UvA-DARE (Digital Academic Repository)

The influence of own cognitive and other's communicated gain or loss frame on negotiator behavior

de Dreu, C.K.W.; Emans, B.J.M.; van de Vliert, E.

DOI

[10.1108/eb022708](https://doi.org/10.1108/eb022708)

Publication date

1992

Published in

The International Journal of Conflict Management

[Link to publication](#)

Citation for published version (APA):

de Dreu, C. K. W., Emans, B. J. M., & van de Vliert, E. (1992). The influence of own cognitive and other's communicated gain or loss frame on negotiator behavior. *The International Journal of Conflict Management*, 3(2), 115-132. <https://doi.org/10.1108/eb022708>

General rights

It is not permitted to download or to forward/distribute the text or part of it without the consent of the author(s) and/or copyright holder(s), other than for strictly personal, individual use, unless the work is under an open content license (like Creative Commons).

Disclaimer/Complaints regulations

If you believe that digital publication of certain material infringes any of your rights or (privacy) interests, please let the Library know, stating your reasons. In case of a legitimate complaint, the Library will make the material inaccessible and/or remove it from the website. Please Ask the Library: <https://uba.uva.nl/en/contact>, or a letter to: Library of the University of Amsterdam, Secretariat, Singel 425, 1012 WP Amsterdam, The Netherlands. You will be contacted as soon as possible.

Announcement

The *International Journal of Organizational Analysis* will publish a special issue in 1994 on Worldwide Organization Development, under the editorship of Robert T. Golembiewski.

Feel free at any time to discuss potential contributions with the editor:

Robert T. Golembiewski
Department of Political Science
Baldwin Hall
University of Georgia
Athens, GA 30602
Phone: 404-542-2970

The closing date for the first submission of all manuscripts is October 1, 1993.

Share your work about the OD—conceptual, empirical, or experiential, or all three—with the world!

The International Journal of Conflict Management
1992, Vol. 3, No. 2 (April), pp. 115-132

THE INFLUENCE OF OWN COGNITIVE AND OTHER'S COMMUNICATED GAIN OR LOSS FRAME ON NEGOTIATION BEHAVIOR*

Carsten K. W. de Dreu

Ben J. M. Emans

Evert van de Vliert

University of Groningen, the Netherlands

Research has shown that negotiators are more cooperative when they code their prospective outcomes as gains (gain frame) instead of as losses (loss frame). Supplementing this prior research that focused exclusively on the effects of negotiator's own frame on his or her own behavior, we argue that frames are communicated and that negotiators are influenced not only by their own frames, but by other's communicated frame as well. This proposition was tested using a 2 x 3 design, manipulating the negotiator's own frame (gains/losses) and other's communicated frame (gains/losses/not given). As predicted, other's communicated gain frame reinforced the negotiator's gain frame but did not alter the negotiator's loss frame into a gain frame. Other's communicated loss frame, however, both reinforced the negotiator's own loss frame and altered the negotiator's gain into a loss frame. As a result, other's communicated gain frame, compared to other's communicated loss frame, induced lower demands and higher concessions when negotiators had a gain frame themselves. Loss framed negotiators, however, were not significantly influenced by other's communicated frame.

In the last decade, researchers have become concerned with cognitive heuristics and biases affecting negotiation behavior and outcomes (e.g., Bazerman & Neale, 1983; Carnevale & Pruitt, 1992; Neale & Bazerman, 1991; Thompson, 1990; Thompson & Hastie, 1988, 1990). As a case in point, the present study dealt with negotiator frames. A frame is defined as the negotiator's representation of potential outcomes as gains or as losses (cf. Bazerman, 1983; Kahneman & Tversky, 1979). Although the effects of the negotiator's frame on the negotiator's own

*The authors thank Anja de Boer and Rommert Jorritsma for their help at various stages of the research project and Peter Carnevale, Max Bazerman, Afzal Rahim and two anonymous reviewers for their excellent comments on a previous draft. This article was written while the first author was at the University of Illinois at Urbana-Champaign as a Fulbright scholar.

behavior are well documented, very little is known about the way negotiators exchange their frames, and how this subsequently affects the negotiator's own and other's behavior. The research reported here addressed these questions.

According to prospect theory (Kahneman & Tversky, 1979), people code potential outcomes relative to some reference-point, usually the status quo or some aspiration level. Outcomes above one's reference-point are positively coded and evaluated as gains (gain frame), while outcomes below one's reference-point are negatively coded and evaluated as losses (loss frame). Gain framed negotiators thus cognitively categorize negotiation outcomes in positive terms and evaluate their concessions as reductions in their gains. Loss framed negotiators code negotiation outcomes negatively and evaluate their concessions as increases in their losses (Bazerman, 1983; Carnevale, Gentile, & De Dreu, 1992). Gain framed negotiators thus are more or less focused on the maximization of gains, while loss framed negotiators are more or less focused on the minimization of losses.

Recent literature reviews suggest that because gains are less threatening than losses, the latter evoke stronger reactions and more complex cognitive activity (Peeters & Czapinski, 1990; Taylor, 1991). Kahneman and Tversky (1979, 1984; Tversky & Kahneman, 1981) similarly argued that gains are less attractive than equivalent losses which are aversive. As a result, people are less motivated to maximize gains than they are motivated to minimize losses (Budescu & Weiss, 1987; Taylor, 1991). Gain framed negotiators thus will have lower demands and will be less resistant to concession making than loss framed negotiators (cf. Carnevale & Pruitt, 1992; Carnevale, Gentile, & De Dreu, 1992). Empirical support for this proposition has been obtained in several experimental studies. Neale and Bazerman (1985) instructed half of their subjects to maximize their gains, and the other half to minimize their losses. Their results showed that gain framed negotiators conceded more, settled easier and were rated as less competitive than loss framed negotiators. Bazerman, Magliozzi, and Neale (1985), and Neale, Huber, and Northcraft (1987) used a three-issue bargaining task developed by Pruitt and Lewis (1975; see also Pruitt, 1981). In the gain frame condition, subjects negotiated over their net profit. In the loss frame condition, however, subjects negotiated over expenses that cut into their gross outcomes. Consistent with the Neale and Bazerman (1985) findings, results showed that gain framed negotiators settled more often than loss framed negotiators. Using the Bazerman et al. (1985) manipulations, several recent experiments additionally showed that gain frames produce lower aspirations and less resistance to concession making than loss frames (Bottom, 1989; Carnevale & Keenan, 1992; Carnevale, Gentile, & De Dreu, 1992; Hollingshead & Carnevale, 1990).

