Time Pressure and the Development of Integrative Agreements in Bilateral Negotiations

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Abstract

A laboratory experiment examined the effects of time pressure on the process and outcome of integrative bargaining. Time pressure was operationalized in terms of the amount of time available to negotiate. As hypothesized, high time pressure produced nonagreements and poor negotiation outcomes only when negotiators adopted an individualistic orientation; when negotiators adopted a cooperative orientation, they achieved high outcomes regardless of time pressure. In combination with an individualistic orientation, time pressure produced greater competitiveness, firm negotiator aspirations, and reduced information exchange. In combination with a cooperative orientation, time pressure produced greater cooperativeness and lower negotiator aspirations. The main findings were seen as consistent with Pruitt's strategic-choice model of negotiation.

Negotiation is a form of symbolic communication that involves two or more people attempting to reach agreement on issues where there are perceived differences of interest. It is an essential element of all interpersonal and intergroup interactions and can be found at all levels of society (Bacharach & Lawler, 1981; Pruitt, 1981). A common feature negotiation quickly (Pruitt, 1981). The present study was designed to examine the influence of time pressure on the process and outcome of negotiation.

Many factors lead negotiators to experience time pressure. One factor is the costs of continued negotiation, such as time lost from other pursuits, or when the goods being negotiated are deteriorating (for instance, fruit beginning of spoil). Time pressure is also produced by the negotiator's nearness to a deadline, or the total amount of time available to negotiate. Some real-world examples of deadlines that produce time pressure include a contract that will expire at midnight, another buyer who will soon make an offer, and a foreseeable point at which open hostility will start. In addition, third parties often use deadlines as a tactic to facilitate compromise (Carnevale, 1986), as President Jimmy Carter did in the Camp David negotiations between Egypt and Israel in 1978. A case can be made that virtually all negotiations involve some element of time pressure. To some extent, all negotiations involve time away from other pursuits and time pressure almost always increases as negotiations proceed, especially as negotiators become fatigued or frustrated. In the present study, time pressure was defined in terms of the closeness of a perceived deadline, that is, the amount of time available to negotiate.

What influence does time pressure have on negotiation? Most research suggests that time pressure increases the level of cooperativeness of negotiators in that it facilitates concession making (see Pruitt, 1981; Rubin and Brown, 1975 for reviews). However, Walton and McKersie (1965) argue that time pressure is likely to inhibit joint problem solving and, specifically, the

search for integrative agreements. An integrative agreement is one that reconciles the parties' divergent interests and provides them with high joint benefit (Follett, 1940). "Joint benefit" refers to the collective gain of the parties in the final agreement. It seems reasonable to suppose that integrative agreements require more time to develop, and that high time pressure interferes with their development.

Integrative agreements can be contrasted with "compromises," which involve concessions to a middle point on some obvious dimension of value (Pruitt and Carnevale, 1982). The distinction between integrative agreements and compromises is most clearly seen in situations where there are many possible solutions that give the bargainers different levels of joint benefit (that is, bargaining situations that are nonconstant-sum). Compared to other possible solutions, a compromise is one that only partly satisfies the parties' interests; it is often the result of a simple decision scheme such as "split the difference.'' The task used in the present study involved several issues and many possible outcomes, some of which provided greater joint benefit than others. The negotiators were able to achieve integrative agreements if they searched beyond the compromise alternatives and made mutually beneficial trade-offs.

Some negotiation situations have more potential for integrative agreements than others. When there is only one issue, such as the price of a used car, what one person gains is what the other gives up. In these "distributive" bargaining situations, there is no possibility for trade-offs and joint gains (Raiffa, 1982). Practically all of the studies of time pressure in negotiation have used single-issue bargaining tasks, leaving it unclear what influence time pressure has on the development of integrative agreements. However, a case can be made that most negotiations have some potential for integration (Pruitt, 1981).

Studies by Pruitt and Drews (1969), Pruitt and Johnson (1970), Yukl (1974), and Carnevale et al. (1979), using nonintegrative, single-issue bargaining tasks, show that time pressure has two related effects: It produces lower negotiator demands and faster concessions. In other words, as time pressure increases, and the desire to reach agreement increases, negotiators react by making unilateral concessions. But what is the psychological mechanism that is responsible for this effect? Is it that time pressure reduces aspirations? Or does time pressure make bargainers more cooperative with one another? The study by Yukl (1974) shows that time pressure has as large an effect on aspirations as it does on level of demand, and that the effect of time pressure on demand is mediated by level of aspiration.

A recent study by Smith et al. (1982) paints a somewhat different picture. It showed that high time pressure produced *mismatching* of the opponent's offers. When high time pressure was combined with a tough opponent, bargainers gave in; but when there was high time pressure and the opponent was soft, bargainers held firm and made few concessions. In contrast, low time pressure produced *matching*, that is, the bargainers were as reasonable (or unreasonable) as their opponent. Low time pressure presumably allowed the bargainers sufficient time to detect a prominent solution, the presence of which fosters matching (Pruitt, 1981). These findings suggest that time pressure can sometimes enhance aspirations and competitiveness, or sometimes reduce these processes, depending on the context of the negotiations (for instance, being faced with a tough or soft opponent).

But the application of the time-pressure results of the single-issue bargaining studies to multiple-issue, integrative bargaining, is not altogether clear, especially in light of Walton and McKersie's (1965) position. We have been able to find only one study that examined time pressure in a multiple-issue, integrative context. Yukl et al. (1976) manipulated time pressure in

a two-issue, integrative bargaining task. The subjects vied for points and were told that to make points they would have to reach agreement within 30 minutes. Under high time pressure the negotiators were given 30 extra points and told that they would lose one point for each minute spent in bargaining; under low time pressure, no extra points were given and there was no cost for the time spent in negotiation.

