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Some Effects of Target Cooperation and Reciprocated Promises on Conflict Resolution*

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Forty female subjects were given intermittent options to transmit noncontingent promises of intent to cooperate during the course of a mixed-motive laboratory game. In a 2 x 2 experimental design, a robot target either reciprocated subjects' promise statements or concealed her behavioral intentions, and was either always cooperative or always competitive in response to the subjects' promises. Subjects sent more promises to the cooperative than to the competitive robot, and kept their promises more often when the robot reciprocated promises than when the robot used evasive replies. The results were interpreted in terms of normative considerations, with the reciprocal noncontingent promise seen as a contractual commitment tactic for use in dyadic conflicts.

A number of theoretical works have recently directed attention toward certain phenomena related to behavioral compliance (e.g., Tedeschi *et al.*, 1972; Thibaut and Kelley, 1959). Many of these

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articles have examined the methods employed by an individual for "getting his way" in dyadic interaction when his goals differ from another's, and when the influence methods employed are designed to obtain overt behavior change without regard for the internal states or attitudes of the target. In the traditional analysis of the compliance situation, a dynamic source is portrayed as influencing the behavior of a relatively passive target by transmitting verbal or nonverbal messages during the conflict of interests situation. With few exceptions, this traditional "one-way" perspective has led to a conceptual and empirical focus upon the acts of the source or the particular mode of influence employed, to the exclusion of a consideration of the acts or attributes of the "passive" target. However, both Heider (1958) and Simmel (1950) have forcefully argued that behavioral compliance is a dynamic process with no "passive" recipients of influence, but only active participants; in short, that a more dynamic and realistic view of the influence process is needed. The present report is one of a series of studies focusing upon the effects of target behaviors as determinants of source actions and attributions, and the outcome of interpersonal conflicts.

In an earlier investigation, Tedeschi *et al.* (1970) employed a modified Prisoner's Dilemma Game (PDG) to study a threatener's reactions to prior announcement of behavioral compliance or defiance by a robot target. The PDG is a two-person, two-choice mixed-motive conflict situation in which each participant chooses either a cooperative (Choice 1) or competitive (Choice 2) strategy alternative on each iteration of the game. Figure 1 presents a generalized matrix representation of the structure of outcomes in a PDG as well as the specific payoff values employed in both the Tedeschi *et al.* and the present study. If both players choose cooperatively, both win (R-R payoff); if both choose competitively, both lose (P-P payoff). If one chooses cooperatively while the other chooses competitively, then the "cooperator" loses more (S-payoff) than if both had competed, and the "competitor" wins more (T-payoff) than if both had cooperated. Fifty male and female subjects in the Tedeschi *et al.* study were given occasional opportunities to send a contingent threat to a robot target. The threat message demanded that the target make the cooperative choice (Choice 1) on the next trial of the game, or else suffer the imposition of an extra-game punishment. Subjects were empowered to enforce their threats. Four simulated target reply-and-response patterns were established: (1) open defiance, in which the target said he would not comply to each threat sent by a subject and did not do so

