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NOTE

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The ethical shift in the Prisoner's Dilemma Game^{1,2}

SVENN LINDSKOLD, JAMES GAHAGAN, and JAMES T. TEDESCHI, University of Miami, Coral Gables, Fla. 33124

Twenty three-man groups made of ROTC cadets were compared with 20 individuals when playing against a "dummy" strategy of 50% cooperation over 50 trials of the Prisoner's Dilemma Game. The 20 triads were further divided into two conditions: one with 10 equal status triads, the other with 10 triads comprised of unit commanders with two of their principal subordinates. Results showed groups to be less "trustworthy" than individuals; this was interpreted to be an "ethical shift." There were no significant differences between triad types.

What differences are there between contending in a mixed-motive situation with a single individual and contending with a group? Many real-life conflict situations involve dealing with the decisions of a council, a board, or a commission, but few experimental studies of simulated conflict have utilized groups as decision-making Ss. Of course, groups have been studied for their problem-solving ability as contrasted with that of individuals alone, and group "shift" phenomena have been proposed and

examined by Wallach, Kogan, & Bem (1964), who considered shifts toward risk-taking, and by Rettig (1966) who contemplated an ethical shift—away from censure avoidance and towards maximization of gain. Group structure has also been studied; member status differences have been observed to impede problem-solving (Bass, 1963; Torrence, 1955), and it would be expected that the inclusion of a formally recognized leader would militate against the diffusion of responsibility among members that has been advanced as one explanation for the risky shift.

In the process of considering what conditions are relevant to the initiation of cooperation in a mixed-motive situation, Deutsch (1964) concluded from his work that trust was an indispensable factor. The connection of trust with greater cooperation has been demonstrated in a number of other Prisoner's Dilemma Game (PDG) studies (Loomis, 1959; Evans, 1964; Tedeschi, Hiester, & Gahagan, in press). Rather than relying, as these studies did, on questionnaires and self-reports to determine Ss' predispositions in responding, Rapoport (1964) has suggested that the investigator look to the data itself and has proposed measures involving two-trial patterns of play in the PDG which he interprets as reflecting

the "propensities" of the players. The four state-conditioned propensities that he proposed were: trust, forgiveness, repentance, and trustworthiness. Trust is operationally defined as a cooperative choice on Trial $n + 1$ following a double-defection outcome on Trial n , and seems to imply confidence that the other player will also cooperate in the interest of breaking out of a deadlock. Forgiveness is defined as cooperating on Trial $n + 1$ after being exploited by the other player on Trial n and, similar to trust, implies some hope that one's opponent will be converted to cooperating after repeated cooperations on one's own part. Repentance is cooperating after exploiting the other player; this response pattern could be said to be related to trust since it seems to assume that the other will not retaliate after being exploited. Finally, trustworthiness refers to a cooperative choice after a double-cooperation outcome. The occurrence of a double-cooperation benefits both players equally and sets the stage for continued cooperation; therefore, unlike the first three state-conditioned propensities, trustworthiness involves strong and equal claims on both players to resist the temptation to exploit the opponent who has just been rewarded for cooperating and should be less likely to switch. Thus, the trustworthy response pattern is presumed to be dependent upon keeping a bargain once struck, while the other propensities are more in the nature of unilateral essays toward mutual promotive interdependence.

There is empirical support for Rapoport's intuitive analysis of the two-trial response patterns. Tedeschi, Steele, Aranoff, & Gahagan (1968) established that forgiveness, repentance, and trust were related to the cooperative and exploitative expectations and intentions of Ss. They interpreted their results by indicating that it is necessary for the S to trust the other in order for him to activate his dispositions to forgive or repent, but that it is not necessary that the individual be trustworthy himself in order to be trusting, forgiving, or repenting. Tedeschi, Hiester, & Gahagan (in press) found a substantial correlation between trust as displayed in the PDG and as measured by a paper-and-pencil test.

Thus, the present study was designed to compare the patterns of responses, within a mixed-motive conflict situation, of single individuals, groups with members of equal status, and groups with one high-status member. Three conditions were established: triads with a ROTC unit commander and two of his subordinates of equal rank (Group H); triads of three equal-rank ROTC cadets, not necessarily from the same unit (Group E); and Ss playing alone as individuals (Group A).

EXPERIMENT I Subjects

A total of 80 male Ss was used. Sixty Ss from the Army ROTC, University of Miami, who had demerits removed in exchange for their participation, formed the 10 triads in each of Groups H and E. Group A consisted of 20 Ss from an introductory psychology course who were fulfilling a course requirement by participating.