Yukl et al. (1976) reported that negotiators reached agreement sooner when there was high time pressure than when there was low time pressure (8.3 minutes versus 17.4 minutes), made fewer offers when there was high time pressure (11.6 versus 17.9), and reached poorer joint outcomes when there was high time pressure (95.8 versus 107.8, where 120 was the maximum possible and failure to reach agreement was 0). In addition, 65% of the dyads under low time pressure disclosed their true issue priorities whereas only 35% did so when there was high time pressure. These findings led Yukl et al. to conclude that time pressure interrupts integrative bargaining processes, and chiefly the processes of systematic concession making (proposing many offers) and problem-solving orientation (exchanging truthful information).

In the Yukl et al. (1976) study, the decrease in the disclosure of truthful information within high time pressure conditions may have reflected enhanced competitiveness. This is plausible given the results of a study by Wright (1974) who found that people under high time pressure become more sensitive to negative information. Conceivably, the negotiators under high time pressure in the Yukl et al. study became more sensitive to the hostile context they were in. All of the subjects in the Yukl et al. study were given an individualistic orientation. They all were told (a) to reach a settlement at a price that gave them the largest personal payoff, and (b) that, “since neither side could know for sure when the other side was telling the truth, it would be

possible for them to give false information in order to mislead their opponent if they desired to do so" (p. 278).

The purpose of the present experiment was to extend the Yukl et al. (1976) study by obtaining a more fine-grained picture of the impact of time pressure on the processes of integrative bargaining. We were particularly interested in obtaining measures of bargainer aspirations and measures of bargainer competitiveness, in addition to the measures of offer making and problem solving that Yukl et al. reported. But more importantly, we were interested in examining time pressure in two different bargaining contexts: when negotiators had an individualistic orientation and when they had a cooperative orientation. An individualistic orientation is one in which negotiators have a goal of maximizing their own outcomes while disregarding the outcome of their opponent; a cooperative orientation is one where negotiators have a goal of simultaneously maximizing their own outcomes and also the outcomes of the other negotiator (see Pruitt, 1981; Rubin and Brown, 1975).

We hypothesized that time pressure would have a greater effect on negotiators who have individualistic goals than on negotiators who have cooperative goals. When negotiators have individualistic goals, high time pressure should produce poorer outcomes than low time pressure. But when negotiators have cooperative goals, they should do well regardless of high or low time pressure. This hypothesis is based on assumptions derived from Pruitt's (1981) strategic-choice model of negotiation about which negotiator strategy (cooperativeness or contentiousness) would seem to be the most likely strategy to quickly produce the desired outcome.

Pruitt's strategic choice model assumes that negotiators choose one of four basic strategies at any one point during negotiation: (a) *contending*, which involves efforts to convince the other to give in, (b) *yielding*, which involves giving in to the other, (c) *integrating*, which

involves efforts to develop a mutually satisfactory outcome, and (d) *inaction*, which involves doing as little as possible in the negotiation. A main determinant of the choice of a strategy is the negotiator's assessment of the feasibility of a strategy, which is an assessment of how likely it is that the strategy will achieve the desired objective (Pruitt, 1981). Our predictions for time pressure were as follows.

High time pressure, in combination with individualistic goals, should enhance the belief that contentiousness is the most likely strategy to quickly produce a desired outcome. An individualistic goal of maximizing one's own outcome should reduce the perceived feasibility of yielding and integrating. In addition, high time pressure should reduce the likelihood that inaction is a feasible strategy. The remaining strategy is contending. Thus, with an individualistic goal, high time pressure is more likely to produce contentious, competitive behaviors than low time pressure. We predicted for negotiators with individualistic goals that high time pressure would: (a) enhance the competitiveness of the negotiators, (b) produce firm negotiator aspirations, and (c) reduce information exchange (this latter prediction is supported by Yukl et al., 1976). Thus, for bargainers with individualistic goals, agreements should be more difficult to achieve, and outcomes should be poorer, when there is little time to negotiate (under high time pressure) than when there is plenty of time to negotiate (under low time pressure).

High time pressure, in combination with cooperative goals, should enhance the belief that cooperation is the most likely strategy to quickly produce a desired outcome. A cooperative goal of maximizing the other's as well as one's own outcome should reduce the perceived feasibility of contending. In addition, high time pressure should reduce the likelihood that inaction is a feasible strategy. The remaining strategies are integrating and yielding. Thus, with a cooperative goal, high time pressure is more likely to produce cooperative behaviors, in the form of problem

solving and concession making, than low time pressure. We predicted for negotiators with cooperative goals that high time pressure: (a) enhances the cooperativeness of the negotiators, (b) increases attempts to exchange information, and (c) produces lower negotiator aspirations. Thus, for bargainers with cooperative goals, agreements should be as easy to achieve, and outcomes should be as good, when there is little time to negotiate (under high time pressure) as when there is plenty of time to negotiate (under low time pressure).

Method

Subjects and Design

The subjects were 48 females and 48 males recruited by advertisement on the campus of the University of Iowa. They were paid three dollars, plus an additional amount to be earned in the study, for their participation. Two same-sex subjects were employed in each session, making 48 dyads, and only dyads whose members were unknown to each other were allowed to participate. One additional dyad was run but not included in the analysis because one of the subjects was unable to understand the negotiation task.

A $2 \times 2 \times 2$ design manipulated time pressure (high or low), orientation (cooperative or individualistic), and negotiator gender. The 24 male and 24 female pairs were assigned randomly, and in equal numbers, to the four combinations of time pressure and orientation. Both members of a pair were in the same condition.