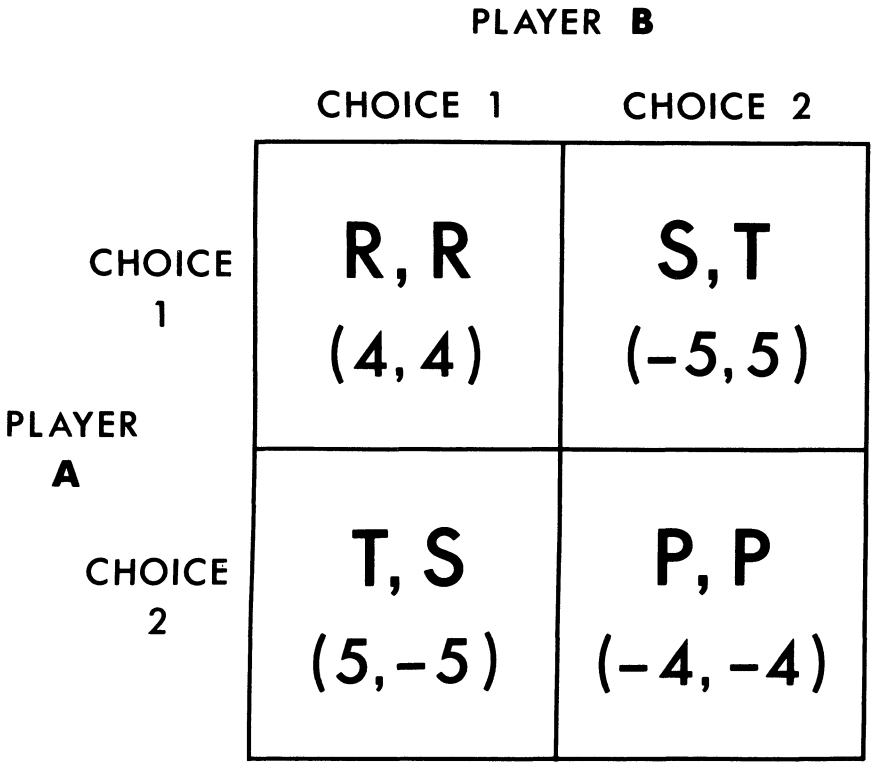

FIGURE 1
The generalized Prisioner's Dilemma game matrix and the specific payoff values employed in the present study. Values shown represent game points.

behaviorally; (2) concealed defiance, in which the target either refused to reveal his intentions or said he would comply, but always behaviorally defied the threatener; (3) open compliance, in which the target said he would comply and did; and (4) concealed compliance, in which the target either refused to reveal his intentions or said he would not comply, but always complied behaviorally. The results indicated that regardless of the presence or absence of prior announcement, the compliance conditions encouraged more threat-sending than the defiance conditions. However, the subjects' own strategy choices on the message trials were significantly more cooperative in the open (i.e., preannounced) compliance condition than in any of the other three experimental conditions. Although

females were higher overall in threat-sending and message-trial cooperation than males, the above pattern of results held equally for both sexes. These results suggested that (a) behavioral defiance rather than compliance discourages transmission of coercive power attempts, but that (b) prior, honest announcement of conciliatory intent, coupled with consistent behavioral compliance, allowed both source and target to employ the "threat" to coordinate mutual cooperation and achieve joint gains.

It is not clear whether a policy of preannounced compliance as a workable conflict resolution tactic is generalizable as a decision rule for recommendation to targets regardless of the type or level of conflict in which they are engaged (cf. Osgood, 1962). That these results are both internally and externally valid is attested to by their replication in both similar simple (e.g., Pilisuk and Skolnick, 1968) and more complex (e.g., Crow, 1963) simulations, as well as in at least one case history at the international level (Etzioni, 1970). However, in all of these investigations, threats of punishment were either the sole or preferred influence mode available to the source, and it may be the case that the efficacy of preannounced compliance by the target is limited to coercive conflicts.

The present investigation asked if conflict resolution would be promoted by a target's preannounced cooperative behaviors when both participants were provided with the capability of transmitting noncontingent promises of cooperation. A strict generalization from the Tedeschi *et al.* results would suggest that highly credible prior announcement of cooperation by the target would be a prime requirement for ameliorative conflict resolution. However, both Baldwin (1971) and Tedeschi (1970) have argued that promises are not the mere positive complements of threats. Their reasoning suggests that, unlike threats, promises carry normative implications like those involved in formal social contracts. When a source transmits a threat, he might be more effective if he maintains high credibility by punishing noncompliance. But when a source transmits a promise, he *ought* to keep his word. If a target responds to a source's promise of cooperation with a similar reciprocal promise, the target has both acknowledged and indicated trust in the source's communication; hence, a type of oral contract is effected and the source should be normatively encouraged to keep his promise. It might be predicted, therefore, that simple target verbal reciprocation of promises would be sufficient to promote and maintain cooperative behaviors by the initiating source of promises, independent of the actual deeds of the target person. On the other hand, the cooperative

or competitive responses of the target should increase or decrease the frequency with which the source commits himself to cooperative actions by verbal preannouncements.

