

Initial Perceptions in Negotiations: Evaluation and Response to ‘Logrolling’ Offers

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ABSTRACT

In negotiations, where several issues are under consideration and parties have different priorities among these issues, integrative agreements can be reached through ‘logrolling’: concessions on low priority issues in exchange for gains on higher priority issues. The present research focuses on the potential role of initial offers in the development of integrative agreements. We show first, that in a simulated competitive market the specific composition of initial offers influences the final agreements, beyond the effect predicted by their overall value. In order to obtain some insight into the judgmental processes that might play a role, we explore the way in which inexperienced negotiators presented with a hypothetical negotiation context evaluate and respond to logrolling versus distributive initial offers. Three hypotheses were tested: logrolling offers convey an implicit message of cooperation, logrolling offers promote understanding of the mutual interest structure of the task, and, finally, logrolling offers establish within-issue anchors. Results do not support the first two hypotheses: logrolling offers were not necessarily judged more attractive than distributive ones, and they did not seem to affect the deeply rooted fixed-pie assumption. However, initial offers did establish within-issue anchors: counter-offers were affected by the specific composition of the initial offers beyond the effect of their overall value. This anchoring process resulted in logrolling offers yielding a higher profit for their initiator, as well as higher combined profits for both parties. Copyright © 2002 John Wiley & Sons, Ltd.

KEY WORDS multi-issue negotiation; anchoring; initial offer; fixed-pie bias

INTRODUCTION

One of the primary topics of negotiation research concerns the development of integrative agreements, which reconcile both parties’ interests, and lead to higher joint benefit (Walton and McKersie, 1965; Pruitt, 1983). Integrative agreements are typically contrasted with distributive agreements. The latter represent agreed divisions of a fixed pie of resources, where one side’s gains are the other side’s losses. In negotiation

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involving complex agendas where several issues are under consideration, and the parties have different priorities among these issues, integrative agreements can be achieved through 'logrolling': each party concedes on low priority issues in exchange for concessions on issues of higher priority to themselves.

The present research focuses on the potential role of initial offers in the development of integrative agreements. Negotiators often make first offers, without sufficient understanding of how they affect the final outcome. Previous research ascertained the great impact of opening demands on subsequent negotiation and final agreements (Chertkoff and Conley, 1967; Liebert *et al.*, 1968; Benton *et al.*, 1972; Yukl, 1974; Rubin and Brown, 1975; Raiffa, 1982; Galinsky and Mussweiler, 2001). These studies, however, were conducted in uni-dimensional, non-integrative settings. Ritov (1996) extended this finding to multi-issue negotiation. In her study, initial offer values for both the initiator and the non-initiator significantly affected the final profit.

The great impact of initial offers on the *distributive* aspect of negotiation suggests that the antecedent of *integrative* agreement may already be found in the initial offer as well. Indeed, for inexperienced negotiators who are not familiar with the negotiation context, the opening offer constitutes the initial encounter with their opponent. As the negotiation process calls for interpretation of the opponent's underlying strategies and priorities, the initial offer may establish a frame for the recipient's judgment and response.

An integrative offer is often associated with higher overall value for the initiator as well as the recipient. However, beyond its overall value, the specific composition of the offer may also play a role. An integrative offer, just like an integrative agreement, would typically involve high inter-issue variance, namely, logrolling: the initiating party offers concessions on low priority issues, while making tough demands regarding issues of higher priority to herself. The recipient of such an offer may categorize it as a combination of some 'losses' and some 'gains'. In contrast, distributive offers are more likely to represent a division of similar proportion with respect to all the negotiated issues, and to be perceived as comprising 'neither losses nor gains'.

The overall value of offers is likely to play a major role when offers of different overall value are compared. However, when a single offer is presented in a novel context, the relative attractiveness of its overall value may be difficult to assess. By contrast, the offer's composition, in terms of 'losses' versus 'gains' might be easier to evaluate. Studies of single versus joint evaluation (Hsee, 1996; Bazerman *et al.*, 1999; Hsee *et al.*, 1999) suggest that when evaluating a separate single object, the attribute, which is easier to evaluate, is weighted more heavily than the attributes that are harder to evaluate. Thus, for example, when considering, one at a time, job offers varying in salary and procedural justice, the job with the greater procedural justice is valued higher than the higher paid job. Presumably, the absolute pay is harder to evaluate on its own than the procedural justice (Bazerman *et al.*, 1994).

Returning to our negotiation study, we draw upon the above literature in assuming that when an inexperienced recipient of a single opening offer evaluates this offer, the more easily evaluable attribute, namely the offer's specific composition, may play a prominent role. Thus, in the present research we ask first whether the specific composition of the opening offer affects the final agreement, beyond the already documented impact of its overall value. A re-analysis of the simulation data of Ritov (1996), to be reported here, indicates that the answer to the above question is affirmative: 'logrolling' opening offers do indeed lead to more integrative agreements.

In order to gain a better understanding of the cognitive underpinning process, by which integrative initial offers may propagate integrative outcomes, we experimentally manipulated the type of initial offer: 'logrolling' (characterized by high between-issue variance) versus 'distributive' (characterized by low between-issue variance). Hence, our new experiments (not including Ritov, 1996) did not actually involve negotiation. Rather, participants, after having studied their assigned or self-generated profit schedule in a hypothetical negotiation, were presented with an initial offer, supposedly forwarded by their opponent, and their task was to relate to this initial offer in different ways. Despite the limitations such an experimental design might impose on the generalizability of the findings (to be addressed in the discussion), it enables precise examination of specific hypotheses.

In the present research, we examine three possible ways in which the offer's specific composition may affect the negotiation process. First, high variance logrolling offers may be interpreted as a signal of a cooperative approach on the part of the initiator. This approach is likely to be reciprocated by the recipient. Second, offers combining tough demands on some issues with substantial concessions on other issues may provide a cue to the potentially different priorities of the opponent, thus suggesting the possibility of further logrolling. Finally, logrolling offers may simply establish within-issue anchors, which are beneficial for the initiator. We next discuss, in some detail, each of the above hypotheses.

(a) Logrolling offer as a signal of the offerer's approach

Numerous studies of negotiation emphasize the role of social psychological aspects in the negotiation process (e.g. Bazerman and Carroll, 1987; Deutsch, 1985; Pruitt and Rubin, 1986; Larrick and Blount, 1995; De Dreu and Boles, 1998; De Dreu *et al.*, 1998, 2000). The underlying assumption of this research is that social judgment provides the cognitive and affective basis for social response. Thus, the negotiators' interpretation of the interaction directly affects their choice of behavioral strategies. Interpretation of the relations in a negotiation involves, to a large extent, ascribing meaning to messages transmitted during the course of the negotiation. Recent research has shown that inducing initial expectations for cooperation rather than competition enhances problem solving abilities and cognitive flexibility (Carnevale and Probst, 1998). This implies that interpretation of initial negotiation messages as competitive or cooperative might affect the negotiator's ability to detect integrative potential and to perceive that trade-offs are possible.

As suggested earlier, the opening offer itself may be interpreted as a message concerning the opponent's strategic perception of the negotiation relationship. The recipients' evaluation of the offer would provide an indication of their interpretation of this message. More specifically, we assume that the judged attractiveness of the opening offer would be associated with the degree to which the offer has successfully communicated a positive message of cooperation. The norm of reciprocity, which has been shown to affect human interactions in various contexts, including negotiation (Gouldner, 1960; Osgood, 1962; Nemeth, 1972; Wall, 1977; Axelrod, 1984; Weingart *et al.*, 1990), may consequently, induce a cooperative approach in the recipient who interprets an offer with high inter-issue variance in this way.

