Running head: COGNITION AND AFFECT IN NEGOTIATION

Thinking Deep and Feeling Good:

Cognitive Motivation and Positive Affect in Negotiation

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November 18, 2002

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Parts of this research were presented at the annual meeting of the International Association for Conflict Management in Salt Lake City, Utah, June 2002.

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Abstract

This article examines how individual differences in cognitive motivation and positive affect influence the outcome in integrative dyadic negotiations. The cognitive motivation and positive affect of 64 participants were measured prior to a simulated negotiation. At the individual level, high cognitive motivation strongly improved the outcome for the sellers, but not for the buyers. When cognitive motivation was low, positive affect enhanced the quality of the outcome for the sellers. The dyadic outcome was positively affected by both the individual difference variables. Cognitive motivation was more important than positive affect, and characteristics of the sellers were more important than those of the buyers.

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It is difficult to reach high quality agreements in negotiations. The task is complex and challenging, and cognitive biases and competitive processes often hinder the achievement of joint gains. The purpose of this article is to explore how intrinsic cognitive motivation and positive affective state can help negotiators to overcome the barriers to successful outcomes in negotiations. Intrinsic cognitive motivation, or need for cognition, is a stable individual difference in the tendency to engage in effortful and analytical thinking (Chatterjee, Heath, Milberg, & France, 2000). High cognitive motivation is likely to help negotiators to overcome cognitive biases and thereby to discover the integrative potential. However, despite its potential importance, cognitive motivation has not been directly examined in negotiation research. Positive affect, that is genuine positive subjective feelings and moods (Russel & Carroll, 1999), may help negotiators by hindering competitive processes and trigger joyful task involvement and cooperation. Positive affect is found to impact numerous social phenomena (Forgas & George, 2001), but is relatively seldom investigated in negotiations (Bazerman, Curhan, Moore, & Valley, 2000). Furthermore, in negotiation research affective state is typically externally induced through manipulations. Here we focus on naturally occurring differences in aroused positive affect.

Although intrinsic cognitive motivation and affective state vary in degree of stability, they both point towards individual differences as explanatory factors in negotiation research. In the last decades there has been pessimism about the effects of individual differences on negotiations (Neale & Bazerman, 1991). This is largely due to inconsistent findings (Rubin & Brown, 1975) and to the use of broad personality

variables (Pruitt & Carnevale, 1993). Recently, however, more specific and maybe more relevant individual difference variables such as social value orientation (Olekalns & Smith, 1999) and cognitive closure (de Dreu, Koole, & Oldersma, 1999) have been found to impact negotiations. In this article we suggest that both trait (intrinsic cognitive motivation) and state (positive affect) influence negotiations. In exploring the effects of cognitive motivation and positive affect on negotiations we have to deal with several issues. First, we must examine how these individual level variables affect the individual level outcome. Second, we must explore the forms in which individual level variables transform to dyadic level outcomes. Third, we must examine whether positive affect and cognitive motivation interact in explaining outcome. We address these issues by first discussing cognitive motivation, then affective states, and finally their interrelationship.

Cognitive Motivation

Cacioppo, Petty, Feinstein, & Jarvis (1996) show that people differ in their tendencies to enjoy and engage themselves effortfully in cognitive activities. Cognitive motivation is only modestly (positively) related to intelligence, and therefore expresses a motivation to apply the mind rather than having an intellectual ability as such. Intrinsic cognitive motivation, as measured by the "need for cognition scale" (Cacioppo, Petty, & Kao, 1984), has consistently been found to influence problem-solving activities. Individuals with low cognitive motivation have a tendency to rely on simple information cues and to use cognitive heuristics (Cacioppo et al., 1996). They are also easily stressed by complex cognitive tasks (Gulgos, 2001). High cognitive motivation lead individuals to actively seek out and use new and relevant information. They are therefore more effective decision makers in badly structured tasks than individuals with low cognitive motivation (Nair & Ramnarayan, 2000).

Furthermore, framing biases in decision-making are found mostly among individuals with low cognitive motivation (Chatterjee et al., 2000; Smith & Levin, 1996).

Cognitive biases have consistently been found to influence the negotiation performance (Thompson, 1998). The use of cognitive heuristics leads to predictable mistakes in negotiations (Bazerman et al., 2000). Framing and anchoring effects, zero sum perceptions, the use of only easily available information, and other barriers to effective negotiations may be overcome by individuals high on cognitive motivation. Their enjoyment of challenging cognitive tasks, their willingness to seek out new and relevant information, and their systematic information processing (Cacioppo et al., 1996) may help them to identify joint gains. Thus, we expect high cognitive motivation to result in effective outcomes. We expect this to hold both for the individuals' own results and for the dyadic outcome.

