponent rated the opponent as happier ( $M = 4.78, SD = 1.14$ ) than did those with an angry opponent ( $M = 1.96, SD = 0.78$ ). Furthermore, paired-sample  $t$  tests showed that participants in the angry-opponent condition rated the opponent as more angry than happy ( $M = 5.74$  vs.  $M = 1.96$ ),  $t(43) = 14.07, p < .01$ , and that participants in the happy-opponent condition rated the opponent as more happy than angry ( $M = 4.78$  vs.  $M = 1.99$ ),  $t(48) = 10.74, p < .01$ .

**Time pressure.** The adequacy of the time pressure manipulation was checked using the instruction check and the experienced

time pressure index. ANOVA on the instruction check revealed that participants in the low time pressure condition thought that 10 min would be plenty of time to complete the negotiation ( $M = 6.31, SD = 1.10$ ), whereas those in the high time pressure condition thought that 10 min would be rather tight ( $M = 2.03, SD = 1.14$ ),  $F(1, 87) = 327.79, p < .01$  ( $\eta^2 = .79$ ). Furthermore, ANOVA on the experienced time pressure index showed that participants in the high time pressure condition actually experienced more time pressure ( $M = 4.21, SD = 1.42$ ) than did participants in the low time pressure condition ( $M = 2.44, SD = 1.12$ ),  $F(1, 87) = 8.53, p < .01$  ( $\eta^2 = .09$ ). We found no main effect of emotion and no interaction. Thus, it can be concluded that the manipulation of time pressure was successful.

### Demand Level

Demands in Rounds 1 to 6 were submitted to a 2 (opponent's emotion: anger vs. happiness)  $\times$  2 (time pressure: high vs. low) mixed-model ANOVA with the opponent's emotion and time pressure as between-participants variables and demands in Rounds 1 to 6 as a repeated-measures variable. Hypothesis 2 predicted a three-way interaction between the opponent's emotion, time pressure, and negotiation round, such that over time participants would make increasingly lower demands when dealing with an angry as opposed to a happy opponent, but only under low (rather than high) time pressure. As in Experiment 1, we first report lower order effects, and subsequently, we turn to the actual hypothesis tests.

**Preliminary analyses.** As in Experiment 1, ANOVA revealed the typical main effect of negotiation round,  $F(5, 435) = 181.63, p < .01$  ( $\eta^2 = .68$ ), indicating that participants' demands declined over time (Round 1:  $M = 645, SD = 83$ ; Round 2:  $M = 581, SD = 91$ ; Round 3:  $M = 537, SD = 90$ ; Round 4:  $M = 513, SD = 89$ ; Round 5:  $M = 485, SD = 94$ ; Round 6:  $M = 459, SD = 92$ ).

Further, ANOVA yielded a significant interaction between the opponent's emotion and negotiation round,  $F(5, 435) = 2.44, p < .05$  ( $\eta^2 = .04$ ). Consistent with previous research by Van Kleef et al. (2004) and with the results of Experiment 1, participants with an angry opponent conceded more in the course of the negotiation (distance traveled:  $M = 209, SD = 98$ ) than did participants with a happy opponent (distance traveled:  $M = 165, SD = 102$ ).

Finally, results showed a marginally significant interaction between the opponent's emotion and time pressure,  $F(1, 87) = 2.83, p < .10$  ( $\eta^2 = .04$ ). Simple-effects analysis revealed a significant multivariate effect of the opponent's emotion in the low time pressure condition, indicating that average demands in Rounds 1 to 6 were lower for participants who negotiated with an angry opponent than for those who dealt with a happy opponent ( $M = 519, SD = 64$ , and  $M = 556, SD = 92$ , respectively),  $F(1, 87) = 2.88, p < .05$  ( $\eta^2 = .05$ ). In the high time pressure condition, there was

<sup>1</sup> A confirmatory factor analysis revealed that experienced time pressure and information processing are separate constructs. The five items designed to measure experienced time pressure loaded on one factor, with factor loadings ranging from .83 to .90 and discriminant factor loadings ranging from  $-.17$  to  $.11$ . The eight items measuring information processing all loaded on the other factor, with factor loadings between  $.51$  and  $.89$  and discriminant coefficients between  $-.15$  and  $.05$ .



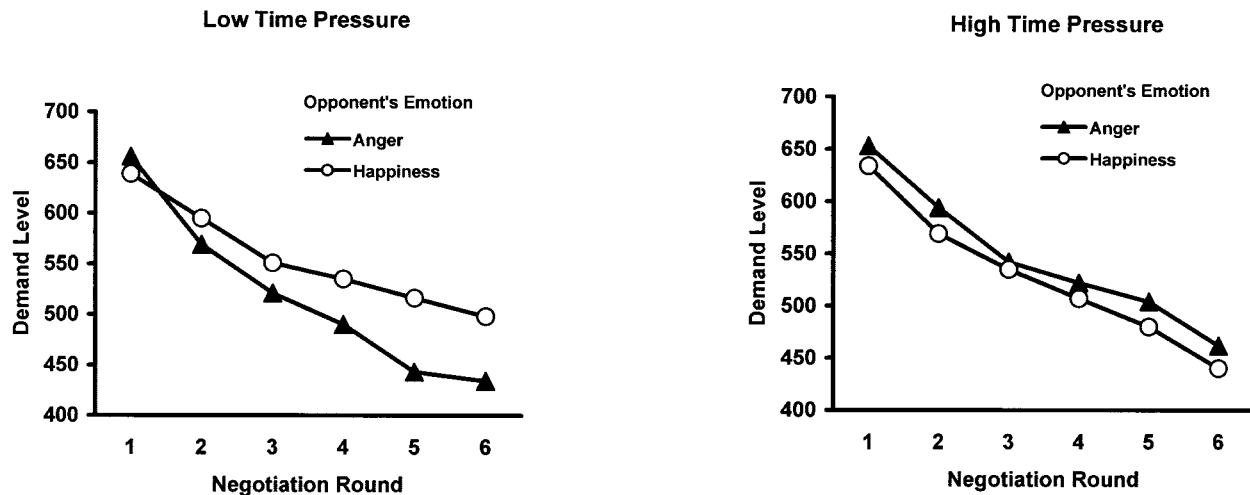


Figure 2. Demand level as a function of the opponent's emotion, time pressure, and negotiation round in Experiment 2.

no significant effect of the opponent's emotion on demands ( $M = 546$ ,  $SD = 78$  and  $M = 528$ ,  $SD = 74$ ),  $F(1, 87) < 1$ , *ns*.

