Locus of Control, Schedule of Reinforcement, and the Attribution of Freedom in the Reinforcing Agent

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Locus of Control, Schedule of Reinforcement, and the Attribution of Freedom in the Reinforcing Agent

A Thesis
Presented to the Department of Psychology and the Faculty of the Graduate College University of Nebraska

In Partial Fulfillment of the Requirements for the Degree Master of Arts University of Nebraska at Omaha

by Mary Piechowski April 1977
Accepted for the faculty of the Graduate College, University of Nebraska, in partial fulfillment of the requirements for the degree Master of Arts, University of Nebraska at Omaha.

Thesis Committee

<table>
<thead>
<tr>
<th>Name</th>
<th>Department</th>
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</thead>
<tbody>
<tr>
<td>Mary Preckwaski</td>
<td>Psychology</td>
</tr>
<tr>
<td>Dean Trifile</td>
<td>Psychology</td>
</tr>
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<td>Joseph P. Toner</td>
<td>Psychology</td>
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<td>G. Barron</td>
<td>Sociology</td>
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</table>

C. Raymond McElraine
Chairman

April 12, 1977
Date
Dedication

To Bob, who graciously accepted the role of "research widower" as this study reached various critical points.
Acknowledgements

My thanks for help in preparing this thesis go in many directions. My advisor, Ray Millimet, expended a great deal of both effort and restraint on my behalf, for which I am most grateful. Thanks also to the teachers and students from Westside Senior High School and Creighton Preparatory School for their willingness in serving as subjects. I also extend my gratitude to Ron Pullen and the staff of the campus audiovisual department for their help with equipment and to the KYNE-TV staff for developing the videotapes. Special thanks go to Darlene Wagner for her hours of assistance with the computer work. Thanks also go to the members of my committee, George Barger, Deana Finkler, and Joe LaVoie for plodding through various rough drafts.

I extend a deeper gratitude, however, to my husband, Bob, and our sons, Mike and David. Their patience and faith that eventually I would finish this and resume normal functioning as a wife and mother was most appreciated.
Attributed Freedom

Abstract

Attributions of freedom and the probability of ingratiating to another were assessed in terms of the unpredictability of the reinforcement schedule used by the other and the locus of control of the observer using videotapes. Internal subjects viewing a situation involving either 0%, 10%, 50%, 90% or 100% reinforcement saw more freedom when less reinforcement occurred. In contrast, external subjects saw more freedom in the unpredictable situations (10%, 50%, 90%) but saw little difference between the 0% and 100% situations. The effect of variations in reinforcement strategy was investigated in a broader context, as well, using sixteen bi-polar trait adjectives. Several different trends were noted among the seven adjectives which showed statistical significance between reinforcement levels. These adjectives included: "unpredictable", "free", "flexible", "changeable", "unsympathetic", "inconsiderate", and "ignorant". There were no significant effects for ingratiation, probably because of weaknesses in the assessment device.
Locus of Control, Schedule of Reinforcement, and the Attribution of Freedom in the Reinforcing Agent

For various reasons, the concept of perceived freedom has received considerable attention in recent years (e.g., Rotter, 1966; Lefcourt, 1976; Steiner, 1970). According to Steiner (1970), perceived freedom exists to the extent that the desired activities and outcomes of self or another are "thought to be unimpeded by the necessity to expend resources or endure social sanctions" (p. 189). Studies of perceived freedom generally fall into two categories: freedom perceived in others and freedom perceived in oneself.

Experimental investigation of the freedom perceived in others has largely been based on the theories of attribution promulgated by Heider (1957) and Kelley (1967). Working from Heider's model, Jones and Nisbett (1971) demonstrated that attributions made to oneself are significantly different from those applied to others: people attribute their own actions to situational determinants, whereas people explain the behavior of others in more dispositional terms. This hypothesis has been supported in numerous studies (e.g., Jones, Worchal, Goethals, & Grumet, 1971; Lay, Zeigler, Hershfield, & Miller, 1974; Nisbett, Caputo, Legant, & Maracek, 1973). Several studies have found that when people are given the opportunity to watch their own behavior from outside the behavioral
Attributed Freedom

situation, an alteration of the expected attributional patterns results. Storms (1973) noted that when a person views his own actions via videotape, his explanations of his behavior are more dispositional in nature. Similarly, Arkin and Duval (1975) found that an individual attributes causality to the situation when he is active in it. But when viewing himself in an identical situation on videotape, he will cite dispositional factors as causes of his behavior. Differences between attribution to oneself and attribution to others may, therefore, be construed as being at least in part due to different perspectives within and outside the situation.

Attribution theorists have classically dichotomized between the person making the attributional judgment and the person about whom the judgment is being made, applying the terms observer and actor respectively. A basic difference in perspective between the two categories has already been discussed. In the perception of freedom in others, however, an important variable may be the actor's unpredictability in the eyes of the observer (Steiner, 1973). This effect has been studied by manipulating reinforcement schedules in a situation where the observer was rewarded and punished by the actor. In a series of studies (Bringle, Lehtinen, & Steiner, 1973; Davidson & Steiner, 1971; Gurwitz & Panciera, 1975), the actor has consistently been perceived as more free when he appeared less predictable in his strategy of dispensing
reinforcements. In other words, when reinforcers were administered on less than a continuous basis, those being rewarded saw those doing the rewarding as more free than did those in the 100% reinforcement condition. Since these studies are of extreme relevance here, the prototype design (Davidson & Steiner, 1971) will be discussed in detail.

Davidson and Steiner (1971) "arbitrarily" designated one subject in a series of dyads as the learner (the observer) and another (who was actually an accomplice) as the teacher (the actor). The teacher was required to display 25 five-letter anagrams (5 of them unsolvable) to the learner. The 20 solvable anagrams had been pretested to insure solvability by the subjects. The learner was allowed 20 seconds to solve each anagram. He was rewarded for correct answers and punished for incorrect answers according to a pre-arranged reinforcement schedule. Rewards consisted of giving a specific amount of money for correct answers and punishment involved taking back the same amount for incorrect responses. Rewards were 4 times as frequent as punishments. In half of the sessions, the teacher was instructed in the presence of the learner to use a specific schedule of reinforcement, although the exact pattern of reinforcement was not disclosed. In the other half of the sessions, the teacher utilized a given reinforcement schedule but the learner was unaware of the experimenter's influence on the reinforcement ratio. Within each of these two conditions, half of the subjects were subjected to continuous reward/
Attributed Freedom

punishment, while the other half were exposed to a 40% variable ratio schedules. The total value of reinforcements equaled $1.50 in all conditions. The differences in perceived freedom were significant between reinforcement conditions. Those who received rewards and punishments only part of the time perceived the person dispensing the rewards as more free than did those who had been reinforced continually. There was no effect due to Instruction.