Negotiation Task

The task was a slight variation of one used in previous research on integrative bargaining (see Pruitt, 1981; Pruitt and Carnevale, 1982). Subjects played the roles of union and management representatives in a simulated labor-management negotiation. The union negotiator was said to be the representative of the employees of "Hospital Products Corporation," and the management negotiator was said to be the representative of the president of the company. They were instructed to negotiate three issues: Wages, Medical Plan, and Vacation. Each negotiator had an issue schedule, and they were not allowed to show it to the other negotiator (see Table 1).

As can be seen in Table 1, there were nine offer levels for each issue. Associated with each offer level were "points" that represented the value to the negotiator of settlement at that offer level. The subjects were told that these points would be converted into real money for them to keep. In the union schedule, the wage issue had the highest and the vacation issue the lowest potential for points. These priorities were reversed for the management negotiator. Hence, the task had integrative (that is, logrolling) potential in the sense that high joint gains could be achieved if the negotiators exchanged concessions on their low-priority issues. (To see this, compare the total point value of the compromise or split-the-difference agreement "5 cents, 5/10, and 50%" with the integrative agreement "9 cents, 5/10, and 10%" for each negotiator and for the dyad.) The negotiators were told that each would receive an amount of money based on 80 points if there was nonagreement.

Procedure

Two subjects were brought into the negotiation room at one time, and were seated across from one another at a table that was one meter wide. The task was described as a "labor-management negotiation," and each person was designated either the union representative or the management representative by which seat they happened to be in. Care was taken to ensure that neither subject was previously acquainted and that they had not interacted while waiting for the experiment to begin.

In the center of the negotiation table was a small barrier (about 18 cm. high) that prevented each subject from seeing the materials in front of the other subject but that allowed complete visual access to the other's upper body and face. A small microphone was positioned in front of each subject. The instructions were presented via tape recorder, while the subjects read from their own copy. The experimenter occasionally stopped the tape and asked the subjects for questions.

Insert Table 1

The experimenter was blind to the time-pressure and orientation conditions up to the point when the negotiation began. This was made possible by having the subjects read the materials manipulating the independent variables privately, and by having a second experimenter, who did not interact with the subjects, set up the materials for each session.

The issue schedules were explained to the subjects in such a way that neither subject could tell what numbers appeared in the other's schedule. They were told that they could talk

freely with one another during the negotiation about anything they wished, including the numbers in their issue schedule, but that they could not show the issue sheets to one another. The negotiators were told that the points in the negotiation would be "converted into real money for you to keep," but were not told what the conversion rate would be. An effort was made to encourage the subjects to try to reach agreement: The subjects in all conditions were told that "If the negotiations break down, a strike is a likely possibility — and you feel, along with the Union (Management) leadership, that a strike would be costly." What those costs would be was left unspecified. Thus, the unspecified costs referred to the costs suffered by the company or union in the simulation, and not to the subjects' actual payoff, which would always be 80 points in the event of nonagreement.

Just before the negotiation began, the subjects received a "Negotiation Directive" from their hypothetical constituent (the president of the company or the union leader) that (a) reiterated the orientation instructions, (b) stated that they could talk about anything that they wanted during the negotiation, including the numbers in the "proposal" and "points" columns (but were not allowed to show the issue schedules to one another), (c) stated that they would not interact with the other negotiator at the end of the negotiation, (d) asked them to keep track of how much time they had left in the negotiation by watching the clock that was sitting in front of them, and (e) instructed them to make "package deals," to include a proposal for each issue, when making offers to the other negotiator. Having the negotiators make "package deals" required them to consider the issues simultaneously, something that data from Yukl et al. (1976) indicate was important for time pressure effects. In addition, prior research on integrative bargaining has included this instruction because, without it, subjects assume that they should

consider the issues sequentially and thus are less likely to recognize the tradeoffs inherent in the task (Froman and Cohen, 1970; Pruitt, 1981).

In all conditions, the experimenter sat in a room behind a one-way mirror during the negotiation, and the subjects knew he was there. The experimenter operated a stereo tape recorder that had input to one channel from the microphone in front of the union negotiator and to the other channel from the management negotiator. After the negotiation, the subjects completed a post-questionnaire, and then were debriefed and paid.

Manipulation of Time Pressure. Time pressure was operationalized in terms of the negotiators' nearness to a deadline. In the high time-pressure conditions, subjects were told "You will have a very brief amount of time to negotiate, five minutes." In the low time-pressure conditions, they were told "You will have a very large amount of time to negotiate, twenty-five minutes." Two things were done to enhance the salience of the time-pressure manipulation: (a) a small timer was placed in front of each bargainer that showed how many minutes and seconds remained in the negotiation, and (b) a small tape recorder played a tape of a male voice that announced how many minutes remained in the negotiation (every minute in the high time-pressure conditions and every five minutes in the low time-pressure conditions).

Manipulation of Orientation. Orientation was operationalized by instructions to negotiators to pursue either a cooperative or individualistic goal. In the cooperative orientation conditions both negotiators were instructed,

> Your job is to get the most for both you and your partner, the other negotiator. You should be concerned with their needs and welfare. The needs and welfare of the other negotiator are important to you. In other words, your task is to maximize not only your own point winnings, but the point winnings of your partner as well.

In the individualistic orientation conditions both negotiators were instructed,

> Your job is to get the most from your opponent, the other negotiator. Do not be at all concerned with their needs and welfare. The needs and welfare of the other negotiator are unimportant to you. In other words, your task is to maximize your own point winnings, disregarding how many points your opponent gets.

Measures

Negotiation outcome. The main measure of negotiation outcome that was employed was *joint outcome*, the sum of the two negotiators' points in the final agreement. The maximum total points that a dyad could achieve was 320.

