A COMPARATIVE EXPERIMENTAL STUDY OF NEGOTIATION BEHAVIOR

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An experimental study of interpersonal negotiation was conducted at eight laboratories, three in Europe and five in the United States. The negotiation task was designed to investigate the various ways in which persons deal with a mixed-motive, incomplete-information problem which involves both distributive and integrative bargaining. The results for the three independent variables were as follows: (a) Increasing the difficulty of the bargaining problem was found to increase trial time and reduce the frequency of agreement. Because with the present procedure the value of agreement derived in part from its cumulative effect over trials, these relationships were different for pairs who had long versus short histories of prior agreement. (b) A comparison of money and points incentives showed the former to have positive effects on the negotiation, both in terms of more favorable postinteraction attitudes and, in addition, in terms of the subsequent interaction and negotiation outcomes. The quicker and more dependable agreements produced under the money incentive are consistent with the view that increasing the value of the stakes has a beneficial effect on negotiation if the relation is one in which cooperative action yields clear mutual gains and is relatively irreversible to exploitation. (c) The creation in one condition of an unequal dependence of the two parties upon agreement did not have the anticipated disruptive effect upon the interaction. Analysis of differences among the sets of data from the eight research sites suggests that the negotiation situation was defined in two rather different ways. This was reflected in different meanings given to the dimension of cooperation versus competition in the interaction. At some sites, this dimension was given an "evaluation" meaning—good versus bad; at other sites, it was given a "dynamics" meaning—weak and passive versus strong and active. These two meanings were found to have different implications for the process and outcomes of the negotiation and for the relations between the subjects' prenegotiation attitudes and their subsequent behavior. The implications of the results and the implications of conducting comparable experiments in different laboratories are discussed.

The experiment reported here had the purpose of investigating several factors determinin


1 This is a report of the Experimental Working Group on the Dynamics of Conflict, a group of European and United States social psychologists with a common interest in an experimental approach to the analysis of social conflict. Our ability to plan negotiation behavior is prominently featured. The experiment, a project of the Transnational Working Group on the Dynamics of coordination, and discuss this particular study was made possible by funds from (a) Office of Naval Research, Group Psychology Branch (Contract ONR-3987), (b) System Development Corporation, Santa Monica, California, and (c) Advanced Research
Conflict was replicated at eight different laboratories, three in Europe and five in the United States. Thus, the investigation had a comparative aspect as well as an experimental one. It is necessary to explain, first, the general nature of the negotiation relationship, then, some of the considerations underlying the combined experimental and comparative research strategy, and finally, the experimental variables and hypotheses.

Negotiation Relationship
The experimental task was designed as a simulation of a two-party relationship which extends over time and which requires for its viability the two parties satisfactorily to negotiate allocations of the rewards available to them. As is commonly true in such cases, it is in each party's interest to acquire a large share of the available rewards at the time of negotiation, but out of regard for the future interaction of the two, it is also in his interest to make sure that the other party is kept satisfied. The latter aspect, the future of the relationship, is explicitly assumed in the present procedure by providing that continued cooperation of the pair increased the value of the rewards available to them.

More particularly, on each of a number of trials there was specified for the two subjects a per cent value (a contract) which they could have if they could agree on how to divide it between themselves. Each participant was also privately assigned an individual value which specified what he received if he failed to reach an agreement. The contract values and individual values varied unpredictably from trial to trial. It was sometimes mutually profitable for the participants to divide the contract (if their individual values were relatively low), but it was usually unprofitable. In order to provide an incentive for agreement, it was further specified that after an uninterrupted sequence of agreements regarding the contract (and as long as the sequence was sustained), the entire set of values, both contracts and individual values, increased approximately elastically.

It can be seen that the two subjects were interdependent in a mixed-motive sense (Schelling, 1960). It was to their mutual long-run benefit to agree on a division of each contract, but it was also often in a person's short-term individual interest to take his independent value, even though it represented more than he could possibly hope to gain at that time from agreement.

The task was also characterized by incompleteness of information (Siegel & Fournier, 1960). Each participant knew the entire sequence of contracts and his own sequences for himself of his failure to cooperate on any given trial (his individual value), but he had no access to objective information about the corresponding consequences for the other subject. Face-to-face and unrestrained interaction made it possible for a subject to pursue his individual interests by misrepresenting (minimizing) the importance he attached to agreement, inasmuch as this afforded him a basis for demanding a lion's share of the contract. Thus, the relationship could be repeatedly subjected to stress by the threat of nonagreement (Kent, 1969) and by problems arising from misrepresentation and distrust (Deutsch, 1958).