Most cognitive research on negotiation has focused on how biases negatively affect the outcomes in negotiation (Bazerman et al., 2000). Little effort has been made to find more fundamental individual differences that influence the tendency to be burdened by biases. The relevance of dispositional differences in cognition in negotiation has, however, recently been demonstrated by de Dreu et al. (1999). They found individuals high on need for cognitive closure to be heavily influenced by salient focal points and stereotypical information when making concessions and setting limits. The need for cognitive closure implies impatience and an energetic search for structure and solutions. The need for closure is negatively but weakly correlated ($r = -.26$) with cognitive motivation (Cacioppo et al., 1996). The effects on the negotiation outcomes may, nevertheless, be similar but opposite. de Dreu et al. (1999) did, however, not examine outcome. They focused on individual level cognitive and behavioral variables.

The effects of cognitive motivation on performance have also typically been studied with the individual as the unit of analysis. However, a study of dyadic decision-making (Shestowsky, Wegener, & Fabrigar, 1998) suggests that those highest on intrinsic cognitive motivation influence the process and the outcome the most. When moving from the individual to the dyadic level we encounter several challenges in exploring whether and how individual level variables influence the dyadic result. A number of potential aggregation effects are possible (Malter & Dickson, 2001). For example, it may be sufficient that one member of the dyad is highly cognitively motivated ("best member") in order for the dyad to discover the integrative potential. Alternatively, simple additive models are possible (i.e., "the more the better"), or there may be interaction effects between the characteristics of the two negotiators. We will explore different forms of aggregation when we test the following general hypothesis:

H1: High cognitive motivation enhances the quality of outcomes in integrative negotiations

Positive Affect

Positive affect has received growing attention in organizational behavior research and has been found to impact both behavior and outcome across a variety of situations (Isen & Baron, 1991). Fairly mild nonspecific experiences of feeling good have been found to help decision-makers to more efficient decision processes (Isen & Means, 1983) and more creative problem solving (Isen, Daubman, & Nowicki, 1987). Isen & Baron summarize the research by stating that "persons who are feeling happy are more cognitively flexible--more able to make associations, to see potential relations among stimuli--than are persons in a neutral state" (1991, p. 21). According to the affect infusion model (Forgas, 1995) affect is particularly influential when substantive

cognitive tasks are performed. Such tasks are characterized by the need to actively

link information elements in new and creative ways. This is a defining characteristic

of integrative negotiation tasks, and affect is therefore of critical importance in

negotiations (Forgas & George, 2001).

The affective infusion model predicts that mild positive mood states influence

the planning and execution of negotiation encounters. Positive mood is expected to

selectively prime positive thoughts and associations, and thereby lead to the use of

more cooperative negotiation strategies. In a series of experiments, Forgas (1998)

found support for this prediction. Participants in a positive mood formulated action

plans that were more cooperative and integrative, and achieved agreements of higher

quality than did neutral or negative mood participants. Positive affect produced

successful outcomes by triggering a favourable impression of the negotiation task, and

thereby generating a cooperative process. Other studies on positive affect in

integrative negotiation support this reasoning. Negotiators in a good mood are found

to be less competitive than others (Baron, 1991), to reduce the use of contentious

tactics, and to reach more integrative outcomes (Carnevale & Isen, 1986).

Positive affect may arise from different sources. Previous research has mainly

examined the effects of externally induced positive mood, that is, positive affect has

been triggered by showing cartoons and by giving gifts (Carnevale & Isen, 1986), by

using pleasant scents (Baron, 1990), and by manipulations of feedback on previous

tasks (Forgas, 1998). In the current study we want to extend this research and examine

the effects of natural occurring variations in positive affect. If natural variations in

mood have an effect, it will reinforce previous studies where positive moods are

artificially induced. While the causes and stability of affect vary, we expect mood

effects to be similar whether it is triggered by cues, natural state or stable trait. The

results of Rhoades, Arnold, & Jay (2001) suggest for example that affective state and trait have similar effects and that state mediates between trait and conflict behavior.