In light of the above discussion, we need to examine, next, how a logrolling offer with high inter-issue variance is interpreted by its recipient. Earlier studies on negotiation have shown cooperative strategies, which combine assertiveness with fairness and consideration of other party's interests, to be effective (Chertkoff and Esser, 1983; Lawler and MacMurray, 1980; Pruitt and Lewis, 1975). These findings may suggest that a high variance offer, characterized by high demands on some issues and significant concessions on others, communicates a signal of a cooperative approach on part of the initiators (consideration of the opponent's interests together with assertiveness on their own most important ones). In that case, we would expect the high variance, logrolling offer to appear more attractive than an equal valued low variance offer, which does not involve major concessions on any of the issues. Hence, the first hypothesis we propose to test is:

Hypothesis a1: *logrolling offers are likely to be evaluated as more attractive than other offers.*

A different line of research, however, suggests that appreciation of a logrolling offer with high variance may be tampered by another factor. In a wide range of conflicts, the 'even split', equal division of resources is perceived as the 'fair' or expected solution (Loewenstein *et al.*, 1989; Messick, 1991; Messick and Schell, 1992). Therefore, an offer involving an equal split of each issue may be perceived as fairer than an offer that substantially deviates from that norm. A distributive low variance offer, which comes close to the mid point of the value range of each issue, may consequently be judged more favorably than a high variance offer, even if the overall value of the latter is higher.

The equal division also serves in the role of a benchmark, or salient reference point, in evaluation of other solutions (Messick, 1991). In particular, if negotiators in a multi-issue negotiation do not integrate the

different issues, then values of each issue in a possible agreement are likely to be coded as gains or losses relative to the even split point. To the extent that losses are more heavily weighted than gains (Kahneman and Tversky, 1979), offers combining 'gains' in some issues with 'losses' in other issues may be judged less attractive than equal valued offers, in which all values are closer to the reference point. It is important to note that the above prediction does not necessarily mean that participants simply count the number of losses versus gains, it also holds if the different issues are appropriately weighted so that the magnitude of the gain or loss is taken into consideration. In sum, this line of research suggests the alternative hypothesis, namely:

Hypothesis a2: logrolling offers are likely to be evaluated as less attractive than distributive ones.

(b) Understanding the differential priorities from the perspective of the two parties

The behavioral research on multi-issue negotiation reveals that negotiators often fail to reach integrative agreements. One of the main suggested causes for this inefficiency is the 'fixed-pie bias': negotiators assume that the parties' interests are diametrically opposed (Bazerman *et al.*, 1985; Thompson and Hastie, 1990). This bias, it is proposed, often inhibits a search for mutually beneficial tradeoffs, as the negotiators are unaware of the potential benefit of such an approach.

This line of research emphasized the key role of understanding the interests of the opponent, for achieving integrative agreements (Thompson and Hastie, 1990; Thompson and DeHarpport, 1994). It is possible that understanding of mutual interests on the part of the negotiators is affected by the nature of the offers presented to them by their opponent. Tough demands with respect to some issues, combined with generous concessions on others could arouse, in the negotiator's mind, the possibility that the opponent has different priorities among the issues at hand. Hence, even if such offers may not be judged as more attractive, they could still promote deeper understanding of the mutual outcome structure. Thus, the hypothesis we propose to test is:

Hypothesis b: logrolling initial offers enhance understanding of differential priorities more than distributive offers.

(c) Within-issue anchoring

Independently of the communicative value of the opening offer, it may also play a role by anchoring the negotiation to the initial proposed values. Anchoring is one of the cognitive heuristics, which extensively affects individual judgment and decision making (Tversky and Kahneman, 1974; Kahneman, 1992; Chapman and Johnson, 1994, 1999; Strack and Mussweiler, 1997; Mussweiler and Strack, 1999). When estimating an unknown value, a previously primed value appears to serve as a starting point for the cognitive process, thus yielding an outcome that is often overly influenced by the initial anchor. Several studies have revealed the impact of anchoring on negotiation (e.g. De Dreu *et al.*, 1999; Polzer and Neale, 1995; Galinsky and Mussweiler, *in press*). In fact, anchoring number estimates on irrelevant information has been shown to affect experienced negotiators as well as novices (Northcraft and Neale, 1987).

In a recent study (Ritov, 1996), using the simulative competitive market (Bazerman *et al.*, 1985), two additional anchoring effects were revealed. First, presentation of the sequence of profit levels in increasing or decreasing order affected the participant's final profit. The buyers' advantage, often observed in previous studies (e.g. Bazerman *et al.*, 1985; Neale *et al.*, 1987), reversed when their profit schedule sequence was inverted. The second anchoring effect involved initial offers: as indicated earlier, initial offer values for both the initiator and the non-initiator significantly affected final profit. Although Ritov (1996) employed a simulation of multi-issue negotiations, the reported study did not specifically investigate the role of within-issue anchors in the context of integrative bargaining. This question is addressed by the present study.

If initial offers affect the final agreement through anchoring, a multi-issue negotiation context naturally raises a question concerning the specific nature of the anchor. What aspect of the offer serves as the anchor?

First, it is possible that the overall value of the offer serves as the dominant anchor. However, there is also a possibility that each issue is anchored independently. In this case, a logrolling offer may benefit the offers' initiators simply by establishing specific, within-issue anchors, which are favorable from their perspective.

The significant consequences of establishing within-issue anchors were demonstrated in a study by Polzer and Neale (1995), in which the externally set goals were manipulated. The goals were either specific to each issue, or stated as an overall value of the combined agreement. Negotiators with specific goals achieved higher outcomes when negotiating with partners who were assigned an overall goal. However, dyads of negotiators who were both assigned an overall goal achieved higher outcomes than dyads assigned specific goals. Thus, the distinction between specific and overall goals appears to have practical implications with respect to the negotiation outcomes. As Polzer and Neale (1995) suggest, the impact of specific goals may be due to the anchoring role they play in the negotiation process. In the present study we examine whether initial offers establish such anchors, when specific goals are not externally set. Specifically, after receiving multi-issue initial offers, participants will be requested to generate counter-offers. The link between these counter-offers and the initial offers will enable a test of our third hypothesis:

Hypothesis c: *Initial offers establish within-issue anchors.*

The rest of the paper will develop according to the following plan. First, we shall describe an analysis of the simulation data of Ritov (1996). Subsequently we will report about three experiments designed to explore how offers with high versus low levels of inter-issue variance may be interpreted and responded to. The negotiation content in the first two experiments is of an abstract nature, while the third experiment examines our main findings in a more realistic context.

The research paradigm we employed is adapted from Bazerman *et al.*, 1985 (modified from the methodology originally developed by Kelley, 1966, and Pruitt and Lewis, 1975). Participants were presented with a two-party negotiation situation, in which three issues were negotiable. They were requested to presume that they were one of the negotiating parties trying to reach a maximally profitable final agreement combining the three issues. Participants had incomplete information: they did not receive information concerning their opponents' profit schedule. In the first two experiments, every participant also received an 'individual' profit schedule, specifying her profit for each of the ranked alternatives within each of the three issues. As in Bazerman *et al.* (1985), the profit span (maximum potential profit) differed between issues. In Experiment 3, participants generated their own profit schedule by evaluating their willingness to pay for obtaining better alternatives on each of the three issues.

RE-ANALYSIS OF THE MARKET SIMULATION (RITOV, 1996)

In the competitive market simulation (Bazerman *et al.*, 1985) participants, randomly assigned roles as buyers or sellers, engage in a simulated negotiation with as many partners as possible in a fixed period of time. Agreements negotiated in this market involve a combination of three different issues, varying in their relative importance for buyers and sellers. In the market simulations examined by Ritov (1996), 148 participants in several different sessions recorded the opening offer as well as the final agreement. In all, the data comprised 320 negotiations. As mentioned earlier, the overall value of initial offers was shown to affect final outcomes. In our current analysis of the data, we asked whether the opening offers' specific composition had an effect on the negotiation outcomes, beyond the effect of their total value.

We first examined whether integrative initial offers resulted in more integrative agreements (i.e. higher joint profits) than non-integrative initial offers. Our measure for the offer's integrativeness was computed by subtracting the offer's level with respect to the most important issue from the offer's level with respect to the least important one. Thus, the integrativeness measure reflects the difference between the initial offer's levels on the two logrolling issues (those with different importance for the two parties).

Testing a general linear model with joint profits as the dependent variable and with the initial offer's overall value and its integrativeness measure as the independent variables resulted in a marginally significant main effect of initial offer's value ($F(1, 265) = 3.5, p = 0.06$) and a highly significant effect of the offer's integrativeness ($F(1, 265) = 33.6, p < 0.001$). Hence, the joint profit of the agreement was affected by the initial offer's specific composition, beyond the effect of its overall value.

