Source prestige and target reactions to threats¹

THOMAS V. BONOMA, BARRY R. SCHLENKER, R. BOB SMITH, and JAMES T. TEDESCHI, *United States International University, San Diego, Calif. 92064*

A 3 by 2 design was employed to study the effects of source capability and of punishment magnitude on the compliance of target individuals to contingent threats intermittently sent by a simulated source in a modified Prisoner's Dilemma game. Source capability did not produce the hypothesized increasing direct effect on behavioral compliance, but punishment magnitude did mediate compliance in a direct relationship. Contrary to previous findings, it was found that low punishment magnitude produced greater cooperativeness by Ss on nonmessage trials than did high punishment magnitude. Some interesting effects were found on measures relating communicative behavior to behavioral compliance.

Horai & Tedeschi (1969) have modified the Prisoner's Dilemma game (PDG) to include the transmission of explicit contingent threats from a simulated player (SP) to a subject target (ST). They operationalized the message-content factors of threat credibility and punishment magnitude by having the SP punish some proportion of noncompliances by the ST and by indicating in the message the degree of punishment (in points) to be administered in case of noncompliance. They found a direct, positive relationship between message utility (Credibility by Punishment Magnitude) and compliance to threats.

Tedeschi (1968; in press) has proffered a theory of social influence within dyads in explicit contingent threats or promises are used by a powerful source to gain behavioral compliance from a relatively weak target. The theory specifies source characteristics that are believed to affect compliance by target individuals, holding message utility constant. For example, Faley & Tedeschi (1969) found that high status sources gained more compliance to threats than did low status sources. The latter study replicated the Horai and Tedeschi findings, and status was found to have effects orthogonal to message utility.

One source characteristic that has received attention in persuasion experiments is prestige. However, prestige has been alternatively defined as esteem,

status, respect, expertness, and trustworthiness (Maslow, 1954; Davis, 1942; Festinger, 1942; Rosnow & Robinson, 1967; Hovland & Weiss, 1951; Kelman & Hovland, 1953). The political scientist, Hans Morgenthau (1965), has defined prestige as the reputation for power. He suggests that perception of power by an observer can be as important as the reality of power itself. Singer (1962) further suggests that prestige (as the perception of power) is determined by two factors: source capability and source intentions. The source may possess great resources but be unwilling to spend them for purposes of power and consequently be perceived as relatively weak. Thus, prestige is assumed to be a multiplicative function of capability and intentions. Tedeschi (1968) accepted this definition and predicted that as source prestige increases, compliance to threats by a target would increase.

The present experiment manipulated the resources available to a simulated source to be used for purposes of enforcing compliance to threats and held intentions constant. A further design consideration was the possibility that prestige might not be orthogonal to message utility. That is, it is possible that sources with differing amounts of resources but offering the same degree of punishment to the target for noncompliance or sources having the same amounts of resources but offering different degrees of punishment could receive the same level of compliance from target individuals. It was expected that resources and punishment magnitude would be orthogonal in their effects on behavioral compliance.

Two basic hypotheses were tested: (1) Holding punishment magnitude constant, the greater the resources possessed by source, the more likely it is that a target will comply to threats; and (2) holding source capability constant, the greater the punishment magnitude and thus the greater the message utility of threats, the more compliant will be the target.

A 2 by 3 factorial design was employed, in which two punishment magnitudes (5 and 20 points) were represented. The SP possessed one of three levels of resources within each punishment condition. The punishment to capability ratios were equated across punishment magnitudes. The actual magnitudes involved were 5/25, 5/50, 5/100, 20/100, 20/200, and 20/400. Thus, three overall ratios of punishment

magnitude (1/5, 1/10, and 1/20) to resources and two punishment magnitudes were represented.

SUBJECTS

A total of 90 male Ss participated in the experiment to satisfy an introductory psychology course requirement. Ss were randomized across conditions as they arrived at the laboratory.