In addition to direct questions regarding the teacher's freedom, subjects were requested to describe the teacher on four general personality dimensions: predictable-unpredictable, programmed-original, rigid-flexible, and consistent-changeable. Separate ANOVA's on each item revealed a significant main effect due to reinforcement and an Instruction x Reinforcement Schedule interaction. The teachers who utilized a variable ratio with no obvious instruction to do so were perceived as more unpredictable, original, flexible, and changeable than those who receive instruction, and both were rated higher on those qualities than either type of teacher in the continuous reinforcement condition.

Davidson and Steiner further hypothesized that the attribution of greater freedom to the teacher would result in greater tendency toward ingratiation on the part of the learner. Thus, the attempts of the learner to favorably impress the teacher when given the opportunity were assessed in the second segment of the study.
Both learner and teacher were requested to complete personality questionnaires which were then exchanged so the two "could get to know each other better". The answers on the questionnaire completed by the teacher (accomplice) were manipulated in terms of agreement-disagreement with the subject's attitudes, which had been determined by means of F-scale items completed prior to the outset of the experiment. Both of the individuals were then requested to place checkmarks on each others' questionnaires to indicate their agreement or disagreement with each others' attitudes. Davidson and Steiner contended that this manipulation provided an opportunity for the learner to ingratiate himself to the teacher by means of opinion conformity. The results indicated that those in the variable ratio condition exhibited a significantly greater amount of opinion change so as to conform with the teacher's opinion than did subjects in the continuous reinforcement group.

Bringle, Lehtinen, and Steiner (1973) replicated the first segment of the Davidson and Steiner (1971) study using a 50% rather than a 40% variable ratio and demonstrated as well that varying the size of rewards within a session results in the attribution of greater freedom to the teacher as the size of the reward increases. In using videotapes, they also established that the phenomenon generalizes to a third person situation: Even if a learner does not directly interact with the teacher in the teacher-student paradigm, but simply
observes the teacher interacting with another person, the same patterns of perceived freedom result.

Gurwitz and Panciera (1975) replicated the original study using a 50% variable ratio and extended the original paradigm to demonstrate that learners attribute more freedom to the teachers than the teachers do to themselves. In addition, they extended the questionnaire to assess the generalizability of the attributions made.

It may be concluded that the use of unpredictability as an indicant of freedom in others is a reliable phenomenon. However, the investigation of the phenomenon as it has proceeded thus far seems incomplete. Numerous factors influence the attribution process. Several factors in particular may be of importance here.

More than two levels of reinforcement need to be examined within the same study. Differences between the 100% reinforcement and 50% reinforcement do little to establish the symmetry implied by Steiner's interpretation. If predictability is the major cue for attributing freedom to another, as Steiner (1973) contends then 0% reinforcement should result in the same amount of perceived freedom as the 100% condition, since never giving rewards or punishments is just as predictable as always giving rewards and punishments. The effects of deviating from either type of predictable situation should be investigated.

Several levels of reinforcement are also needed to get
a more accurate picture of the role of perceived freedom in the use of ingratiating strategies. The presence of 100% reinforcement is a clear-cut situation—the rewards/punishment dispensed by the teacher are in full accord with the behavior of the learner. Consequently, there would appear to be little need for the learner to further understand the teacher in order to maintain the status quo of an already satisfactory situation. We must determine whether greater perceived freedom and more attempted ingratiation are the result of the degree of unpredictability in the situation. Perhaps, those noted to date are merely the result of a motivational disparity due to inherent differences in the novelth of the continuous versus the variable ratio condition or are due to motivational differences due to different levels of "success". Several different variable ratios should be used. When there's more room for improvement, more effort may be considered "appropriate".

In addition, individual differences in perceived freedom in oneself would seem to have strong bearing on the perception of freedom in others. In this regard, Srull and Karabenick (1975) have proposed that the perception of one's own freedom acts as a moderating variable in determining behavior in a specific situation. That is, the perception one has of his own freedom may color his perception of freedom in others.

Freedom perceived in oneself has been extensively
Attributed Freedom

investigated under the rubric of locus of control, i.e., the degree to which an individual sees the contingencies of reinforcement in his life as being controlled by himself (internal control) or by forces other than himself, such as God, fate, or powerful others (external control). An immense amount of research has established the presence and reliability of this personality dimension (Lefcourt, 1966, 1972, 1976; Phares, 1975; Rotter, 1966).

Fitch (1970) has noted that internally controlled individuals differ from externals in attribution processes in general. In addition, internals and externals have been shown to use different kinds and amounts of information (DuCette & Wolk, 1973; Pines, 1973) and they use the information to which they have access in different ways (Phares, 1968). Furthermore, the value of reinforcement has been shown to vary with the locus of control of the individual. In this regard, Holmes and Jackson (1975) have found internals to be more responsive to rewards and externals to be more attentive to punishment. Similarly, Lefcourt (1976) has demonstrated that externals fail to differentiate situations in regard to reinforcement availability. It seems clear from these results that the locus of control dimension is likely to be relevant factor in the Davidson and Steiner paradigm.

Of particular import in terms of perceived freedom are the studies of causal attribution which have demonstrated differences in the degree of responsibility which internals
Attributed Freedom

as opposed to externals impute to an individual whom they observe. Studies by Phares and Wilson (1972) and by Phares and Lamiel (1975) have shown that internals attribute more personal responsibility for an accident than do externals.

In a similar vein, the role of ingratiation in the Davidson and Steiner paradigm might also be clarified by taking the influence of individual differences into consideration. Jones and Wortman (1973) have defined ingratiation as a category of strategic behaviors intended to influence another person in regard to the attractiveness of one's own personal qualities. They contend that the degree and quality of ingratiation behavior vary extensively between individuals. Consequently, any explanation of ingratiation should be considered within the context of individual differences.

In light of the above considerations, the following hypotheses are proposed:

1. The attribution of freedom to another will vary according to the amount of reinforcement employed by the person. If Steiner's theory holds, the greatest amount of freedom should be perceived in the 50% reinforcement condition (1.2 variable ratio) which most approximates chance. The amount of freedom perceived should be symmetric around this point: 1:10 ratio should be perceived as involving the same amount of freedom as a 9:10 situation and the 0:10 condition should be as free as the 10:10 situation. This should also be true of adjectival attributions.
2. Since internals differ from externals in the process of attribution, the attribution of freedom to a person dispensing rewards and punishments will vary as function of the locus of the control of the observer. Internals should perceive others as more free than do externals.

3. In a similar vein, variations in the amount of ingratiation deemed possible will be a function of both reinforcement schedule used by the stimulus person and the locus of control of the subject. Internals will expect to influence those who are perceived as free (variable ratio conditions) but not those who are perceived as controlled by outside sources (continuous and no reinforcement conditions). Externals will not feel that they can manipulate the rate of reinforcement in either case.

Method

Two different subject pools were used to investigate the problem, using the same procedures with minor variations. The two will be considered separately as Case I and Case II.