Negotiation process. In order to examine the processes underlying the development of integrative agreements, the interaction between the negotiators was recorded, transcripts of them were produced, and then coded for various themes. The coding scheme was the same as that developed and used by Pruitt and his students (see Pruitt, 1981; Pruitt and Carnevale, 1982 for a detailed description of this coding system). The basic unit of the coding scheme was defined as everything said by one person between the time the other person stopped speaking and then began again. More than one code could be assigned to a unit, but a single unit could be assigned the same code only once. The usage of each type of code was determined by counting the number of times that code was assigned and then dividing by the total number of units. The correlations between the coding of two raters who worked separately were above .85.

The coding categories included negotiator commitments to a position, contrived arguments designed to persuade the other to concede, mentioning the costs of continued negotiation, requests for information, giving information about their point values or priorities, and a measure of unit relationship, the "We/1" ratio, defined as the number of times that first

person plural pronouns were stated divided by the number of times singular ones were spoken. In addition, several aspects of offer making were assessed, including the number of different offers made, and the difference between the parties' value of the final offer.

Results

An analysis was made of the differences between the union and management roles on all the measures, and no reliable differences were found (using paired-comparison /-tests). This is consistent with the majority of studies that have used the buyer-seller version of this task (see Pruitt, 1981). Thus, most of the analyses reported here used the dyad as the unit of analysis.

Manipulation Checks

Both experimental manipulations were highly successful. Compared to negotiators in the low time-pressure conditions, negotiators in the high time-pressure conditions reported that they were more rushed (10.8 versus 5.2), $F(1,40) = 32.5, p < .0001$, and that time pressure was greater (10.2 versus 5.6), $F(1,40) = 29.0, p < .0001$, on 18-point scales from "Not at All Rushed'' and "None" to "Highly Rushed" and "Great Time Pressure," respectively. In addition, they reported that it was more important to reach agreement quickly (8.42 versus 6.17), $F(1,40) = 14.29, p < .0005$, on 12-point scales from "Highly Unimportant" to "Highly Important."

Compared to negotiators in the cooperative-orientation conditions, negotiators in the individualistic-orientation conditions reported that it was more important to maximize their own

outcomes (9.5 versus 7.8), $F(1,40) = 8.11, p < .007$), but less important to maximize joint outcomes (8.0 versus 10.4), $F(l, 40) = 23.89, p < .0001$, and to search for mutually acceptable proposals (9.3 versus 10.5), $F(l, 40) = 9.12, p < .005$.

Outcome of the Negotiation

Table 2 presents the outcomes that were achieved by each bargainer in the 48 pairs. An agreement consisted of a settlement on each of the three issues, and each bargainer's outcome is the sum of the points that they achieved for each issue. For example, the agreement "6c, 5/10, 30%" would give the union negotiator 125 (75 + 40 + 10), and the management negotiator 145 (15 + 40 + 90).

Joint outcome. A measure of joint outcome was constructed that was the sum of the points achieved by each bargainer in the dyad. (In the example mentioned above, joint outcome would be 270, 125 + 145.) A problem that arises in this type of analysis is what outcome value to assign to bargainers who did not reach agreement.

In their analysis of bargainer outcomes, Yukl et al. (1976) assigned values of zero to dyads that were unable to reach agreement. However, Yukl et al. did not report the number of dyads in each condition that were unable to reach agreement. Thus it is unclear in the Yukl et al. study if the lower outcome found in the high than in the low time- pressure condition was the result of a greater inability for the bargainers to reach agreement under high time pressure (and thus more zero scores), or that the agreements that were reached under high time pressure were actually less integrative.

In the present study, we examined bargainer outcomes three ways: (1) the number of agreements reached in each condition, (2) joint outcome with value of 80 (the bargainer's reservation value) assigned to bargainers who did not reach agreement, and (3) joint outcome with the nonagreement dyads excluded from the analysis. The second analysis is closest to what Yukl et al. report. The third analysis can tell us if time pressure influences the quality of agreements that were reached.

Insert Table 2

The data in Table 2 and also in row 1 of Table 3 reveal that six dyads were unable to reach an agreement in the allotted time, and that most of these (five) were in the individualistic-orientation/high time-pressure condition. At first blush, it appears that time pressure inhibits the bargainer's ability to reach agreement. But it will be seen that time pressure also reduces the integrativeness of the agreements that are reached.

An analysis of variance of joint outcome, with the nonagreement dyads assigned 160 (80 for each bargainer) revealed a statistically significant main effect for time pressure and an interaction between time pressure and orientation. The main effect indicated that under high time pressure negotiators achieved poorer outcomes than under low time pressure ($Ms = 241.3$ versus 272.3), $F(1,40) = 6.56, p < .02$. This replicates the basic time-pressure effect reported by Yukl et al. (1976). This main effect is qualified by the time pressure/ orientation interaction, $F(l, 40) = 6.56, p < .02$. As can be seen in Row 2 of Table 3 and graphically in Figure 1, the deleterious effect of time pressure on joint outcome only occurred when negotiators had an individualistic orientation. When they adopted a cooperative orientation, negotiators did well

despite the high time pressure. Thus, our main hypothesis was supported. This interaction extends the Yukl et al. study by demonstrating that the time pressure effect observed by Yukl occurs when negotiators have an individualistic orientation but not when they have a cooperative orientation.

Insert Table 2

The two-way interaction between time pressure and gender was not statistically significant, $F(1,40) = 2.04, p < .17$, but nevertheless it may be of some interest. It suggests that men are more susceptible to the deleterious effects of time pressure than women. Women did moderately well despite the high time pressure (achieving outcomes of 250.0 and 263.8 under high and low time pressure, respectively), whereas men did very well under low time pressure (280.8) and did very poorly under high time pressure (232.5). The three-way interaction between orientation, time pressure, and gender was not statistically significant ($p = .39$).

Insert Table 3

Row 1 of Table 3 suggests that the reduced outcome in the high time-pressure/individualistic-orientation condition is due to a greater inability of these bargainers to reach agreement. Virtually all the negotiators in the other conditions were able to reach agreement. The reader should recall that the analyses just reported, and the means in row 2 of Table 3 and in Figure 1, reflect an analysis of outcomes with the nonagreement dyads included

and assigned a value of 160. What about the quality of the outcomes of the bargainers who reached agreement?