APPARATUS

The PDG equipment utilized has been fully described elsewhere (Horai & Tedeschi, 1969). The apparatus is fully automated, with full feedback presented to the S at all times on two add-subtract cumulative counters. Lights served as cues and prompters to program the events (PDG trial, threat message, punishment option to the SP). A third counter was clearly labeled "capability units" and indicated to the ST the total resources expended by the SP at any point during the experimental session.

PROCEDURE

The Ss signed up in pairs, and care was taken to maintain the impression that each S was involved in a joint decision-making task with a male peer. Ss read dittoed instructions that explained the rudiments of PDG play, the nature of the mutual outcomes, the fact that the "other person" could send the posted threat message whenever he chose (actually, only at predesignated trials), and that the S could not initiate communications but must use one of three reply messages available to him whenever the "other person" sent him the threat message. The threat message was: "If you do not make Choice 1 on the next trial, I will take n points away from your counter," where n was either 5 or 20 and Choice 1 was the cooperative choice. The three reply messages available to the S were: (M1) "I will make Choice 1 on the next trial," (M2) "I will make Choice 2 on the next trial," and (M3) "I do not wish to disclose my intentions." Furthermore, the instructions explained that the "other person" had the posted number of capability units to use for punishment purposes, but that they would be expended at the rate of 1 point for each 1 point of punishment administered. When the capability units were exhausted, the source lost his punishment capability. Each S was instructed to obtain as many points as he could during the experiment.

A criterion of 10 unsuccessful threats was established for each S, and the credibility of the SP was set at 50%.² Compliance by the S entailed making a cooperative PDG strategy choice, and the SP always competed on a threat trial. Thus, the S was always faced with a least-of-evils choice on the threat trial; he either complied and lost the competitive advantage or he defied the threat, lost

points because of the resulting double competitive outcome, and had the additional 50% probability of being punished (negative side-payoff). A total of 150 trials were run and the SP cooperated 50% of the time on nonmessage PDG trials.

The capability units counter was initially set at ϕ , and each punishment levied added to the counter until it reached the posted maximum (in the case of the 5/25 and 20/100 groups), or until five punishments had been meted out. The maximum capability for each condition was clearly labeled above the counter as "maximum capability = x," where x equaled 25, 50, 100, 200, or 400 points.

RESULTS

Compliance

A 3 by 2 analysis of variance was performed that yielded no effect of the three ratios of punishment magnitude to resources on the frequency of compliances by Ss ($p > .10$). However, punishment magnitude did affect compliance ($F = 3.832$, $df = 5/90$, $p = .05$). The 20-point punishment produced more compliance ($\bar{X} = 13.81$) than did the 5-point punishment ($\bar{X} = 10.85$).

Cooperation

Since a criterion of 10 unsuccessful threats was established for each S, and the number of successful threats (compliances) was allowed to covary, different Ss experienced different numbers of threats during the experiment. In order to eliminate this factor as a determinant of cooperative behavior on nonmessage PDG interactions and overall winnings, 3 by 2 analyses of covariance were performed on these data, using the total number of threats as the covariate.

A main effect of punishment magnitude was found on the cooperativeness of Ss on nonmessage PDG interactions ($F = 8.699$, $df = 1/90$, $p < .004$). Ss facing low punishment cooperated more ($\bar{X} = 13.08$) than did Ss in the high punishment condition ($\bar{X} = 10.32$). No effect of ratio was found, nor was the interaction significant ($p > .10$).

Reply Messages

No differences were shown by the covariance analyses performed on the frequencies with which each reply message was used, nor were there any effects of the independent variables on the truthfulness with which M1 was used. However, a Ratio by Punishment Magnitude interaction was obtained on the truthfulness with which M2 was used and is illustrated in Fig. 1. Duncan range tests indicate that the interaction was determined by the decreasing effect of high punishment magnitude over ratio conditions. No differences between the three low punishment ratios were found, but high punishment in the low ratio condition produced more truthful defiance than did high punishment magnitude in the high ratio condition ($p < .01$). Also, high punishment in the high ratio condition produced less truthful defiance than did low punishment in the high ratio condition ($p < .01$).