Case I

Subjects

One hundred forty-eight students from a suburban Midwestern high school took part in the study as part of an introductory course in psychology. The sample consisted of 91 females and 57 males ranging in age from 16 through 18 with a mean age of 16.6. Males and females were classified separately as either internal or external in locus of control
orientation on the basis of a separate sex median split of scores on the Adult Nowicki-Strickland Internal External (ANS-IE) locus of control scale (Nowicki & Duke, 1974) after they were assigned to conditions. In both cases, the split occurred at such a point that a score of nine or below was considered as internal and a score of 10 or above was classified as external. Participation occurred over a three day time span about three months into the school year.

Experimental Task

Reinforcement schedule was manipulated by means of a videotaped situation in which one person dispensed rewards and punishments to another person. To insure that the subjects attended to the desired stimulus figure, only the person dispensing the reinforcement was seen during the task. The person with whom the stimulus figure interacted was heard giving responses during the task but was seen only before the task was introduced and after it had been completed. The videotape participants were both male and were presented as peers taking part in a psychology experiment.

The videotape participants engaged in an anagram game consisting of 20 five-letter anagrams. At the beginning of the tape, the "anagram solver" was told by the "teacher":

This is an anagram task. I'm going to show you twenty cards, one at a time, each having a scrambled five-lettered word on it. For each card, you have twenty seconds to figure out the word by rearranging the letters on the card. In some cases, I may give you a quarter for your answer. In other cases, I may take a quarter away.
The person acting as teacher then began the task by exposing the first anagram and starting a stopwatch.

During the entire task, the camera was focused on the anagram cards, the teacher's hands which flipped cards and worked a stopwatch, and a pile of quarters which lay on the table. This focus was utilized to maximize attention to the reinforcement behaviors. Answers to each anagram were superimposed on the screen so that all subjects were aware of the correct answer on each trial. In each videotape, the respondent was successful on ten of the anagrams and unsuccessful on ten. Unsuccessful anagrams were by omission in all cases, with the twenty seconds which was allowed elapsing before the anagram solver attempted an answer. His responses were rewarded and punished equally by the teacher according to one of five reinforcement schedules: 10:10, 9:10, 5:10, 1:10, and 0:10. The variable schedules were on a ratio basis. Since there were ten correct and ten incorrect anagrams, the same number of quarters were taken back as were given in each condition. Thus, total earnings in all five conditions amounted to zero.

Dependent Measures

Five different sources of information were used in assessing the subject's reactions to the videotape sequence and to provide information about the subject himself. The assessment packet presented to each subject after the videotape included a perceived freedom/ingratiation questionnaire,
a rating sheet containing sixteen bi-polar adjectives, the Nowicki-Strickland Internal-External locus of control scale, a questionnaire intended to assess naivete and attentiveness during the study, and a blank sheet of paper.

The blank sheet of paper was used at the outset of the assessment phase. Subjects were requested to write a three-minute description of the person who gave and took back quarters in the videotape. This description served two purposes: It was a means of directing the subjects' thinking to the intended stimulus person in responding to the remaining questionnaires and it served as a check of which stimulus person had actually been considered by the subject when the data was analyzed. Since virtually all the descriptions alluded to actions in the videotape, it was possible to verify whether the teacher or the anagram solver had been described by each subject by means of the actions which were described. Data from the two students who described the anagram solver instead of the teacher were not analyzed.

An eleven-item questionnaire was used to assess the subjects' perceived freedom of the teacher, the likelihood of ingratiating to the teacher if given the chance to play the anagram game, and the perceived personal ability in comparison to the anagram solver (perceived freedom/ingratiation scale). Each item was on a five-point Likert scale ranging from "not at all" on the left extreme through "somewhat" at the midpoint to "extremely" on the right end of the scale.
Each section of the scale was divided into tenths so that the score for any one item ranged from zero to 40. The eleven items used are presented in Appendix A.

The six questions used for the perceived freedom subscale of the questionnaire were either verbatim or slightly reworded versions of those used by Gurwitz and Panciera (1975). Maximum score on the perceived freedom subscale was 240. The four items which were intended to assess ingratiation and the single question used to measure perceived personal ability were developed specifically for this study on the basis of the activity in the videotape situation. The maximum scores were 160 and 40 respectively.

Reliability and validity of the perceived freedom/ingratiation questionnaire has not been established. An unconventional attempt to demonstrate reliability was unsuccessful with the Case II data. There is some construct validity to the perceived freedom questions because they had been used successfully in a previous study. The inter-rater and intra-rater reliabilities of the scoring procedures were above .95 (N = 35) in all cases.

Subjects completed the Adult Nowicki Strickland Internal-External scale as a measure of locus of control. The researchers who developed the measure noted split-half reliabilities of the measure ranging from .74 to .86 and test-retest reliability of .83 (Nowicki & Duke, 1974). Construct validity of the measure is well established (Phares, 1974). In addition,
discriminant and convergent validity studies completed by Nowicki and Duke (1974) followed the predicted patterns of significance.

The subject also assessed certain traits of the teacher on a set of sixteen bipolar adjective combinations which are listed in Appendix B. The adjectives included the four used by Davidson and Steiner (1971): unpredictable, changeable, flexible, and original. In addition, adjectives which would indicate status and a good-bad type of orientation were used. Subjects marked the direction of degree of attribution by indicating which of seven spaces between the two opposing adjectives best described the teacher. The fourth space (middle) of the scale was reserved for pairs on which the subject thought it inappropriate to evaluate the teacher. Poles were reversed to avoid response set. Scoring for each adjective pair consisted of a range of 1 to 7, with the lowest score being an extreme attribution of the adjective on the left. It was not possible to assess the reliability and validity of this assessment device within the appropriate subject pool.

The final measure was a check on the naivete and attentiveness of the subjects, described in Appendix C. The naivete check was designed to serve as a screening device in establishing the quality of the data. There were no students eliminated from the study because of prior knowledge. However, students who chose option d or e on question 3 (admitted lack
of effort and/or thought in completing the questionnaires) were not used as subjects. Six students were so deleted with no more than 2 out of any one condition. There seemed to be no systematic relationship between subjects dropped and the conditions of the experiment. A check of the number of quarters given and taken and the amount of money the anagram made were included as well.

Procedure

Subjects participated during the "small group discussion" portion of their classwork. Group size ranged from 11 to 16. Groups were randomly assigned to conditions.

After a few words of explanation by their usual teacher, the experimenter read the following instructions to each group:

This is a study in impression formation. We are interested in what you think of the person in this videotape. If the situation seems a bit false, please try to ignore it. The people are real and we are interested in your impression of the person in this videotape.

Subjects then viewed one of the five videotape conditions. Following the videotape presentation, subjects were given the packet containing the assessment measures. The sequence of the ANS-IE, the perceived freedom/ingratiation scale and the adjective rating scale was varied randomly within each group. However, the blank sheet of paper came first and the naivete questionnaire came last in all cases. After the three-minute written description was completed, each student completed the four remaining assessments at his/
her own pace and then returned the entire packet to the experimenter.