Insert Figure 1

Row 3 of Table 3 presents an analysis of joint outcomes that only included dyads that achieved agreement. As can be seen, when there is an individualistic orientation, time pressure has a deleterious effect on joint outcome even for those bargainers who are able to reach agreement, $F(l, 17) = 4.69, p < .05$. Thus, under an individualistic orientation, when agreements are reached, they are less likely to be integrative when there is high time pressure than when there is low time pressure.

The data in row 3 of Table 3 also suggest that agreements that are reached when there is low time pressure are more integrative when there is an individualistic orientation than when there is a cooperative orientation, $F(1,22) = 3.56, p < .08$. This may suggest that when there is low time pressure, an individualistic orientation may lead to higher goals, and a cooperative orientation may lead to greater concessionary behavior. However, the first and second offers (rows 9 and 10 of Table 3) in the low time pressure conditions indicate that an individualistic orientation does not produce higher goals, and also that the cooperative orientation does not lead to greater concessionary behaviors. Nevertheless, when there is low time pressure, it appears that an individualistic orientation in contrast to a cooperative orientation, creates a greater search for integrative agreements, perhaps through some as yet unidentified process.

Symmetry of outcome. The symmetry of an outcome refers to the difference between the outcome scores for a given pair of bargainers. In Table 2 it can be seen that for the dyads that

were able to reach agreement, on average, the management negotiators did about seven points better in outcome than the union negotiators; but this difference was not statistically significant, $t = 1.43, p > .15$. In addition, an analysis of the absolute difference between outcomes in dyads that reached agreement revealed that, overall, agreements reached by women and men were equal in symmetry ($p = .43$), that agreements reached under low and high time pressure were equal in symmetry ($p = .41$), and that agreements reached when there was a cooperative or individualistic orientation were equal in symmetry ($p = .22$). There were no statistically significant interactions between these factors for the absolute difference measure.

Symmetry of final offers. Several interesting effects were obtained for a measure of the symmetry reflected in the final offers. This offer was usually the offer that became the final outcome, except for the six dyads that did not reach agreement. If the final offer gave each negotiator an identical outcome, then the equality measure was zero. Inequality was greater when the negotiators had individualistic goals than when they had cooperative goals (36.7 versus 20.0) $F(l, 40) = 3.60, p < .07$. And inequality was greater under high time pressure than low time pressure (35.8 versus 20.8) $F(1,40) = 4.44, p < .05$. An interaction was obtained between gender and time pressure for this variable. Inequality was great for men in both high and low time-pressure conditions and also for women who were under high time pressure (28.3, 31.7, 43.3, respectively); but equality seemed more the rule for women under low time pressure (10.0) $F(1,40) = 5.38, p < .03$.

Process Measures

Table 3 also contains means for the process measures and postquestionnaire items (rows 4 through 10) for each combination of time pressure and orientation. We predicted that negotiators with an individualistic orientation would reduce information exchange under high time pressure (as Yukl et al., 1976 found), whereas negotiators with cooperative goals would increase information exchange under high time pressure. Partial support was obtained for this prediction. As seen in row 4 of Table 3, negotiators reported the least ability to exchange information in the individualistic-orientation/ high time-pressure condition, $F(1,40) = 3.35, p < .08$. As expected, high time pressure reduced the reported amount of information exchange in the individualistic conditions, and slightly increased it in the cooperative conditions. This variable was significantly and positively correlated with joint outcome, $r(46) = .30, p < .05$. There was a nonsignificant trend for negotiators to actually give the least amount of information about their priorities in the individualistic-orientation/high time-pressure condition, shown in row 5 of Table 3, $F(1,40) = 2.24, p = .14$. Although the predicted pattern is present for both questionnaire and process data, it is stronger for the former. Perhaps our coding scheme did not capture the type of information exchange that subjects were referring to in the self-report item.

We also predicted that negotiators with individualistic goals would be more competitive under high than low time pressure, whereas negotiators with cooperative goals would be more cooperative under high than low time pressure. Support was obtained for this prediction. Rows 6 and 7 of Table 3 give results from post-questionnaire items about the subject's perceived competitiveness of self and the other negotiator. For both variables, and consistent with our

prediction, high time pressure increased the competitiveness of the negotiators when they had individualistic goals, and high time pressure reduced competitiveness when negotiators had cooperative goals. Significant three-way interactions were obtained for both of these variables, $F(1,40) = 6.38, p < .02$, and $F(1,40) = 7.49, p < .01$, respectively, and the patterns shown in Table 3 are the simple interactions for male subjects only. We report the data from only the male subjects because the females showed no consistent pattern on these measures.

Tables 3 also contains results for a behavioral measure of contentiousness, that is, the proportion of negotiator statements that used a contrived argument to pressure the other into making concessions (row 8). The means reported here (only for male subjects) suggest that high time pressure reduces contentiousness more when negotiators have cooperative goals than when they have individualistic goals, $F(1,40) = 3.73, p < .07$. Even though the proportion of contentious statements in the individualistic conditions was reduced when there was high time pressure compared to when there was low time pressure, it actually enhanced the bargainer's perceptions of competitiveness (compare row 8 to rows 6 and 7).

Finally, we predicted for negotiators with an individualistic orientation that high time pressure would produce firm negotiator aspirations, and that for negotiators with a cooperative orientation, high time pressure would produce lower negotiator aspirations. Support was obtained for this prediction. Rows 9 and 10 report the size of the negotiators' first and second offers, which can be viewed as measures of aspiration (Pruitt, 1981). These offers reveal that when negotiators had cooperative goals, high time pressure reduced their aspirations, whereas when they had individualistic goals, high and low time pressure did not differ—that is, their aspirations were as firm under high time pressure as under low time pressure, $F(1,40) =$

$4.26, p < .05$, and $F(1,40) = 7.62, p < .01$, respectively. Again, these are the simple interaction means from the male subjects as the female negotiators showed no consistent pattern.