**Hypothesis test.** As predicted, ANOVA produced a significant three-way interaction between the opponent's emotion, time pressure, and negotiation round,  $F(5, 435) = 2.84$ ,  $p < .02$  ( $\eta^2 = .05$ ). Consistent with Hypothesis 2, simple-effects analysis revealed a highly significant Emotion  $\times$  Round interaction in the low time pressure condition,  $F(5, 435) = 5.78$ ,  $p < .01$  ( $\eta^2 = .20$ ) but not in the high time pressure condition,  $F(5, 435) < 1$ , *ns*. As can be seen from Figure 2, under low time pressure participants conceded more to an angry opponent than to a happy one, whereas under high time pressure there was no difference.

To facilitate mediation analysis (see below), we also analyzed the demand-level data by calculating a distance-traveled index (demand in Round 1 – demand in Round 6; for discussions, see De Dreu et al., 1999, and Pruitt, 1981). This distance-traveled index yielded results similar to those described above. A marginally significant main effect of the opponent's emotion showed that participants with an angry opponent conceded more between the first and sixth rounds than did those with a happy opponent ( $M = 209$ ,  $SD = 98$  vs.  $M = 165$ ,  $SD = 102$ ),  $F(1, 87) = 3.44$ ,  $p < .07$  ( $\eta^2 = .04$ ), and this main effect was qualified by a significant interaction between emotion and time pressure,  $F(1, 87) = 3.94$ ,  $p < .05$  ( $\eta^2 = .05$ ). Simple-effects analysis revealed that participants who negotiated under low time pressure were strongly influenced by the opponent's emotions, conceding more to an angry opponent than to a happy one ( $M = 222$ ,  $SD = 83$  vs.  $M = 141$ ,  $SD = 86$ ),  $F(1, 87) = 8.54$ ,  $p < .01$  ( $\eta^2 = .19$ ). By contrast, participants who negotiated under high time pressure remained unaffected by the opponent's emotion ( $M = 191$ ,  $SD = 116$ , and  $M = 194$ ,  $SD = 114$ , respectively),  $F(1, 87) < 1$ , *ns*.<sup>2</sup>

### Information Processing

In line with Hypothesis 3, ANOVA showed that information processing was affected by time pressure. As predicted, participants in the low time pressure condition reported more information

processing than did participants in the high time pressure condition ( $M = 4.49$ ,  $SD = 0.51$  vs.  $M = 3.61$ ,  $SD = 0.57$ ),  $F(1, 87) = 7.89$ ,  $p = .01$  ( $\eta^2 = .08$ ). ANOVA revealed no main effect of the opponent's emotion and no interaction,  $F_s < 1$ , *ns*. Analysis of the time consumed index revealed that participants in the high time pressure condition spent less time thinking ( $M = 131$ ,  $SD = 47$ ) than did those in the low time pressure condition ( $M = 160$ ,  $SD = 84$ ),  $F(1, 87) = 3.86$ ,  $p < .05$  ( $\eta^2 = .05$ ). There was no effect of emotion on time consumed ( $F < 1$ , *ns*) and no interaction ( $F = 1.80$ , *ns*). We also analyzed participants' appraisal of the opponent's limits as an indirect way of assessing their degree of information processing (cf. Van Kleef et al., 2004). This analysis revealed a marginally significant main effect of the opponent's emotion, showing that participants with an angry opponent judged the other's limit to be higher ( $M = 4.97$ ,  $SD = 0.63$ ) than did those with a happy opponent ( $M = 4.76$ ,  $SD = 0.90$ ),  $F(1, 87) = 3.06$ ,  $p = .084$  ( $\eta^2 = .03$ ). More important, the analysis revealed a significant interaction between the opponent's emotion and time pressure,  $F(1, 87) = 6.47$ ,  $p < .02$  ( $\eta^2 = .07$ ). Simple-effects analyses showed that participants' estimates of the opponent's limits were strongly influenced by the opponent's emotion in the low time pressure condition ( $M = 5.28$  and  $SD = 0.47$  for anger vs.  $M = 4.58$  and  $SD = 0.91$  for happiness),  $F(1, 87) = 7.75$ ,  $p < .01$  ( $\eta^2 = .19$ ) but not in the high time pressure condition ( $M = 4.77$  and  $SD = 0.64$  for anger vs.  $M = 4.90$  and  $SD = 0.88$  for happiness),  $F(1, 87) < 1$ , *ns*. This finding provides additional evidence for the validity of the information processing measure because it suggests that participants under high time pressure thought less deeply about the other's emotion than did those under low time pressure.

<sup>2</sup> Analysis of covariance with the opponent's emotion and time pressure as the independent variables, demand in Round 6 as the dependent variable, and demand in Round 1 as a covariate produced similar results.

### Mediation Analysis

Hypothesis 3 predicted that time pressure would moderate the effects of the opponent's emotion on participants' concession making through its impact on participants' degree of information processing. To test this hypothesis, we conducted a series of regression analyses, using the distance-traveled index as the dependent variable. This index was preferred over an average-demand index because it captures the decrease in demands over the course of the negotiation, and as such, it is more compatible with the three-way interaction between emotion, time pressure, and negotiation round. Furthermore, average demand is a highly conservative measure, because it includes the first negotiation round where no effects are to be expected (since the first emotion manipulation is introduced after Round 1). ANOVAs on the distance-traveled index produced results that are fully compatible with the repeated-measures analyses (see above), and therefore we are confident that the index constitutes a valid measure of concession behavior.

To test the predicted pattern of mediation (see Figure 3), we followed R. M. Baron and Kenny's (1986) procedure, performing three separate regression analyses. Because the original predictor (time pressure) is interactively related to the dependent variable (distance traveled), the proposed mediator (information processing) is also interactively related to the dependent variable (Hull, Tedlie, & Lehn, 1992). The proper control is then formed by taking the "covariate interaction" between the mediator (information processing) and the independent variable (opponent's emotion). To establish mediation, we should find a main effect of time pressure on information processing and an interaction between the opponent's emotion and time pressure on distance traveled. Finally, the

interaction between the opponent's emotion and time pressure should be significantly reduced when the covariate interaction (opponent's emotion by information processing) is controlled for (see Hull et al., 1992, for an insightful explanation of the rationale underlying this analysis; see also Stevens, 1996).