Following the idea that peoples' cognitions affect their language and communication (Forgas, 1981; Markus & Zajonc, 1985), it can be assumed that negotiators' cognitive frames affect the way negotiators *verbally* evaluate outcomes in either gain or loss terms. Negotiators thus may consciously or unconsciously communicate their own gain or loss frame to the other party. This might then affect the other negotiator's cognitions and behavior. Conversely, the other party's com-

municated frame may affect the negotiator's own cognitions and behavior. Contrary to prior research, we thus conceptualize negotiator frames both at a cognitive and at a communicated level, and we suspect that negotiators are influenced not only by their own cognitive frames, but also by the frame communicated by their opponent. In the present study we examined how the opponent's verbal representation of outcomes as gains (communicated gain frame) or as losses (communicated loss frame) influenced the recipient's cognitions and negotiation behavior. Specifically, we were interested in how other's communicated gain or loss frame interferes with the recipient's cognitive gain or loss frame. Two competing hypotheses can be derived from the literature.

The first hypothesis is based on the idea that people are less willing and feel less obliged to help someone who anticipates positive, rather than negative outcomes (Heider, 1958; McClintock & Keil, 1982; Lindenberg, 1989). A gain frame communicated by the other party tells the negotiator that making concessions increases other's gains, whereas other's communicated loss frame tells the negotiator that conceding reduces other's losses. Following the literature on helping behavior just cited, it can be expected that other's communicated gain frame produces smaller concessions than other's communicated loss frame. Some evidence for this proposition was obtained in a game experimental study by De Dreu, Emans, and Van de Vliet (in press). In that study, the decision maker's own frame was manipulated by presenting own outcomes either as gains or as losses. The other party's frame was manipulated in a similar way: the decision maker's pay-off schedule presented other's outcomes as gains or as losses. Results showed that subjects made less cooperative choices in case of other's gain rather than loss frame, albeit only when subjects had a gain frame themselves; apparently, it was easier to sacrifice one's own gains than to increase one's own losses, in order to minimize other's losses. Combining the results of De Dreu et al. (in press) with past research on negotiator frames then leads to the following prediction: other's communicated gain frame induces higher demands and smaller concessions than other's communicated loss frame, especially when the negotiator has a gain, rather than loss frame. Because the negotiator is assumed to be concerned about own and other's losses more than about own and other's gains, we label this prediction the *concern for losses hypothesis*.

The alternative hypothesis is based on the idea that people categorize information in order to deal with a complex environment (e.g., Anderson, 1981; Rosch, 1977) and that these simplifying representations develop out of social interaction (Blumer, 1969; Markus & Zajonc, 1985; McGuire, 1985). Thus, a negotiator might categorize information about own potential outcomes as gains or as losses subject to the other party's representation of his or her outcomes as gains or as losses. Other's communicated gain frame may lead the negotiator to categorize own outcomes as gains, whereas other's communicated loss frame may lead the negotiator to represent own outcomes as losses. Further, when other's communicated frame is inconsistent with the negotiator's own cognitive frame, the negotiator's frame may change: gain framed negotiators may adopt the loss frame communicated by their

opponent, and loss framed negotiators may adopt the other's communicated gain frame. Because negative stimuli such as losses are weighted more heavily in judgment than equivalent positive stimuli including gains (Kahneman & Tversky, 1979; Peeters & Czapinski, 1990) and overrule positive information (Taylor, 1991), it can be suspected that other's communicated loss frame overrules one's own gain perspective more easily than that other's communicated gain frame overrules one's own loss perspective. The alternative hypothesis proposes that other's communicated gain frame confirms the recipient's gain frame, but will not alter the recipient's loss perspective, while other's communicated loss frame both confirms the negotiator's own loss frame and alters the negotiator's own gain frame into a loss perspective. Combined with the results of previous research about negotiator frames discussed above, it can be predicted that other's communicated gain frame induces lower demands and larger concessions than other's communicated loss frame, especially when the negotiators have a gain rather than loss frame themselves. We label this prediction the *frame adoption hypothesis*.

In summary, two competing hypotheses were developed. Both predict that gain framed negotiators are more influenced by other's communicated frame than loss framed negotiators; in case of gain framed negotiators, other's communicated gain frame either leads to less cooperative behavior (concern for losses hypothesis), or to more cooperative behavior (frame adoption hypothesis) than other's communicated loss frame. We tested these hypotheses in an experiment manipulating the negotiator's own cognitive and the other negotiator's communicated frame. Subjects negotiated via computers the transaction of several issues in a buyer/seller simulation. Although subjects were led to believe that they negotiated with another participant, they in fact negotiated with a preprogrammed computer (cf. Carnevale & Keenan, 1992; Carnevale, Gentile, & De Dreu, 1992). The negotiator's own frame was manipulated as in prior research, namely by means of issue charts displaying net profits (own gain frame), or expenses that would cut into gross profit (own loss frame). Other's communicated frame was manipulated by means of messages the other party sent to the negotiator. In other's communicated gain frame, these messages evaluated outcomes in gain terms. In other's communicated loss frame, these messages evaluated outcomes in loss terms. In order to study own frame effects when other's communicated frame could not affect the negotiator's own frame, we added another's 'no communicated frame' condition (in which no messages were sent) to the design. Although this confounded other's communication (a gain or loss frame) with other's non-communication (no frame), it enabled us to study the own frame effects in complete isolation of explicit or implicit information about other's frame.