Time Pressure and Orientation Main Effects

Because of the variety of measures, this study provides a rich source of information on time pressure and orientation beyond that of direct relevance to our major hypotheses. Specifically, there are a number of main effects for time pressure and orientation that are of some interest in their own right.

Time pressure. The verbal process measures revealed that contrived persuasive arguments were less frequent under high time pressure than low time pressure (12% versus 23% of the statements) $F(1,40) = 3.29, p < .08$ and that the negotiators had more of a unit relationship under high time pressure, as revealed by the "We/1" ratio (0.012 versus 0.003) $F(1,40) = 4.83, p < .04$. Negotiators in the high time-pressure conditions had lower aspirations than those under low time pressure, that is, the negotiators' first offers were lower under high time pressure (148.4 versus 160.8) $F(1,40) = 3.03, p < .09$. In addition, time pressure affected the exchange of information, with negotiators under high time pressure giving less priority information than those under low time pressure (3% versus 7%) $F(1,40) = 3.72, p < .07$.

In addition, time pressure appeared to affect the subjects' ability to think about the task, maneuver, and utilize "trial and error" tactics. In the high time-, as opposed to low time-pressure conditions, the negotiators reported that they were less able to (a) think about the task (7.6 versus 8.33) $F(1,40) = 2.86, p < .10$, (b) outmaneuver the other (4.6 versus 5.8), $F(1,40) =$

$6.14, p < .02$, and (c) consider and experiment with different negotiation tactics (5.7 versus 6.6), $F(1,40) = 4.1, p < .05$. Consistent with this, the process data indicated that negotiators in the high time-pressure conditions made fewer different offers (4.1 versus 6.3), $F(1,40) = 6.22, p < .02$, and were less likely to change an offer once it was made (2.7 versus 4.9), $F(1,40) = 4.65, p < .04$.

Orientation. The verbal process measures revealed that the negotiators with an individualistic goal were more likely than the negotiators with a cooperative goal to commit themselves to a position (6.5% versus 1.5% of the statements made), $F(1,40) = 8.41, p < .006$), to mention the costs of continued negotiation (1.9% versus 0.2% of the statements), $F(1,40) = 3.48, p < .07$, and were less of a unit relationship as assessed by the "We/I" ratio (0.003 versus 0.012), $F(1,40) = 5.68, p < .03$. In addition, negotiators with an individualistic goal had higher aspirations than those given a cooperative goal, that is, they made higher first offers (167.6 versus 141.8) $F(1,40) = 13.38, p < .0007$.

The negotiators in the individualistic goal conditions, compared to those with cooperative goals, reported that they were less able to exchange information (5.92 versus 7.29), $F(1,40) = 6.90, p < .02$. This self report reflected reality, because their statements during the negotiation revealed that when they had individualistic goals, they requested information less (11% versus 18% of the statements) $F(1,40) = 4.05, p < .06$, and were less likely to give information about their point values (1 % versus 18% of the statements) $F(1,40) = 10.05, p < .003$. Indeed, the percentages suggest that when they asked for information it was given— but only when they had cooperative goals.

There were no differences between the individualistic and cooperative conditions in the number of offers and counteroffers made by the bargainers. Thus, the orientation manipulation

did not produce a difference in terms of the extent of bargaining as indicated by the frequency of offers and counteroffers.

Discussion

The major hypothesis of this experiment was supported: The effect of time pressure on negotiation is contingent on the orientation of the bargainers. For negotiators with an individualistic orientation, high time pressure results in a greater inability to reach agreement and poorer negotiation outcomes when agreement is reached. For negotiators with a cooperative orientation, time pressure has no effect on the ease of reaching agreement or on the quality of the agreements that are reached. In other words, time pressure inhibits the process of conflict resolution when negotiators adopt an individualistic orientation, but not when they adopt a cooperative orientation.

Support for our major hypothesis is important for four main reasons. First, only one other study has examined time pressure in an integrative bargaining task (see Yukl et al., 1976), yet time pressure is pervasive in bargaining and is particularly important in integrative bargaining where mutually profitable outcomes can be easily missed. All other things being equal, more time may be necessary for negotiators to reach agreement and also “find” integrative solutions. Second, the Yukl et al. study left it unclear whether time pressure affects the ability to reach an agreement or whether it affects the quality of the agreements that are reached. The present study shows very clearly that it affects both. Third, the results of this study suggest an important qualification of the only previous study of time pressure in integrative bargaining (Yukl et al., 1976). Yukl et al., found lower joint outcomes under high versus low time pressure, but their

experiment induced an individualistic orientation across conditions. The present study replicates this effect under conditions of an individualistic orientation and demonstrates that time pressure does not have an effect when negotiators have a cooperative orientation. And fourth, the results of the present experiment fit the general framework of Pruitt's (1981) strategic choice model of negotiation.

The strategic choice model suggests that negotiators have three basic strategies for moving toward agreement: unilateral concession, contentious behavior, and coordinative behavior (Pruitt, 1981). Contentiousness (for instance, competitive tactics such as contrived arguments) occurs to the degree that a negotiator's goal is to get an agreement favoring his own side even at the risk of nonagreement; coordinative action (for example, exchange of information about priorities) occurs to the degree that a negotiator's goal is to get an agreement that satisfies both sides; and unilateral concession occurs primarily when a negotiator wishes to reach agreement at any cost.