In the first step, we entered the opponent's emotion, time pressure (both dummy coded), and their interaction into the regression equation to predict distance traveled. This analysis showed a significant effect of emotion,  $\beta = .22, p < .04$ , and an interaction between emotion and time pressure,  $\beta = -.23, p < .02$  (in Figure 3 these effects are represented by  $\beta_1$  and  $\beta_2$ , respectively). In the second step, we used time pressure to predict information processing and again found a significant regression,  $\beta = -.29, p < .01$  ( $\beta_3$  in Figure 3). In the third analysis, the interaction between emotion and time pressure (including both main effects) and the covariate interaction between emotion and information processing (including the main effect of information processing) were simultaneously entered into the equation to predict distance traveled. This analysis produced a significant effect of the covariate interaction (Emotion  $\times$  Information Processing) on distance traveled,  $\beta = .28, p < .01$  ( $\beta_4$  in Figure 3), and the originally significant interaction between emotion and time pressure was reduced to nonsignificance,  $\beta = -.13, ns$ . A Sobel test indicated that the reduction in the regression weight was significant ( $Z = 1.98, p < .05$ ; see Kenny, Kashy, & Bolger, 1998). These results are in line with Hypothesis 3, and they support the conclusion that time pressure moderates the interpersonal effects of anger and happiness on concessions because it decreases negotiators' degree of information processing.<sup>3</sup>

### Satisfaction With the Negotiation and Desire for Future Interaction

Exploratory analyses revealed that participants with a happy opponent were more satisfied with the negotiation than participants with an angry opponent ( $M = 4.43, SD = 1.24$  vs.  $M = 3.65, SD = 1.51$ ),  $F(1, 87) = 7.27, p < .01$  ( $\eta^2 = .08$ ). Participants with a happy opponent also reported a greater willingness to engage in future negotiation with the same party than did participants with an angry opponent ( $M = 4.77, SD = 1.25$  vs.  $M = 3.03, SD = 1.50$ ),  $F(1, 87) = 35.55, p < .01$  ( $\eta^2 = .29$ ).

### Discussion

The results of Experiment 2 corroborate our hypotheses. As predicted, time pressure moderated the effects of anger and happiness on demands and concessions: Participants with an angry opponent placed larger demands and made smaller concessions than did those with a happy opponent, but only under low rather than high time pressure. Furthermore, Experiment 2 showed that this moderating effect of time pressure was mediated by informa-

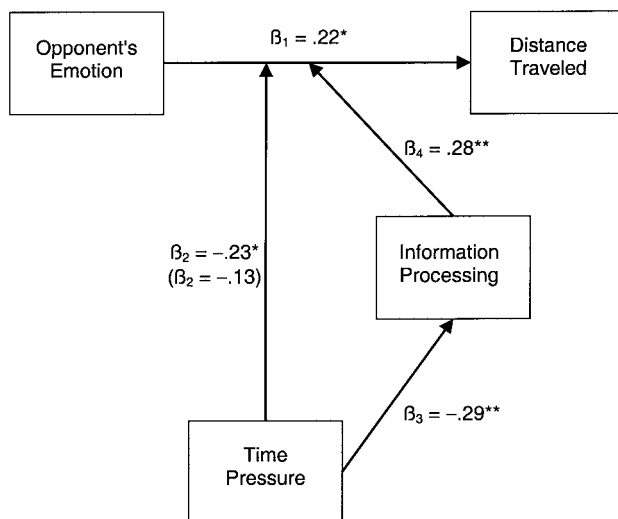


Figure 3. A motivated information processing model of the interpersonal effects of anger and happiness. Standardized regression coefficients are presented.  $\beta_1$  refers to the main effect of the opponent's emotion on distance traveled;  $\beta_2$  refers to the interaction between opponent's emotion and time pressure on distance traveled;  $\beta_3$  refers to the effect of time pressure on information processing;  $\beta_4$  refers to the covariate interaction between information processing and opponent's emotion on distance traveled. \* $p < .05$ . \*\* $p < .01$ .

<sup>3</sup> We report analyses with distance traveled as the dependent variable because this index is most compatible with the three-way interaction between emotion, time pressure, and negotiation round (i.e., it reflects concession behavior over time). Hierarchical regression analyses with demand in Round 6 as the dependent variable and demand in Round 1 as a covariate (entered in Step 1) yielded similar results and identical conclusions as the regression analyses based on the distance-traveled index.

tion processing. Under low time pressure, participants thoroughly scrutinized the information about the opponent's emotions, and they modified their demands and concessions accordingly. By contrast, participants who negotiated under high time pressure engaged in less thorough information processing, and as a result, they were not influenced by the opponent's emotional state. Finally, exploratory analyses indicated that anger (compared with happiness) decreases negotiators' satisfaction with the negotiation as well as their willingness to engage in future interaction with the opponent.

There are some limitations associated with the self-report measure of information processing that was used in this experiment. One is that it may be difficult for individuals to get full access to, and reliably evaluate, their own cognitive processes. Furthermore, the information processing scale was administered after the negotiation and not during the negotiation. We explicitly decided not to ask participants about their information processing activity during the negotiation because we suspected that doing so would influence their processing strategy and thereby confound the results. These limitations notwithstanding, we are confident about the validity of the information processing measure for three reasons. First, similar self-report measures of information processing have been used in previous research, yielding consistent results. For example, De Dreu et al. (1999) found that participants with a high dispositional need for cognitive closure reported less thorough information processing than did those with a low need for closure. Furthermore, De Dreu (2003) found that participants' self-reported information processing was affected by time pressure, with participants under high time pressure reporting less thorough information processing than those under low time pressure. Thus, self-report measures of information processing are influenced by dispositional and situational factors in a predictable and theoretically meaningful way.

Second, our findings pertaining to self-reported information processing are compatible with those obtained for the amount of time spent thinking, which constitutes an objective and unobtrusive measure of information processing *during* the negotiation (see De Dreu, 2003). Time spent thinking was affected by the time pressure manipulation analogous to self-reported information processing, and both measures were significantly positively correlated.