The proportion of times that the Ss cooperated on the trial when they sent M3 as a reply was analyzed and revealed a punishment magnitude main effect ($F = 4.749$, $df = 1/90$, $p < .032$). Ss in the high punishment condition used M3 to cover cooperation more often ($\bar{X} = 1.52$) than did Ss in the low punishment condition ($\bar{X} = 1.14$).

DISCUSSION

Hypothesis 1 was clearly disconfirmed. The resources possessed by SP did not affect compliance or any of the dependent variables of the experiment, except for the one interaction found. Hypothesis 2 was confirmed and constitutes another replication of the direct relationship between punishment magnitude and behavioral compliance to threats (Horai & Tedeschi, 1969; Lindskold, Bonoma, & Tedeschi, 1969; Faley & Tedeschi, 1969).

It might be conjectured that in an attempt to find out too much, the design of this experiment sacrificed a finding in respect to prestige. Ratios were established in a manner so that in two conditions (5/25 and 20/100) all the source's capability units would be expended with the use of five punishments for noncompliances. This consideration led to the choice of a 50% credibility level for threats. If credibility is an important determinant of target's attributions of

source's intentions, and the latter factor is multiplicatively related to capability in the perception of power, as suggested by Singer, then the source may have appeared irresolute in his punitive intentions and therefore lacking in prestige in all conditions of the experiment. Thus, if credibility was set at 100%, resources possessed by the source might have had an impact on target compliance. If this is the case, then message utility and prestige would not be orthogonal in their effects.

Prior studies, in which the SP had unlimited resources to use, have demonstrated that message utility had no effect on the cooperative behavior of targets on nonthreat PDG trials (Horai & Tedeschi, 1969; Lindskold, Bonoma, & Tedeschi, 1969; Faley & Tedeschi, 1969; Gahagan, Tedeschi, Horai, & Faley, 1969). Yet, in the present study, in which the source always had limited resources to use, low punishment magnitude produced more nonmessage trial cooperations from Ss than did high punishment magnitude. It will be noted that in two of the three low punishment conditions, the capability units available to the source were less than in any of the high punishment conditions, again as a function of the design, which was concerned more with ratios of punishment to resources than with absolute differences in capability units. Perhaps the Ss facing a source who had less absolute power were more hopeful of establishing a cooperative relationship which would induce the source to refrain from using his small advantage, but Ss facing a source who had a large number of capability units were resigned to a power struggle and a competitive relationship. Prior studies which allowed the source unlimited capability found no message utility effects on nonmessage trials because the capabilities were so large and the perceived power of the source was so great that STs were resigned to a power struggle. This present finding is at least indirect evidence for an effect of prestige in the dyadic interaction.

The Punishment Magnitude by Ratio interaction shown in Fig. 1 was due to the significant increase in lying by Ss in the high punishment condition as the source's capability increased. Apparently, when the source assigned low punishment to his threats, target Ss were relatively unaffected by the threats, particularly since they were only 50% credible. Being unimpressed by the low punishment magnitude, such Ss were then unaffected by the power capability of the source. When the SP used high punishment but possessed a relatively low level of capability, Ss were also unafraid to announce their intention honestly to defy the threat. However,

Figure 1

when the SP used high punishment and possessed a high level of resources, the perceived potential costs of behavioral defiance increased. In the latter case, it cost Ss nothing to defy the threatener verbally, and they stood a chance of deterring him by so doing. But to actually defy him might cause him to become angry and to use his threats more often and with higher credibility, particularly since he had the capability units for so doing.

The fact that high punishment magnitude produced more frequent use of the not-reveal-intentions message (M3) as a cover for compliant responses than did low punishment magnitude replicated the findings of several other threat studies (Horai & Tedeschi, 1969; Lindsfold, Eonoma, & Tedeschi, 1969). It should be remembered that Ss were required to choose a reply message and could not refuse to communicate. An explanation of this behavior as "face-saving" (Brown, 1965) has been previously noted by Tedeschi and his colleagues. The S must comply because of the high costs of defiance, but he doesn't need to comply verbally, nor does he need to lie about his intentions to defy, so he simply refuses to reveal his intentions when he is forced to comply.