The results of the present study suggest that (a) high time pressure in combination with individualistic goals enhances the belief that contentiousness is the most likely strategy to produce the desired outcome, and (b) high time pressure in combination with cooperative goals enhances the belief that cooperation is the most likely strategy to produce the desired outcome. Given the goal of maximizing one's own outcome, time pressure enhances competitive behaviors; given the goal of maximizing the other's and one's own outcome, time pressure enhances cooperative behaviors.

Beyond the interaction of orientation and time pressure, this study offers a fairly detailed picture of the effects of time pressure on negotiation process. An array of main effects on questionnaire and process data provide the basis for several conclusions about time pressure.

First, high time pressure inhibits or constrains the exchange of information that is often important to integrative bargaining (see Pruitt, 1981). Second, high time pressure lowers aspirations of negotiators based on their first offers. And third, time pressure reduces the flexibility of negotiators—they were less likely to change offers once they were made and felt they were less able to utilize "trial and error" tactics. The implication of these conclusions is that although high time pressure exerts pressure towards greater cooperation through lowering aspirations (see Pruitt, 1981), it unleashes processes that have a deleterious effect on integrative bargaining (for example, less exchange of information and less use of "trial and error").

The most puzzling aspect of the present study are the differences between male and female dyads. Most of the results are consistently stronger for males than for females, and this has not been the pattern in recent work on integrative bargaining (see Pruitt el al., 1986). In the present study, female negotiators did well despite the time pressure, and so did all of the subjects when there was a cooperative orientation. A possible explanation of this is that females are high in interpersonal orientation (see Rubin and Brown, 1975)—that is, they are more sensitive to the interpersonal cues presented by others. In any case, the gender differences found here were unexpected and future research might examine whether time pressure activates gender differences that are otherwise not present in integrative bargaining.

It may be useful to consider why the results of this experiment, which concern five-minute negotiations, teach us about time pressure, when many negotiations under great pressure take several days. (And the complement, that results concerning 25-minute negotiations teach us about relaxed negotiations that may take years.) This is a question about external validity. The experimental operations in the present study created high and low time-pressure conditions *relative to each other*. In the context of this laboratory simulation, we find that time pressure

does affect negotiation process and outcome. The important generalization from this study is not the specific operations of the experimental situation, but the theoretical variables that the operations are designed to reflect. The findings of the present study suggest that time pressure *can* affect negotiation, especially ones that involve individualistically oriented parties.

It is not difficult to identify examples of real-life situations that involved time pressure, and where time pressure promoted either cooperativeness or competitiveness. One example where time pressure produced greater hostilities (cited in Pruitt, 1981) is the Mexico City student rebellion of 1968. With the Olympic Games about to start, and time pressure increasing as the opening date approached, the government officials first attempted compromising with the students; when their compromises were rejected by the students, they employed the hostile tactic of shooting students at a rally.

In addition to raising questions about the external validity of laboratory negotiation experiments, the present study suggests that laboratory researchers should carefully consider the time limitations that are placed on negotiations. This is consistent with Smith et al. (1982), who interpret the results of earlier bargaining studies in light of the possibility that the researchers inadvertently imposed limitations on bargaining that could have created high time pressure. Smith et al. noted that one study, which placed restrictions on the number of possible bargaining rounds, produced results very similar to what would be expected for high time pressure.

In conclusion, the present study suggests that different processes are triggered by time pressure depending on the negotiator's orientation. When negotiators have an individualistic orientation, high time pressure enhances competitiveness, keeps aspirations firm, reduces information exchange, lowers the likelihood of agreement, and produces agreements of poorer quality. When negotiators adopt a cooperative orientation, high time pressure enhances

cooperativeness, lowers aspirations, and the quality and likelihood of agreement is as good as when there is low time pressure. This study shows that the influence of time pressure is more complex than suggested in existing literature (Rubin and Brown, 1975; Pruitt, 1981). High time pressure may either increase or decrease competitiveness contingent on other factors, one of which is the negotiator's goals.

Table 1

TABLE 1
Issue Schedules for Union and Management Negotiators. The Breakoff Value Was 80 Points for Each Negotiator

Wages		*Medical Plan*		*Vacation*	
Proposal	*Points*	*Proposal*	*Points*	*Proposal*	*Points*
		Union Issue Schedule			
9c	120	9/10	80	90%	40
8c	105	8/10	70	80%	35
7c	90	7/10	60	70%	30
6c	75	6/10	50	60%	25
5c	60	5/10	40	50%	20
4c	45	4/10	30	40%	15
3c	30	3/10	20	30%	10
2c	15	2/10	10	20%	5
1c	0	1/10	0	10%	0
		Management Issue Schedule			
9c	0	9/10	0	90%	0
8c	5	8/10	10	80%	15
7c	10	7/10	20	70%	30
6c	15	6/10	30	60%	45
5c	20	5/10	40	50%	60
4c	25	4/10	50	40%	75
3c	30	3/10	60	30%	90
2c	35	2/10	70	20%	105
1c	40	1/10	80	10%	120

Table 2

TABLE 2
Negotiator Outcomes
(union, management; no agreement = 080)

High TP Indiv.	*Dyad*	*Outcome*	*Low TP Indiv.*	*Dyad*	*Outcome*
Male	1	(105, 145)	Male	13	(175, 095)
	2	(080, 080)		14	(140, 180)
	3	(080, 080)		15	(160, 140)
	4	(080, 080)		16	(140, 160)
	5	(175, 135)		17	(120, 140)
	6	(080, 080)		18	(115, 175)
Female	7	(095, 195)	Female	19	(170, 150)
	8	(150, 130)		20	(165, 145)
	9	(095, 175)		21	(130, 145)
	10	(110, 150)		22	(140, 160)
	11	(120, 120)		23	(120, 120)
	12	(080, 080)		24	(080, 080)
High TP Coop.	*Dyad*	*Outcome*	*Low TP Coop.*	*Dyad*	*Outcome*
Male	25	(115, 175)	Male	37	(155, 155)
	26	(120, 120)		38	(135, 115)
	27	(130, 130)		39	(115, 115)
	28	(125, 125)		40	(160, 160)
	29	(160, 160)		41	(160, 100)
	30	(085, 145)		42	(120, 140)
Female	31	(140, 140)	Female	43	(135, 115)
	32	(105, 165)		44	(135, 115)
	33	(070, 190)		45	(125, 125)
	34	(120, 120)		46	(125, 125)
	35	(140, 140)		47	(160, 160)
	36	(135, 135)		48	(120, 120)