The experiment was explained and discussed during a large group session of the class six weeks after the experimental data was collected.

Case II

Subjects

One hundred male students from a private parochial high school took part in the study as "service to the community". The average age of the subjects was 16.9 with a range of 16 to 19. Students from a social awareness service oriented class served as subjects for the 100% and 90% conditions. Students from an introductory psychology class served as subjects for the 50% and 10% conditions, and students from an upper level history class constituted the subjects of the 0% condition. Since the median of the group was exactly ten, an arbitrary decision was made to include scores of ten and above in the external category, thereby coinciding with the split used in Case I. Participation took place over a two and one half month time span, lasting from the middle of one semester to the beginning of the next. Twelve subjects were dropped from the analysis because of previous knowledge or lack of effort. Attrition was approximately equal across conditions.

Procedures

In general, procedures were identical to Case I.
However, in the 100% and 90% conditions of Case II, subjects provided additional data which was later deleted from the design because of time constraints for the remaining groups.
Extra data included:

1. an additional nine questions on the perceived freedom/ingratiation scale intended to serve as a reliability check of the instrument

2. a list of the questions the subject would have asked the teacher if he had known he was going to play the anagram game with him. This was intended as a direct measure of both quality and quantity of ingratiation attempts but required too much time to be included within this study.

The subjects were debriefed after each group completed the assessment measures. Except for the differences noted, the same assessment techniques and scoring procedures were used.

Results

Case I

A preliminary 2(Sex) x 5(Reinforcement Schedule) factorial analysis of variance (ANOVA) using unweighted means was used to assess the potential variation in locus of control scores. Neither the main effect for sex of subject (F < 1) nor the interaction of Sex x Reinforcement Schedule (F < 1) were significant. As previous research (Bringle et al., 1973) found no significant sex differences in the attributions of freedom within the same paradigm, the data from both males
and females were combined for the main ANOVA. The mean perceived freedom score, the standard deviation, and size of each cell are reported in Table I.

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<td>X</td>
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Table I - Means and Standard Deviations for Subparts of the Perceived Freedom/Ingratiation Scale at various levels of reinforcement

The main analysis consisted of a 2(Locus of Control) x 5(Reinforcement Schedule) ANOVA of the perceived freedom scores using unweighted means and a post hoc division of subjects within each condition according to locus of control score. Cell size was unequal, ranging from eight to 23. Differences in cell size were due to natural differences in the size of
the small discussion groups, the use of a median split to categorize on the locus of control dimension, and the deletion of the six subjects already noted.

Consistent with the hypothesis, the main effect of reinforcement schedule was significant, $F(4,137) = 5.78$, $p < .001$. The reinforcement schedule used by the actor affected the amount of freedom attributed to him.

The second hypothesis was also confirmed. The main effect of locus of control was significant, $F(4,137) = 8.88$, $p < .01$. Thus, the locus of control orientation of the person making the attribution has an impact on the amount of freedom perceived in another.

More important however is the significant interaction between locus of control and reinforcement schedule, $F(4,137) = 4.14$, $p < .01$. There are differences in the way internals and externals view and interpret the various levels of reinforcement used by the stimulus figure (see Figure 1).

![Figure 1-Mean Perceived Freedom at Different Levels of Reinforcement - Case I](image-url)
According to Steiner (1973), the greatest amount of freedom should be perceived when the reinforcement schedule approximates chance. Thus, the 50% condition should have the greatest perceived freedom with a symmetric decline in the amount of freedom perceived at equal distances in either direction from that point. If the symmetry of predictability holds, there should be no significant difference between the 0% condition and the 100% condition since they are both perfectly predictable. Following the same reasoning, the difference between the 10% and the 90% conditions should be nonsignificant because they are equally unpredictable. Furthermore, a comparison of the 50% condition with the 0% condition or the 100% condition should reveal significant differences since the 50% condition represents the greatest possible unpredictability and the 0% and 100% represent the greatest possible predictability. The mean of the 50% condition should be significantly greater than the means of either the 0% or the 100% condition. Two final comparisons were designed to verify that the mean amount of freedom in the 50% condition is significantly greater than that of the 10% and 90% conditions. Separate planned comparisons for internals and externals were undertaken using two-tailed t-tests to determine if the greatest freedom is attributed to the condition which most closely approximates chance (50% condition) rather than with other amounts of unpredictability.

The predicted pattern of significance was present for
externals. A comparison between the attributions of freedom made in the 0% condition and the 100% condition showed no significant difference \( t(137) = .67, p < .50 \). Likewise, the difference between the 10% condition and the 90% condition was not significant \( t(137) = 1.0416, p < .10 \). At the same time, the comparison between the 0% condition and the 50% condition showed a significant difference \( t(137) = 2.28, p < .05 \). The attributed freedom in the 50% condition was significantly greater than the amount of freedom attributed in the 0% condition. Following the same pattern, a comparison of the 50% condition with the 100% condition showed the mean of the 50% condition to be significantly greater \( t(137) = 2.62, p < .01 \). The final comparison, however, did not justify the contention that chance probability (50% condition) is perceived as most free. A comparison of the 50% condition with the 10% condition was not significant \( t(137) = .26, p < .50 \). In addition, a comparison of the 50% condition with the 90% condition was not significant \( t(137) = .83, p > .30 \). Therefore, we can assume only that the varying degrees of predictability in the 10%, 50%, and 90% conditions result in approximately the same amount of perceived freedom.

As Figure 1 indicates, internals attributed less freedom as the number of reinforcements in the condition increased. Thus, the pattern of significance within the planned comparisons was quite different than for externals. The comparison of the 0% condition and the 100% condition was significant
Attributed Freedom

\[ t(137) = 3.85, p < .01. \] Internals perceived a person who offered no reinforcement as significantly more free than one who dispensed reinforcement on a continuous basis. The comparison between the 10% condition and the 90% condition was also significant \[ t(137) = 3.02, p < .01. \] Internals saw someone who gave reinforcement 10% of the time as more free than one who reinforced 90% of the time. The difference between the 50% condition, and the 100% condition approached significance \[ t(137) = 1.88, p < .10. \] For internals, the person who dispensed reinforcement 50% of the time was seen as being about as free as one who reinforced continuously. The comparison between the 0% condition and the 50% condition was significant \[ t(137) = 2.27, p < .05 \] but was in the direction opposite of expectation. Internals perceived more freedom in the 0% reinforcement condition than in the condition involving 50% reinforcement. This same pattern was evident in the final two comparisons. The difference between the 90% condition and the 50% condition was not significant \[ t(137) = 1.27, p < .20. \] The difference between reinforcing nine out of 10 times and 5 out of 10 times was not significant for internals. However, the comparison between the 10% and 50% conditions was significant \[ t(137) = 2.27, p < .05. \] Reinforcing 10% was considered more free, by internals, than reinforcing 50% of the time.