In order to test these hypotheses, subjects were given intermittent opportunities to send noncontingent promises in a modified PDG. A robot player responded to subjects' promises with either an identical promise of next-trial cooperation or a statement refusing to reveal the robot's strategy intentions. In addition, the robot either always or never selected the cooperative alternative following message exchanges, creating a 2 (reciprocal promises or evasive replies) X 2 (0% or 100% cooperation on message trials) experimental design.

METHOD

Subjects and Apparatus

Forty female subjects partially fulfilled an introductory psychology course requirement at the State University of New York at Albany through their participation. Subjects, who believed they were playing a peer,[1] were recruited for the experiment in pairs, and were assigned equally to the four cells of the experimental design in their order of appearance at the laboratory.

Each subject faced a game panel (see Tedeschi *et al.* 1971, for a complete description of the equipment) which contained: (a) two strategy selection buttons, one for the cooperative (Choice 1) and one for the competitive (Choice 2) response alternative; (b) a 2 X 2 payoff matrix; (c) two automatic add-subtract cumulative counters which kept running point totals of both player's scores at all times; (d) two message columns (incoming and outgoing) with either a light adjacent to each printed message to indicate receipt (lefthand column); or button for transmission of the message (righthand column) (e) a green light to indicate the start of each trial; and (f) a white light to indicate when the communication channel was open. Payoffs for the various joint choices were determined by the fixed matrix values in Figure 1.

Procedure

Subjects were seated individually in an experimental cubicle and were given ample time to read the dittoed instructions and explore

[1] Subjects, after initially being separated, were asked if they were acquainted with the person they signed up with. If so, they were informed that two other subjects had been waiting in the testing cubicles for a short time, and that in order to insure adequate experimental control, each would be in the experiment with one of these "strangers" and not with their acquaintance. In this manner, prior friendships were controlled for.

the apparatus.[2] The instructions emphasized that the subject's objective in the experiment was to obtain as many game points as she could, an individualistic set. Conflict-related words, such as "game," "opponent," "cooperation," "competition," "win," "lose," or "promise" were not used.

A single message was posted on the "outgoing" side of the subjects' game panel. It read, "I intend to make Choice 1 on the next trial", a noncontingent promise. Subjects were instructed that each time the white light on the game panel was illuminated they had the *option* of sending this message to the other person. They were not informed that 10 such options would occur over the 50 PDG trials, nor were they informed of the number of game trials which would be played. Subjects were instructed that the cue light indicating an opportunity to send the message would remain illuminated for ten seconds and that if a message was not sent during that period, they would resume making joint decisions. Two target reply messages were posted on the "incoming" side of the subjects' game panel: (M1) "I will make Choice 1 on the next trial" and (M2) "I do not wish to reveal my intentions." Subjects were informed that the "other person" could transmit a message only if the subject first initiated communication on any option trial—the simulated target could never initiate communications during the interaction. The location of the printed reply messages was systematically counterbalanced.

In the *reciprocal-cooperation* condition, the simulated target always responded to subjects' promises with M1, the reciprocal promise, and always made the cooperative (Choice 1) strategy selection on message trials. In the *reciprocal-noncooperation* condition, the robot responded to subjects' promises with reciprocal promises, but always made the noncooperative behavioral choice on the trial immediately following. In the *evasive-cooperation* condition, the simulated target always responded to a promise with M2, but always made the cooperative strategy selection on message trials. In the *evasive-noncooperation* condition, subjects' promises were met with both consistent intentional evasion and behavioral noncooperation by the robot. On those message-option trials on which a subject chose not to send a message, the robot alternated cooperative and competitive strategy selections in *abba* order. Finally, a preplanned but unpatterned set of strategy selections was

[2] Copies of the instructions and post-experimental test materials may be obtained from the authors upon request.

employed by the simulated target on all nonmessage iterations in order to maintain a proportion of 50% cooperative and 50% competitive strategy selections by the robot across all trials.