We next examined whether integrative initial offers resulted in better outcomes from the initiator's perspective in comparison to distributive offers. Testing a general linear model with the overall value of the agreement for the initiator as the dependent variable and with the initial offer's overall value and its integrativeness measure as the independent variables resulted in significant effects of both overall value ($F(1, 265) = 89, p < 0.001$), and degree of integrativeness ($F(1, 265) = 33.6, p < 0.001$).

Finally, for each of the two 'logrolling' issues, we also examined whether their agreed value was related to their initially proposed value (for the initiator). Exhibit 1 displays the final outcome as a function of the

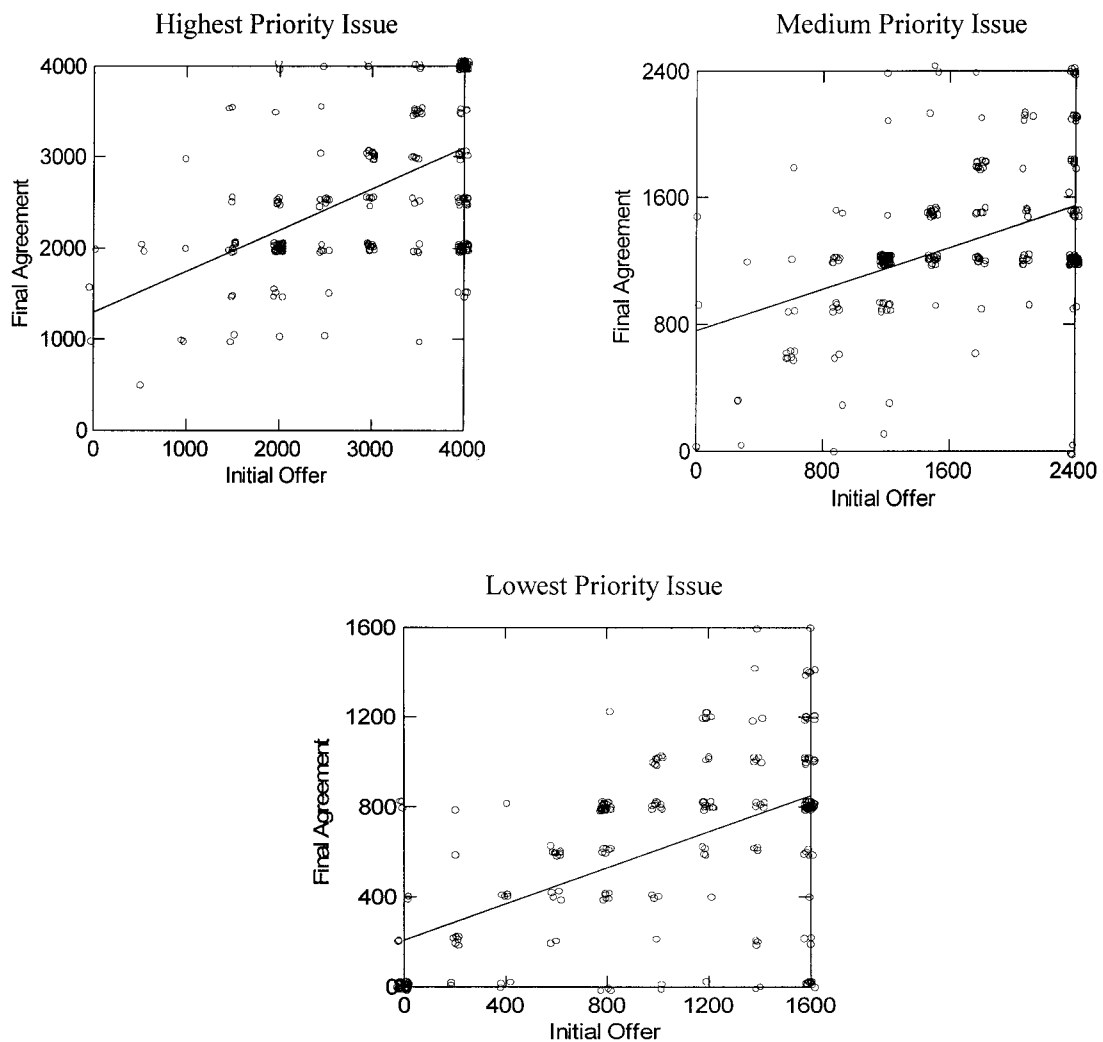


Exhibit 1. The initiator's final outcome for each issue, plotted against the initial offer value for that issue. (Analysis of the competitive market simulation data reported in Ritov, 1996)

initial offer, separately for each of the issues. As can clearly be seen in the figure, higher initial offer values were associated with higher agreed values, for each of the issues. This positive relationship held even when controlling for the initial offer's overall value. Two separate general linear models (one for each issue), with final issue value as the dependent variable and with the initial offer's overall value (for the initiator) as well as its value (for the initiator) on the relevant issue, yielded a significant main effect of the overall value ($F(1, 265) = 50, p < 0.001$ for the most important issue and $F(1, 265) = 38, p < 0.001$ for the least important issue), as well as a significant main effect of the specific issue's value ($F(1, 265) = 137, p < 0.001$ for the most important issue and $F(1, 265) = 161, p < 0.001$ for the least important one). Hence, the value the initiator gained for each issue was influenced not only by the combined total value of the initial offer but also by the initially proposed value of that particular issue.

Taken together, the above analyses of Ritov's (1996) data suggests that the specific combination of demands comprising the initiating offer affects the negotiation outcomes, beyond the effect of its overall value. Therefore, a more thorough investigation of the effect of such between-issue combinations on the negotiation process (not only the final outcomes) could be of great significance.

EXPERIMENT 1

Our first study focused on Hypothesis a, according to which logrolling (i.e. integrative) offers might be judged by their recipients, either as more (Hypothesis a1) or as less (Hypothesis a2) attractive than other offers. In general, we wanted to examine whether the specific composition of opening offers influences their perceived attractiveness, beyond the influence of their overall value. This was accomplished by requesting participants to judge the attractiveness of initial offers with different overall values and with different between-issue combinations. Moreover, since previous studies (Ritov, 1996) have shown an effect of profit schedule type (increasing versus decreasing), the experimental design also included these two profit schedule types.

Method

Participants

Two hundred and sixty-three Management and Industrial Engineering students at Ben Gurion University participated in the study as part of a class exercise.

Procedure

As described in the Introduction, participants were presented with a two-party negotiation situation, adopted from Bazerman *et al.* (1985), in which three issues were negotiable. They were given one of the two profit schedules shown in Exhibit 2, and were asked to presume that they were to negotiate with the other party, trying to reach a maximally profitable agreement, based on the values in their assigned profit schedule. Participants spent an average of ten minutes reading instructions. Subsequently, each participant was presented with an initial offer, supposedly forwarded by her opponent, and was requested to evaluate its attractiveness on a 10 point scale ranging from 1 (very unattractive) to 10 (very attractive).

Twelve initial offers (2 profit schedules \times 2 overall profit values \times 3 offer types) were manipulated between participants (see Exhibit 2). The two profit schedule types included one *increasing* and one *decreasing* schedule: presentation of the sequence of the profit levels was in increasing or decreasing order (schedules were otherwise identical—see Exhibit 2). The two overall profit values included one lower total value (\$3800) and one higher one (\$4800). The three offer types included a 'low variance, distributive offer', combining values close to the median level on all issues '4-5-5' and '5-6-6' for the increasing schedule;

Exhibit 2. Profit schedules and initial offer types (Experiments 1 and 2) (adapted from Bazerman *et al.*, 1985)

Increasing profit schedule: (\$)			
Level	Issue D	Issue R	Issue F
1	0	0	0
2	200	300	500
3	400	600	1000
4	600	900	1500
5	800	1200	2000
6	1000	1500	2500
7	1200	1800	3000
8	1400	2100	3500
9	1600	2400	4000

<i>Initial offer types</i>			
<i>Total = \$4800</i>		<i>Total = \$3800</i>	
Distributive: 5-6-6		Distributive: 4-5-5	
Logrolling: 2-3-9		Logrolling: 1-2-8	
Unintegrative: 7-8-4		Unintegrative: 6-7-3	

Decreasing profit schedule: (\$)			
Level	Issue D	Issue R	Issue F
1	4000	2400	1600
2	3500	2100	1400
3	3000	1800	1200
4	2500	1500	1000
5	2000	1200	800
6	1500	900	600
7	1000	600	400
8	500	300	200
9	0	0	0

<i>Initial offer types</i>			
<i>Total = \$4800</i>		<i>Total = \$3800</i>	
Distributive: 4-4-5		Distributive: 5-5-6	
Logrolling: 1-7-8		Logrolling: 2-8-9	
Unintegrative: 6-2-3		Unintegrative: 7-3-4	

'5-5-6' and '4-4-5' for the decreasing schedule), a '*high variance, logrolling-integrative offer*', combining low values on the two unimportant issues and a high value on the important issue ('1-2-8' and '2-3-9' for the increasing schedule; '2-8-9' and '1-7-8' for the decreasing schedule), and a '*high variance, unintegrative offer*', combining high values on the two unimportant issues and a low value on the important one ('6-7-3' and '7-8-4' for the increasing schedule; '7-3-4' and '6-2-3' for the decreasing one).