Third, the validity of the Information Processing Scale is supported by the results pertaining to participants' appraisals of the opponent's limit. Previous research has shown that the opponent's emotion influences participants' demands through their appraisal of the other's limits. Negotiators believe angry opponents to have a high limit and happy opponents to have a low limit, and therefore, they concede more to an angry opponent than to a happy one. However, this effect only occurs when it is in the negotiator's strategic interest to think about the other's emotion (Van Kleef et al., 2004). In line with this finding, the results of the present experiment show that the effect of the opponent's emotion on the participant's appraisal of the opponent's limit is moderated by time pressure: Negotiators with an angry opponent judge the opponent's limit to be higher than do negotiators with a happy opponent, but only under low time pressure. Under high time pressure the opponent's emotions do not influence participants' appraisals of the opponent's limits. This finding suggests that individuals under high time pressure think less deeply about the implications of the

opponent's emotions, and it provides additional support for the conclusion that epistemic motivation moderates the interpersonal effects of anger and happiness on concessions through its influence on participants' information processing.

### Experiment 3

Together, Experiments 1 and 2 strongly suggest that the degree to which negotiators are influenced by their opponent's emotional state depends on their epistemic motivation—negotiators with a high epistemic motivation are more likely than those with a low epistemic motivation to consider the information that is conveyed by the opponent's emotion, and they are therefore more likely to act on it than are those with a low epistemic motivation. Although these results are consistent with a motivated information processing model of the interpersonal effects of anger and happiness in negotiations, it is important to consider an alternative account for our findings.

So far we have investigated the moderating influence of epistemic motivation on the interpersonal effects of anger and happiness by examining dispositionally based need for cognitive closure (Experiment 1) and situationally induced time pressure (Experiment 2). Although both need for cognitive closure and time pressure effectively induce variation in epistemic motivation, they may also have inadvertently introduced an *urgency tendency*—an inclination to attain closure as soon as possible (Kruglanski & Webster, 1996). Thus, it is possible that, apart from influencing participants' degree of information processing, our operationalizations of epistemic motivation in Experiments 1 and 2 introduced the additional motive of finishing the negotiation as quickly as possible. One could argue that the observed interaction effects resulted from there being only one condition in each experiment in which there was no compelling reason to decrease demands (i.e., the low need for closure/low time pressure–happy opponent condition). Participants in the other conditions either had an angry opponent or a goal of finishing quickly.

Although this alternative explanation is difficult to reconcile with the information processing data and the mediation test reported in Experiment 2, we decided to conduct a third experiment in which we manipulated epistemic motivation without simultaneously introducing an incentive to finish the negotiation quickly. One variable that does exactly this and that is highly relevant in negotiation, is power. Power can be broadly defined as the capacity to exert influence on other people (Bacharach & Lawler, 1981; Kelley & Thibaut, 1978). Although power may derive from a variety of "power bases" (French & Raven, 1959), such as someone's position within a group or organization or the possession of valuable resources, such as expertise (Lee & Tiedens, 2002; Podsakoff & Schriesheim, 1985; Yukl & Falbe, 1991), it is the mutual dependence of individuals that allows power to occur. In exchange relations (such as negotiations) between two persons A and B, B's dependence on A increases with the value of the benefits A can give B, and it decreases with B's access to alternative sources for those benefits (Bacharach & Lawler, 1981; Emerson, 1972; Kelley & Thibaut, 1978). Accordingly, in some negotiation studies power has been operationalized as the availability of alternatives (e.g., Brett, Pinkley, & Jackofsky, 1996; Giebels, De Dreu, & Van de Vliert, 1998, 2000; Pinkley, 1995; Pinkley, Neale, & Bennett, 1994). In Experiment 3 we used a similar manipulation of power,

providing half of the participants with plenty of alternatives to an agreement with the current negotiation partner, whereas the other half were given no alternatives whatsoever.

Power in negotiation has been shown to increase a negotiator's limit (Pinkley, 1995; White & Neale, 1991), sense of power (Pinkley, 1995), and eventual share of the pie (e.g., Arunachalam, Wall, & Chan, 1998; Brett et al., 1996; Pinkley et al., 1994). Fiske (1993; Neuberg & Fiske, 1987) argued that people pay attention to those who control their outcomes so as to be able to predict what will happen to them and (re)gain a sense of control. Therefore, low-power individuals will be more motivated to attend to (information about) others than will high-power individuals (Fiske & Dépret, 1996). There is ample evidence in support of this reasoning. For example, it has been shown that compared with low-power individuals those with high power pay less attention to information that is inconsistent with their initial expectations about another person (Erber & Fiske, 1984), rely more on stereotypes and less on individual attributes when forming impressions about others (Goodwin et al., 2000; Neuberg & Fiske, 1987), pay less attention to specific social stimuli (Snodgrass, 1985, 1992), and ask less diagnostic questions aimed at acquiring accurate information about others (De Dreu & Van Kleef, 2004). In other words, power reduces the motivation to attend to, and process, social information about others (see Keltner, Gruenfeld, & Anderson, 2003, for a comprehensive review of this literature).

On the basis of the research outlined above, negotiators with high (compared to low) power can be expected to have lower epistemic motivation and to be less motivated to consider information about their opponent's emotions. Thus, building on previous research regarding the effects of power on information processing and on the results of Experiments 1 and 2, we predicted that high-power negotiators would be less influenced by their opponent's emotions than low-power negotiators. Specifically, we hypothesized that low-power negotiators would concede more to an angry opponent than to a happy one, whereas high-power negotiators would not be differentially affected by the opponent's emotions (Hypothesis 4).

To test this hypothesis, we conducted a scenario experiment in which we manipulated participants' power by varying their number of alternatives to a negotiated agreement and by subsequently confronting them with either an angry or a happy counterpart. We opted for a scenario approach for three reasons. First, using a scenario allowed us to assess whether the results that we obtained using the computer task generalize to other settings. Second, we wanted to investigate whether our findings generalize to different samples. Instead of using undergraduate students as participants, Experiment 3 involved managers of three different organizations. Third, we wanted to create a negotiation context that more closely resembles the kind of situation that people might encounter in real life. In real negotiations, the status of the opponent's emotional expressions is often unknown, and negotiators have to make inferences about whether these expressions are reliable indicators of the opponent's actual inner state or part of a strategic influence attempt. In Experiments 1 and 2, participants were given unambiguous and apparently reliable information about the opponent's emotional state. In the third experiment, we created a situation in which it was unclear whether the opponent's emotion was genuine or not.