In the psychological literature on affect there is a debate on the dimensionality of the construct (e.g., Russel & Carroll, 1999), where one discusses the importance of the degree of arousal ("hot" versus "cold" emotions). Aroused positive affect (e.g., enthusiasm) may in its effects on negotiation differ from positive affect with low arousal (e.g., happy). By using natural mood and a paper and pencil test, we may be more precise than previous studies on the arousal aspect of positive mood. Given the fact that emotions were manipulated rather than measured in most prior studies, we do not know whether the participants were positively aroused or more relaxed satisfied. Positive affect may need to have a component of high activity and energy related to it (Caliguri, Jacobs, & Farr, 2000) in order to have an effect in task-related interpersonal encounters such as negotiations. We therefore examine the effects of aroused positive affect.

Most research on positive affect has focused on the individual level of analysis (Isen & Baron, 1991). However, George (1990) has proposed that groups often develop a group affective tone. In order to examine how aroused positive affect impacts the dyadic outcome, we want to explore different kinds of aggregations, including using average scores and the score of the member with the highest positive affect. We suggest the following general hypothesis:

H2: Positive affect enhances the quality of outcomes in integrative negotiations

Cognitive Motivation and Positive Affect

Above we have proposed that trait (i.e., cognitive motivation), and state (i.e., positive affect) both influence outcomes in negotiations. The two factors may also interplay in explaining outcomes. We find it reasonable to frame the discussion of

possible interaction effects in terms of the temporal stability of the two factors. Thus, the question is whether the effects of positive affect depend on the level of cognitive motivation. Who is helped the most by positive affect, those that are high or those that are low on cognitive motivation?

Individuals high in cognitive motivation are naturally inclined to involve themselves eagerly and constructively in complex negotiation tasks. They may not need positive affect, or respond to it, as a triggering mechanism for their constructive task involvement. The pre-existing trait will dominate their cognitive and behavioral activities. Individuals low on cognitive motivation do not lack the intellectual ability to solve complex tasks, neither do they lack the ability to apply themselves (Cacioppo et al., 1996). They may, however, need an alternative mechanism than cognitive motivation, to trigger energetic cognitive and behavioral involvement. Aroused positive affect may serve as such a mechanism. Therefore, we put forward the following hypothesis:

H3: The positive relationship between positive affect and the quality of outcome in integrative dyadic negotiation is strongest when cognitive motivation is low

<center>Method</center>

Participants and Procedures

We used 64 business students enrolled in negotiation courses as participants in the study. Their average age was 25 years, and women comprised 42 % of the sample. We conducted negotiation simulations during the first meeting of the classes. A seller and a buyer negotiated the delivery of television sets (cf. Pruitt & Lewis, 1975). They negotiated three issues, and each issue had nine alternative settlement points. The payoff matrix is shown in Appendix A. We chose this simulation because it is a commonly used variable-sum negotiation that allows for integrative agreements

through logrolling. The parties can achieve high quality agreements by exchanging concessions on their low-profit issues (date of delivery for the seller and financing terms for the buyer).

Prior to the negotiation exercise, the students were asked to answer a questionnaire containing several measures, including measures of cognitive motivation and affect. Then the negotiation exercise started. Each student received confidential background information and a profit schedule that showed their individual earnings associated with the different possible alternatives. The subjects had 10 minutes for preparation before they were randomly assigned to dyads (a seller and a buyer) and led to separate rooms. The dyads were given 30 minutes to negotiate. Finally, the students were debriefed.

Measurement and Validation

Outcome. At the individual level, outcome was measured as the total profit achieved by the negotiator across the three issues. For example, if the negotiators in a dyad agreed on alternative E on all three issues (see Appendix A), each negotiator would receive an individual outcome of 4000. The individual outcomes for a seller and a buyer in a dyad were not independent of each other (intraclass correlation = -.41). Therefore, we analysed the individual outcomes for the sellers and the buyers separately. At the dyadic level, the negotiators' joint outcome was measured as the sum of the individual outcomes achieved by a seller and a buyer in a dyad. Thus, if the negotiators as suggested above agreed on alternative E on all issues, their joint outcome, or joint sum, would be 8000. In fully integrative agreements (e.g., AEI), the joint sum is 10400.[1]

Cognitive motivation. We measured a negotiator's intrinsic cognitive motivation with eight questions adapted from the short version of the "need for

cognition scale" (Cacioppo & Petty, 1982). The scale consisted of statements such as "I prefer complex rather than simple problems", "I enjoy having responsibility for situations that require a lot of thinking", and "I appreciate tasks which imply finding new solutions to problems". Higher scores reflected higher cognitive motivation. The coefficient alpha for this scale was .79. We recoded the variable so that it was centred on zero, in order to reduce multicollinearity when main effects and interaction effects were analysed. To analyse cognitive motivation at the dyadic level, we examined buyer and seller scores, the average score across seller and buyer, and the value of the member with the highest score.