In many respects, the task was like those used in a number of prior studies of bargaining, which have been concerned primarily with the distributive aspects of the process, that is, with the division of more or less fixed rewards (Siegel & Fournier, 1965). However, the present task also required integrative bargaining, which refers to the process which enables interdependent parties, if they can manage sufficiently to emphasize the cooperative aspects of their relationship, to increase the total amount of rewards available for allocation (Walton & McKersie, 1965). Thus, the rules which placed a premium upon an uninterrupted sequence of cooperation provided an incentive for subjects to free themselves from the vicissitudes of trial-by-trial variations in their relationship and to place themselves instead under the control of stabilizing norms and agreements.

Given this complex relationship, the participants could deal with it in a variety of ways including active, trial-by-trial bargaining, the development of rules or norms about making contracts, and avoidance of confrontation by means of frequent opting for the independent value, at least as much as it represented more than he could possibly hope to gain at that time from agreement.

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is reasonable to believe that the value of cooperation has been increased without an accompanying offsetting increase in the risk associated with it. In contrast, a study by Kelley, Condray, Dahlke, and Bii (1956) of interdependent escape under strong pressure shows decreased cooperation when the heightened incentive (magnitude of impending danger) increases the risk of acting cooperatively. The Prisoner’s Dilemma (PD) game seems to be ambiguous as to the relative risk associated with cooperative versus egocentric behavior: with heightened incentives, it can shift positively (Radlow, Weidner, & Horst, 1968), negatively (Gunnarson, Deutsch, & Epstein, 1965), or not at all (Evans, 1964; Wrightman, 1966). That it does not dependably become more cooperative with high incentives is explainable by the fact that the PD game provides neither the convergence of interest nor the close bilateral control over the course of the interaction that seems to afford the possibility of increased value of cooperation without increased risks. The latter factor of mutual, moment-to-moment control over the process is highlighted in research by Daniels (1967), who, like Dahlke and Meeker and Shure on a simple exchange relationship. Their evidence indicates that although high incentives are ordinarily beneficial in this situation, if the moves in the exchange are modified so as to render each person vulnerable to exploitation (i.e., if cooperative initiatives are rendered risky), high incentive has a detrimental effect. In the light of these considerations, our hypothesis about the effects of more valuable incentives in the present negotiation situation were necessarily somewhat tentative. It seemed likely that subjects would generally find cooperation with equal sharing of rewards in the game quite certain than maximizing one’s individual interests through deceiving and exploiting the other person. The reason is that the success of the latter is contingent upon the other person’s explicit compliance, since in our negotiation situation there is no way of bypassing his share of control over the course of the relationship. Thus, the pursuit of high

4 P. V. Daniels, R. J. Meeker, and G. H. Shure. In a joint study, and a single social contact in two-person interactions. Manuscript in preparation.

outcomes through individualistic behavior should appear exceedingly uncertain of success, and accordingly, we expected the relationship generally to evolve in the direction of cooperation.

Equal versus unequal dependence. The variable and relative dependence of the two persons is of particular relevance to relationships such as the present one, in which a sharp conflict exists between short-run and long-run interests. Our procedure was designed to subject the cooperative arrangements of the pats to repeated stress by placing temptations, in the form of large short-run gains, before one person or both. In the equal dependence condition, these temptations were distributed equally, over trials, between the two. Thus, one person’s resistance to temptation (or sacrifice of a high individual value) on one occasion could readily be offset by the other person’s subsequent similar resistance. In the unequal dependence condition, the temptations were focused to a considerable extent upon one person, so we might assume it would be more difficult for the pair to arrange an exchange of sacrifices. The tempted person would tend to disrupt the relationship and create distrust by his seemingly excessive claims against the joint value or by his too frequent preclusion of agreement by taking his individual value. Thus, our hypothesis was that the unequal dependence would interfere with the establishment and maintenance of agreements and would act to the detriment of the pair’s outcomes.

This hypothesis can be viewed in relation to a more general thesis advanced by Fauchon, in Tihkaut (1964) and Tihkaut and Fauchon (1965). They proposed that norms governing a relationship (norms of loyalty and allocation) will be established and maintained most successfully when the members are equally (and highly) dependent upon the relationship. This would characterize our equal condition where it would be in each person’s interest to act equally so that they be “loyal” to the relationship (to maintain an unbroken sequence of agreements) and that they be equitable in the allocation of the contracts.

Problem difficulty. The factor of problem difficulty refers to how difficult it is, on any given negotiation problem, for the two persons to find an agreement satisfactory to both. The higher are their individual values relative to the contract value, the less profitable is agreement (at least in terms of immediate gains), and the more conflict they are likely to experience in their attempt to achieve it. “Satisfaction” of agreement depends, of course, upon the value the person places upon maintaining an unbroken sequence of agreements in order to enjoy the benefits of Schedule 2, so we expected the effects of problem difficulty, defined in terms of individual values and contract value, to depend upon the prior sequence of agreements.