## Method

### Sample

The study was conducted with middle- and lower-level managers from three different Dutch companies: a consultancy firm, a phone company, and a firm of contractors. The HR managers of these companies were contacted and asked to distribute the questionnaires among the employees. Depending on the manager's preference, the questionnaires were handed out to the employees in person or distributed via the company e-mail. Respondents participated in the study on a voluntary basis. They completed the questionnaires anonymously, and they were assured that their individual responses would remain confidential. The final sample consisted of 82 respondents: 46 from the consultancy firm (response rate 46%), 27 from the phone company (response rate 82%), and 9 from the firm of contractors (response rate 56%). They were 50 men and 31 women (1 unknown) who were on average 34 years old. The participants' experience in their current jobs ranged from 0 to 30 years, with an average of 4.5 years. The number of people directly reporting to them varied from 1 to 5, with an average of 2. Participants reported spending on average 4 hr per month negotiating and dealing with conflict.

### Design and Procedure

The design was a 2 (opponent's emotion: anger vs. happiness)  $\times$  2 (participant's alternatives: abundant vs. none) full factorial, with demands as the major dependent variable. Employees who agreed to participate in the study received a booklet containing a brief description of the research, a negotiation scenario, and a questionnaire. Participants who were recruited via the e-mail received an electronic version of the document. Participants who received a paper-and-pencil version of the study materials were requested to return the completed questionnaire directly to the researchers by means of the enclosed stamped addressed envelope. Those who received the electronic version were asked to attach the file with their responses to an e-mail message addressed to the researchers.

**Negotiation task.** Participants were presented with a scenario that featured a buyer-seller negotiation in an organizational context. They were asked to take their role seriously and to respond as if they were actually in the situation. In the scenario, participants were given the role of a project manager who had been assigned the task of hiring an information technology (IT) company to update and professionalize the company website. They were told that their company preferred to invest no more than 90,000 euros (roughly equivalent to US\$90,000).

**Power manipulation.** Power was manipulated by varying the participant's number of alternatives to a negotiated settlement. After the general situation had been sketched, half the participants read that a thorough search of all the appropriate IT companies in the region had shown there to be as many as eight good candidates (high-power condition). The other half read that there was only one good candidate (low-power condition). Participants then learned that [one of the companies / this company] was willing to accept the assignment for 120,000 euros. Subsequently, participants were asked to imagine that they had [randomly contacted one of the companies / contacted the company] by phone to negotiate the price of the assignment, and that they had just proposed to pay 90,000 euros.

**Manipulation of the opponent's emotion.** Participants then read that, just as the other party was about to respond to this offer, the other's mobile phone rang, that the other apologized for the disturbance, and that the other briefly talked on the mobile phone to someone else. Participants in the angry-opponent condition read that they overheard the following conversation: "Hey Bernard, I'm sorry, I don't have time right now, I'm in the middle of a negotiation with a client . . . I just got an offer which makes me really mad. I'll call you back . . . Yeah, you're right, I'm pretty angry. Bye!" In contrast, participants in the happy-opponent condition read that they heard the opponent say the following: "Hey Bernard, I'm sorry, I don't have time right now, I'm in the middle of a negotiation with a client

... I just got an offer which makes me really happy. I'll call you back ... Yeah, you're right, I feel very good about this. Bye!"

After the emotion manipulation, participants were informed that the opponent requested an improved offer, which was to be communicated by electronic mail. Participants were then asked to write down the e-mail message as they would send it to the IT company and to make sure to mention their final offer. Finally, they were asked to complete a brief questionnaire containing measures of their intention to concede, experienced power, manipulation checks, and ability to imagine themselves in the situation.

### Dependent Variables

The main dependent variable was the participant's demand, as written in the e-mail to the IT company. We asked one question to measure participants' intention to concede ("In this situation I would be inclined to concede to the other," 1 = *definitely not* to 5 = *definitely*). The emotion manipulation was checked by two items, one measuring perceived anger ("During the conversation over the mobile phone, the other person expressed anger regarding my offer," 1 = *definitely not* to 5 = *definitely*) and one measuring perceived happiness ("During the conversation over the mobile phone, the other person expressed happiness regarding my offer," 1 = *definitely not* to 5 = *definitely*). The manipulation of the participant's alternatives was checked using three items (e.g., "Do you think that there are other IT companies in your region that could professionalize the website for a better price?," "Are there other qualified IT companies in your region that you could contact?"), which were averaged into an alternatives index ( $\alpha = .80$ ). Experienced power was measured by five items (e.g., "I feel that I have a powerful negotiation position"; "I feel that I need the other person to finish the project successfully," reverse scored; "I feel that I am dependent on the other person," reverse scored; "I feel powerful in this situation"; 1 = *totally disagree* to 5 = *totally agree*). These items were averaged into a single index of the participant's experienced power ( $\alpha = .73$ ). Finally, participants were asked to what extent they had been able to imagine themselves in the situation described in the scenario (1 = *not very well* to 5 = *very well*).

## Results

### Manipulation Checks

**Opponent's emotion.** The manipulation of the opponent's emotion was checked in the same way as in Experiments 1 and 2. A 2 (opponent's emotion: angry vs. happy)  $\times$  2 (participant's perception of opponent's emotion: angry vs. happy) ANOVA with repeated measures on the second factor revealed a significant interaction between the opponent's emotion and participants' perceptions of the opponent's emotion,  $F(1, 78) = 496.22, p < .01$  ( $\eta^2 = .86$ ). Participants in the angry-opponent condition rated the opponent as more angry ( $M = 4.29, SD = 0.81$ ) than did those in the happy-opponent condition ( $M = 1.38, SD = 0.63$ ), and participants in the happy-opponent condition rated the opponent as happier ( $M = 4.53, SD = 0.55$ ) than did those in the angry-opponent condition ( $M = 1.43, SD = 0.83$ ). There was no main effect of power and no interaction (both  $F$ s  $< 1, ns$ ). Finally, paired-sample  $t$  tests showed that participants in the angry condition rated the other as more angry than happy ( $M = 4.29$  vs.  $M = 1.43$ ),  $t(41) = 13.16, p < .01$ , and that participants in the happy condition rated the other as more happy than angry ( $M = 4.53$  vs.  $M = 1.38$ ),  $t(39) = 20.43, p < .01$ .