Positive Affect. We measured a negotiator's positive affective state using items from the Positive and Negative Affect Schedule (PANAS; Watson, Clark, & Tellegen, 1988) and Russel (1980). On these scales, participants are asked to indicate how they feel (1 = not at all, 5 = extremely). We had four positive affect items; enthusiastic, excited, elated and clutched up. These items were chosen because they have an element of positive arousal, which seems more relevant in negotiation situations than low aroused positive affect items such as happy, glad and satisfied. The coefficient alpha was .73. We recoded the variable so that it was centred on zero. Similar to cognitive motivation, we examined the buyers and the sellers scores, the average score across the sellers and the buyers, and the value of the member with the highest score, to indicate positive affect at the dyadic level.

Results

Means, standard deviations and correlations for the study variables are displayed in Table 1. The correlation matrix shows that cognitive motivation is significantly positively related to the outcomes at both the individual level ($r = .32$) and the dyadic level ($r = .52$). Positive affect is marginally significantly positively

related to the outcome at the dyadic level ($r = .35$). The low correlation ($r = .17$)

between positive affect and cognitive motivation indicates that they are independent

constructs.

Individual Outcome. We first analysed how cognitive motivation and positive

affect influenced the individual outcome. The individual outcomes of the sellers and

the buyers were analysed separately because of the dependency between the

individual scores in a dyad. We used hierarchical moderated regression analyses to

test the hypotheses at the individual level. Cognitive motivation and positive affect

were entered in Step 1, and the interaction term in Step 2. The results are presented in

Table 2.

For the sellers, model 1 reached statistical significance, $F(2, 29) = 6.64$, $p <$

.01, $R^2 = .31$. Cognitive motivation had a significant positive affect on the individual

outcome ($\beta = .55$), while positive affect did not impact the individual outcome ($\beta =$

.05). By adding the product term in Step 2, a marginal significant negative interaction

term was found ($\beta = -.33$). Positive affect was most important for the outcome when

cognitive motivation was low. For the buyers, Model 1 did not reach statistical

significance, neither did Model 2 with the interaction term, F-values $= 0.02$, ns.[2,3]

At the individual level, the results for the sellers support Hypothesis 1

(cognitive motivation enhances the quality of the outcomes), but not Hypothesis 2

(positive affect enhances the quality of the outcomes). Hypothesis 3 (positive affect is

more important when cognitive motivation is low) receives marginally support. The

results for the buyers do not support any of the hypotheses.

Dyadic Outcome. We used hierarchical moderated regression analyses to test

how cognitive motivation and positive affect impacted the dyadic outcome. First, we

examined how the dyadic outcome depended on the cognitive motivation of the

sellers and the cognitive motivation of the buyers (entered in Step 1), and the interaction of their cognitive motivation (entered in Step 2). Then we used the same procedure to test the effects of positive affect. The results are shown in Table 3.

The cognitive motivation of the sellers and the buyers (Model 1) had a significant positive effect on the dyadic outcome, $F(2, 28) = 7.01$, $p < .01$, $R^2 = .33$. The regression coefficients show that the significant model was caused by the cognitive motivation of the sellers ($\beta = .57$), and not by the cognitive motivation of the buyers ($\beta = .02$). The interaction term entered in Step 2 was significant ($\beta = -.37$). The buyers with high cognitive motivation were most important for the dyadic outcome when the sellers had low cognitive motivation, and vice versa.

The positive affect of the sellers and the buyers (Model 1) did not impact the dyadic outcome significantly, $\underline{F}(2, 29) = 2.15$, ns, though the sellers' positive affect had a marginally significant positive effect ($\beta = .34$). The negative interaction of the sellers' and the buyers' positive affect was also marginal significant ($\beta = -.35$). Being positive was especially important for the dyadic outcome if the opponent was low on positive affect.

In order to test Hypothesis 3 (interaction between cognitive motivation and positive affect) at the dyadic level, we ran another set of hierarchical moderated regression analyses. Cognitive motivation and positive affect were entered in Step 1, while the interaction of cognitive motivation and positive affect was entered in Step 2. The effects of cognitive motivation and positive affect were first examined using the average scores of the two members, and next using the maximum scores in each dyad. The results are summarized in Table 4.