Method

Design

The design was a 2 x 3 factorial, involving Own Frame (gains/losses) and Other's Communicated Frame (gains/losses/not given). The dependent variables

were the negotiator's concessions, demands, own communicated frame sent to the other party, and perceptions of the other party.

Subjects

One hundred and forty one undergraduate students at the University of Groningen participated in the experiment. Subjects came in groups of eight persons to the laboratory, where they were randomly assigned to experimental conditions (N ranged from 22 to 25).

Procedure

Upon arrival in the laboratory, subjects were placed in individual cubicles, preventing them from seeing each other. Each subject was seated in front of an Apple Macintosh computer which was connected to a central server. All instructions and information about the negotiation, as well as questions, were presented on the computer screen. Negotiation offers and messages, as well as post-negotiation questions could be communicated by means of a keyboard. After brief instructions, the subjects were told that they were participating in a simulated negotiation between a buyer and a seller. Each subject was always assigned the role of the seller and they were led to believe that some other participant was assigned the role of buyer. In fact, the buyer was a standardized computer program.

Subjects learned that they had to negotiate the transaction of refrigerators, and that the negotiation concentrated on three issues, namely price, delivery time and warranty. In order to enhance motivation to negotiate seriously, subjects further learned that they could earn points that were worth lottery tickets. They were told that, at the end of the negotiation, a lottery would decide whether a ticket was worth either 5, 25 or 50 cents. The more points subjects would have, the more lottery tickets they would receive, and the higher the amount of money they would take away afterwards. Finally, subjects were told that the buyer would make the first offer, that the negotiation would stop either when agreement was reached or time was over, and that in case of non-agreement, one obtained no points. Following these instructions, subjects first played two "sample" rounds to familiarize themselves with the computer, and then actually negotiated with the buyer. This negotiation lasted for a maximum of six rounds, after which the negotiation was interrupted to ask questions (none of the subjects had reached an agreement at this point). Subjects completed a questionnaire and were told that, because time was limited, the negotiation would not continue. Hereafter, subjects were fully debriefed. Regardless of subject's behavior in the negotiation, s/he received 15 Dutch guilders (about 7 U.S. dollars) for participation.

Independent Variables

Own Frame. The own frame variable was identical to that used in past studies of negotiator frame (Bazerman et al, 1985; Carnevale & Keenan, 1992). In the own gain frame condition, the subjects were told that the negotiation would concern how much profit they could make. They were shown an issue chart (see Table

1) that listed 9 levels of possible agreement (denoted by a number from 1 to 9) with a corresponding positive number that represented the profit value at each agreement level. They were told "You can see that the best deal for you is '1-1-1', for a total outcome of 8000 ($1600 + 2400 + 4000$)."

Table 1
Gain Framed Issue Chart with
Loss Framed Payoffs Between Brackets

Contract-level	Negotiation Issues		
	Delivery	Warranty	Price
1	1600 (-000)	2400 (-000)	4000 (-000)
2	1400 (-200)	2100 (-300)	3500 (-500)
3	1200 (-400)	1800 (-600)	3000 (-1000)
4	1000 (-600)	1500 (-900)	2500 (-1500)
5	800 (-800)	1200 (-1200)	2000 (-2000)
6	600 (-1000)	900 (-1500)	1500 (-2500)
7	400 (-1200)	600 (-1800)	1000 (-3000)
8	200 (-1400)	300 (-2100)	500 (-3500)
9	000 (-1600)	000 (-2400)	000 (-4000)

Note: Subjects were provided with either the positive numbers or with the negative numbers. In the latter situation, they were told that the numbers represented expenses that would cut into their gross profit ($8000 - \text{expenses}$). Subjects could propose different contract levels for different issues at each round.

In the own loss frame condition, the subjects were told that the negotiation would concern how much expenses would cut into their gross profit. They were told that their net profit was 8000 minus expenses. They were shown an issue chart (see Table 1) that listed 9 levels of possible agreement with a corresponding negative number that represented the expense value at each agreement level. They were told "You can see that the best deal for you is '1-1-1', for a total expense of 0 ($0 + 0 + 0$). At 1-1-1, your net profit would equal 8000 (that is, $8000 - 0 = 8000$)."

Other's Communicated Frame. Each proposal made by the other party was accompanied by a message, except in the other's no frame condition. In the other's communicated gain frame condition, these messages all expressed gains, in that the other party's own outcomes were always evaluated from a gain perspective. In the other's communicated loss frame condition, these messages all expressed losses, in that the other party's own outcomes were always evaluated from a loss perspective. The six gain and six loss messages are presented in Table 2.

Table 2
Messages Used to Manipulate Other's Communicated Frame

Messages	Gain Frame	Loss Frame
1	I make little gains with this offer.	I make big losses with this offer.
2	Hey, I didn't make much gains so far, and your offer implies small gains.	Hey, I've already lost quite a lot, and your offer implies big losses.
3	Let's get serious. I've made small gains, and I will not reduce my profits much more.	Let's get serious. I've made large losses, and I will not increase my expenses much more.
4	This is my fourth concession already, and I'm gaining far too little.	This is my fourth concession already, and I'm losing far too much.
5	My gains so far are really unsatisfying.	My losses so far are really unsatisfying.
6	I'm sorry, but I think I've gained too little.	I'm sorry, but I think I've lost too much.

Note: Messages are translated from Dutch.