Procedure

The apparatus and general procedure have been described by Steele & Tedeschi (1967). The matrix used had the values of: $R = 5$, $T = 10$, $S = -10$, and $P = -5$.³ All triads were instructed that each member was to suggest a strategy choice for each trial and mark it on a form furnished him. The marking requirement served to induce all members to make a choice on each trial. Group H triads were told that whenever there was a dispute the commander would make the final decision and he was to operate the switches on all trials. Group E triads were told that they were to find their own method of resolving disputes. Group A Ss were simply instructed to come to a decision and push the appropriate switch. In all cases the Ss were led to believe they were playing a single opponent and were instructed that their goal was to get as many points as they could.

After five practice trials, a total of 50 iterations of the game was run for all groups. E played the role of "other" and used a planned, but unpatterned, 50% cooperative strategy.

Results

A multivariate analysis of variance was performed on six dependent variables. No differences between conditions were found on the proportion of cooperative strategy selections made by Ss over all trials or on points won ($F < 1$ in each case). Of the four state-conditioned propensities defined by Rapoport, only trustworthiness differed significantly between experimental conditions [$F(2,31) = 4.093$, $p < .03$].⁴ Duncan multiple-range tests were performed which employed Kramer's (1956) adaptation for unequal n . Both Groups H ($\bar{X} = .371$) and E ($\bar{X} = .398$) displayed less trustworthiness ($p < .05$) than Group A ($\bar{X} = .566$), but they did not differ from each other.

EXPERIMENT 2

In reviewing the results of the first experiment, the conclusions became somewhat clouded by the criticism that the Ss in the triad conditions were all ROTC cadets, while the Ss in Group A were non-ROTC. It was suggested that perhaps the obtained difference stemmed from personality variables distinctive to students attracted to the ROTC program rather than from the experimental conditions. Hence, Experiment 2 was subsequently performed to evaluate this hypothesis. Facing the same conditions as in Experiment 1, two groups of Ss were tested. One consisted of 19 ROTC

cadets who gained merits by serving, and the other was made up of 20 non-ROTC Ss partially fulfilling an introductory psychology course requirement. Ss in both of these groups played as individuals.

Results

No differences were found between the two groups on the same six dependent measures (all $p > .10$). In addition, the results of the two groups of individuals in Experiment 2 were compared with Group A results from Experiment 1, and no differences were found ($p > .10$). The trustworthiness means for the Experiment 2 groups were: ROTC individuals, .506; non-ROTC individuals, .441.

DISCUSSION

The lack of difference between conditions in winnings suggests that there was no effect of problem-solving facilitation or inhibition in the triads. Secondly, the notion of a risky shift in these groups is rejected because of no difference in overall cooperative play. The triads could have risked greater cooperation (trust) to induce the opponent to join in a cooperative bond; or they could have risked more defections to afford themselves more exploitation opportunities—gambling that the opponent would not become totally competitive himself so as to eliminate all possibility of gain. In addition to these counterbalanced risks, it might be suggested that the present experiment may have worked against the occurrence of a risky shift by requiring Ss to act repeatedly upon their decisions after receiving feedback from the previous trials regarding the consequences of prior similar decisions. Zajonc, Wolosin, Wolosin, & Sherman (1968) have also suggested that experience with the decision and its consequences may limit the occurrence of the shift phenomenon.

The trustworthiness result indicates that, when a double-cooperation bargain situation was presented, the individual Ss were more predisposed to continue it. A bargain in American culture carries with it strong moralistic overtones, and the triads were more likely to violate the tacit agreement and make the ethical shift to maximize gains that Rettig has postulated. Some empirical substance seems to be given to Niebuhr's (1932) notions of the morality of man contrasted with the immorality of man's society. No differences between conditions were found on any of the measures of a disposition to trust the other player; the difference occurred on that one measure that focused most definitely on the opponent's being able to trust the S.

Since there was no difference between the two triad conditions, the responsibility-diffusion hypothesis is rejected as an explanation for the shift. Responsibility was clearly focused on the high-status member of Group H triads, but responsibility was

undefined in Group E. Hence, group interaction itself and the support of others in censure-avoidance are taken as adequate conditions to produce the shift.

Finally, the hypothesis that experimental differences could be accounted for by participation or nonparticipation in the ROTC program was ruled out by Experiment 2. A much more sophisticated apparatus was used for Experiment 2; yet the comparisons between individuals across studies indicated a high reliability of results.

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NOTES

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2. The authors wish to thank Col. Charles McKeown, Major Thomas Faley, Madeleine Ledo, and Bruce Weber for their help during various phases of this research.
3. See Rapoport (1964) for definition of the symbols used.
4. Two of the leaderless triads from Group E and four individuals from Group A were omitted from the analysis of trustworthiness because there were fewer than five occasions (double cooperative outcomes) on which trustworthy behavior could be displayed. Such a small sample of occasions yields too unstable an estimate of such behavior to be used on data analyses.