By using average scores, Model 1 is significant, $F(2, 29) = 6.21$, $p < .01$, $R^2 = .30$. Cognitive motivation is significantly positively related to the dyadic outcome (β

= .44). Positive affect is also positively related to the dyadic outcome (β = .24), but do not reach statistical significance. We found no significant interaction between cognitive motivation and positive affect (β = -.22), but the interaction point towards a substitution effect. By using maximum scores, Model 1 is again significant, $F(2, 29) = 10.37$, $p < .01$, R^2 = .42. Both cognitive motivation (β = .48) and positive affect (β = .32) have a positive significant affect on the dyadic outcome. We did not find a significant interaction term (β = -.15).

At the dyadic level, the results support Hypothesis 1. Cognitive motivation enhances the dyadic outcome, but it is mainly the cognitive motivation of the sellers that count. High motivation among the buyers is only critical when the sellers have low motivation. Hypothesis 2 receives some support. Positive affect enhances the outcome when maximum score is used, and the positive affect of the sellers seems to be the driving force. Hypothesis 3 is not supported, as cognitive motivation and positive affect did not interact significantly.

Discussion

In this paper we have examined how cognitive motivation and positive affect influenced outcomes in dyadic integrative negotiations. In general, the results indicate that both variables are potent predictors of outcomes. Furthermore, the results also give some more specific insights into role-effects and aggregations. First we discuss the general effects, and then the more detailed findings.

The most important result from our investigation is the strong positive effects of cognitive motivation on negotiation outcomes. Being the first study of cognitive motivation in negotiation, our findings leave promising news for future studies. We have found that cognitive motivation influenced both the individual level outcomes (for sellers) and the joint gains. In this study we have examined intrinsic cognitive

motivation, or need for cognition. This is a tendency to effortful engagement in cognitive activities and must be distinguished from intelligence. Previous research has shown that it helps decision makers' overcome cognitive biases (e.g., Smith & Levin, 1996) and it generates continuous attention, curiosity, objectivism and other problem solving advantages (for a review, see Cacioppo et al., 1996) that should facilitate for integrativeness in negotiations. The results indicate that cognitive motivation is a potent variable in negotiation research.

Our research has been based on natural variations in intrinsic cognitive motivation. However, individuals high on cognitive motivation do not apply themselves effortfully to all tasks. The task must be stimulating and challenging. The results indicate that negotiation simulations are sufficiently stimulating to make need for cognition highly relevant. We expect that real life negotiations are even more likely to evoke effortful cognitive processes among those high in need for cognition. However, future research should examine what factors in negotiation situations that actually trigger cognitive efforts among those already high in intrinsic cognitive motivation. Perhaps educating individuals to perceive negotiations as a complex task with potentially creative non-obvious solutions will trigger cognitive efforts among those with high cognitive motivation. Furthermore, the strong effects of intrinsic cognitive motivation on outcomes reveal a need to find external cognitive motivators for individuals low on intrinsic motivation. It is probably a challenging task to trigger energetic problem solving among individuals low on need for cognition. Cacioppo et al. (1996) identify "personal relevance" as one situational factor that moderates between intrinsic cognitive motivation and effort. Situational variables studied in negotiation research, e.g. accountancy, may serve as a substitute for those low on cognitive motivation.

Further research on cognitive motivation should also examine the micro mediating process between cognitive motivation and negotiation outcomes. Psychological research on individual decision-making suggests that cognitive motivation works by removing cognitive biases and facilitate for cognitive playfulness. For practical purposes, selecting negotiators high on need for cognition and/or frame the situation as demanding may be as important as training negotiators to avoid cognitive biases.

Our investigation showed that positive affect, although less so than cognitive motivation, increased gain in negotiations. This is not surprising given previous research and conceptualizations (Barry & Oliver, 1996). There are, however, two aspects of our research that warrant special attention: the focus on natural, rather than experimentally manipulated positive mood, and the aroused nature of the positive affect construct. First, previous research has shown fairly mild manipulations of affect to influence behavior and outcome in negotiations (e.g., Forgas, 1998). Research on conflict behavior in natural settings (Rhoades et al., 2001) has found positive affect to generate high concern for one-self and others. In our study we find that natural variations in affective state also influence outcome. Second, our affect construct can be defined as aroused positive affect. The positive affect construct presented by Rhoades et al. (2001) also had a high arousal connotation (e.g., enthusiastic, excited, determined). This suggests that positive affective "motivation" influences behavior and outcomes in conflicts and negotiations. In order to detect the importance of arousal, further research should examine whether the same effects are found for low arousal positive affect.