A potential problem was that the six gain versus six loss messages not only differed in the communicated frame, but also in relevant other variables such as cooperativeness, persuasiveness and artificiality. This might confound or obscure the predicted effects of other's communicated frame. To prevent such problems, we selected the used messages from a larger sample by means of a pretest with 33 students from the same population as the experimental subjects. Ratings were assessed on (a) does this message express a gain perspective or a loss perspective (1 = definitely losses to 7 = definitely gains), (b) how cooperative is this message (1 = very competitive to 7 = very cooperative), (c) how persuasive is this message (1 = not at all to 7 = very persuasive), and (d) how artificial is this message (1 = very artificial to 7 = very natural). For each message, analysis of variance yielded strong main effects for the first question, all $F(1, 32) > 4.0$, $p's < .01$. By contrast, no significant differences were observed for the second, third and fourth questions, all $F(1, 32) < 2.0$, $p's > .20$. Inspection of the overall means revealed that the used messages differed in the communicated frame (gain messages $M = 5.65$, loss messages $M = 2.47$), were rated as moderately persuasive (gain messages: $M = 5.06$; loss messages $M = 5.07$), were not seen as artificial (gain messages $M = 3.91$, loss messages $M = 3.95$), and were rated as moderately cooperative (gain messages $M = 4.08$; loss messages $M = 4.12$). It is concluded that the messages differed in the communicated frame, but not in a priori cooperativeness, artificiality and persuasiveness.

Programmed Opponent's Offers

An issue in experiments like this is the program's offer behavior: whether it generates contingent or noncontingent responses, and whether it generates cooperative or competitive perceptions which can account for substantial variation in the subjects' offer behavior. For example, if a programmed bargainer sent integrative offers on every round (e.g., "9-5-1" or "8-5-3"; see Table 1), as opposed to non-integrative offers (e.g., "8-8-8" or "6-6-6"), it is more likely that subjects would consider tradeoffs in their own offers. As a result, we designed the offer pattern to be noncontingent and intermediate in the tradeoff pattern and apparent cooperativeness. Across the six rounds of the negotiation, the programmed buyer sent the following offers: 9-8-9, 9-7-7, 8-6-7, 7-6-7, 7-6-6, and 8-5-6 (see Table 1). Data from other studies (Carnevale & Keenan, 1992; Carnevale, Gentile, & De Dreu, 1992) had indicated that a similar pattern was intermediate in perceived cooperativeness-competitiveness.

Dependent Variables

On each round, the offers of the subjects were recorded. In addition, the subjects were given the opportunity to create and send a message to the buyer on a given round (no prewritten messages were provided). At the end of the negotiation, subjects were asked several questions described in more detail in the results section.

Results

Manipulation Checks

The adequacy of the own frame manipulation was assessed by asking subjects whether they were negotiating over net profits or over expenses that cut into their gross profit. As expected, responses to this question were only associated with own frame, $\chi^2(2) = 42.38, p < .0001$. Fifty eight subjects in the gain frame condition answered correctly that they negotiated over net profits, while 13 subjects answered that they negotiated over expenses. Sixty subjects in the loss frame condition stated correctly that they negotiated over expenses, while the remaining 10 answered that they negotiated over net profits.

As in prior research (e.g., Neale et al., 1985; Carnevale & Keenan, 1992), subjects were also asked what minimum net profit they still thought to be acceptable (i.e., negotiator's limit). Subjects gave their limit by typing a number between 0 and 8000. The expected main effect for own frame indicated that subjects in the own loss frame condition reported higher limits than subjects in the own gain frame condition, $M = 4549$ versus $M = 4085$; $F(1, 135) = 6.38, p < .02$. Additionally, a main effect for other's communicated frame, $F(2, 135) = 3.07, p < .05$, showed that subjects reported somewhat lower limits when the other party communicated a gain frame ($M = 4031$), than loss frame ($M = 4308$; $t(91) = -1.67, p <$

.09), or no frame ($M = 4593$; $t(93) = -3.01, p < .01$). This result is consistent with the frame adoption hypothesis.

The adequacy of the other's communicated frame manipulation was assessed by analyzing the frequency with which subjects referred to another's outcomes in gain or loss terms. It was assumed that when the other's communicated frame is perceived accurately, subjects refer to other's outcomes in gain terms when the other party communicates a gain frame, and in loss terms when the other party communicates a loss frame. These results, reported below under 'negotiator's communication', confirmed the manipulation of other's communicated frame.

Negotiation Concessions and Demands

Offer data were transformed into two indices, each tapping a different aspect of the negotiator's behavior. First, an index for average concessions was calculated by summing the contract levels proposed by the negotiator. Thus, a proposal 1-1-1 was coded as 3 ($1 + 1 + 1$), and a proposal 5-3-1 was coded 9 ($5 + 3 + 1$). The mean value over six rounds constituted the average concession. In addition, an index for average demands was calculated in a similar way, namely by summing the points associated with each proposal. Thus, proposal 1-1-1 represented a demand level of 8000 ($1600 + 2400 + 4000$), and proposal 5-3-1 constituted a demand of 6600 ($800 + 1800 + 4000$) (see also Table 1).

Average Concession. Analysis of variance on average concession revealed a main effect for other's communicated frame, $F(2, 135) = 9.69, p < .001$, as well as a borderline significant interaction between own frame and other's communicated frame, $F(2, 135) = 2.86, p < .061$. Cell means are presented in row 1 of Table 3. Consistent with the frame adoption hypothesis, it appears that loss framed negotiators were not significantly influenced by other's communicated frame, while gain framed negotiators made larger concessions under other's communicated gain frame than under other's communicated loss or no frame.

Average Demand. Analysis of variance on average demand revealed similar results. First, a main effect for other's communicated frame was found, $F(2, 135) = 7.97, p < .001$. Consistent with the frame adoption hypothesis, this main effect was qualified by a marginally significant interaction between own frame and other's communicated frame, $F(2, 135) = 2.4, p < .10$. Cell means are given in row 2 of Table 3. Loss framed negotiators were not significantly influenced by other's communicated frame, whereas gain framed negotiators had lower demands under other's communicated gain, than under other's communicated loss or no frame.