**Ingratiation**

The same ANOVA techniques used to assess the perceived
freedom scores were used to determine the subject's likelihood of ingratiating to the stimulus figure. There were no significant effects for either reinforcement schedule, $F(4,137) = 2.162, p < .08$ or for locus of control, $F < 1$. The interaction of reinforcement schedule and locus of control was nonsignificant as well, $F < 1$. These findings refute the third hypothesis: neither schedule of reinforcement nor locus of control of subject seemed to have any effect on the likelihood of the subject attempting to ingratiate to the stimulus figure.

**Perceived Ability**

The subject's perception of his own ability in comparison with the anagram solver's ability was assessed by the question, "If you were the anagram solver, how likely is it that you would have made fewer mistakes than the person who was trying to solve the anagrams in this videotape?" The same type of Likert scale format was used, with scores ranging from zero to 40. These scores were subjected to the same ANOVA analyses as previously described. There were no significant effects due to reinforcement schedule, $F(4,137) = 1.21, p > .30$, locus of control and reinforcement schedule, $F < 1$. Since the measure was intended to serve as a check to insure that there were no gross differences in the perception of the anagram solver between conditions, these findings were adequate.

**Adjectives**

The 16 adjective pairs provided a means of testing the generalizability of the attributions made to the stimulus
figure of the videotapes. Gurwitz and Panciera (1975) claim that the broader an assessment gets in the scope of its questions, the less likely it is to detect differences within a specific set of situations. The questions asked about freedom in the perceived freedom/ingratiation questionnaire were specific to the situation. They involved alterations in strategy for dealing with the task at hand such as giving more quarters, taking fewer, and changing strategies. The adjective pairs were introduced to assess attribution on a more general plane. The four adjectives employed by Davidson and Steiner (1971) ("unpredictable", "flexible", "original", "changeable") were among those used. The responses for each adjective were analyzed with the same ANOVA procedures as described above.

Of the 16 adjective sets, seven showed a significant main effect due to reinforcement schedule. The means and standard deviations of these seven pairs are listed in Table 2. Those with significant main effects included three of the adjectives used by Davidson and Steiner: "unpredictable", $F(4,137) = 18.11, \ p < .001$, "flexible", $F(4,137) = 6.607, \ p < .001$, and "changeable", $F(4,137) = 4.56, \ p < .002$. In addition, the adjectives "free", $F(4,137) = 3.89, \ p < .005$, "inconsiderate", $F(4,137) = 4.137, \ p < .001$, "ignorant", $F(4,137) = 2.66, \ p < .035$, and "unsympathetic", $F(4,137) = 4.13, \ p < .004$ had significant main effects due to reinforcement condition. Since there were no effects due to locus
### Table II-Means and Standard Deviations of Adjectives which had significant main effects due to Reinforcement Schedule at various levels of reinforcement.

<table>
<thead>
<tr>
<th>Adjective</th>
<th>0%</th>
<th>10%</th>
<th>50%</th>
<th>90%</th>
<th>100%</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N=36</td>
<td>N=25</td>
<td>N=36</td>
<td>N=23</td>
<td>N=38</td>
</tr>
<tr>
<td></td>
<td>X</td>
<td>SD</td>
<td>X</td>
<td>SD</td>
<td>X</td>
</tr>
<tr>
<td>Unpredictable</td>
<td>3.40</td>
<td>2.06</td>
<td>6.00</td>
<td>1.36</td>
<td>5.05</td>
</tr>
<tr>
<td></td>
<td>4.65</td>
<td>2.27</td>
<td>6.38</td>
<td>0.52</td>
<td>5.18</td>
</tr>
<tr>
<td>Total</td>
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<td>2.25</td>
<td>6.13</td>
<td>1.14</td>
<td>5.11</td>
</tr>
<tr>
<td>Free</td>
<td>I 5.33</td>
<td>1.72</td>
<td>5.80</td>
<td>1.70</td>
<td>4.53</td>
</tr>
<tr>
<td></td>
<td>E 3.62</td>
<td>2.66</td>
<td>6.00</td>
<td>1.69</td>
<td>4.12</td>
</tr>
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<td>2.46</td>
<td>5.87</td>
<td>1.66</td>
<td>4.33</td>
</tr>
<tr>
<td>Flexible</td>
<td>I 1.67</td>
<td>1.29</td>
<td>4.40</td>
<td>2.47</td>
<td>3.74</td>
</tr>
<tr>
<td></td>
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<td>1.80</td>
<td>3.75</td>
<td>2.25</td>
<td>2.94</td>
</tr>
<tr>
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<td>1.62</td>
<td>4.17</td>
<td>2.37</td>
<td>3.36</td>
</tr>
<tr>
<td>Changeable</td>
<td>I 1.53</td>
<td>.64</td>
<td>4.13</td>
<td>2.33</td>
<td>4.05</td>
</tr>
<tr>
<td></td>
<td>E 2.74</td>
<td>2.34</td>
<td>3.88</td>
<td>1.88</td>
<td>2.71</td>
</tr>
<tr>
<td>Total</td>
<td>2.26</td>
<td>1.94</td>
<td>4.04</td>
<td>2.14</td>
<td>3.42</td>
</tr>
<tr>
<td>Inconsiderate</td>
<td>I 6.20</td>
<td>1.08</td>
<td>4.93</td>
<td>1.75</td>
<td>4.74</td>
</tr>
<tr>
<td></td>
<td>E 5.65</td>
<td>1.56</td>
<td>5.88</td>
<td>.84</td>
<td>5.59</td>
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<td>1.40</td>
<td>5.26</td>
<td>1.54</td>
<td>5.14</td>
</tr>
<tr>
<td>Ignorant</td>
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<td>1.55</td>
<td>2.73</td>
<td>1.91</td>
<td>3.26</td>
</tr>
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<td>2.06</td>
<td>3.75</td>
<td>1.04</td>
<td>4.65</td>
</tr>
<tr>
<td>Total</td>
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<td>1.85</td>
<td>3.09</td>
<td>1.70</td>
<td>3.92</td>
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<tr>
<td>Unsympathetic</td>
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<td>1.52</td>
<td>5.47</td>
<td>1.64</td>
<td>4.90</td>
</tr>
<tr>
<td></td>
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<td>1.52</td>
<td>5.74</td>
<td>1.45</td>
<td>5.31</td>
</tr>
</tbody>
</table>

of control, the planned comparisons were computed on the combined groups for each level of reinforcement. The trend of responses for each significant adjective pair is illustrated in Figure 3. Results of the planned comparisons for each
Figure 2-Trends of Attribution with Increasing Amounts of Reinforcement for Adjectives with Significant Main Effects due to Reinforcement.
attribute will be discussed separately.