Table 3

TABLE 3
Negotiation Outcome and Process as a Function of Time Pressure and Orientation (N = 12 dyads)

	Individualistic Goal		*Cooperative Goal*	
	High TP	*Low TP*	*High TP*	*Low TP*
1. Agreements reached	7/12	11/12	12/12	12/12
2. Joint outcome (N = 12)	216.7a	278.8b	265.8b	265.8b
3. Joint outcome (only agreement dyads)	257.1a	289.5b	265.8a	265.8a
4. Able to exchange information	5.17a	6.67b	7.50b	7.08b
5. Gives priority information	.02a	.09b	.05ab	.06ab
6. Own competitiveness (males)	11.33a	9.83b	5.00c	7.50d
7. Other's competitiveness (males)	12.17a	10.33b	5.33c	6.33c
8. Contrived arguments (males)	.13a	.24b	.03c	.27b
9. First offer (males)	165.4a	167.9a	134.2b	155.0a
10. Second offer (males)	145.4a	144.6a	125.6b	145.0a

NOTE: Common subscripts indicate no significant difference among means in the same row.

Table 4

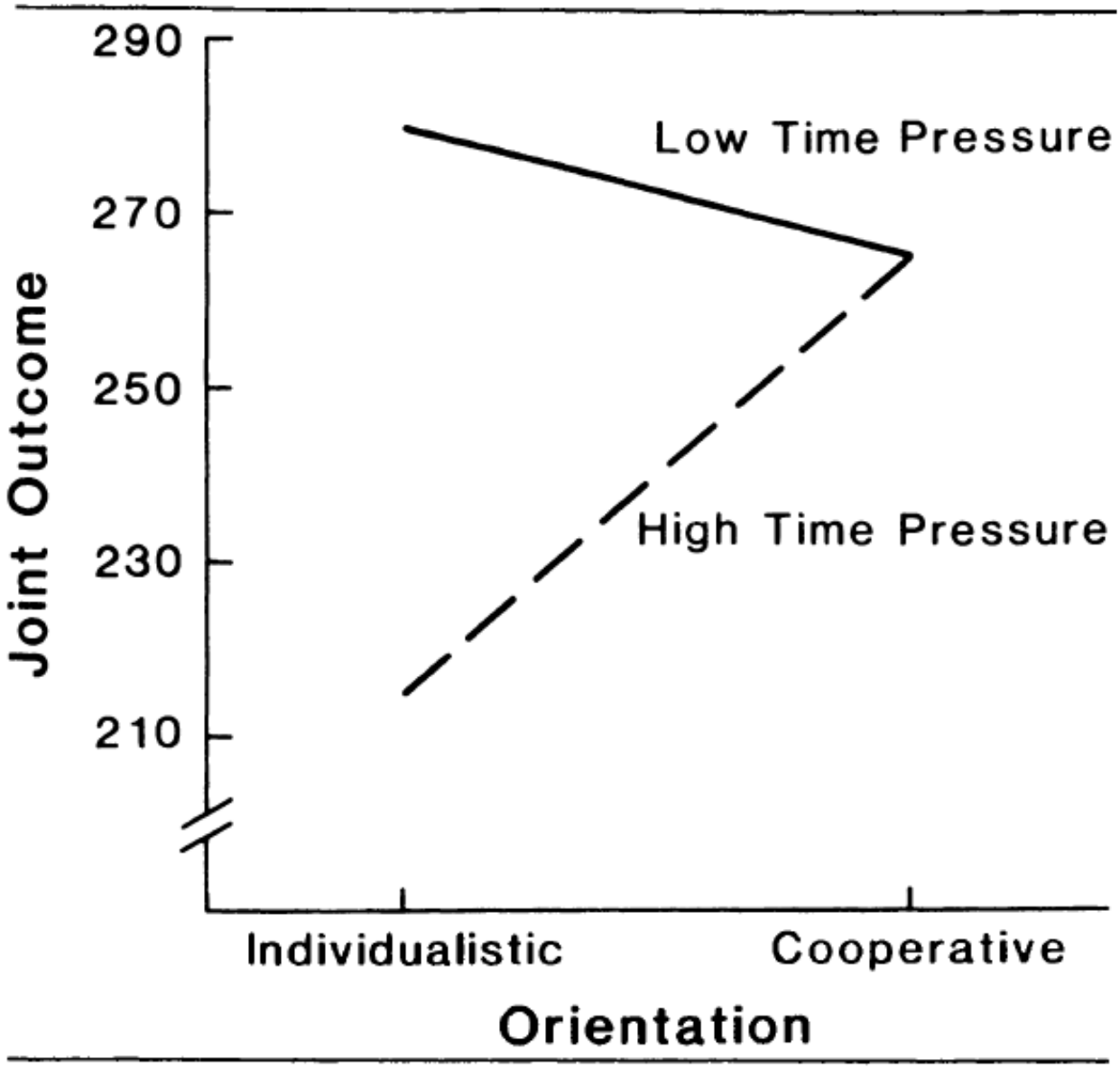

Figure 1: Interaction Effect of Time Pressure and Orientation on Joint Outcome (n = 12 dyads)

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