Table 3
Means for Average Concession and Demand as a Function of
Own Frame and Other's Communicated Frame

Other's Communicated Frame	Own Frame					
	Gains			Losses		
	Gains	Losses	Not Given	Gains	Losses	Not Given
Average						
Concessions	11.32 ^a	8.81 ^{bc}	7.71 ^c	9.94 ^{abc}	9.68 ^{abc}	8.28 ^{abc}
Demand	4440 ^a	5275 ^{bc}	5828 ^c	4890 ^{ab}	5006 ^{ab}	5356 ^{bc}

a,b,c Means for each dependent variable with unequal superscripts differ at $p < .05$

Negotiator's Communication

One hundred and eighteen subjects created one or more messages. Of the twenty-three subjects who never sent a message, 22 subjects were in the other's no communicated frame condition (12 had a gain frame and 10 had a loss frame). Apparently, other's non-communication is strongly reciprocated. For two reasons, we conducted further analyses of negotiator's communication only on those subjects who sent at least one message, namely (1) because including the 'silent' subjects created a severe heterogeneity of variance among experimental conditions, and (2) because it is difficult to interpret non-communication unequivocally (e.g., does it reflect a competitive stance, or inaction). Analyses with and without the 'silent' subjects both revealed virtually identical results, but, for the reasons outlined above, the analyses without the 'silent' subjects are reported here.

Analysis of variance on the number of messages sent yielded a main effect for own frame, showing that gain framed negotiators communicated somewhat less than loss framed negotiators, $M = 4.62$ versus $M = 4.95$; $F(1, 112) = 3.86$, $p < .06$. A main effect for other's communicated frame further showed that subjects sent less messages when the other party communicated no frame ($M = 2.04$), rather than either a gain ($M = 4.74$) or loss frame ($M = 5.32$), $F(2, 112) = 48.39$, $p < .0001$. As pointed out already, other's communication seems to be reciprocated, as is other's non-communication. Two judges, blind to experimental conditions and hypotheses scored the message content on three dimensions, namely (1) the framing of other's outcomes as gains or as losses, (2) the framing of own outcomes as gains or as losses, and (3) the message cooperativeness. Interrater agreements always exceeded .86.

Framing of Other's Outcomes. First, we analyzed whether subjects referred to other's outcomes in gain terms or in loss terms. This measure provides insight in

the adequacy of the other's communicated frame manipulation. When a message referred to other's outcomes as gains (e.g., your gains, your profits, your benefits), this message was scored as 'other's gain frame'; when it referred to other's outcomes as losses (e.g., your losses, your costs, your expenses), it was scored as 'other's loss frame.' The number of 'other's gain frame' and the number of 'other's loss frame' messages, divided by the total number of messages sent, was analyzed by means of a 2 (Own Frame) $\times$ 3 (Other's Communicated Frame) $\times$ 2 (Frames other's outcomes as gains or losses) analysis of variance with the latter variable within subjects. A main effect for other's communicated frame first indicated that subjects referred more to other's outcomes when the other party communicated a gain frame ($M = .16$) or a loss frame ($M = .12$), rather than no frame ($M = .01$), $F(2, 112) = 29.25$, $p < .0001$. This effect was qualified by a significant interaction between other's communicated frame and framing of other's outcomes, $F(2, 112) = 112.5$, $p < .0001$. When the other party communicated a gain frame, subjects referred to the other's outcomes as gains and not as losses ($M = .31$ versus $M = .00$, $p < .001$), while they referred to the other's outcomes as losses and not as gains, when the other party communicated a loss frame ($M = .25$ versus $M = .00$, $p < .001$). These data show that the manipulation of other's communicated frame was successful. Additionally, they show that when the opponent talks about outcomes, these outcomes become an important part of the negotiator's own communication.

Own Communicated Frame. In the second place, we analyzed whether subjects referred to their own outcomes in terms of gains or losses. When a message contained words like 'my benefits', 'my gains', or 'my profits', the message was coded as own communicated gain frame. When a message contained words like 'my losses', 'my expenses', or 'my costs', the message was coded as own communicated loss frame. Whether negotiators refer to their own outcomes in either gain or loss terms can be considered to reflect the negotiator's (cognitive) frame. The frame-adoption hypothesis predicted that other's communicated frame would influence negotiators' own frame, especially when negotiators themselves have a gain frame.

The number of "own communicated gain frame," and number of "own communicated loss frame" messages, divided by the total number of messages sent, was analyzed by means of a 2 (Own Frame) $\times$ 3 (Other's Communicated Frame) $\times$ 2 (Own Communicated Frame: gains/losses) analysis of variance with the latter variable within subjects. First of all, a significant interaction between own frame and own communicated frame emerged, $F(1, 112) = 18.79$, $p < .001$. Gain framed negotiators communicated a gain frame more often than a loss frame ($M = .12$ versus $M = .02$, $p < .05$), while loss framed negotiators communicated a loss frame more often than a gain frame ($M = .15$ versus $M = .07$, $p < .05$). This result is consistent with our assumption that negotiator frames are reflected in their communication.

Second, a significant main effect for other's communicated frame emerged, showing that subjects talked less about their own outcomes when the other party communicated no frame ($M = .06$), rather than a gain frame ($M = .10$) or a loss

frame ($M = .12$), $F(2, 112) = 3.01$, $p < .06$. This effect was qualified by a significant interaction between other's communicated frame and own communicated frame, $F(2, 112) = 18.06$, $p < .001$. Negotiators referred to their own outcomes as gains when the other party communicated a gain frame, or no frame ($M = .14$ and $M = .08$), more often than when the other party communicated a loss frame ($M = .02$). Conversely, they referred more often to their own outcomes as losses when the other party communicated a loss frame ($M = .21$) rather than a gain frame or no frame ($M = .06$ and $M = .05$).

These effects were further qualified by an interaction between own frame, other's communicated frame, and own communicated frame, $F(2, 112) = 2.73$, $p < .07$. Cell means are shown in Table 4. First of all, it can be seen that when the other party communicated no frame, gain framed negotiators communicated a gain frame more often than a loss frame, whereas loss framed negotiators communicated a loss frame more often than a gain frame. Second, when the other party communicated a gain frame, gain framed negotiators communicated a gain frame more often than a loss frame, but only when they themselves had a gain frame; when they had a loss frame, they did not communicate more in gain than in loss terms. When the other party communicated a loss frame, however, both gain and loss framed negotiators communicated a loss frame themselves. Thus, consistent with the frame adoption hypothesis, it appears that other's communicated gain frame is reciprocated only when negotiators have a gain frame themselves, whereas the other's communicated loss frame is reciprocated regardless of one's own cognitive frame.