Of the more detailed findings, the differential importance of the sellers and the buyers was an unexpected surprise. The seller's cognitive motivation and positive

affect had positive effects on outcomes. The affect and cognition of the buyers had low predictive power. Post hoc, we may speculate whether a "buyer is the king" norm influences the negotiation. The buyers may in fact let the sellers do all the work. Therefore, the characteristics of the sellers become more important for the outcome than those of the buyers. This line of reasoning is supported by a recent study on culture and negotiation (Drake, 2001). Role (seller or buyer) was found to be a better prediction of the fixed sum perceptions than culture. Furthermore, an explorative analysis showed that the sellers' behavior influenced the buyers' perception, but not vice versa. The buyers may perceive themselves as powerful and act distributively (Cai, Wilson, & Drake, 2000). The integrative gain must therefore come from innovative efforts from the sellers. The sellers are only able to improve their results by demonstrating that this does not hurt the buyers.

Future research should explore role differences by examining process data at the role level of analysis. The role effects point, however, to a more general challenge regarding the effects of individual level variables in dyadic interactions. In our examination of joint outcome the model with the best fit was based on maximum scores (i.e., the member with the highest score on cognitive motivation and positive affect) rather than on averaging the individual scores. Thus, the effects of combination and distribution of individual characteristics should be investigated in future studies of dyadic negotiations.

As always, it is necessary to be cautious when generalizing from experimental data on students. Furthermore, we lack process data to detect the micro mediating effects between individual level characteristics and outcomes at the dyadic level. Since we measured natural levels of affect, the ranges and effects may be lower than when strong manipulations are used. Furthermore, we did not manipulate situational

variables in this study. The inclusion of such variables could have helped us detecting the moderating and mediating effects between individual characteristics and outcomes. Nevertheless, the design allowed us to test for the effects of natural occurring individual differences on negotiation in a controlled setting. In this setting, cognitive motivation and positive affect were found to influence the quality of the outcome. Thus, thinking deep and feeling good may be powerful routes to success in negotiations.

References

Baron, R. A. (1990). Environmentally induced positive affect: Its impact on self-efficacy, task performance, negotiation and conflict. *Journal of Applied Psychology, 20,* 368-384.

Barry, B., & Oliver, R. L. (1996). Affect in dyadic negotiation: A model and propositions. *Organizational Behavior and Human Decision Processes, 67,* 127-143.

Bazerman, M. H., Curhan, J. R., Moore, D. A., & Valley, K. L. (2000). Negotiation. *Annual Review of Psychology, 51,* 279-314.

Cacioppo, J. T., & Petty, R. E. (1982). The need for cognition. *Journal of Personality and Social Psychology, 42,* 116-131.

Cacioppo, J. T., Petty, R. E., Feinstein, J. A., & Jarvis, W. B. (1996). Dispositional differences in cognitive motivation: The life and times of individuals varying in need for cognition. *Psychological Bulletin, 119,* 197-253.

Cacioppo, J. T., Petty, R. E., & Kao, C. F. (1984). The efficient assessment of need for cognition. *Journal of Personality Assessment, 48,* 306-307.

Cai, D. A., Wilson, S. R., & Drake L. E. (2000). Culture in the context of intercultural negotiation: Individualism-collectivism and paths to integrative agreements. *Human Communication Research, 26,* 591-617.

Caliguri, P. M., Jacobs, R. R., & Farr, J. L. (2000). The attitudinal and behavioral openness scale: scale development and construct validation. *International Journal of Intercultural Relations, 24,* 27-46.

Carnevale, P. J., & Isen, A. M. (1986). The influence of positive affect and visual access on the discovery of integrative solutions in bilateral negotiation. *Organizational Behavior and Human Decision Processes, 37,* 1-13.

Chatterjee, S., Heath, T. B., Milberg, S. J., & France, K. R. (2000). The differential

processing of price in gains and losses: The effects of frame and need for

cognition. *Journal of Behavioral Decision Making, 13,* 61-75.

de Dreu, C. K., Koole, S. L., & Oldersma F. L. (1999). On the seizing and freezing of

negotiator inferences: Need for cognitive closure moderates the use of

heuristics in negotiation. *Personality and Social Psychology Bulletin, 25,* 348-

362.