In order to check whether the participants correctly understood their profit schedule and the utility function for computing their total profits associated with such a three-issue offer, the first 103 participants completing the questionnaire were given a supplementary task. They were presented with two additional offers ('4-4-4' and '3-8-9') and then asked to indicate the overall profit they would gain from each of these offers. As all 103 respondents were accurate in computing their total profit for each of the two offers, the test was eliminated for all subsequent participants.

Exhibit 3. Mean initial offer attractiveness rating by version (1–10 scale) (Experiment 1)

Offer type	Offer value		
	\$3800	\$4800	Average
Distributive	6.18	6.76	6.5
Logrolling	5.07	5.50	5.3
Unintegrative	5.86	6.50	6.2
Average	5.7	6.3	

Results and discussion

Mean attractiveness ratings of initial offer for each version are presented in Exhibit 3. Testing a general linear model of attractiveness ratings by profit schedule type, overall profit value, and offer type as independent variables yielded significant main effects for all three independent variables, but no significant interaction effects.

First, not surprisingly, there was a significant main effect of overall profit value ($F(1, 251) = 7.29$, $p < 0.007$): offers which summed up to an overall value of \$4800 were judged as more attractive than offers which summed up to a total of \$3800 only (6.3 versus 5.7 respectively).

However, it is also clear that the evaluation of a multi-issue offer was in fact affected, not only by the offer's overall value, but also by its specific configuration ($F(1, 251) = 12.07$, $p < 0.001$): logrolling offers were judged to be *less* (not more) attractive than others. Mean attractiveness ratings were 6.5, 6.2, and 5.3 for the distributive, unintegrative, and logrolling offers respectively. Bonferroni *post hoc* tests show that logrolling offers were judged to be significantly worse than unintegrative ($p < 0.003$) and distributive ($p < 0.001$) offers, while the difference between the two latter ones was not significant.

The results of Experiment 1 seem incompatible with Hypothesis a1: that logrolling initial offers deliver a message of a cooperative attitude on behalf of the initiator. Rather, the advantage of the distributive offer is consistent with Hypothesis a2, and hence compatible with the notion that the values of each issue are coded as gains or losses relative to the even split reference point.¹ A logrolling offer combining one relatively large 'gain' (in the most important issue) with two 'losses' is viewed as less favorable than an unintegrative offer combining only one 'loss' with two 'gains', or a distributive offer in which all values are closer to the reference point.

It is interesting to note that if participants were simply comparing the number of 'gains' and the number of 'losses', the unintegrative offer (combining two 'gains' with only one 'loss') would have been judged more favorable than the distributive one. The finding that the unintegrative offer is not rated higher than the distributive offer seems to be more compatible with the assumption that the different issues (the offer's components) are weighted, so that the magnitude of the gain or loss is also taken into account.

Rating of attractiveness was also significantly affected by profit schedule type ($F(1, 251) = 19.72$, $p < 0.001$). Consistent with the format effect reported by Ritov (1996), mean attractiveness of initial offer was higher with the increasing profit schedule (6.4) than with the decreasing one (5.47).

In Experiment 2 we designed a further test of Hypotheses a1 and a2, and addressed the two remaining hypotheses presented in the Introduction (Sections (b) and (c)). The first one (Hypothesis b) is that logrolling initial offers enhance understanding of the differential priorities of the two parties, while the second (Hypothesis c) is that logrolling initial offers establish within-issue anchors.

¹The distributive offers we used deviated slightly from a pure instance of an even split offer. The finding that such offers were still considered more attractive than logrolling ones provides strong support for Hypothesis a2. It seems likely that attractiveness of strictly even split offers would have been even higher, especially in comparison with the 4-5-5 offer.

EXPERIMENT 2

Method*Participants*

One hundred and fifty-four Management students at Ben Gurion University participated in the experiment as part of a class exercise.

Procedure

The procedure of this experiment was similar to that of Experiment 1. After ten minutes of reading instructions and profit schedules (adopted from the first experiment), each participant was presented with a single initial offer (either logrolling or distributive) and then spent up to twenty minutes completing a questionnaire referring to the initial offer. The questionnaire included:

- (a) Judging the offer's attractiveness for self on a ten-point scale
- (b) Assessing the offer's attractiveness for initiating party on a ten-point scale
- (c) Assessing the offer's value for the initiator on each of the issues (participant was requested to assess what the initiators' profits would be on each of the three issues: 'D', 'R', and 'F', for the level they had presumably offered)
- (d) Proposing a counter-offer
- (e) Estimating the other party's profit schedule, by assessing the lowest and highest value for her on each of the issues. (Participants were again presented with their own profit schedule, and below it were given an identically formatted blank profit schedule. They were asked to assume that the blank schedule was that of the other party. Their task was to fill in the values of the minimum and the maximum levels of each of the issues, reflecting their assessment of the other party's profit schedule.)

In this experiment, two offer types were manipulated between participants, one high variance logrolling ('2-3-9'), and one low variance distributive ('5-6-6'). Both offers had an overall value of \$4800 and only the increasing profit schedule was employed.

Results and discussion*Attractiveness perceptions*

We begin with an additional test of Hypothesis 1. In our first experiment we found that distributive offers were rated as more attractive by their recipients than logrolling ones. We now reanalyzed the attractiveness ratings of distributive versus logrolling offers, combining the data from Experiments 1 and 2. Again the mean attractiveness rating of a distributive initial offer was significantly higher than that of a logrolling one (means were 6 and 5.3 respectively, $F(1, 328) = 11.4$, $p < 0.001$). The combined results, therefore, indicate once more that the logrolling offers were judged as less, rather than more attractive by their recipients than the comparable distributive offers.

In principle, a logrolling offer could communicate some cooperation on the part of the initiator but still be evaluated by its recipient as less attractive than a distributive one. In order to examine this possibility, participants were asked to assess the offer's attractiveness for the initiator, in addition to evaluating the offer's appeal for themselves. The difference between the two attractiveness ratings: attractiveness for oneself and assumed attractiveness for the initiator, then served as our additional measure of the degree to which the offer is perceived by the recipient as communicating a message of cooperation on part of the initiator.

A MANOVA with judged attractiveness for self and for initiating party as the within-subject dependent variables and with offer type as the between-subject independent variable revealed a significant difference between the two attractiveness judgments ($F(1, 52) = 46.6$, $p < 0.001$), but no significant interaction with

offer type. The result that negotiators tend to assume that offers are generally more attractive for their initiators than for their recipients, is conceptually related to the well established findings concerning the ego-centric bias and the reactive devaluation phenomena (Ross and Stillinger, 1991; Messick and Sentis, 1983; Neale and Bazerman, 1983; Thompson and Loewenstein, 1992). However, the lack of significant interaction with offer type is another indication that the logrolling initial-offer was not perceived as indicating a cooperative approach.

Estimation of other party's profit schedule

As reported in the Method section, participants were also requested to estimate the other parties' profit schedule, by assessing the lowest and highest value for them on each of the issues. We used these values to compute the assessed profit potential span of the partner for each issue, by subtracting the lowest value from the highest one. Using the rank order of the three issues' profit spans as a measure of the other party's assumed priorities among those issues, we compared the participants' own priorities ($D < R < F$, as determined by the assigned schedule) to their assessment of the other parties' priorities.