Table 4
Means for Own Communicated Gain or Loss Frame as a Function
of Own Frame and Other's Communicated Frame

Other's Communicated Frame	Own Frame					
	Gains			Losses		
	Gains	Losses	Not Given	Gains	Losses	Not Given
Own Comm. Frame						
Gains	.23 ^a	.01 ^d	.13 ^b	.04 ^{cd}	.03 ^{cd}	.00 ^d
Losses	.04 ^{cd}	.18 ^{ab}	.00 ^d	.10 ^{bc}	.21 ^a	.07 ^c

^{a,b,c} Means with unequal superscripts differ at $p < .05$.

Cooperativeness of Messages. Finally, we analyzed the cooperativeness of communication. Both judges rated each message on a Likert scale ranging from

very competitive (1) to very cooperative (7) (interrater reliability = .85). Analysis of variance on the averaged ratings for cooperativeness, divided by the total number of messages sent, yielded no effects for the experimental variables, all $F(1, 112) < 1$, *n.s.* On average, subjects sent messages that were rated as intermediate in cooperativeness-competitiveness ($M = 3.96$).

Perception of Other

We assessed subjects' perceptions of the other party in order to determine whether the communication of a frame influences perceptions of the sender. Subjects were asked how exploitative and selfish the other party was during the negotiation (both seven-point scales with 1 = not at all to 7 = very much). Analysis of variance yielded main effects for other's communicated frame on exploitativeness, $F(2, 135) = 5.35$, $p < .01$, and on selfishness, $F(2, 135) = 2.91$, $p < .06$. No other effects were found. The cell means are presented in Table 5, from which it can be seen that the other party was perceived as more exploitative and selfish when the other party communicated no frame, than either a gain or loss frame. In line with the pretest results, no differences were found between other's communicated gain or loss frame.

Table 5
Means for Perception of Other as a Function
of Other's Communicated Frame

	Other's Communicated Frame		
	Gains	Loss	Not Given
Exploitative	2.94 ^a	3.34 ^a	3.94 ^b
Selfish	2.93 ^a	2.91 ^a	4.46 ^b

^{a,b} Means for each dependent variable with unequal superscripts differ at $p < .05$.

Discussion

The experiment tested two competing hypotheses about the influence of other's communicated gain or loss frame on negotiator cognitions and behavior. Prior research (De Dreu et al., 1992) and the literature concerning helping behavior (Lindenberg, 1989; McClintock & Keil, 1982) led to the concern for losses hypothesis. It predicted that other's communicated gain frame induces higher demands and smaller concessions than other's communicated loss frame, especially when negotiators have a gain rather than loss frame themselves. The competing frame adoption hypothesis predicted that other's communicated gain frame would induce lower demands and larger concessions than other's communicated loss

frame, especially when negotiators have a gain rather than loss frame themselves. Our data showed that other's communicated gain frame induced lower limits, lower demands and larger concessions than other's communicated loss frame, especially when negotiators had a gain rather than loss frame themselves. Moreover, negotiators talked about their own outcomes in gain terms only when the other party communicated a gain frame or no frame and they had a gain frame themselves; when the other party communicated a loss frame, negotiators talked about their own outcomes in loss terms, regardless their own cognitive frame. Together, these data suggest that the concern for losses hypothesis must be rejected, while the frame adoption hypothesis receives good support.

Consistent with the frame adoption hypothesis, the results of the present study strongly suggest that negotiators' (cognitive) frames develop and change as a function of their opponent's communicated frame. Specifically, our data showed that other's communicated gain frame changes a loss frame less easily into a gain frame than that other's communicated loss frame changes a gain frame into a loss frame. This suggests that the communication of a gain frame is less contagious than the communication of a loss frame, and that gain framed negotiators are less committed to their frame than loss framed negotiators. An important implication of our findings thus is that when two negotiators have different frames, the gain framed negotiator adopts other's loss frame more readily than vice versa. It requires only one loss framed negotiator to induce resistance to concession making in both; only if both negotiators hold and communicate a gain frame, will settlement rather than stalemate be fostered.

Our findings extend past research in two other ways. Up to now, research restricted itself to the influence of negotiator frames upon the negotiator's own cognitions and behavior, and thus implicitly conceptualized frames in intrapersonal and rather static terms. The present findings undermine such an implicit conceptualization (cf. Putnam & Holmer, in press). Negotiators communicate frames and some first evidence is provided here that these communicated frames shape the opponent's cognitions and behaviors. Furthermore, our data strongly showed that communicated frames are reciprocated, suggesting that frames become more and more anchored, making it more and more difficult to change them (especially in case of loss frames). By implication, it can be suggested that mediators or constituents wanting to change the negotiators' frame should do this quickly. Otherwise, their job might be more difficult than presumed. In the second place, most studies concerned with negotiator frames manipulated these by means of payoff schedules (i.e., Bazerman et al., 1985; Carnevale & Keenan, 1992; Carnevale, Gentile, & De Dreu, 1992; Neale et al., 1987). Although we believe this to be an elegant way to study frame effects in the laboratory, everyday negotiations seldom take place on the basis of some (framed) payoff schedule. Our findings, however, suggest that negotiator frames are also induced by the frames communicated by their opponents, and probably also by the frames communicated by constituents or mediators. If so, negotiators, mediators and constituents should be aware of the frame they communicate to the negotiating parties. Unawareness may induce unde-

sirable frames, while controlled frame communication permits one to influence the negotiator's frame in a desirable way (cf. Russo & Schoemaker, 1989). Conversely, it can be suggested that negotiators, constituents, or mediators should pay careful attention to the frames communicated by both negotiators. This increases one's insight in the negotiators' perspective, which in turn might promote successful interventions.