**Power.** A significant main effect of the alternatives manipulation on the corresponding index revealed that participants in the

abundant-alternatives conditions felt that they had more alternatives ( $M = 4.47, SD = 0.45$ ) than did those in the no-alternatives conditions ( $M = 3.56, SD = 0.88$ ),  $F(1, 78) = 33.45, p < .01$  ( $\eta^2 = .30$ ). We found no main effect of the opponent's emotion and no interaction (both  $F$ s  $< 1, ns$ ). Furthermore, a main effect of the alternatives manipulation on the Experienced Power Scale showed that participants who had abundant alternatives indeed felt more powerful ( $M = 4.34, SD = 0.45$ ) than did participants who had no alternatives ( $M = 3.43, SD = 0.70$ ),  $F(1, 78) = 48.14, p < .01$  ( $\eta^2 = .38$ ). Again, there was no main effect of emotion ( $F = 1.81, ns$ ) and no interaction ( $F = 2.02, ns$ ).

### Preliminary Analyses

A one-sample  $t$  test showed that participants' ratings on the imagination item were significantly above the scale mean ( $M = 3.77, SD = 1.22$ ),  $t(81) = 5.70, p < .01$ , indicating that they had been able to imagine themselves in the situation that we presented. Preliminary analyses revealed no effects of any of the demographic variables, so they are not discussed any further.

### Demand Level

A main effect of the opponent's emotion showed that participants with an angry opponent conceded to a higher (i.e., less favorable) price than did those with a happy opponent ( $M = 93,167$  and  $SD = 4,601$  vs.  $M = 88,956$  and  $SD = 2,998$ , respectively),  $F(1, 78) = 26.06, p < .01$  ( $\eta^2 = .25$ ). Second, a main effect of power revealed that participants with abundant alternatives made tougher demands than did those who had no alternatives ( $M = 90,125$  and  $SD = 2,399$  vs.  $M = 92,054$  and  $SD = 5,589$ , respectively),  $F(1, 78) = 4.85, p < .03$  ( $\eta^2 = .06$ ). Finally, and most important, both main effects were qualified by the expected interaction between emotion and power,  $F(1, 78) = 8.60, p < .01$  ( $\eta^2 = .10$ ). Consistent with Hypothesis 4, simple-effects analysis revealed that participants conceded more to an angry opponent than to a happy one, but only when they had no alternatives ( $M = 95,136$  and  $SD = 5,383$  for anger vs.  $M = 88,663$  and  $SD = 3,504$  for happiness),  $F(1, 78) = 33.07, p < .01$  ( $\eta^2 = .34$ ). Participants with abundant alternatives did not differ as a function of the opponent's emotion ( $M = 91,000$  and  $SD = 2,052$  for anger vs.  $M = 89,250$  and  $SD = 2,447$  for happiness),  $F(1, 78) = 2.23, ns$ .

The results pertaining to participants' self-reported intention to concede were consistent with those obtained for their actual demands. A main effect of emotion indicated that participants were more inclined to concede to an angry opponent than to a happy one ( $M = 2.74$  and  $SD = 1.17$  vs.  $M = 2.05$  and  $SD = 0.88$ , respectively),  $F(1, 78) = 10.63, p < .01$  ( $\eta^2 = .12$ ), and a main effect of power showed that participants with abundant alternatives were less likely to concede than were those who had no alternatives ( $M = 1.95$  and  $SD = 0.88$  vs.  $M = 2.83$  and  $SD = 1.10$ , respectively),  $F(1, 78) = 18.12, p < .01$  ( $\eta^2 = .19$ ). Again, a significant interaction between emotion and power was obtained,  $F(1, 78) = 7.63, p < .01$  ( $\eta^2 = .09$ ). Simple-effects analyses revealed that participants who had no alternatives were more inclined to concede to an angry opponent than to a happy one ( $M = 3.41, SD = 1.01$  and  $M = 2.20, SD = 0.83$ , respectively),  $F(1, 78) = 18.57, p < .01$  ( $\eta^2 = .31$ ), whereas those with abundant

alternatives did not differ as a function of the opponent's emotion ( $M = 2.00$ ,  $SD = 0.86$  and  $M = 1.90$ ,  $SD = 0.91$ , respectively),  $F(1, 78) < 1$ , *ns*.

### Discussion

Building on previous research on power and epistemic motivation (e.g., De Dreu & Carnevale, 2003; Fiske, 1993; Fiske & Dépret, 1996; Neuberg & Fiske, 1987) and on the results of Experiments 1 and 2, we hypothesized and found that the interpersonal effects of anger and happiness on demands and concessions are moderated by power. As predicted, low-power negotiators were strongly influenced by their opponent's emotions, conceding more to an angry opponent than to a happy one. By contrast, high-power negotiators were unaffected by the opponent's emotion. These results corroborate Hypothesis 4, and they support the motivated information processing model outlined in the introduction.

Importantly, this additional support for the motivated information processing account also undermines the "urgency" explanation that we advanced in the introduction to Experiment 3. The idea was that, in Experiments 1 and 2, a low epistemic motivation (i.e., high need for closure, high time pressure) possibly went hand in hand with a desire to end the negotiation as quickly as possible and that perhaps a sense of urgency rather than reduced motivation to process information is responsible for the results pertaining to demands and concessions in the first two experiments. In Experiment 3, however, this reasoning is far less plausible because it is difficult to see how having few or plenty of alternatives would unequivocally increase or decrease participants' motivation to finish the negotiation. If anything, in Experiment 3 low epistemic motivation is likely to have coincided with a *reduced* rather than an increased urgency motivation, because having plenty of alternatives enables a negotiator to safely try and get the most out of the negotiation without risking ending up with nothing at all. However, if one would make a case that having no alternatives (i.e., high epistemic motivation) produces a desire to finish the negotiation quickly, the pattern of means would be inconsistent with those obtained in the first two experiments. Thus, although the urgency explanation can account for some of the results of Experiments 1 and 2, it cannot account for the combined effects of Experiments 1 to 3. In contrast, the motivated information processing model can easily explain the results of all three experiments by using the principle of epistemic motivation. The motivated information processing account thus constitutes the most parsimonious explanation for the combined results of the present experiments.