The number of participants who assumed there was a complete match between their own priorities and the other party's is presented in Exhibit 4. As the exhibit clearly shows, under both offer type conditions, most participants assumed there was a match in the between issue priorities, so that order of issue importance for the other negotiating party was the same as their own (chi-square = 0.525, $p = 0.47$, for the comparison of match/no match distribution under the two offer type conditions).

Thus, the fixed pie bias, namely the tendency to assume that the other party's priorities are the same as ones own, was unaffected by the type of offer forwarded by the opponent. A more sensitive measure of the degree of accuracy in assessing the specific values for the other party (Thompson, 1991; Thompson and DeHarpport, 1994) yielded similar results.²

Exhibit 4. Assumed match of priorities (determined by maximum potential profit) as function of initial offer type (Experiment 2)

Assumed match	Offer type		
	Distributive '5-6-6'	Logrolling '2-3-9'	Total
No	6	4	10
Yes	64	69	133
Total	70	73	143

²We additionally computed an accuracy measure based on the measure used in several previous studies by Thompson and her colleagues (Thompson, 1991; Thompson and DeHarpport, 1994). In our study, participants were requested to estimate values only for the lowest and highest levels of each issue. Since participants almost always correctly estimated the minimum value as 0, our accuracy measure summed the absolute deviations of participants' estimates from other parties' true values for the maximum level only. The scoring procedure for the accuracy measure was:

$$\text{Accuracy score} = (D_{\max} - F_{\max} + 2400)/4800$$

In this equation, D_{\max} indicates the estimation of the other party's maximum profit for issue D and F_{\max} indicates the estimation of the other party's maximum profit for issue F. Hence higher scores indicate better understanding of the differential importance of the two issues and lower scores indicate more of a fixed pie perception. Moreover, a score of 1 indicates perfect accuracy and score of 0 indicates that the participant estimated the maximum profit for the other party on each issue to be exactly the same as her own maximum profit for that issue. According to an ANOVA with the accuracy score as the dependent variable and offer type as the independent variable, the accuracy of assessing the other party's priorities was not significantly affected by offer type.

Exhibit 5. Mean *assessed values* of initial offer for initiating party compared to corresponding *assigned values* for participant (Experiment 2)

Type of offer	Assigned/assessed value	Issue D	Issue R	Issue F
Distributive '5-6-6'	Value for participant (assigned)	800	1500	2500
	Value for initiator (assessed)	805	1347	2195
Logrolling '2-3-9'	Value for participant (assigned)	200	600	4000
	Value for initiator (assessed)	583	95	2980

In order to further examine the participants' estimations of initiating party's profit schedule, we analyzed their assessment of the initial offer value for the initiating party. Exhibit 5 presents the initial offer values assigned to the participants and the corresponding mean values they assessed for the initiator. The exhibit clearly shows that higher value for the recipient was associated with higher presumed value for the initiator: the assigned and assessed values were highly correlated, with some regression to the mean occurring as the participants infer the value for the initiator from their own assigned value.

Testing a general linear model with assessed initial offer values for the opponent on each of the issues as (within-subject) dependent variables and with initial offer type, attractiveness of initial offer for participant, and estimated attractiveness of initial offer for the initiator as independent variables revealed a significant interaction of issue by offer type ($F(2, 296) = 24.7, p < 0.001$). The effect of offer type was significant for each of the three issues ($F(1, 148) = 8.7, p < 0.013$; $F(1, 148) = 11.4, p < 0.001$; $F(1, 148) = 12, p < 0.001$ for the first, second and third issues respectively). In other words, the value the participants assumed their initiating partner would receive was positively related to the value they themselves received on that issue. No additional effects were significant. In particular, assessment of the other party's initial offer values did not vary as function of any of the attractiveness ratings.

In sum, we find that (a) recipients of logrolling initial offers, just like recipients of other offer types, believe that their priorities are the same as the other party's; (b) recipients of logrolling initial offers, just like the other participants, assume that for each issue, the offer's value for the initiator is positively related to the offer's value for themselves. These results indicate that a logrolling initial offer does not necessarily improve understanding of mutual interests, as was suggested by Hypothesis b.

Counter-offer

We turn next to Hypothesis c, pertaining to the role of logrolling initial offers in establishing within-issue anchors. To that end, we examine first the demand levels comprising the counter-offer proposed by participants in response to the given opening offer. Exhibit 6 shows the levels of the initial offer and the mean levels of the counter-offer for each of the three issues and for each offer type.

As can be seen in Exhibit 6, the levels the participants requested for themselves in their counter-offers were typically positively related to the levels they were offered in the initial offers. The only exception

Exhibit 6. Mean levels of counter-offer compared to corresponding levels of initial offer (Experiment 2)

Type of offer	Initial/counter level	Issue D	Issue R	Issue F
Distributive	Level of initial offer	5	6	6
	Level of counter-offer	6.7	6.9	7
Logrolling	Level of initial offer	2	3	9
	Level of counter-offer	5.5	5.9	7.3

was in the case of issue 'F' in the logrolling initial offer condition, in which participants were initially offered the highest possible level and hence could not request a higher level than the one they were already offered. In order to examine both the effect of offer type and the effect of attractiveness ratings on the counter-offer levels with respect to the three issues ('D', 'R', and 'F'), we tested a general linear model, with counter-offer levels on each of the three issues as the within subject dependent variables and with initial offer type, attractiveness of initial offer for participant, estimated attractiveness of initial offer for the initiator (other party), and interaction between the two attractiveness ratings as the independent variables.

Results of this test revealed that the difference between the counter-offer levels of the three issues was significantly affected by initial offer type only ($F(2, 296) = 24.7, p < 0.001$). Hence, the specific combination of levels per issue that the participants requested by means of their counter-offer depended on the levels they originally received in the initial offer. This result is compatible with Hypothesis c, indicating that logrolling initial offers establish within-issue anchors.

We next examine the consequences of the above anchoring effect regarding the total (combined) value of the counter-offer for each of the participants. The payoff structure of the negotiation task (presented in Exhibit 2) implies that anchoring the counteroffer on the proposed levels of the initial offers employed in this study should yield approximately equal valued counter-offers, from the participant's perspective. For the imaginary opponent (presumably maintaining the decreasing profit schedule), however, the same anchoring effect is expected to yield a higher valued counter-offer in the logrolling case relative to the distributive one.

Testing a general linear model with counter-offer's total value for participant and for other party as (within-subject) dependent variables and with initial offer type, attractiveness of initial offer for participant, estimated attractiveness of initial offer for the initiator (other party), and interaction between the two attractiveness ratings as independent variables supported the above notion: initial offer type significantly affected the total value of counter-offer for the initiating party ($F(1, 148) = 4, p < 0.045$), but not for the recipient (our participant): participants who received a logrolling initial offer, reciprocated with counter-offers which had higher values for the other party than participants who received a distributive initial offer (2978 versus 2201). Thus, a logrolling initial offer seems more effective from the initiators' perspective, yielding higher counter-offer values for them compared to a distributive offer.

The above-mentioned test also revealed that the combined value of counter-offer for both parties was significantly higher when the initial offer was logrolling rather than when it was distributive (8530 and 8095 respectively; $F(1, 148) = 27.9, p < 0.001$), and was not influenced by attractiveness ratings. Hence, a logrolling initial offer seems more efficient than a distributive one: it yields higher combined profits for the two parties.

In sum, our results concerning the counter-offer seem to indicate that logrolling initial offers are indeed more efficient as well as more effective (from the initiator's point of view) than distributive offers. The findings are compatible with Hypothesis c, suggesting that the logrolling initial offers' effectiveness can stem from their role in establishing within-issue anchors, which are advantageous for the initiator.

Our conclusion that counter-offer levels are anchored on initial offer levels is mainly based on the fact that when analyzing counter-offer levels, we found that for each issue, the level the participants demanded depended on the level they were initially offered. Specifically, counter-offer levels were positively related to initial offer levels. However, as noted earlier, probably due to a ceiling effect, the instance of issue 'F' in the logrolling offer was an exception.