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NOTES

1. The authors wish to thank Sverre Lindsfold and Peg Tedeschi for their help during various phases of this study.
2. The rationale for the criterion and the details of the procedure are fully explained by Horai & Tedeschi (1969).

Preparatory state effects in intersensory facilitation¹

IRA H. BERNSTEIN, ROBERT ROSE,² and VICTOR ASHE, University of Texas at Arlington, Arlington, Tex. 76010

Four trained Ss participated in a task concerned with intersensory facilitation of reaction time (RT). Discriminative RT to a visual event was longer than discriminative RT to a combined auditory-visual event, even though the auditory event by itself was a catch signal. The magnitude of this difference was greater with a long (5.5 sec) as opposed to short (.5 sec) foreperiod delay. This finding supported the hypothesis that the auditory component of the combined event serves a preparatory state role by enhancing response readiness,

a role that is manifest to the extent that S's prior degree of preparation is nonoptimal.

Reaction time (RT) to a combined visual-auditory (VA) event, RT_{va} , is more rapid than RT to the visual (V) component alone, RT_v (Todd, 1912; Hershenson, 1962; Bernstein et al, 1969a, b). Bernstein et al (1969b) have suggested that one reason for this intersensory facilitation effect is that the auditory (A) component may aid in the response preparation process. It follows from this assumption that A will have a greater effect when the S is less well as opposed to better prepared to respond. At high degrees of preparation, S's performance is limited by other factors,

such as stimulus intensity. With both maximum preparation and high visual intensities, RT reaches an "irreducible minimum," affording no opportunity for A to affect RT. As foreperiod (FPD) parameters are well known to affect unisensory RT through changes in the preparatory process, it would follow that this magnitude of facilitation ($F = RT_v - RT_{va}$) would be a function of FPD parameters that alter RT_v . The present study varied FPD duration (5.5 vs .5 sec) and FPD variability (random vs fixed duration) as a preliminary test of the preparatory-state hypothesis.

SUBJECTS

Four advanced undergraduate psychology majors, three male (RR, VA, and CN) and one female (PB), enrolled at the University of Texas at Arlington, comprised the sample. All had at least 10 h of experience in experiments of the present type. RR and VA also served as Es and were familiar with the hypothesis under investigation; PB and CN were not familiar with the hypothesis.

PROCEDURE

Throughout the experiment, a given trial could consist of a V, VA, or A event, the latter serving as a catch trial. Trial types occurred with equal frequency and at random. A total of 300 trials was run in each of four sessions, exclusive of warm-up and preexperimental practice. In one session, all trials were run with a 5.5-sec FPD. In a second session, all trials were run with a .5-sec FPD. In the third and fourth sessions, 5.5- and .5-sec FPDs occurred at random and with equal frequency. Conditions, however, were randomized across Ss. Each session was designed to last for slightly more than 1 h to provide rest breaks.

APPARATUS AND STIMULI

V events were presented on a Scientific Prototype Model 800-F two-channel tachistoscope. The blank field contained a fixation cross subtending 1 deg of arc and 8 min of arc in thickness, which was cut from an opaque mask, covered by a layer of 10% transmittance negative, and back illuminated. The fixation cross was on continually. The exposure field contained the V event, which was a circular aperture subtending 24 min of arc that was presented for 20 msec. This aperture was covered by two layers of 10% transmittance negative. The resulting luminances for the fixation and exposure fields were approximately 1 and .1 apparent fc, respectively. Each trial began with a 100-msec, 500-Hz square-wave warning signal (WS) generated by an RCA WA-44C signal generator at 100 dB. A was a 10-msec, 1,300-Hz, 95-dB sinusoidal tone burst produced by a second RCA generator