Existing investigations pertaining to problem difficulty have varied in different ways the degree to which the two bargainers can satisfy their respective needs through agreement. For example, Khage (1965) varied the two persons’ levels of aspiration in relation to the amount of resources they were able to divide. Kelley et al. (1967) varied the size of the alternative scores each person received in the event of failure to agree (much like the present individual values). In a territory game, Shure and Meeker (1969) varied the degree of overlap between the areas designated as important for each person. With extensive overlap, it is more possible for both persons to occupy a sizable portion of their most valued territory. The results of these studies are consistent: With higher difficulty of the negotiation problem, time to reach agreement increases and (in the first two studies where no agreement was possible) frequency of agreement declines. The effects of problem difficulty in the present experiment were expected to follow this same pattern.

Method

Sites and Subjects

The experiments were conducted with 10 pairs of subjects in each of four conditions: private incentives, equal dependence; private incentives, unequal dependence; money incentive, equal dependence; and money incentive, unequal dependence. This design was completed in social psychology laboratories at eight locations: University of Leuven, Leuven, Belgium; Swiss Institute of Educational Research; Paris, France; University of Paris, France; Universiteit, Utrecht, Netherlands; Teachers College, Columbia University, New York, New York; Dartmouth College, Hanover, New Hampshire; University of California, Los Angeles, California; University of New England, North Carolina; and System Development Corporation, Santa Monica, California.

The subjects were drawn from the local university populations by way of (a) subject pool and the fulfillment of course requirements: Leuven, Dartmouth, UCLA, and North Carolina; (b) announcements and advertisements: Paris, Utrecht, Leuven, and System Development Corporation. The subjects at Leuven were drawn from the Flemish section of the university. This recruitment procedure (a) without any mention of money, simply to serve in an experiment—Leuven and Dartmouth; (b) with the possibility of making money being held out as much as $50 at Columbia, $50 at North Carolina, and amount not specified at UCLA; and (c) with promise of pay—equivalent of $20 at Paris, $50 at Utrecht, and $50 at System Development Corporation.

Procedures

In all cases, the experimenter was a male research assistant at the graduate level. Two different experimenters were used, each conducting half the design. At UCLA, North Carolina, and System Development Corporation, but these variations have been disregarded here. At Dartmouth, one experimenter ran the money incentive condition in the spring, and a second experimenter, the point condition the following summer. In every case, the experimenter followed verbal instructions. Both translations of instructions and questionnaires were used at Leuven and Utrecht, and a French translation so at Paris.

After introducing the two subjects (who were strangers in all cases), the experimenter stated that each subject sits on opposite sides of a small table, randomly asigning one to his left and the other to his right. (Seating position was significant because the subjects at the left, designated Subject 1, was always assigned the lower individual values in the unequal dependence condition). They were asked in full view of each other’s faces, but separated by a screen behind which each one could privately view his cards and make private notes.

2.2.2.8. Nâng cao chất lượng nguồn nước sinh hoạt

Thật ra, việc nâng cao chất lượng nguồn nước sinh hoạt không chỉ giúp giảm thiểu ô nhiễm, mà còn giúp tăng cường sức khỏe sinh sản. Việc này đòi hỏi phải có các biện pháp hiệu quả, với sự hỗ trợ của các tổ chức, ind cơ sở hạ tầng và chính quyền địa phương.

2.2.2.9. Điều chỉnh quy hoạch địa p. vi

Việc điều chỉnh quy hoạch địa p. vi để đảm bảo sự cân đối giữa các yếu tố môi trường, sức khỏe sinh sản và kinh tế là một trong những giải pháp quan trọng. Điều này đòi hỏi sự tham gia của tất cả các bên liên quan, với sự hỗ trợ của các tổ chức, ind cơ sở hạ tầng và chính quyền địa phương.

3. CONCLUSIONS

Qua nghiên cứu và phân tích, chúng tôi thấy rằng việc tăng cường các biện pháp sinh học địa p. vi và vi sinh học, cũng như việc nâng cao chất lượng nguồn nước sinh hoạt và điều chỉnh quy hoạch địa p. vi để đảm bảo sự cân đối giữa các yếu tố môi trường, sức khỏe sinh sản và kinh tế là những giải pháp quan trọng. Việc này đòi hỏi sự tham gia của tất cả các bên liên quan, với sự hỗ trợ của các tổ chức, ind cơ sở hạ tầng và chính quyền địa phương.

4. REFERENCES


Manipulation of Dependence

The description above applies to the equal dependence condition in which, on the average, the two subjects' individual values were equal, and if they had never agreed, each would have made an average of 3 points per trial. In the unequal treatment condition some of Subject 1's individual values were downwardly one category (from a club to a heart), and some of Subject 2's were upgraded (from aclub to a spade). In the sequence for the first 10 trials, the upgrading for Subject 1 occurred on Problems 1 and 6 and the upgrading for Subject 2, on Problems 4 and 10. The same values were maintained in the latter trials blocks by virtue of their reversal and then by repetition of the first 10 trials. The result was to decrease Subject 1's average individual value (with monitoring) by 4 points and to increase Subject 2's by 6 to 10 points. The problems in the unequal condition represented seven levels of difficulty, with the average difficulty being 1.8 as in the equal dependence condition. The readers will note that no mention was made to the subjects of the experimental distinction between Subject 1 and Subject 2. This variable was introduced entirely by modification of the decks of cards they used.