Drake, L. E. (2001). The culture-negotiation link: Integrative and distributive

bargaining through an intercultural communication lens. *Human

Communication Research, 27,* 317-349.

Forgas, J. P. (1995). Mood and judgment: The Affect Infusion Model (AIM).

Psychological Bulletin, 116, 39-66.

Forgas, J. P. (1998). On feeling good and getting your way: Mood effects on

negotiator cognition and bargaining strategies. *Journal of Personality and

Social Psychology, 74,* 565-577.

Forgas, J. P., & George, J. M. (2001). Affective influences on judgments and behavior

in organizations: An information processing perspective. *Organizational

Behavior and Human Decision Processes, 86,* 3-34.

George, J. M. (1990). Personality, affect and behavior in groups. *Journal of Applied

Psychology, 75,* 107-116.

Gulgos, S. (2001). Need for cognition and cognitive performance from a cross-

cultural perspective: Examples of academic success and solving anagrams.

The Journal of Psychology: Interdisciplinary and Applied, 135, 100-112.

Isen, A. M., & Baron, R. A. (1991). Positive affect as a factor in organizational

behavior. *Research in Organizational Behavior, 13,* 1-53.

Isen, A. M., Daubman, K. A., & Nowicki, G. P. (1987). Positive affect facilitates creative problem solving. *Journal of Personality and Social Psychology, 51,* 1122-1131.

Isen, A. M., & Means, B. (1983). The influence of positive affect on decision-making strategy. *Social Cognition, 2,* 18-31.

Malter, A. J., & Dickson, P. R. (2001). The effect of individual learning on competitive decision-making and firm performance. *International Journal of Research in Marketing, 18,* 99-117.

Nair, K. U., & Ramnarayan, S. (2000). Individual differences in need for cognition and complex problem solving. *Journal of Research in Personality, 34,* 305-328.

Neale, M. A., & Bazerman, M. H. (1991). *Cognition and rationality in negotiation.* New York: Free Press.

Neale, M. A., & Northcraft, G. B. (1991). Behavioral negotiation theory: A framework for conceptualizing dyadic bargaining. *Research in Organizational Behavior, 13,* 147-190.

Olekalns, M., & Smith, P. L. (1999). Social value orientations and strategy choices in competitive negotiations. *Personality and Social Psychology Bulletin, 6,* 657-668.

Pruitt, D. G., & Carnevale, P. J. (1993). *Negotiation in social conflict.* Buckingham: Open University Press.

Pruitt, D. G., & Lewis, S. A. (1975). Development of integrative solutions in bilateral negotiation. *Journal of Personality and Social Psychology, 31,* 621-633.

Rhoades, J. A., Arnold, J., & Jay, C. (2001). The role of affective traits and affective

states in disputants´ motivation and behavior during episodes of organizational

conflict. *Journal of Organizational Behavior, 22,* 329-345.

Rubin, J. Z., & Brown, B. R. (1975). *The social psychology of bargaining and*

negotiation. New York, San Fransisco, London: Academic Press.

Russel, J. A. (1980). A circumplex model of affect. *Journal of Personality and Social*

Psychology, 39, 1161-1178.

Russel, J. A., & Carroll J. M. (1999). On the bipolarity of positive and negative affect.

Psychological Bulletin, 125, 3-30.

Shestowsky, D., Wegener, D. T., & Fabrigar, L. R. (1998). Need for cognition and

interpersonal influence: Individual differences in impact on dyadic decisions.

Journal of Personality and Social Psychology, 74, 1317-1328.

Smith, S. M., & Levin, I. P. (1996). Need for cognition and choice framing effects.

Journal of Behavioral Decision Making, 13, 61-75.

Thompson, L. (1998). *The mind and heart of the negotiator.* Upper Saddle River, NJ:

Prentice Hall.

Tripp, T. M., & Sondak, H. (1992). An evaluation of dependent variables in

experimental negotiation studies: Impasse rates and Pareto efficiency.

Organizational Behavior and Human Decision Processes, 51, 272-295.

Watson, D., Clark, L.A., & Tellegen, A. (1988). Development and validation of brief

measures of positive and negative affect: the PANAS scales. *Journal of*

Personality and Social Psychology, 54, 1063-1070.