The sequence of significance in the planned comparisons for the adjective "unpredictable" did not follow the pattern expected on the basis of Steiner's theory. A comparison of the 0% condition and the 100% condition revealed a significant difference, \( t(137) = 4.02, p < .001 \). Students who watched a person who never reinforced the anagram solver considered him significantly more unpredictable than students who watched a situation where he reinforced all the time. In addition, the 10% condition compared to the 90% condition was significant, \( t(137) = 5.48, p < .001 \). A person who only reinforced 10% of the time was perceived as more free than a person who reinforced 90% of the time. The 0% condition and the 50% condition was also significant, \( t(137) = 2.08, p < .05 \).

However, this difference clearly indicates that the 50% reinforcement situation was not the condition in which subjects attributed the most unpredictability to the stimulus figure. Subjects perceived less predictability in the person who never reinforced the anagram solver than in one who reinforced him 50% of the time. The 50% condition was significantly greater in attributed unpredictability than was the 100% condition, \( t(137) = 6.04, p < .01 \). This is consistent with Steiner's predictions. However, the final two comparisons demonstrate the actual trend quite effectively. The comparison of the 10% condition and the 50% condition was significant, \( t(137) = 2.15, p < .05 \) as was the comparison of the 50% condition and
the 90% condition, \( t(137) = 3.86, p < .001 \). That is to say, subjects saw the 90% reinforcement condition as more predictable than the 50% condition, but they saw the 10% condition as even less predictable than the 50% condition. Thus, in making a general attribution of unpredictability, there seems to be a decreasing amount of unpredictability as the amount of reinforcement in the situation increases. But when no reinforcement occurs, the stimulus figure is perceived as more predictable than when he reinforces 10% of the time. The differences evident in this pattern of results cannot be based on the degree to which reinforcement deviates from a chance basis as Steiner suggests.

The adjectives "free", as well as the adjectives "flexible" and "changeable", more closely approximate the pattern of significant results expected on the basis of deviations around the 50% condition. All three of these curves are "M" shaped as Figure 2 illustrates.

The planned comparison of the 0% condition and the 100% condition for the adjective "free" was not significant, \( t(137) = 1.56, p < .10 \). In general, a person who never reinforces and one who always reinforces are seen as equally free. However, the comparison of the 10% condition and the 90% condition was significant, \( t(137) = 2.098, p < .05 \). Thus, giving reinforcement on a very limited basis is perceived as more free than giving reinforcement almost all the time.
Attributed Freedom

The comparisons which clearly refute the predictions based on Steiner's interpretations are those between the 0% condition and the 50% condition and the 50% condition and the 100% condition. The 0% to 50% comparison, \( t(137) = 0.09, p < .50 \), was not significant and the 50% to 100% comparison, \( t(137) = 1.61, p < .10 \), approached significance. Subjects perceive little difference in freedom between the no reinforcement, continuous reinforcement, and reinforcement which occurs exactly half the time.

By the same token, the comparison of the 10% condition and the 50% condition is significant, \( t(137) = 2.15, p < .01 \). Providing reinforcement very rarely is seen as more free than providing it 50% of the time. The opposite comparison is not significant, however. The difference between the 50% and the 90% conditions was not significant, \( t(137) = 0.487, p < .50 \). Only the 10% condition seems to evoke a significantly greater attribution of freedom, in the general sense.

Although the shape of the three curves seems similar, the pattern of significance for the planned comparisons is not consistent among the adjectives "free", "flexible", and "changeable". As already noted, the major difference in attributing the trait "free" occurs when reinforcement is provided on a very rare basis.

The significant comparisons for the trait "flexible" occur between the 0% to 50% conditions, \( t(137) = 3.07, p < .01 \), and between the 50% to 100% conditions, \( t(137) = 2.49, p < .05 \).
Attributed Freedom

All other comparisons were not significant. In other words, subjects saw an individual who reinforced 100% of the time and one who never reinforced as equally inflexible. However, varying the schedule of reinforcement between 10%, 50%, and 90% resulted in approximately the same degree of attributed flexibility. Introduction of variability increases the amount of flexibility perceived in the stimulus person, but the amount of variability doesn't appear to make any difference.

Exactly the same pattern holds for the adjective "changeable". The only significant comparisons were between the 0% condition and the 50% condition, \( t(137) = 2.44, p < .02 \), and between the 50% condition and the 100% condition, \( t(137) = 2.052, p < .05 \). The person who always reinforces was considered to be just as unchangeable as the one who never reinforces. Any amount of variation in the strategy for dispensing reinforcement results in a greater amount of perceived changeability. However, as with the term "flexible", the amount of variability (i.e., which variable ratio schedule was employed) had no significant effect on the amount of changeability perceived.

Planned comparisons of the adjective "ignorant", reveal a very different configuration. Only the comparison of 0% to 100% conditions was significant, \( t(137) = 3.029, p < .01 \). The person who never reinforced was seen as significantly more ignorant than the person who always reinforced. This finding may be related to the subjects expectations within the experimental
situation. Perhaps the person who never dispensed any reinforcement was construed as being unable to play the game as it was supposed to be played.

The adjective "inconsiderate", as well as the term "unsympathetic", may also have been interpreted in this light. Planned comparisons for "inconsiderate" are significant between the 0% and 100% conditions, $t(137) = 5.39$, $p < .001$, between the 10% and 90% conditions, $t(137) = 2.01$, $p < .05$, and between the 50% and 100% conditions, $t(137) = 3.56$, $p < .001$. The person who never reinforced was seen as significantly more inconsiderate than the person who always reinforced. The person who reinforced rarely was seen as significantly less considerate than one who reinforced almost all the time. And the person who only reinforced half the time was believed to be more inconsiderate than the person who reinforced all the time. The trend can thus be described as a decreasing linear relationship: the less reinforcement used, the more inconsiderate a person was perceived to be.

The adjective "unsympathetic" follows a similar trend. The difference between the 0% condition and 100% condition was significant, $t(137) = 3.10$, $p < .01$, and the difference between the 10% condition and the 90% condition was significant $t(137) = 2.29$, $p < .05$. A person who never reinforced was seen as less sympathetic than one who always reinforced. A person who rarely reinforces was seen as less sympathetic than one who reinforced all the time. The trend
Attributed Freedom

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can again be described as a decreasing linear relationship: the less a person reinforces, the more unsympathetic he was perceived to be.

Case II

Perceived Freedom

Analyses were completed as for Case I. There was a significant main effect due to schedule of reinforcement, \( F(4,90) = 3.03, p < .05 \). Neither the main effect of locus of control, \( F < 1 \), or the interaction of locus of control and schedule of reinforcement \( F(4,90) = 1.11, p < .36 \), was significant. Means and standard deviations are listed in Table I.

The planned comparisons for the main effect were computed on internals and externals separately to parallel the Case I analysis. The results do not agree with the Case I findings. Neither internals and externals, as identified by means of the Nowicki-Strickland locus of control measure, exhibited the patterns of significance expected from the results in Case I.