Measures and Data Analysis

1. Pregame ratings were made by subjects on 5-point scales from the semantic differential, having the following polar-opposite adjectives as ends: agreeable-unagreeable, positive-negative, handsome-homely, hostile-peaceful, wise-foolish, cooperative-competitive, weak-strong, brave-timid, and moral-imoral. Each subject used the scales first to rate how he expected the typical person to behave and then how he himself expected to behave.

2. Behavioral observations were made during each trial and each episode. The subjects' notes of the observable behaviors that individual exhibited: (a) would have guessed; (b) was hard to judge; the subject's accuracy, attempts to persuade the other, pressured the other, used promises; (b) bargained hard until latest: as above.

3. An extinction was at Paris, where the observations were made by a resident (female) observer present at each experiment.
significant positive relationship was observed between the number of consecutive agreements reached by the participants and their overall agreement levels. The data also showed that agreement levels increased as the number of consecutive agreements increased, suggesting that these agreements served as a basis for further discussion and negotiation. This pattern was consistent across different levels of difficulty, with higher levels of agreement being reached in more difficult problem-solving tasks.

The figure illustrates the average number of agreements reached by the participants at each level of difficulty. It can be seen that there was a clear upward trend in the number of agreements as difficulty increased, indicating that participants were more likely to reach agreements in more complex situations. This finding supports the idea that experience and prior agreements can facilitate the resolution of more challenging problems.

In conclusion, the study provides evidence for the role of prior agreements in promoting future negotiations and enhancing the likelihood of successful outcomes. The results highlight the importance of maintaining a record of past agreements, as these can serve as a foundation for future discussions and collaborations. Furthermore, the study underscores the significance of understanding the dynamics of agreement-making processes, particularly in complex and demanding contexts.
a longer history tended to agree (though not always), but used considerable time to do so. In contrast, pairs without the constraint of prior agreements tended not to agree, and one or the other person quickly decided to take his individual value. (For these pairs, the longest trial times tended to be at intermediate degrees of difficulty.) Thus, in this situation where prior agreements (history) made it especially worthwhile for the bargainers to avoid nonagreement in order to gain or maintain the more profitable interaction, the effects of problem difficulty were more complex than has been observed in prior experiments where no special penalty was attached to non-agreement. The inverse relation between difficulty and agreement rate was especially marked for pairs with few prior agreements, and the direct relation between difficulty and time was present only for pairs with more than a few prior agreements. Finally, history had a suppressing effect on hard bargaining. Even taking duration of trial into account, the longer the run of prior agreements, the less likely it was that the interaction would be judged as involving hard bargaining.

**Effects of Money versus Point Incentives**

The incentives for which the bargaining was conducted had been described to the subjects before they gave their pregame reactions to the situation, so we may first ask whether the incentives affected their initial orientations to the relationship. The results show that this was indeed the case. In the money condition, the money condition, the self was rated as more honest and cooperative, and the typical person as more cooperative. In the bargaining interaction itself, the behavior under the money condition was less conflictual in almost all respects coded by the experimenters. Rule discussed and rule invoked occurred more often, and less often noted were instances of bargain hard, bargain hard with honest, and misrepresent individual value. These differences are not only statistically significant but rather large in absolute terms. Using the points condition as a baseline, the money condition yielded a 44% increase in rule discussion, a 49% increase in rule invocation, and decreases of 15% in bargaining hard, 40% in bargaining hard with threat, and 28% in misrepresenting individual value. As the behavioral results would lead us to expect, agreement was significantly more frequent with money than with points (75% versus 66%). The advantage amounts to almost 4 extra trials of agreement over the 30 trials. Moreover, pairs in the money condition showed significantly greater efficiency in using their agreements to reach and stay on Schedule 2. That is, they were on Schedule 2 a higher proportion of the occasions that their number of agreements made possible (70% versus 55%). Thus, it appears that the subjects operating with money incentives were able not only to agree more easily but to assemble whatever agreements they reached into longer unbroken strings. This undoubtedly reflects the effectiveness of the rules which were shown above to have been more frequently discussed and invoked within the money condition.

The consequence for the individual bargainers was, of course, that they fared better in their individual scores under the money condition. The average subject there earned 7.1 points per trial (which, let it be noted, yielded him a total of $4.56 over the 30 trials in the United States sample and amounts that were probably psychologically equivalent to this in the European laboratories). In the points condition, the average was 6.6 points per trial.

The fact that money subjects were better able to establish and maintain sequences of agreement implies that they were less responsive to level of problem difficulty, tending to persist in their agreement even when the individual values were temptingly high. The results are quite consistent with this implication: Points subjects were about as likely to agree on easy problems as were money subjects, but the former sample's rate of agreement dropped more sharply as problem difficulty increased.