### General Discussion

In the current research we drew on the motivated information processing model of negotiation (De Dreu & Carnevale, 2003; see also Kruglanski, 1989; Kruglanski & Webster, 1996) to enhance our understanding of the interpersonal effects of emotions in negotiation. Experiment 1 demonstrated that negotiators' tendency to concede more to an angry opponent than to a happy one (Van Kleef et al., 2004) is moderated by individual differences in epistemic motivation: Negotiators with a low dispositional need for cognitive closure were strongly affected by the opponent's

emotion, whereas those with a high dispositional need for cognitive closure were unaffected. Experiment 2 showed a similar pattern for a situational manipulation of epistemic motivation. Participants who negotiated under low time pressure (i.e., high epistemic motivation) were strongly influenced by the other's emotion, whereas those under high time pressure (i.e., low epistemic motivation) were not. This moderating effect of time pressure was mediated by information processing. Finally, using a different paradigm and participant population, Experiment 3 demonstrated that the interpersonal effects of anger and happiness in negotiations are moderated by power. In line with previous research by Fiske and colleagues (Fiske, 1993; Fiske & Dépret, 1996; Neuberg & Fiske, 1987) showing that power reduces epistemic motivation, we found that low-power negotiators conceded more to an angry counterpart than to a happy one, whereas high-power negotiators were unaffected by the other's emotion. Taken together, the results of these three studies provide strong support for the proposition that a negotiator's epistemic motivation determines the extent to which he or she will be influenced by the opponent's emotions. The fact that we used three different operationalizations of epistemic motivation and found consistent results renders alternative explanations less plausible. Below we consider the implications of these findings, discuss the strengths and limitations of our approach, and outline some avenues for future research.

### Implications and Contributions

In exploring how epistemic motivation moderates the interpersonal effects of emotions in negotiation, the present work brings together two separate lines of research. The synthesis of these different lines of inquiry extends our knowledge about the negotiation process, the social effects of emotions, and the role of epistemic motivation in social interaction. Our findings are consistent with a motivated information processing approach to negotiation (see De Dreu & Carnevale, 2003; De Dreu et al., 1999, 2000), which holds that negotiators may be more or less motivated to engage in systematic and thorough information processing, depending on personality characteristics such as need for cognitive closure and situational factors such as time pressure and power (Fiske, 1993; Fiske & Dépret, 1996; Kruglanski & Webster, 1996). Consistent with this perspective, our data show that when negotiators have a high epistemic motivation, they process the information that is conveyed by the opponent's emotions more thoroughly, and, as a result, the opponent's emotional state has a stronger impact on their behavior.

Recent research on the interpersonal effects of emotions in negotiation has demonstrated that anger and happiness have a profound impact on negotiation behavior (Sinaceur & Tiedens, 2004; Van Kleef et al., 2004, Experiment 1). Furthermore, these effects have been shown to be produced by strategic considerations. Negotiators who are confronted with an angry opponent judge the other's limits to be high, leading them to concede quickly so as to avoid impasse. Conversely, negotiators who are confronted with a happy opponent believe that the other has low limits, which causes them to stand firm and make tough demands (Van Kleef et al., 2004, Experiment 2). The present research qualifies these findings by showing that the interpersonal effects of emotions on negotiation behavior are moderated by epistemic

motivation: Negotiators only react to the opponent's emotion in a strategic way when they are motivated to consider the implications of the other's emotion.

The current findings also add to what we know about the effects of emotions in social settings. Although the previous decade has witnessed an increasing interest in the interpersonal effects of emotions (e.g., Frijda & Mesquita, 1994; Keltner & Haidt, 1999; Morris & Keltner, 2000; Oatley & Jenkins, 1992), little is known about potential moderators of these effects. The present research fills this void by showing that the interpersonal effects of emotions are contingent on the perceiver's motivation to actively think about the implications of the opponent's emotions. This finding has interesting implications for the tactical use of emotions (cf. Barry, 1999), because it suggests that the effectiveness of the use of emotional deception as a strategic ploy depends on whether the target of the influence attempt is motivated to think about the implications of the other's emotions for his or her own goal attainment.

In prior research, epistemic motivation has been linked to social psychological phenomena such as impression formation, attribution, stereotyping, and language use (for a comprehensive overview, see Kruglanski & Webster, 1996) and their strategic implications in the context of conflict and negotiation (De Dreu & Carnevale, 2003). The present research extends these findings to the domain of emotions by showing that the interpersonal effects of anger and happiness are moderated by epistemic motivation. Although this finding is of importance in its own right, its relevance may extend beyond the specific effects of emotion and may well generalize to other domains of social interaction. Despite the fact that lay epistemic theory has been investigated in a multitude of contexts, most support for the theory stems from settings that involve little or no social interaction. The current study shows that the theory also holds in settings with (simulated) interaction, and our finding that individuals with a high epistemic motivation are more easily influenced by others' emotions than are individuals with a low epistemic motivation suggests that similar moderating effects may also obtain in other areas of social influence.

Dual-process models of human information processing distinguish between the *ability* to process information and the *motivation* to do so (see e.g., Chaiken & Trope, 1999; Smith & DeCoster, 2000). An implicit assumption of lay epistemic theory and the motivated information processing approach is that people have sufficient cognitive resources available to process the information that they receive but differ in the extent to which they are motivated to process the information. This raises the question of whether our findings are caused by differences in motivation or differences in ability. Although our experiments were not designed to investigate the relative effects of ability and motivation on information processing, we believe that they can best be explained in terms of differential motivation. First, chronic differences in motivation to actively acquire and thoroughly scrutinize new pieces of information (i.e., need for cognitive closure) have been shown not to be related to measures of cognitive ability (i.e., intelligence; Kruglanski & Webster, 1996). Thus, the interaction between dispositional need for closure and the opponent's emotion that was obtained in Experiment 1 would suggest that it is motivation, rather than ability, that moderates the interpersonal effects of anger and happiness in negotiation.