For internals, the planned comparison between the 0\% condition and 100\% condition revealed no significant differences, \( t(90) = .19, p < .50 \). Likewise, the comparison between the 10\% condition and the 90\% condition was not significant, \( t(90) = .27, p < .50 \). It appears that internals in the second sample perceived no difference in freedom between never reinforcing and always reinforcing or between rarely
reinforcing or almost always reinforcing. These findings are consistent with the predicted symmetry around the 50% level of reinforcement as illustrated in Figure 3. Consistent with the symmetry predictions as well were the 0% to 50% comparison, t(90) = 2.34, p < .02 and the 50% to 100% comparison, t(90) = 2.26, p < .05 which were both significant. The reinforcement schedule which most closely approximates chance was perceived as more free than both the 0% and 100% conditions by internals in Case II. However, neither the 10% to 50% comparison, t(90) = 1.06, p > .30, nor the 50% to 90%, t(90) = 1.45, p < .20 were significant. Any variation in the strategy used in dispensing reinforcements resulted in a greater attribution of freedom than either consistent strategy. However, the degree of variation had no significant

Figure 3-Mean Perceived Freedom at Different Levels of Reinforcement—Case II
Attributed Freedom

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effect: there was no statistically significant difference between the 10%, 50%, and 90% reinforcement conditions.

The findings for externals were not as clear. The comparison of the 0% to 100% reinforcement condition was significant, \( t(90) = 2.29, p < .02 \). Externals in the second sample perceived a person who never reinforced as more free than someone who reinforced all the time. However, in comparing the 10% condition to the 90% condition, there was no significant difference, \( t(90) = 1.32, p < .20 \). That is to say, externals saw rarely reinforcing and almost always reinforcing as involving approximately the same amount of freedom.

The 0% to 50% comparison was not significant for externals. They saw little difference between never reinforcing and reinforcing half the time. On the other hand, the 50% to 100% comparison revealed a significant difference, \( t(90) = 2.38, p < .02 \). Externals saw a person who reinforced 50% of the time as more free than someone who reinforced 100% of the time. The 10% to 50% comparison, \( t(90) = .65, p < .50 \) was not significant, and the 50% to 90% comparison, \( t(90) = 1.88, p < .10 \), merely approached significance. As with internals, the amount of variability in the reinforcement schedule was not critical as long as some variability was present. Although the differences were not significant, Figure 3 indicates that the mean amount of perceived freedom was highest in the 50% condition.
Attributed Freedom
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**Ingratiation**

There were no significant differences for reinforcement schedule, $F(4, 90) = 1.29, p < .28$, locus of control, $F < 1$, or the interaction of reinforcement schedule and locus of control, $F < 1$ using the ingratiation score as the dependent variable. Subjects in all conditions varied approximately the same amount in the degree to which they believed themselves likely to ingratiate to the teacher if given the chance before playing the anagram game.

**Ability**

There were no significant effects for reinforcement schedule, $F < 1$, locus of control, $F < 1$, or the interaction of reinforcement schedule and locus of control, $F < 1$, when the subjects' perceived ability was analyzed. Neither the amount of reinforcement used by the person in the videotape nor the locus of control of the subject had an effect on the subject's perception of his own ability for solving the anagrams as compared to that of the anagram solver in the videotape.

**Adjectives**

The adjective "unpredictable" showed a statistically significant main effect due to schedule of reinforcement $F(4, 90) = 5.46, p < .001$. The means and standard deviations of each cell are reported in Table 2. Planned comparisons were conducted as in Case I. No statistically significant differences were found. Figure 2 suggests, however, that the significant main effect may be due to differences between 0%
Attributed Freedom

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and 10% reinforcement and perhaps, between the 90% and 100% conditions which were not planned comparisons. The shape of the curve is a shallow "M" similar to curves of the adjectives "free", "flexible" and "changeable" in Case I.

In addition, the adjective passive had a significant main effect due to locus of control, $F(1,90) = 7.365, p < .01$.

Reliability

As already noted, a long form of the perceived freedom/ingratiation scale was administered in the initial stages of the study to establish the reliability of the items. The attempt was unsuccessful. The Pearson product-moment correlation between the items used in the final form and a set of carefully reworded items was .02 ($N = 100$). A similar correlation for the ingratiation questions was also low ($r = .15, N = 100$).

The lack of correlation may have been due to the technique used to measure reliability rather than to a lack of reliability itself, however. The long form was extremely tedious and may have been completed haphazardly. A more effective method would have been a test-retest technique. However, this was not possible with the subject pool available.

The lack of significant main effects in Case II warrants comment before any interpretation of results are attempted. There are methodological difficulties which must also be considered. Data collection covered a much longer time span (75 days as compared to 3 days for the Case I data) and occurred at various points in the refinement of the procedures. It
is questionable whether the presentations done in the first few sessions were equivalent to those done during the later sessions since the experimenter's previous practice varied considerably. This is especially true of the two conditions which used the long form of the perceived freedom/ingratiatiion scale. In addition, there seemed to be major attitudinal differences between the conditions. On at least one occasion, impending school activities precluded the likelihood of subjects taking the task seriously.

Most important, however, is the confounding which occurred because of the assignment of single whole classes to one condition. The effects of the type of class (e.g., psychology, history, social awareness) as well as differences in the philosophical orientation of the course and teacher differences cannot be separated from differences due to the experimental manipulations.

Since Case II data is confounded, interpretations will be primarily concerned with the Case I findings.

Discussion

It seems likely, from the results reported here, that internals and externals use different information in assessing a person's freedom in a given situation. Internals attributed greatest freedom to an individual who dispensed little or no reinforcement and least freedom to one who reinforced on a continuous basis. Externals, on the other hand, saw a person who never gave reinforcement and one who always gave
reinforcement as equally restricted. Any amount of variation in the strategy of dispensing rewards and punishments was seen by externals as more free than either of the predictable conditions.

It has been reported that internals seek more information (Williams & Stack, 1972) and use information differently (Phares, 1975) than do externals in assessing a situation. It has also been noted that internals are more likely to pay attention to relevant informational cues than are externals (Lefcourt & Wine, 1969). In addition, Pines (1973) found that internals pay more careful attention to the nature of task in pursuing goals while externals are more likely to rely on behaviors oriented toward the social agent. It has also been found that externals do not attend to the amount of reinforcement present in the situation while internals do (Phares, 1975). Differences between the two can be interpreted in light of these findings.

If internals do pay closer attention to the nature of the task (forming an impression of the person in the videotape), perhaps they used information other than the predictability of the situation in forming their opinions. Jones, Davis, and Gergen (1961) demonstrated that out-of-role behavior provides more critical information on which to base an impression than does mere fulfillment of role expectations. Comments in the written descriptions of the teacher in the videotape clearly indicated that the expectations...
were of 100% reinforcement. Any deviation from that role can therefore be construed as out-of-role behavior. Internals may have determined the amount of freedom they believed the teacher to have by assessing the degree to which his behavior was out-of-role. Since externals are less likely to pay attention to the amount of reinforcement involved, they may not have used the out-of-role information in forming an opinion.