The average trial times appear consistent with the preceding results. If we keep in mind that since agreement is the rule rather than the exception, trial time is primarily a measure of time to reach agreement (rather than time to "decide" not to agree), just as agreement was more dependably achieved with the money incentive, the trial was more quickly concluded. The average trial lasted 44.5 seconds for money pairs and 52.5 seconds for points pairs. What, then, of our hypothesis that with more valuable incentives, more time would be required to reach agreement because of the sharper conflict between common and individual interest? It appears that this may have been true during the initial stage of the interaction. The average trial times are shown in Figure 3, separately for the money and points conditions. To smooth the curves, running averages have been calculated for successive tripllets of trials. It can be seen that the times for money pairs were equal to or greater than those for the points pairs for the early trials, and the money pairs became faster only after the initial 4 or 7 trials. When considered in the light of results already presented, this suggests that the first trials were used by money subjects to develop rules about their interaction. The crises for these pairs seem to have occurred on the sixth trial, where they were likely to have been on Schedule 2, but where the temptation to depart was extreme (the contract value was minimal and the individual values large). Once they got past their first few trials on Schedule 2, the money pairs seem to have settled down to a steady resolution of their conflict, presumably by appeals to rules evolved during the early trials.

The postgame ratings and question suggest that although the other player's behavior was generally found to be more positive than had been expected before the game of the typical player, this was particularly true when the monetary incentive was involved. The rating data are quite consistent with the process and outcome results, that the negotiations proceeded more smoothly and with greater attention to the integrative bargaining aspects of the situation when the money incentives were involved.

In general, our expectations about the effect of the money incentives, based on the assumption that they would be regarded as more valuable outcomes, are sustained. The relationship created by this negotiation task began relatively equally balanced between a positive and negative definition, though somewhat inclined toward the competitive side. Under the points incentive condition, the relationship tended to evolve toward cooperation and, as we had expected, this tendency was even more marked under the non-money incentive. The money incentive decreased the magnitude of the tendency toward competition at the outset and, accordingly, the interaction was characterized by more frequent development of allocation rules, less frequent hard-bargaining tactics (threat and misrepresentation), and readier agreement. The beneficial effects of the money incentive are consistent with similar effects found in previous investigations of relationships such as the present one—relationships in which it is true that (a) the chances of successful exploitation of one party by the other are small, and (b) cooperative action affords a clear advantage by virtue of a, a relatively risk-free route to better outcomes. In this kind of relationship, increasing the value of the outcomes involved in the negotiation tends to increase the ease and success of that negotiation.
Effects of initial attitudes on patterns of cooperation: The questions raised and the evidence obtained from the experimental data are consistent with the general conclusions of the theory, but there are some important differences. First, in the experimental situations, the initial attitudes of the players were not independent of each other. Second, the experimental data suggest that the effects of initial attitudes on cooperation may be more complex than those suggested by the theory. Third, the experimental data suggest that the effects of initial attitudes on cooperation may be contingent upon the specific conditions under which the game is played.
rules (which, as our other evidence suggests, occurred during the early trials). Once the rules were in existence, they apparently constrained the relationship and made it difficult for the person with the consistently higher individual values to do more than occasionally defect. In view of the "chance" determination of individual values, he had no reason to expect his good fortune to continue and thus, no basis for requesting that the rules be changed to take account of his advantage.

Site Differences: The Meaning of Cooperation-Competition 34

An important reason for replicating the experiment at as many as eight different sites was to make it possible to investigate the factors mediating between task or condition variations on the one hand, and variations in process and outcomes on the other. In the present study it turns out that the variation in type of incentive had a large effect on the amount of agreement within the dyads. By comparing the different samples of dyads studied at the different sites, it may be possible to increase our understanding of how this came about.

For the index of number of agreements, there is not a significant interaction between type of incentive and site. That is to say, there are more agreements at each of the eight sites in the money condition than in the points condition, and although there are differences among the sites in this respect, this between-site variability in the incentive effect is not significantly greater than could be expected by chance. This being the case, it is not possible to compare sites that show improvement under high incentive with those that do not, in order to determine what makes the difference. Rather, the problem becomes one of determining whether the high incentive

34 Grateful acknowledgment is made to John C. Barlow for his contributions to the analyses reported in this section.

The same is not true for another important outcome measure—average time to reach agreement. There are significant differences among the sites in how much the money incentive increased their speed. However, it seems wise here to focus upon the fact that the subjects were instructed to pay attention to rather than the more incidental indicator of their speed.

has its positive effect on agreement in different ways at different sites.

We approached this problem by attempting to discover whether, before the interaction began, the relationship was defined in different ways at the different sites. We were particularly interested in possible differences among the sites in the meaning of cooperation-competition. Such differences were suggested by the significant Site x Pair Pattern interaction in relation to number of agreements, noted earlier, which shows that cooperative-competitive pair pattern had a different relevance for agreement in the different samples.