Following the game interaction, subjects were removed to separate testing cubicles, and were asked to give their impressions of the "other girl's" and their own behaviors on a shortened form of the Semantic Differential (Osgood *et al.*, 1957). Each page of this two-page measure contained thirteen polar adjective pairs, four for each of the Evaluative, Activity and Potency dimensions of that scale. Each item was scored from −3 to +3 and summed over each dimension. A single accommodative-exploitative item was added to the other items, and scored in a like manner. Finally, subjects were requested to complete the Interpersonal Judgment Scale (IJS: Byrne, 1961), which includes a measure of liking for the other and is scored from a low of 2 to a high of 14.

RESULTS[3]

Frequency of Promises

As predicted, subjects in interaction with a cooperative target sent more promises ($\bar{X} = 8.58$) than did subjects who faced a noncooperative target ($\bar{X} = 7.65$; $F = 4.362$, $df = 1/36$, $p < .044$). The frequency with which subjects sent promises was unaffected by whether the target replied evasively or with a reciprocal promise ($p > .10$) or by the interaction of the robot's behaviors and statements of intent ($p > .10$).

Credibility of Subjects' Promises

The credibility of the subjects' promises (i.e., the proportion of times a subject followed a promise to cooperate with a cooperative strategy selection) was affected by the reply messages of the target ($F = 5.09$, $df = 1/35$, $p < .03$) but not by her subsequent cooperative or competitive behaviors ($p > .10$). Subjects made cooperative choices on message trials proportionately more often when the target's reply was a reciprocal promise ($\bar{X} = 81.5\%$) than when the target's reply was evasive ($\bar{X} = 62.8\%$). The interaction term was not significant ($p > .10$). None of the factors of the experiment affected the degree of cooperativeness displayed by subjects on nonmessage trials of the PDG.

[3] All analyses were computed by mutiple analysis of variance techniques (MANOVA).

Post-Game Impressions

Subjects in interaction with the behaviorally cooperative target judged her to be more attractive and more desirable as a future experimental partner on the IJS ($\bar{X}$ = 9.85) than did subjects in interaction with the noncooperative target ($\bar{X}$ = 8.65; F = 3.64, df = 1/36, $p < .06$). Similarly, the target who replied with reciprocal promises was rated as more attractive ($\bar{X}$ = 9.85) than was the robot target who replied evasively ($\bar{X}$ = 8.65; F = 3.64, df = 1/36, $p < .06$).

On the subscales of the Semantic Differential, significant effects of the cooperation manipulation were obtained on subjects' ratings of the potency (F = 6.40, df = 1/35, $p < .03$) and evaluation (F = 5.30, df = 1/35, $p < .02$) of the robot player. The behaviorally cooperative opponent was given a higher rating ($\bar{X}$ = +2.60) on the evaluative scales than was the noncooperative opponent ($\bar{X}$ = −0.31), and the cooperative target was seen as less potent ($\bar{X}$ = −0.95) than was the noncooperative target ($\bar{X}$ = +1.16). Finally, subjects in interaction with the robot who made reciprocal promise replies rated the target as more accommodative ($\bar{X}$ = +0.13) than did subjects in interaction with the robot who used the evasive reply message ($\bar{X}$ = −0.85; F = 4.60, df = 1/36, $p < .04$). No effects were obtained on activity ratings and there were no interaction effects on any of the post-game impressions measures.

DISCUSSION

As hypothesized, subjects sent more promises when the target was strategically cooperative as opposed to competitive, a result which is easily explained by traditional reinforcement notions. When the robot cooperated in response to transmission of a promise by subjects, the subjects won either 4 points by cooperating or 5 points by competing. When the target competed in response to a promise, subjects either lost 5 points by cooperating or 4 points by competing. Thus, subjects were reinforced for promise-sending behaviors when the robot was cooperative and punished for sending promises when the robot was competitive. This finding extends a complementary result obtained by Tedeschi *et al.* when contingent threats were the mode of influence.