In order to clarify this point we ran an addendum to this experiment, in which we used an expanded profit schedule, so that none of the initial offer levels was the highest possible one. In this addendum, 54 participants were presented with instructions, which were identical to those used in the original experiment. However, the profit schedules participants received included 11 levels (as opposed to only 9), and after being presented with an either logrolling or distributive initial offer, their only task was to propose a counter-offer. As before, the levels the participants requested for themselves in their counter-offer were positively related to the levels they were offered in the initial offer. However in this case, the monotone relations between the

offered level and counter demand held for all three issues, *including* issue 'F'. These results lend further support to our earlier conclusion concerning the anchoring hypothesis, i.e. that integrative logrolling initial offers establish within-issue anchors.

EXPERIMENT 3

In a recent review on the negotiation literature, Bazerman *et al.* (2000) discuss the importance of the individual negotiators' perceptions, i.e. mental models, of the negotiation structure. They suggest that in order to come to a clearer understanding of these mental models, psychological researchers need to devise the ways of investigating the presence and the role of these models. The present experiment represents an initial step in this direction.

In both our previously reported experiments, the content of the negotiation was abstract and the negotiator's utility function was predetermined by the experimenters. Although the manipulation check in Experiment 1 suggested that participants correctly understood the assigned utility schedule, their reactions may have been different had the utilities been self-generated. The current experiment was, therefore, designed to examine our findings in a more concrete context of apartment rental, using self-generated utility functions rather than assigned ones.

Method

Participants

Sixty-two undergraduate students at the Hebrew University were paid 20 NIS (approximately \$5) for voluntarily participating in a two-phase experiment, with a week's break between the two phases.

Procedure

The first phase was designed to obtain the participants' self-generated utilities for the issues to be negotiated. For that purpose, participants were presented with a hypothetical situation, in which they were asked to assume that they were interested in renting an apartment in a specific 12-floor building, in which the cost of rent could be influenced by three issues only: the floor (with higher floors being more attractive and offering better apartments), the payment terms, and the extra furnishing supplied by the owner. They were told (presumably by the landlord's secretary) that the non-negotiable rent rate for an unfurnished apartment on the first floor, with prepayment of the total amount for the full year was \$500 per month. However, they were also told that for additional monthly rent they could negotiate better terms on each of the three negotiable issues. They were then presented with a list of seven available options for each of the three negotiable issues. For each issue, the seven options were presented in an increasing sequential order, from the least to the most improved option from the renter's perspective (see the Appendix). Their task was to prepare themselves for later negotiation with the landlord by assessing for each of the issues separately, how much they would be prepared to pay in addition to the \$500 monthly rent, in order to obtain each option rather than the most basic one. This procedure allowed us to determine each participant's utility function concerning the to be negotiated issues. On completion of the task, participants were thanked and requested to return a week later.

In the second phase, participants were handed a brief reminder of the situation and were again presented with the list of the seven sequential options for each of the negotiable issues (no utilities were given). They were then requested to presume that they can afford to pay a monthly rent of \$600, and would like to rent an apartment, which is superior to the basic one, with respect to the negotiable issues (floor, furnishing, and terms of payment). Similar to the procedure in our prior experiments, each participant was then presented with an offer presumably initiated by the landlord, and was asked to relate to it in the following ways:

- (a) Judge the offer's attractiveness for self on a ten-point scale
- (b) Assess the offer's attractiveness for initiating party (the landlord) on a ten-point scale
- (c) Propose a counter-offer
- (d) Estimate the landlord's priorities, by assessing for each of the issues, the lowest amount the landlord would be willing to accept as additional monthly rent (above the \$500) in order to agree to the highest ranked option.

In this experiment, two offer types were manipulated between subjects. The logrolling offer, denoted '1-2-6', referred to an apartment on the first floor (lowest option level), with the second lowest payment terms option, and with all the furnishing except for air conditioning (sixth highest option level). The distributive offer, denoted '4-4-4', combined median options for each of the three issues. The offers were chosen based on the results of a pilot test, in which the self-generated utility functions showed that most participants (82 out of a total of 133) valued the furnishing issue above the other two issues. Furthermore, for those 82 participants the mean overall value of the two offers, the logrolling ('1-2-6') and the distributive ('4-4-4'), were very close. Hence using these specific offers should provide a basis for assessing, as before, the effect of the offer's composition (distributive versus logrolling) beyond the effect of its overall value.

In addition, three orders of issue presentation (so that each issue was presented once first, once second, and once third) were also manipulated between participants.

Results and discussion

For our analyses we selected the participants whose subjective priorities among the three issues rendered the '1-2-6' offer logrolling. The measure for the participants' priorities was the amount they were willing to pay for achieving the most improved option (the seventh level) for each of the issues. For 26 of the 62 participants (42%) the furnishing was valued higher than each of the other issues. These participants were selected for subsequent analyses.

For each participant, we used the self-generated utilities from the first phase to determine the subjective values of the offer's components from her perspective. First, we computed for each participant the overall value of the initial offer. The mean overall values of the two initial offer types for these participants were very similar: 93.5 for the distributive one and 95.2 for the logrolling one ($T_{24} = -0.056, p = 1$). Hence, as was the case in our prior experiments, for these participants, our manipulation of the type of initial offer allows a fair test of the effect of the specific composition of the offer beyond the effect of its overall value. We next turn to our main hypotheses and prior findings concerning the role of logrolling initial offers in propagating integrative outcomes.

Attractiveness perceptions

We again start with a test of Hypothesis 1, according to which a logrolling offer could communicate some cooperation on the part of the initiator. As before, in order to examine this possibility, participants were asked to assess the offer's attractiveness for the initiator, in addition to evaluating the offer's appeal for themselves.

Testing a general linear model with judged attractiveness for self and for initiating party as the within subject dependent variables and with initial offer type and initial offer overall value as the between subject independent variables revealed a significant difference between the two attractiveness judgments ($F(1, 23) = 15.9, p < 0.001$), but no significant interaction with offer type. These results replicate the finding of Experiment 2, suggesting that the logrolling initial offer is not perceived as indicating a cooperative approach.

Not surprisingly, the initial offer value did significantly affect the difference between the two attractiveness judgements ($F(1, 23) = 8.7, p < 0.007$). The attractiveness of the proposed initial offer for the participants was positively related to the value of the offer for them ($F(1, 23) = 16.7, p < 0.05$), whereas the

Exhibit 7. Assumed match of priorities as function of initial offer type (Experiment 3)

Assumed match	Offer type		Total
	Distributive '4-4-4'	Logrolling '1-2-6'	
No	5	5	10
Yes	6	10	16
Total	11	15	26

assumed attractiveness of the offer for the initiating opponent was negatively related to the value of the offer for the participant ($F(1, 23) = 16.7, p < 0.04$).

Estimation of other party's priorities

As reported in the Method section, participants were requested to estimate the other party's priorities, by assessing the minimum amount the landlord would accept as additional monthly rent, in order to settle for the most improved option from the renter's point of view (the seventh level), for each of the three issues. Similar to the procedure in Experiment 2, we used the rank order of the three estimated amounts as a measure of the landlord's assumed priorities among those issues. The number of participants who assumed there was a complete match between their own priorities (furnishing > floor, payment terms) and the other party's, for each initial offer condition, is presented in Exhibit 7. The match/no match distributions under the two offer type conditions did not differ significantly (chi-square = 0.394, $p = 0.53$). Thus, under conditions of self-generated utilities, just like under conditions of assigned ones, the fixed pie bias, namely the tendency to assume that the other party's priorities are the same as ones own, appears to be unaffected by the type of offer forwarded by the opponent.

Further support for the above conclusion is provided in Exhibit 8 presenting the mean assumed value of the most improved alternative of each of the three issues for the landlord, alongside with the corresponding mean values for the participants. As can be seen in the exhibit, the order of priorities is assumed to be the same for both parties, with furnishing given the highest priority and payment terms given the lowest priority.