To investigate possible differences in definition of the relationship, factor analyses were made of the pregame ratings of "typical player" and "self in the game." This procedure follows the lead of Osgood, Sun, and Tannenbaum (1957), who obtained ratings of a large number of concepts using bipolar scales (the semantic differential). Their factor analyses of these ratings revealed three major factors of "comparative" meaning: (a) an Evaluative factor, defined by scales such as good-bad, clean-dirty, and beautiful-ugly; (b) an Activity factor, defined by such scales as active-passive, fast-slow, and exciting-calm; and (c) a Potency factor, defined by strong-weak, hard-soft, and similar ratings. And importantly for our present research, Osgood and his colleagues found that when persons or person-related concepts were being judged, the activity and potency factors fused into one, which they called the Dynamism factor.

The factors resulting from our analyses of the pregame rating scales are remarkably stable and quite similar to those described by Osgood et al. (The latter is no accident, inasmuch as we had selected scales partly to represent their factors.) In the first analysis, the data for all the independent variables at all the sites were utilized. Six factors were extracted, using a Varimax orthogonal solution. The factor loadings of the pregame rating scales on the two factors identified as Evaluative and Dynamism are presented in Table 1. Those adjective pairs which define the Evaluative factor are dishonest-honest, hostile-peaceful, and moral-immoral. The positive pole of the factor is represented by honest, peaceful, and moral. The Dynamism factor is defined by passive-active, weak-strong, brave-cowardly, and wise-foolish. The positive pole of this factor is represented by passive, foolish, weak, and cowardly. Of interest for our present problem is the fact that in this analysis which extends over all sites, the cooperative-competitive scale does not have high loadings on either factor.

We next made factor analyses separately for each site. Two-factor solutions utilizing only the pregame ratings are presented in Table 2. It is apparent that the basic factor structure is the same at all sites. In all cases, the Evaluative factor is defined by dishonest-honest, hostile-peaceful, and moral-immoral. Similarly, the Dynamism factor is consistently defined by passive-active, weak-strong, brave-cowardly, and (though less consistently) wise-foolish. What Table 2 also makes clear is that the factorial definition of cooperative-competitive—its comparative meaning—varies among the sites. In the Columbia and North Carolina data, it leads to a moderate degree on the Dynamism factor, but relatively little on the Evaluative factor. Just the opposite is the case in the Paris, Leuven, and Dartmouth data. In the UCLA and System Development Corporation data, this scale loads on both factors. The Utrecht data are different yet, with the cooperative-

![Table 1](image)

<table>
<thead>
<tr>
<th>Site</th>
<th>Evaluative Factor</th>
<th>Dynamism Factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paris</td>
<td>High</td>
<td>Low</td>
</tr>
<tr>
<td>Leuven</td>
<td>High</td>
<td>Low</td>
</tr>
<tr>
<td>Dartmouth</td>
<td>High</td>
<td>Low</td>
</tr>
<tr>
<td>UCLA</td>
<td>Low</td>
<td>High</td>
</tr>
<tr>
<td>System</td>
<td>Low</td>
<td>High</td>
</tr>
</tbody>
</table>

Note: Factor loadings less than .30 are shown. Statistical reliability is marked.

![Graph](image)

Fig. 5. Factor loadings of cooperative-competitive self-ratings.
Table 1

<table>
<thead>
<tr>
<th>Pair</th>
<th>A1</th>
<th>A2</th>
<th>B1</th>
<th>B2</th>
<th>C1</th>
<th>C2</th>
<th>D1</th>
<th>D2</th>
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<tbody>
<tr>
<td>Pair</td>
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Note: The table above and the diagram on the right are not legible due to the quality of the image. The table contains data from pairs labeled A1, A2, B1, B2, C1, C2, D1, D2, with specific values indicated for each pair. The diagram appears to be a visual representation of the data, possibly showing trends or comparisons between the different pairs. Further analysis or interpretation would be required to understand the full context and implications of the data presented.
seconds, and the D samples, only 43 seconds ($p < .01$).

The comparisons of the two samples in terms of the observational data must be made with some reservations: (a) Because observational data were not obtained for one of the E pairs, we are left with a comparison between two European sites (Leuven and Paris) and three United States sites (Columbia, North Carolina, and UCLA); (b) it is likely that different criteria were used at the different sites for the various observational categories; (c) differences must be interpreted in the light of the difference between the samples in duration of the negotiation. These reservations noted, we report the observational data as yielding the following consistent and plausible pattern of results: (a) "bad" acts (did not bargain, mis-represented individual value, bargained hard, and bargained hard with threat) occurred more frequently in the E sample then in the D sample; (b) rule usage (rule invoked) was more frequent in the D sample; (c) rule usage was closely associated with pair pattern in the D sample; (d) in the "bad" acts tend to be associated with pair pattern more closely in the E sample than in the D sample; (e) rule usage (rule invoked) was more frequent in the D sample; (f) rule usage was closely associated with pair pattern in the D sample.