Second, in contrast to previous research on the effects of time pressure and information processing (e.g., Freund et al., 1985; Heaton & Kruglanski, 1991; Kruglanski & Freund, 1983), we did not vary the amount of time available to reach an agreement. Rather, all participants were given the same amount of time to negotiate, and they were told that this was either more than enough or relatively tight. In other words, we manipulated experienced time pressure rather than the absolute amount of time available, suggesting that our effects can be more easily attributed to motivated closing of the mind than to a reduced cognitive capacity to process information (for discussions, see De Dreu, 2003; Mosterd & Rutte, 2000).

Third and foremost, the results of Experiment 3 cannot be understood in terms of a reduced capacity to process information. The power manipulation that was used in this experiment cannot have influenced participants' information processing capacity, and yet negotiators with high power were unaffected by their opponent's emotions, whereas those with low power were strongly influenced. This finding can only be explained in terms of a differential *motivation* to process the information conveyed by the other's emotion (cf. Fiske, 1993; Fiske & Depret, 1996). Together, these three experiments provide strong support for the assertion that a negotiator's motivation to engage in thorough information processing determines the extent to which he or she will be influenced by the opposing negotiator's emotions.

Another interesting issue concerns the potentially differential effects of experienced and expressed emotions. In Experiments 1 and 2, participants received information about their opponent's experienced emotions, which could be trusted to reflect the opponent's true feelings. One might argue that in real life negotiators rarely have reliable information about their opponent's experienced emotions. Rather, they perceive some expression of emotion, and they have to make inferences as to whether this expression reflects the opponent's real emotion or whether it is part of a strategic influence attempt. The situation described in Experiment 3 reflected the ambiguity that is characteristic of real life emotional expressions. Instead of giving participants reliable information about the other's experienced emotions, participants were confronted with the opponent's verbal expressions of anger or happiness, without receiving information pertaining to the trustworthiness of the expressions. The results of Experiment 3 are compatible with those of Experiments 1 and 2, suggesting that negotiators respond in similar ways to emotions with an ambiguous status as they do to truly experienced emotions.

This conclusion is consistent with research on the correspondence bias (Jones, 1979), the fundamental attribution error (Ross, 1977), and spontaneous trait inferences (see, e.g., Uleman, Newman, & Moskowitz, 1996), in which it has been shown that observers use other people's apparent behavior to make inferences about their personality or inner state. Furthermore, other research has shown that observers are not very accurate at detecting faked emotions but instead tend to believe that the emotions that others pretend to be experiencing are real (e.g., DePaulo, 1992; DePaulo, Stone, & Lassiter, 1985; Zuckerman, DePaulo, & Rosenthal, 1981). All in all, it appears that when it is unclear whether the expressed emotions are genuine or strategic, perceivers tend to respond as if the expressed emotions are genuine. The question of what happens when it is clear that the other's expressed emotions are part of a strategic ploy awaits further research.

### Limitations and Suggestions for Future Research

There are some limitations to our findings. First, there was no face-to-face interaction. The primary focus of this research was on generating and testing hypotheses, and therefore we made an explicit decision to maintain as much experimental control as possible. Although the present findings generalize across settings, operations, and populations, they may be limited to situations where there is no face-to-face interaction. With the upsurge of computer-mediated negotiations (Moore et al., 1999), and the increased reliance on other communication means than face-to-face interaction (McGrath & Hollingshead, 1994), our findings thus pertain to more and more settings. However, in light of the proven generalizability across different paradigms of the interpersonal effects of emotions (cf. Sinaceur & Tiedens, 2004; Van Kleef et al., 2004), we see no reason why our findings should be limited to situations that lack face-to-face contact.

A related issue concerns the "cognitive" nature of the emotion manipulation that was used in the present experiments. The fact that we used verbal manipulations of emotion raises the question of whether our findings generalize to settings in which emotions are communicated in a different manner (e.g., nonverbally). One could argue that the effects would be different if people were presented with behavioral instead of cognitive emotion cues. This possibility cannot be ruled out on the basis of the present data. However, previous research has shown similar interpersonal effects of emotions regardless of whether a verbal (Van Kleef et al., 2004) or nonverbal (Sinaceur & Tiedens, 2004) manipulation was used. By analogy, the effects of epistemic motivation have been observed in many different contexts and settings (De Dreu & Carnevale, 2003; Kruglanski & Webster, 1996). Therefore we are quite confident about the external validity of our findings. However, future research is needed to explore this issue in greater depth.

Another avenue for future study concerns the long-term consequences of anger. How does anger influence the relationship between the negotiators? Do the effects of anger persist over time or do they diminish or even backfire in the long run? The present findings show that negotiators with an angry opponent are less satisfied with the negotiation and are less willing to engage in future interaction with the same opponent than are negotiators with a happy counterpart. These findings point to an interesting dilemma facing negotiators who anticipate future interaction. On the one hand, negotiators may be motivated to strategically present happiness to make a good impression and to induce or maintain a positive interpersonal relationship. On the other hand, they may choose to use anger to get their opponents to go along with their preferences. Future research could investigate which of these strategies is more beneficial in the long run.

### Conclusion

Consistent with the motivated information processing approach outlined in the introduction, the present research shows that the interpersonal effects of anger and happiness on negotiation behavior are moderated by the focal negotiator's epistemic motivation. When epistemic motivation is high, negotiators thoroughly scrutinize the information that resides in the opponent's emotions, and they act accordingly, standing firm against a happy opponent and

conceding to an angry opponent. However, when epistemic motivation is low, negotiators engage in shallow and nonsystematic information processing, which renders them impervious to the other's emotional state. Thus, the current research suggests that the interpersonal effects of emotions are contingent upon the perceiver's motivation to engage in thoughtful and deliberate information processing. The relevance of these findings is unlikely to be limited to the negotiation setting and may well generalize to other domains of social interdependence.

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### New Editor Appointed for *History of Psychology*

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Manuscript submission patterns make the precise date of completion of the 2005 volume uncertain. The current editor, Michael M. Sokal, PhD, will receive and consider manuscripts through December 31, 2004. Should the 2005 volume be completed before that date, manuscripts will be redirected to the new editor for consideration in the 2006 volume.