Two explanations for the fact that the present study obtained results that were opposite to those of De Dreu et al. (in press) can be given. De Dreu et al. (in press) examined cooperative choices in non-iterated prisoners' dilemmas as a function of other's frame, which was manipulated by presenting other's outcomes either as losses or as gains. The present study examined the influence of other's communicated frame in negotiations. Apparently, psychological differences exist between a frame communicated by the other party, and other's (cognitive) frame given by the experimenter. Future research should address these differences, for example by examining the influence of other's communicated gain or loss frame when other's cognitive gain or loss frame is known to the negotiator. A second possible explanation is that norms about helping behavior were far more salient in the study by De Dreu et al. (in press) than in the present one. Contrary to the present study, subjects in that study were psychology sophomores who might have interacted before the experiment or might have anticipated future interaction. Prior or anticipated future interaction enhances cooperative motives (Ben-Yoav & Pruitt, 1984; Komorita & Carnevale, 1988), and the data of De Dreu et al. (in press) indeed showed that even in the least cooperative condition, subjects made about sixty percent cooperative choices. Thus, future research might examine the influence of other's communicated gain or loss frame in a cooperative versus competitive negotiation context.

Past research repeatedly observed that gain framed negotiators are more cooperative than loss framed negotiators (e.g., Bazerman et al., 1985; Neale et al., 1985, 1987). As became evident in the other's no communicated frame conditions, we did not replicate this past finding. Carnevale and Keenan (1992) recently argued that most prior studies used individualistically motivated subjects and they observed that the 'classical' frame effects were entirely absent when negotiators had a cooperative orientation. Only under an individualistic orientation, gain framed negotiators made larger concessions than loss framed negotiators. The fact that we did not explicitly induce an individualistic motivation thus may have obscured the possible effects of negotiator's own frame.

Not communicating led to somewhat higher levels of competitiveness than communicating a loss frame, both inducing more competition than communicating a gain frame (albeit only significantly in case of gain framed negotiators). The frame adoption hypothesis anticipated the difference between other's communicated gain and loss frame, but cannot account for the rather competitive reactions observed in the other's no communicated frame condition. The results for perception of the other party and the communication data provide some ideas about the nature of this effect. Negotiators rated their opponent as more exploitative and

more selfish when other's communicated frame was absent rather than present. Furthermore, they reciprocated other's non-communication as they did with regard to other's communication. In the first place, this suggests that the differences between the other's communicated frame conditions and the other's communicated no frame conditions are due to the presence or absence of communication, rather than the presence or absence of a communicated frame. In the second place, these data suggest that another's non-communication, as compared to another's communication, is interpreted as a more hostile stance which in turn enhances competitiveness. Compared to communicating a gain frame, it thus seems that taking a hostile stance by not communicating at all or by communicating a loss frame enhances negotiator's resistance to concession making, either because of their matching other's competitive behavior or because of their adoption of other's communicated loss frame.

References

- Anderson, J. R. (1981). *Cognitive psychology and its implications*. San Francisco, CA: Freeman Press.
- Bazerman, M. H. (1983). Negotiator judgment; a critical look at the rationality assumption. *American Behavioral Scientist*, 27, 211-228.
- Bazerman, M. H., Magliozzi, T., & Neale, M. (1985). Integrative bargaining in a competitive market. *Organizational Behavior and Human Decision Processes*, 35, 294-313.
- Bazerman, M. H., & Neale, M. (1983). Heuristics in negotiation: Limitations to effective dispute resolution. In M. H. Bazerman & R. J. Lewicki (Eds.), *Negotiations in organizations* (pp. 51-67). Beverly Hills, CA: Sage.
- Ben-Yoav, O., & Pruitt, D. (1984). Resistance to yielding and the expectation of cooperative future interaction in negotiation. *Journal of Experimental Social Psychology*, 34, 323-335.
- Blumer, H. (1969). *Symbolic interactionism: Perspective and method*. Englewood Cliffs, NJ: Prentice Hall.
- Bottom, W. P. (1989, August). *Adaptive reference-points in integrative bargaining*. Paper presented at the SPUDM conference, Moscow.
- Budescu, D. V., & Weiss, W. (1987). Reflection of transitive and intransitive preferences: A test of Prospect Theory. *Organizational Behavior and Human Decision Processes*, 39, 184-202.
- Carnevale, P. J., & Keenan, P. (1992). *Decision frame and social goals in integrative bargaining: The likelihood of agreement versus the quality*. Unpublished paper. University of Illinois at Urbana-Champaign.
- Carnevale, P. J., Gentile, S., & De Dreu, C. K. W. (1992). *Time pressure, uncertainty and frames in bilateral negotiation*. Unpublished paper. University of Illinois at Urbana-Champaign.
- Carnevale, P. J., & Pruitt, D. (1992). Negotiation and mediation. *Annual Review of Psychology*, 43, 531-582.
- De Dreu, C. K. W., Emans, B. J. M., & van de Vliert, E. (in press). Frames of reference and cooperative social decision making. *European Journal of Social Psychology*.
- Forgas, J. P. (1981). *Social Cognition: Perspectives on everyday understanding*. London: Academic Press.
- Heider, F. (1958). *The psychology of interpersonal relations*. New York: Wiley.
- Hollingshead, A. B., & Carnevale, P. J. (1990, August). *Positive affect and decision frame in integrative bargaining: A reversal of the frame effect*. Paper presented at the 50th annual meeting of the Academy of Management, San Francisco, CA.
- Kahneman, D., & Tversky, A. (1979). Prospect Theory: An analysis of decision making under risk. *Econometrica*, 47, 263-291.
- Kahneman, D., & Tversky, A. (1984). Choices, values and frames. *American Psychologist*, 39, 341-350.
- Komorita, S. S., & Carnevale, P. J. (1988, June). *Motivational arousal versus decision framing in social dilemmas*. Paper presented at the international conference on social dilemmas, Groningen, the Netherlands.
- Lindenberg, S. (1989). Choice and culture: The behavioral basis of cultural impact on transactions. In H. Haferkamp (Ed.), *Social structure and culture* (pp. 175-198). Berlin/New York: Walter de Gruyter.
- Markus, H., & Zajonc, R. B. (1985). The cognitive perspective in social psychology. In G. Lindzey & E. Aronson (Eds.), *The handbook of social psychology* (3rd ed., pp. 137-230). New York: Random House.
- McClintock, C. M., & Keil, L. (1982). Equity and social exchange. In J. Greenberg & R. Cohen (Eds.), *Equity and justice in social behavior*. New York: Academic Press.
- McGuire, W. J. (1985). Attitudes and attitude change. In G. Lindzey & E. Aronson (Eds.), *The handbook of social psychology* (3rd ed., pp. 236-346). New York: Random House.
- Neale, M., & Bazerman, M. H. (1985). The effects of framing and negotiator overconfidence on bargaining behavior and outcomes. *Academy of Management Journal*, 28, 34-49.
- Neale, M., & Bazerman, M. H. (1991). *Rationality and cognition in negotiation*. New York: Free Press.
- Neale, M., Huber, V., & Northcraft, G. (1987). The framing of negotiations; contextual versus task frames. *Organizational Behavior and Human Decision Processes*, 39, 228-241.
- Peeters, G., & Czapinski, J. (1990). Positive-negative asymmetry in evaluations: The distinction between affective and informational negativity effects. *European Review of Social Psychology*, 1, 33-60.
- Pruitt, D. G. (1981). *Negotiation behavior*. New York: Academic Press.
- Pruitt, D. G., & Lewis, S. A. (1975). Development of integrative solutions in bilateral negotiation. *Journal of Personality and Social Psychology*, 31, 621-630.
- Putnam, L. L., & Holmer, M. (in press). Framing, reframing and issue development. In L. L. Putnam & M. E. Roloff (Eds.), *Communication perspectives on negotiation*. Newbury Park, CA: Sage.
- Rosch, E. H. (1977). Human categorization. In N. Warren (Ed.), *Advances in cross-cultural psychology*, 1. London: Academic Press.
- Russo, J. E., & Schoemaker, P. J. H. (1989). *Decision trap: Ten barriers to brilliant decision making*. New York: Simon & Schuster.
- Taylor, S. (1991). Asymmetrical effects of positive and negative events: The mobilization-minimization hypothesis. *Psychological Bulletin*, 110, 67-85.
- Thompson, L. L. (1990). Negotiation behavior and outcomes: Empirical evidence and theoretical issues. *Psychological Bulletin*, 108, 515-532.
- Thompson, L. L., & Hastie, R. (1990). Social perception in negotiation. *Organizational Behavior and Human Decision Processes*, 47, 98-123.