These various results for the two samples are consistent with the notion that the E sample tended to define the bargaining situation more behaviorally than the D sample. Where the "competitive" is, relatively speaking, to be "bad," the behavioral differences between cooperative and competitive pairs tended to be in terms of frequency of bad behaviors. In the same vein, it was only in the E sample that any sizable number of persons claimed having poor cards, an action that is difficult to understand except possibly as a basis for a more realistic view.

What is most notable about the E sample is the fact that the bad behavior characteristic of the more cooperative pairs was little more disruptive of agreement than was the relatively good behavior for the pairs who described themselves as cooperative. We may speculate that the initially cooperative subjects in the E sample created trouble for themselves by indulging in some misrepresentation (perhaps despite their moral scruples) to which the partners then overreacted. They infrequently used threat, so it seems not to have been explicit power tactics which created trouble, but these cooperative subjects in the E sample did have many cases of not bargaining (a mild pressure tactic) which could easily have been another cause of their apparent difficulty.

In the D samples, where to be cooperative is to be passive and weak, the cooperative pairs created and used rules to settle the negotiation problems and were able thereby to achieve high rates of agreement. The psychological significance of the bargaining situation for the D sample seems best described in "rules" or "instrumental" terms. The subjects described themselves as cooperators who seem to have treated the negotiation problems as tasks to be solved by local and direct arrangements and not (as their counterparts in the E sample) as interactions having wider, moral connotations. The cooperative pairs in the D sample were more in these usage, but they did not, as a substitute, engage in active negotiation with threats and misrepresentation to the same degree as did their E sample counterparts. (In terms of outcome, agreement, the D sample competitors were markedly faster than the E sample competitors. They appear to have used refusal to bargain and some hard bargaining, and to the extent that this is a matter which both negotiation time and agreement rate as relative low values.

We began this analysis of site differences with the purpose of attempting to determine whether the incentives effects obtained in the experiment were mediated in different ways at the different sites. The evidence as to the role of the money incentive which emerges from the analyses described above (involving the Sample X Incentive X Pair Pattern design) is mixed in its implications. On the one hand, there are several respects in which the money incentive made the E sample like the D one. Whereas with the points incentive, the E sample was high on poor cards claimed and bargained hard with threat, in the money condition, they were indistinguishable from the D sample. (The Sample X Incentive interactions are both significant.) A similar pattern (though only marginally significant, $p < .10$) occurred for number of agreements, there being a relation between pair pattern and agreement rate under money incentives in the E sample (as there was for both incentives in the D sample), but no such relation in the points condition. Similarly (though again, the interaction is only marginally significant, $p < .10$), the money incentive produced a sharp drop in negotiation time for the E sample (in the direction of the D averages). On the other hand, whereas money increased rule discussion for the D sample, it decreased it for the E sample (interaction significant at $p < .05$).

The implication of these trends seems to be that while money inhibited certain behaviors characteristic of the E sample (and thereby decreased time and increased agreement), it did not encourage for these pairs the positive, rule-using behavior more characteristic of the D sample. Thus, of two general possible effects of money (reducing interfering behaviors and increasing agreement-promoting behaviors), the former seem to be more prominent in the E sample and the second, in the D sample.

It is relevant here to note that a tendency for money to change the definition of the situation in the direction of the D sample is suggested by factor analyses made of all the data from the five United States sites. These factors were made separately for the money and points conditions. While the basic factor structure is essentially the same for the two conditions, the cooperative-competitive scale found more as the evaluative factor in the points condition and more on the dynamism factor in the money condition.

Discussion

The results of two of our independent variables were very much as we expected. Problem difficulty refers to how difficult it is for the pair of negotiators to satisfy their respective needs within the framework of agreement. Problem difficulty is very similar to what has been called the "bargaining range." Difficult problems being characterized by a narrow bargaining range (Kahn & Leites, 1962). In the present study as in prior ones (Kahn, 1968; Kelley et al., 1967; Shure & Meeker, 1969), there was generally an increase in negotiation time and a decrease in agreement rate under money incentive conditions.

However, the value of agreement had a long-run as well as a short-run component in the present experiment. If the bargainers could manage to withstand the short-run costs required for agreement and develop an unbroken succession of them, their entire interaction became more valuable. This long-term value of agreement complicated the observed relation between problem difficulty and the dependent variables. The decrease in rate of agreement with increasing difficulty was particularly sharp for pairs who had not yet begun to approach the more valuable level of interaction, but the increase in negotiation time with increasing difficulty was particularly marked for pairs who had. Apparently, pairs who had brought under control their own individual interest in short-run gains were able to agree even on difficult problems, but reaching agreements required considerable discussion time.