In confirmation of our second hypothesis, subjects made their promises more credible (i.e., by cooperating as they promised they would) when the target reciprocated promises than when the target made an evasive intentional reply. A reinforcement explanation of this finding would require that the target's reciprocal promise be

interpreted as a secondary reinforcement. There are two problems with a secondary reinforcement interpretation. First, reciprocal promises did not increase the frequency of promises sent by subjects as would be predicted by reinforcement theory. Second, reciprocal promises could not have affected subjects' *subsequent* cooperation, unless one wishes to make an argument for backward conditioning.

If however, following Baldwin (1971) and Tedeschi (1970), the promises *per se* constituted a "more social" form of influence than (for example) threats, and invoked a normative or contractual commitment between source and target, then the results can be interpreted in terms of normative pressures. The robot target's simple reciprocation of subjects' promissory statements may be construed as creating a binding commitment between subject and robot about subject's future strategic message-trial choice. That is, when the target reciprocated the subject's promise statement, the robot's gesture served the purpose of explicitly noting, acknowledging and formally recognizing the cooperative commitment made by the subject in that promise. Subjects, mired in their own words by such reciprocation, would display exactly the behavioral pattern disclosed: increased cooperation following message transmissions. On the other hand, when the target was intentionally evasive in her replies, source's normative overture was denied, no commitment existed, and less message-trial cooperation was tendered.

Once subjects were normatively locked-in to their commitment to cooperate by the target's reciprocal promise, they kept their promises irrespective of whether the target exploited them or rewarded them for so doing. The subjects' promises were noncontingent and unilateral. To be committed is to restrict one's alternatives to the point that only one course of action remains. The unilateral nature of the subjects' promises was probably made salient by the procedural fact that subjects always initiated communications and that the robot could not communicate unless the subjects did so first. Thus, when subjects sent promises that were positively acknowledged by the target, they were under normative pressure to follow through and keep their promise. Of course, when the target exploited the subjects' honest behaviors, they committed themselves less often to such unilateral cooperative gestures.

The fact that cooperative targets were perceived as more attractive than their noncooperative counterparts is not surprising—we tend to like those who reward us (Bramel, 1969), and strategic cooperation is easily interpretable as rewarding. The marginal effect of target's cooperation on attraction ratings was buttressed by the strong effect

of target cooperation on the ratings obtained on the evaluative dimension of the Semantic Differential. The target who sent reciprocal promises was liked better than the target who sent evasive replies to subjects' promises. This result must be interpreted cautiously since it is a weak one, but it suggests that we might tend to like not only those who reward us with cooperation, but also those who only *say* that they intend to reward us. The observation that cooperative robot targets were judged to be less potent than were noncooperative targets extends a consistent pattern which has been associated with studies employing the modified Prisoner's Dilemma paradigm as a research tool (cf. Brown *et al.*, 1972). Over a series of experiments, a cooperative or rewarding robot player has been consistently rated as more attractive but as less potent than a competitive or punishing robot player. Apparently, subjects associate positive attributes with weakness and negative attributes with strength.

CONCLUSIONS

The data from the present study suggest that a person can become mired in her own words when she makes unilateral promises of cooperation to others. Even if the source expects to be exploited, she may be willing to absorb the costs of such exploitation both to maintain credibility and to fulfill normative commitments. Thus, when unilateral (noncontingent) promises are the mode of influence, it is apparently not necessary that a target both reciprocate the cooperative intent and behaviorally follow through on this intention for source to maintain a high level of behavioral cooperation. Rather, the necessary precondition is for target to get the source to initiate the unilateral intention commitments, for then source's cooperation is almost assured. This result stands in sharp contrast to the results obtained when contingent threats are the preferred influence mode during conflict (Tedeschi *et al.*, 1970).

However, it is also clear that actions speak loudly as well. Cooperative target responses to the source's promises encourage the frequent employment of the available communication modes as a means of conflict resolution, a finding which is not limited to noncontingent promises or to females, but which holds whenever threats are the mode of influence and across both sexes as well (Tedeschi *et al.*, 1970). Competitive reactions, on the other hand, lead to a reduction in attempted influence on the part of the source. Given the constraints of the research paradigm in which these

findings were obtained and the fact that the subjects in the present experiment were college females, the generality of these differences must be established by further experimentation.

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