Testing a general linear model with the assumed value of each of the three issues (furnishing, floor, and payment terms) for the opponent as the within subject dependent variables and with initial offer type and initial offer overall value as the between subject independent variables resulted in significant effects of the initial offer value only. The values the participant thought the landlord attributed to each of the issues was significantly affected by the overall value of the initial offer she supposedly forwarded ($F(1, 22) = 21, p < 0.001$ for the floor issue; $F(1, 22) = 37.5, p < 0.001$ for the payment terms issue; and $F(1, 22) = 69, p < 0.001$ for the furnishing issue). However, no significant effects of initial offer type were obtained. Hence,

Exhibit 8. Mean values of each issue for the renter (WTP for the seventh level options), and corresponding mean assessed values for the landlord (assumed WTA) (Experiment 3)

Assessed value of the 7th level option	Floor	Payment terms	Furnishing
For participant	\$42.7	\$31	\$105.9
For landlord (following receipt of a distributive offer)	\$85.9	\$75	\$147.7
For landlord (following receipt of a logrolling offer)	\$87.5	\$77.5	\$153.3

Exhibit 9. Mean levels of counter-offer compared to corresponding levels of initial offer (Experiment 3)

Type of offer	Initial/counter level	Floor	Payment terms	Furnishing
Distributive	Level of initial offer	4	4	4
	Level of counter-offer	5.1	5.4	5.2
Logrolling	Level of initial offer	1	2	6
	Level of counter-offer	3.9	3.8	6.2

the values the participant thought their opponent attributed to the different issues was unaffected by the type of offer forwarded by the opponent. In sum, in line with our prior findings, the logrolling initial offer did not seem to improve understanding of mutual interests.

Counter-offers

As in Experiment 2, the options the participants requested for themselves in their counter-offers were positively related to the options they were offered in the initial offers. Exhibit 9 presents the mean option levels of the counter-offer for each of the three issues as a function of the corresponding option levels of the initial offer. As can be seen, when initial offer levels on the three issues were similar to each other (as in the case of the distributive offer), so were the levels of the counter-offer. However, when the level initially proposed for the furnishing issue was higher than the levels proposed for the other two issues (as with the logrolling initial offer), then the level proposed for the furnishing issue in the counter-offer was also higher than the levels proposed for the other two issues.

Testing a general linear model with the counter-offer options on each of the three issues as the within subject dependent variables and with initial offer type and initial offer overall value as the between subject independent variables generally replicated our prior findings. Only the initial offer type had a significant effect on the specific combination of the three counter-offer options ($F(2, 40) = 4.8, p < 0.013$). The option the participants requested (by means of their counter-offer) depended on the initial offer type for each of the three the issues ($F(1, 20) = 4.5, p < 0.05$; $F(1, 20) = 4, p < 0.058$; and $F(1, 20) = 4.2, p < 0.05$ for the floor, payment terms and furnishing issues, respectively). This result is again compatible with the hypothesis that initial offers establish within-issue anchors.

Finally, for each of the three issues separately, we also examined whether the counter-offer value was related to the value of the initially proposed option from the participant's perspective. Exhibit 10 displays the counter-offer's value as a function of the initial offer's value, separately for each of the issues. As can clearly be seen in the exhibit, higher initial offer values were associated with higher counter-offer values, for each of the issues.

This positive relationship held even when controlling for the initial offer's overall value: Three separate general linear models (one for each issue), with counter-offer's issue value as the dependent variable and with the initial offer's overall value (for the initiator) as well as its value on the specific relevant issue, yielded significant effects of the initial offer's value on the specific issue for two of the issues ($F(1, 20) = 7.461, p < 0.02$ and $F(1, 22) = 6.6, p < 0.02$ for furnishing and payment terms issues respectively), and only approached significance for the floor issue ($F(1, 23) = 2.8, p = 0.1$). No significant effects of the initial offer's overall value were obtained. Taken together, the results concerning the counter-offer seem to further support our prior conclusion that the greater efficiency and effectiveness of logrolling initial offers may be simply due to the establishment of within-issue anchors (in line with Hypothesis c).

Some of the above reported analyses do not necessarily depend on the assumption that the issue of furnishing is subjectively more important to the participant than the other issues. Therefore, we repeated these analyses using the data from all respondents (not just the ones meeting the selection criterion). Results were generally replicated. First, with respect to assessing the other party's priorities, the difference between the

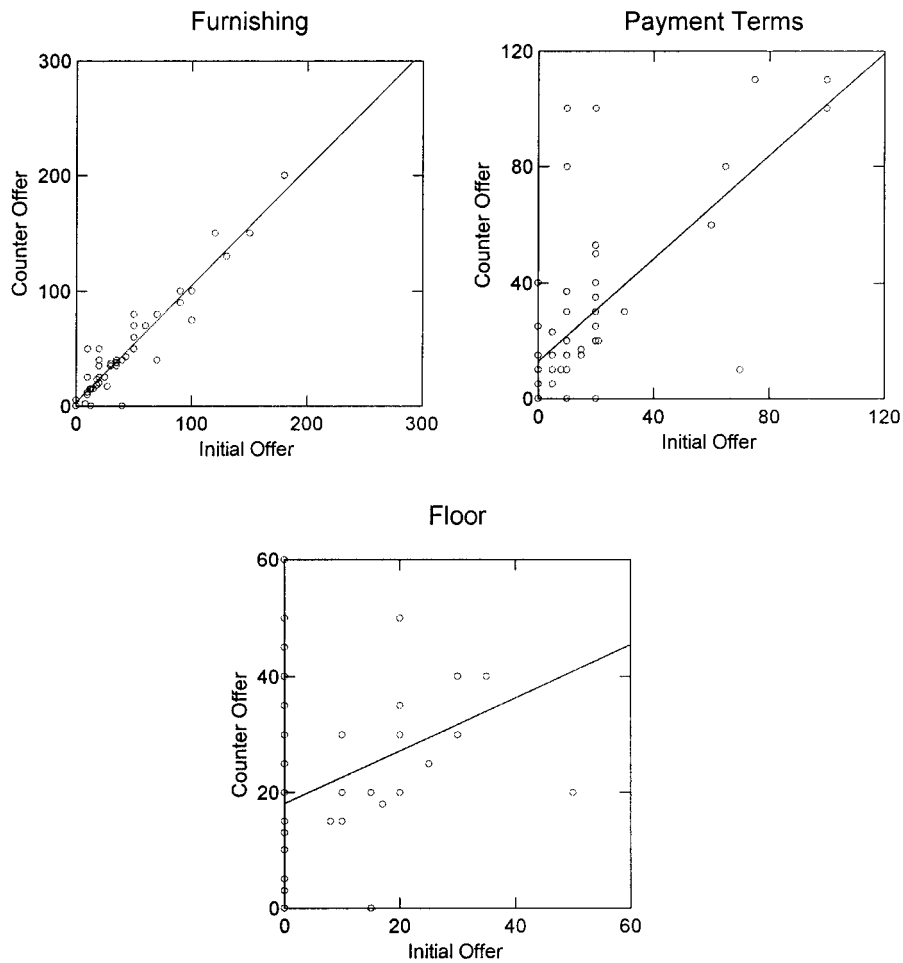


Exhibit 10. The participant's counter offer value for each negotiated issue, plotted against the participant's initial offer value for that issue

assumed values for the most improved alternative from the landlord's perspective on the different issues was significantly effected by the initial offer's overall value ($F(2, 22) = 12.5, p < 0.001$), but not by the offer type ($p = 0.98$). Hence, the values the participant thought their opponent attributed to the different issues was unaffected by the type of offer forwarded by the opponent.

Second, with respect to the counter-offer proposed by the participants, only the initial offer type had a significant effect on the specific combination of the three counter-offer issues ($F(2, 40) = 4.8, p < 0.013$), and the subjective value that participants requested was influenced by the initially proposed value of that particular issue beyond the effect of the offers overall value ($p < 0.001$, for each of the issues).

GENERAL DISCUSSION

The present research sought to determine the potential role of the specific composition of the opening offer, beyond the already documented impact of its overall value. A re-analysis of the simulation data of Ritov

(1996), indicated that 'logrolling' opening offers lead to more integrative agreements. Consequently, our main goal was to gain a better understanding of the judgmental processes by which logrolling initial offers may propagate integrative outcomes.