The effects of type of incentive, money versus points, are generally consistent with the view that an increase in the value of the commodities involved in the negotiation facilitates its course, if the relation is one in which cooperative behavior affords relatively dependable and inviolable means to attain better outcomes and exploitative or individualistic behavior entails the risk of high costs. That the costs of exploitative behavior were high in the present negotiation task is suggested by the fact that the relationship tended to evolve toward cooperation even under the points incentive. And in keeping with the general proposition above, this tendency was more strongly in evidence under the money incentive; initial attitudes were more cooperative, the interaction more often involved the development and invocation of rules and less often entailed hard bargaining techniques, and agreement was more quickly reached. Also the interest in long-term gain appeared to be higher with the money incentive, the evidence of this being that the integrative bargaining aspects of the relationship were managed more satis-
instances, subjects were mainly different in their degree of "social interaction," that is, in the degree to which the gift they gave each time depended upon what they had just received. Some subjects (may we describe them as "active") responded in a highly contingent manner, and others ("passive") gave the same gift each time without regard to what they had received. In the Leuven and Dartmouth samples, the main difference among subjects was in "generosity versus profit orientation," that is, in the cost to themselves of the gifts they gave. Some subjects (the "good" ones) gave costly commodities, and others ("bad" ones) kept their own costs down.

Thus, there are striking parallels between the two studies, both in the empirically derived groups of sites and in the definitions of the major dimension of individual difference within the two groupings. The two studies seem to reflect the same distinction between different samples of subjects, and the "Dynamism versus "Evaluative" distinction seems to describe the difference rather well.

The evidence from the earlier study makes subic two important additional considerations: (a) Certain overall characteristics of the behavior within a given sample (say, the E sample) may reflect in part the general level of the subjects on the other dimension (say, the D factor). This is illustrated by the fact that the earlier Leuven and Dartmouth samples, differentiable on the basis of "generosity," were generally high on contingent. That is, the degree of contingency was high for both more and less generous subjects. This suggests, of course, that the general level of "activity" was high throughout the sample. This implication is consistent with evidence from the present study that there was a high level of activity within the E sample, as indicated by both the pregame ratings and the long trial times. (b) The effect of a given dimension may vary from one situation to another. Thus, in the present study, cooperatively inclined subjects in the D sample (that is, the less active) seemed to evolve rules as a means of handling the conflict in the situation. In the earlier study, the less active (low contingency) subjects tended to be very low in "generosity." These two facts together suggest that in a situation where passive subjects are not able to handle their interpersonal conflicts by rules or by some similar impersonal device, they will tend to discontinue responding to one another and, in effect, withdraw from interaction. In the commodity-exchange situation employed in the earlier experiment, establishing explicit rules was not possible, but withdrawal was, and it could be accomplished by simply disregarding the other person's gifts and giving him very little.

**Strategy of Site Comparisons**

Certain methodological difficulties are inherent in between-site comparisons of game behavior. As we have noted repeatedly, some of these problems were of considerable importance in the present study and, of course, must be taken into account in the interpretation of site differences noted above. In view of these many problems, the reader may well wonder how we dare to average data over sites, or even worse, try to make sense of differences among the sites. The answer, forthcoming from the present investigation, can now be given along three lines. First, exact replication at different sites is impossible. It is pointless to insist on the elimination of all differences in future subject ratings of the questions, equivalence of incentives, etc., as a precondition to conducting comparative research. Comparability is, of course, actively to be pursued, but to require a very high level is to delay irremediably much needed research. Second, not all of these differences matter. For some problems, the degree of incomparability we experience is in the present investigation of little significance. For example, our major independent variable, type of incentive, had quite similar effects on the major outcome variable (rate of agreement) at all eight sites. Third, with sufficient attention to measurement of the psychological mediating variables, it is possible to assess the degree of comparability and to extract meaning from the incomparability. This point is illustrated by the analysis of the E and D samples. This distinction may very well reflect the different types of subject populations available at the two sets of laboratories. For example, different social or organizational climates. If so, it might be very difficult and perhaps impossible to get comparable kinds of subjects (as through selective recruiting) for a study to be conducted at E versus D sites. But this need not deter us from undertaking such a comparison. Nor, if we undertake it, need we gloss over the problem of incomparability by simply assuming the subjects to be comparable. With adequate premeasures (personality, initial perceptions, and orientations) and good luck in their relevance (as illustrated by our own pregame ratings), the degree of comparability can be determined. And to the extent there is incomparability, its meaning and effect can be determined through appropriate classification of subjects and cross-analysis of variables. Undetected incomparability is a danger because it brings erroneous generalization. Identified incomparability, on the other hand, affords a gift for the theoretical mill. If we are ever to be able to generalize from the laboratory to the natural world, and from one real situation to another, we will have to be able to make distinctions for greater degree of incomparability than those encountered in any interlaboratory replications. In a real sense, developing a capacity to deal with interlaboratory differences means learning how to make the generalizations which our investigations have as their ultimate goal.

**REFERENCES**


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