Footnotes

[1] We also measured joint outcome as Pareto efficiency. Pareto efficiency relates the agreements to Pareto optimal solutions. We developed an index based on Tripp and Sondak (1992), where we measured the number of possible agreements that were superior to the solution chosen by each dyad. However, as the correlation between Pareto efficiency (reversed) and joint sum was very high, $\underline{r} = .91$, we decided to use only one of the measures. We used joint outcome, as this is the most widely used measure in dyadic negotiations (Neale & Northcraft, 1991).

[2] We found no differences between the seller and the buyer in individual outcome, $F(1, 62) = 0.17$, *ns*, cognitive motivation, $F(1, 61) = 0.67$, *ns*, positive affect $F(1, 62) = 0.41$, *ns*, or in other variables as gender, age and experience.

[3] Furthermore, we also examined how individual outcome depended on the opponent's cognitive motivation and positive affect, but no effects were found.

Appendix A

Payoff Matrix

Delivery time			Product variations			Financing terms		
Alternative	Buyer	Seller	Alternative	Buyer	Seller	Alternative	Buyer	Seller
0 weeks	4000	0	9	2400	0	24 weeks	1600	0
1 week	3500	200	8	2100	300	18 weeks	1400	500
2-3 weeks	3000	400	7	1800	600	12 weeks	1200	1000
4-5 weeks	2500	600	6	1500	900	8 weeks	1000	1500
6-7 weeks	2000	800	5	1200	1200	6-7 weeks	800	2000
8-9 weeks	1500	1000	4	900	1500	4-5 weeks	600	2500
10-11 weeks	1000	1200	3	600	1800	2-3 weeks	400	3000
12-13 weeks	500	1400	2	300	2100	1 week	200	3500
14 weeks	0	1600	1	0	2400	0 weeks	0	4000

Note. Negotiators saw only their own payoff matrix and were not allowed to exchange payoff matrixes.

Tables

Table 1

Descriptive Statistics and Correlations

Variables	Individual level		Dyadic level				
	M	*SD*	*M*	*SD*	Outcome	CM	PA
Outcome	4667	760	9334	817		0.32**	0.11
Cognitive Motivation (CM)	3.47	0.58	3.47	0.45	0.52***	(0.79)	0.17
Positive Affect (PA)	2.71	0.68	2.71	0.45	0.35*	0.27	(0.73)

Note. Individual level correlations are shown above the diagonal, dyadic level correlations below. Coefficient alphas are shown in parentheses in the diagonal.

* $p < .10$. ** $p < .05$. *** $p < .01$.

Table 2

Regression Analyses on Individual Outcome

	Individual Outcome	
Independent Variables	Step 1	Step 2
Sellers		
Cognitive motivation	.55***	.49***
Positive affect	.05	.21
Cognitive motivation x Positive affect		-.31*
R^2	.31***	.39***
ΔR^2		.08*
Buyers		
Cognitive motivation	-.03	-.05
Positive affect	-.02	-.03
Cognitive motivation x Positive affect		-.05
R^2	.00	.00
ΔR^2		.00

Note. Standardized beta coefficients are shown.

* $p < .10$. *** $p < .01$.

Table 3

Regression Analyses on Dyadic Outcome

	Dyadic Outcome	
Independent Variables	Step 1	Step 2
Cognitive motivation		
Sellers' cognitive motivation	.57***	.60***
Buyers' cognitive motivation	.02	-.13
Sellers' x Buyers'		-.37**
R^2	.33***	.45***
ΔR^2		.12**
Positive affect		
Sellers' positive affect	.34*	.39**
Buyers' positive affect	.17	.14
Sellers' x Buyers'		-.33*
R^2	.13	.23*
ΔR^2		.10*

Note. Standardized beta coefficients are shown.

* $p < .10.$ ** $p < .05.$ *** $p < .01.$

Table 4

Regression Analyses on Dyadic Outcome for Average and Maximum Scores of

Cognitive Motivation and Positive Affect

	Dyadic Outcome	
Independent Variables	Step 1	Step 2
Average scores		
Cognitive motivation	.44***	.36**
Positive affect	.24	.20
Cognitive motivation x Positive affect		-.22
R^2	.30***	.34***
ΔR^2		.04
Maximum scores		
Cognitive motivation	.48***	.41**
Positive affect	.32**	.31**
Cognitive motivation x Positive affect		-.15
R^2	.42***	.43***
ΔR^2		.01

Note. Standardized beta coefficients are shown.

** $p < .05$. *** $p < .01$.