The series of studies described here focused on the early stage of the negotiation process and explored the way in which logrolling initial offers are perceived and judged by their recipients. Within this framework we examined three hypotheses regarding the possible role of logrolling initial offers: A logrolling initial offer could convey an implicit message of cooperation, it could promote understanding of the mutual interest structure of the task, and, finally, it could simply serve to establish intra-issue anchors.

Results of our experiments indicated that logrolling offers were not judged as more attractive than other offers. Hence such offers did not seem to convey a message signaling a cooperative attitude on behalf of the initiator.

Our findings also imply that a logrolling initial offer does not necessarily improve understanding of mutual interests. Recipients of logrolling initial offers, just like the rest of the participants, believed their priorities were the same as the other party's, and also assumed that initial offer values (per issue) for the initiator were positively related to the same offer values for themselves.

Notwithstanding, according to our results, a logrolling initial offer does seem to be more efficient than a distributive one (yielding higher combined profits for the two parties), as well as more effective from the initiator's perspective (yielding higher counter-offer values for the original initiator compared to a distributive offer). This greater effectiveness seems to be due to the fact that logrolling offers establish within-issue anchors, which are beneficial for the initiator.

To summarize, our study clearly indicates that in multi-issue negotiations with logrolling potential, the specific composition of the initial offer has an effect beyond that of its total value. Specifically, according to our results, in such situations, logrolling initial offers result in higher combined profits for the two parties, and higher effectiveness (higher valued counter-offer from the initiator's perspective) than distributive offers. However, these advantages do not necessarily require conveyance of a social message nor improved understanding of mutual interests, they may, in some circumstances, simply be due to the fact that they establish intra-issue anchors, which are advantageous for the initiator. Moreover, these findings were shown to hold not only when the content of negotiation was abstract and the negotiator's utility function was predetermined by the experimenters, but also when the context had a more concrete nature, with a relevant content and with self-generated utility functions. It is perhaps worth noting that many real-life multi-issue negotiations involve issues of different kinds, and a unique overall value of a proposed deal is often hard to compute. In those cases, just like in our study, the within-issue anchoring effects are expected to be highly salient.

It is important to note that our results do not rule out the possibility that if negotiators gain better understanding of the integrative potential apparent in the mutual interests structure, and if logrolling initial offers are interpreted by them as more attractive and cooperative, they will be more likely to respond to logrolling offers with logrolling counter-offers. However, our findings suggest that such social perceptions and understanding of mutual interests are not necessary conditions. Logrolling counter-offers can also be achieved by means of a mere anchoring process. Similar conclusions were reached by De Dreu and Van Lange (1995), in a study that examined the influence of social value orientations on cognition and behavior in an integrative negotiation task. In their study De Dreu and Van Lange demonstrate that although, as expected, individuals with pro-social orientation relative to individuals with other orientations ascribed greater levels of fairness and considerateness to their negotiating partner, negotiators with all types of value orientation (pro-socials, individualists and competitors) exhibited equally growing tendencies toward logrolling as the negotiation progresses. Hence, in this study as well as in ours, social cognition does not seem to be critical for logrolling.

Our research extends numerous earlier findings concerning the impact of initial offers on the distributive aspect of negotiation (Chertkoff and Conley, 1967; Liebert *et al.*, 1968; Benton *et al.*, 1972; Yukl, 1974;

Rubin and Brown, 1975; Raiffa, 1982), by showing the impact of opening offers on the integrative aspect of negotiation as well. In particular, while earlier research has repeatedly suggested that the overall value of an initial-offer may serve as an anchor (Polzer and Neale, 1995; Northcraft and Neale, 1987; Ritov, 1996; De Dreu *et al.*, 1999; Galinsky and Mussweiler, *in press*), the present research uncovers the potential role of the initial offer in establishing with in-issue anchors.

Limitations

Some limitations of the research must be considered. The first limitation is that our conclusions might be restricted by the fact that they are based on experiments in which no actual negotiation took place. The within-issue anchoring effect may not be as robust in face-to-face negotiation settings that allow for free exchange of information. The finding of a within-issue anchoring effect of initial offer on the final agreement in the data of Ritov (1996), in which actual negotiation did take place, lends some support to our conclusions. However, future research still needs to address this issue by examining the behavioral and judgmental responses to different initial offers during an actual negotiation process. It is plausible that when negotiators are free to communicate, not only by proposing offers, but also by exchanging information about intentions, and priorities, they might be better able to perceive an integrative offer as advantageous for both parties. This could of course enhance even more the tendency of negotiators to respond to such an offer with a logrolling counter-offer. As mentioned above, the conclusions of this study do not rule out the possibility that social perceptions and improved understanding may (and probably do) have an affect in other situations. However, we do suggest that they are not necessary conditions. We plainly show that logrolling responses can also be achieved by mere within-issue anchoring on initial offers.

A second limitation involves the participants' lack of experience. It is important to note that we restricted our research to inexperienced negotiators. Hence extending our conclusions beyond their implications for the initial encounter under such circumstances requires extra caution. It is conceivable that both the attractiveness of integrative offers and the response they elicit will change once the negotiators gain experience, either through participation in the specific negotiation task involved, or through familiarity with negotiation in general. This limitation is being addressed in another experiment, which is currently under way. In this experiment, we compare responses of experienced and non-experienced participants to different initial offers. Preliminary results suggest that although experience does result in more logrolling responses to all offer types, a within-issue anchoring effect is still apparent. Moreover, even the experienced negotiators do not generally appreciate that the integrative offer is superior to the distributive one from the initiator's perspective. These preliminary results are compatible with the above reported findings that responses to initial offers do not necessarily rely on social perception and on understanding of mutual interests. In some cases, they may simply reflect a within-issue anchoring process.

Practical implications

Finally, although the main contribution of this research is theoretical, some practical implications concerning how we might enhance negotiators' integrative behavior and improve their integrative outcome are worth noting. In general, the results demonstrate again that initial offers can be a compelling tool for influencing the negotiation process and outcome.

Initial offers seem to have a wide-ranging impact on the negotiation and should therefore involve careful and serious consideration by the initiating party. Our results suggest that when entering into a multi-issue negotiation, initiating an offer should be preceded by taking into account not only its overall value but also its specific composition. In particular, initiating parties in multi-issue negotiations who detect logrolling potential can benefit more from initiating logrolling rather than distributive offers. Such offers will probably be anchored on and responded to with advantageous integrative counter-offers, even if the recipient, *i.e.* their

negotiating opponent, does not realize the apparent integrative potential, and regardless of whether or not their opponent perceives this logrolling initial-offer to be attractive.

APPENDIX: THE SEVEN SEQUENTIAL OPTIONS FOR EACH OF THE THREE NEGOTIABLE ISSUES (EXPERIMENT 4)

Floor		Payment terms		Extra furnishing	
Option level	Option description	Option level	Option description	Option level	Option description
1	1st floor: medium-size bedrooms, no balcony	1	Prepayment of the total yearly amount	1	Unfurnished apartment
2	2nd-3rd floor: medium-size bedrooms, no balcony	2	2 payments, linked to the USD or index (inflation rate), the higher of the two	2	Telephone, beds, cupboards
3	4th-5th floor: medium-size bedrooms, no balcony	3	3 payments, linked to the USD or index, the lower of the two	3	Telephone, beds, cupboards, refrigerator, oven, stove
4	6th-7th floor: medium-size bedrooms, with balcony in one	4	6 payments, linked to the USD or index, the higher of the two	4	Telephone, beds, cupboards, refrigerator, oven, stove, dining table and chairs, lounge suite, TV set
5	8th-9th floor: medium-size bedrooms, with balcony in both	5	6 payments, linked to the USD or index, the lower of the two	5	Telephone, beds, cupboards, refrigerator, oven, stove, dining table and chairs, lounge suite, TV set, washing machine
6	10th floor: large bedrooms, with balcony in both	6	12 payments, linked to the USD or index, the higher of the two	6	Telephone, beds cupboards, refrigerator, oven, stove, dining table and chairs, lounge suite, TV set, washing machine, central heating
7	11th floor: large bedrooms with balcony in both and off the lounge	7	12 payments, linked to the USD or the index, the lower of the two	7	Telephone, beds cupboards, refrigerator, oven, stove, dining table and chairs, lounge suite, TV set, washing machine, central heating, air-conditioning

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