- Thompson, L. L., & Hastie, R. (1988). Judgment tasks and biases in negotiations. In B. H. Sheppard, M. H. Bazerman & R. J. Lewicki (Eds.), *Research in negotiation in organizations*, Vol. 2 (pp. 31-54). Greenwich, CT: JAI.
- Tversky, A., & Kahneman, D. (1981). The psychology of preferences. *Scientific American*, 248, 163-169.

Biographical Note

Carsten K. W. de Dreu
Department of Psychology
University of Groningen
Grote Kruisstraat 2/1
9712 TS Groningen, the Netherlands
Phone/Fax: 31-50-63-63-86/04

Carsten de Dreu is a Ph.D. student in Organizational Psychology at the University of Groningen. His research interests include negotiation, and attitude change and persuasion.

Ben Emans is associate professor in organizational psychology at the University of Groningen. He holds a Ph.D. degree in social sciences from the University of Groningen. His current research concerns leadership and organizational conflict.

Evert van de Vliert is the Professor of Organizational and Applied Social Psychology at the University of Groningen. He holds a Ph.D. degree in social sciences from the Free University in Amsterdam. His research interests include organizational intervention, role transitions, and conflict and conflict management.

Received: October 2, 1991
Accepted after revision: April 15, 1992

♥

RESEARCH NOTE

The International Journal of Conflict Management
1992, Vol 3, No. 2 (April), pp. 133-150

EFFECTS OF ARBITRATION CONDITION AND RISK-TAKING PROPENSITY UPON BARGAINING BEHAVIOR

William J. Bigoness
University of North Carolina at Chapel Hill
Philip B. DuBose
James Madison University

This study investigated the effects of arbitration condition and risk-taking propensity upon bargaining behavior. Negotiators anticipating final-offer arbitration settled more contracts, resolved more contract issues, and conceded more than did negotiators anticipating conventional arbitration. Contrary to our hypothesis, low risk-taking propensity dyads did not settle significantly more contract issues under final-offer arbitration than they did under conventional arbitration. Union negotiators made significantly greater concessions during the 30 minute pre-arbitration bargaining period and conceded a greater total amount than did management negotiators. Possible explanations for these findings are presented.

For more than 25 years following the publication of Stevens' (1966) article questioning whether or not compulsory arbitration is compatible with bargaining, policy makers and researchers alike have sought to determine the characteristics of an optimal arbitration system (Anderson, 1981; Bigoness, 1976; Champlin & Bognanno, 1985; Farber, Neale, & Bazerman, 1990; McCall, 1990; Notz & Starke, 1987; Wheeler, 1978). Interestingly, it is commonly accepted that the most effective arbitration procedure is one that is infrequently utilized and that provides an incentive for the parties to reach a negotiated settlement. The rationale behind this belief is that parties express greater satisfaction with, and greater commitment toward, negotiated settlements they reach themselves.

To facilitate negotiated settlements, arbitration systems must meet two criteria (Bigoness, 1976; Farber & Katz, 1979). First, the arbitration procedure must create uncertainty in the minds of the negotiating parties concerning arbitration outcomes. Second, the arbitration procedure must entail costs to the parties should