A more basic difference may also account for the differences in attribution. Weiss (1972), Lazarus (1966), and others have demonstrated that predictability and control are important aspects of aversive situations. It seems reasonable to generalize that they are likely to be important features in assessing any situation. The basic difference between internals and externals is the degree to which they have control of their own outcomes. Perhaps externals rely more on predictability since they believe themselves to be under the control of others. If this is the case, the predictability of the situation will be far more salient to the externals than to the internals who are more likely to be looking for other types of information as well. If a person assumes he is in control of his own outcomes, he is likely to look at many aspects of the task. If a person believes his outcomes are under the control of forces outside himself, he is likely to concentrate on predicting their responses to be able to cope with whatever outcomes they decide for him.
The lack of differences between internals and externals when asked to attribute personality traits to the person in the videotape can be interpreted in a similar manner. Gurwitz and Panciera (1975) suggest that the particulars of a given situation have less of an impact as greater amounts of generalization are requested. In other words, the specific information used by internals in assessing perceived freedom within the situation was not relevant to the general attributions requested by the adjective pairs. Consequently, they may have resorted to the same general information which externals had used in the previous task.

There seem to be two main trends in the mean trait attributions of the adjective sets. The adjectives "free", "flexible" and "changeable" exhibit weak "M" curves. Planned comparisons for these three traits reveal, in general, a significant difference between the predictable and unpredictable conditions. Those in either the 0% or 100% reinforcement conditions attributed significantly less of the three traits to the person in the videotape than did those in the 10%, 50%, and 90% condition. None of the adjectives exhibited the symmetry which would be evident if Steiner's contention, that the greatest amount of freedom should be perceived in the 50% condition since it is the least predictable, had held. Predictable reinforcement is perceived as resulting in less freedom, flexibility and changeability, but the amount of unpredictability, provided some variability was
present, had little effect on trait attributions.

A second trend can be isolated in the adjectives "inconsiderate" and "unsympathetic". The general comments made by subjects in the 0% and 10% reinforcement conditions give the distinct impression that they believed the teacher had not played by the rules. Even though reinforcement involved both reward and punishment, not doing either was construed as unsympathetic and inconsiderate. This interpretation can be used to explain the general decreasing linear trend of these two adjectives as more reinforcement was introduced into the situation.

The adjective ignorant seems also to follow this decreasing linear trend. However, the attribution of the trait "ignorant" may be, in part, due to a confounding aspect of the situation. Persons who viewed the 10% and 90% conditions may have interpreted the minor deviations which defined the reinforcement condition as being due to ignorance on the part of the person in the videotape. This orientation on the part of the subject is confounded with the effect which is actually due to variations in the schedule of reinforcement. Consequently, any interpretation is unclear.

The adjective "unpredictable" may be a combination of the "M" trend and the downward linear trend already described. There was a much greater amount of unpredictability attributed when a 0% or 10% reinforcement was employed. At the same time, however, there is significantly more unpredictability
perceived in the 10% condition than in the 0% condition. Never reinforcing is not as predictable as always reinforcing, but it is more predictable than reinforcing on rare bases.

The significance of the seven adjectives is important in that it demonstrates that general trait attributions do vary as a function of the situation. It is also important to note that a single variation in the situation, namely the reinforcement schedule, can result in several different trends in the attribution of personality traits.

Ingratiation

The lack of significant effects in assessing the potential for ingratiation is due to either faulty design or a true lack of relationship. The measure used is definitely suspect. Differences between conditions may have made certain items on the questionnaire seem nonsensical. For example, asking "If you were the anagram solver, how successful would you be in getting the person to take away money less often when you made a mistake?" when no money had been taken away in the videotape, would make the item difficult, if not meaningless, to answer. Perhaps a single question simply asking the likelihood of getting to know the teacher before playing the anagram game would have been a more effective means of measuring ingratiation. A single question might be more successful in avoiding the confounding between the reward and punishment aspects of the situation as well.
Although the phenomenon of ingratiation is well founded (Jones & Wortman, 1973), the decision of whether to ingratiate or not may not be a function of the predictability of the situation as Steiner (1973) suggests. There are many other aspects, such as the respective status of both individuals and the rewards controlled by each, which have an impact on the decision to ingratiate. These factors should also be considered in order to adequately assess ingratiation within this paradigm.

Conclusion

As with most investigations, this study has resulted in both answers and questions. It has demonstrated that internals and externals seem to be different in the way they attribute freedom to another on the basis of variations in reinforcement schedule. It also noted that the greatest unpredictability does not fall, as Steiner predicted, at the chance level of occurrence, but, rather, any amount of variation is perceived as more free than no variation at all. It showed that general attributions of personality traits can vary as a function of the schedule of reinforcement used by the person who is being judged, and that different traits can result in different attribution trends for increasing amounts of reinforcement.

Probably the biggest question raised by the study is: "Can it be replicated?" The failure to replicate many of the findings in the Case II data makes another attempt critical.

Besides this major consideration, several minor issues
need attention. The ingratiation assessment needs to be re-evaluated and perhaps redesigned to establish whether there is or is not a relationship between the predictability of the situation and the likelihood of ingratiating.

To date, nothing has been done to assess the effect of predictable partial reinforcement schedules. A fixed ratio reinforcement schedule is just as predictable as the 0% and 100% schedules of reinforcement used here. Will a subject who views a 50% fixed ratio reinforcement situation perceive the reinforcing agent as less free, predictable, changeable, than a person who reinforces on a 50% variable ratio? Predictability is a salient aspect of the situation, but further investigation is necessary to adequately define its relationship to attributions of freedom and personality traits such as those used here.

A final and more encompassing question concerns the relationship between the predictability of situation, which has been investigated here, and more general attribution theory. For example, where does unpredictability fit as a cue in Kelley's (1967) theory, or does it fit at all? Can predictability as studied here be integrated with the broader framework of attribution theory? Clearly, future research in this area must strive to integrate the effects of unpredictability of the actor in a specific situation within the larger context of attribution.
Attributed Freedom

References


Attributed Freedom

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Steiner, I. D. The illusion of freedom is no mirage. Psychology Today, 1973 (August), 51-55.


The following questions are concerned with the person who gave and took back quarters in the videotape. Answer each item according to how you feel about the person by placing a mark on the line under the question.

1. How free was the person in the videotape to give and take back quarters?
   not at all             somewhat            extremely

2. When the correct answer was given on an anagram, how free was the person to refrain from giving a quarter for that response?
   not at all             somewhat            extremely

3. When the anagram solver missed a word, how free was the person in the videotape to refrain from taking back a quarter?
   not at all             somewhat            extremely

4. How free was the person to give and take away quarters whenever he felt like it?
   not at all             somewhat            extremely

5. Once the person had started giving and taking back quarters, how free was he to change his strategy?
   not at all             somewhat            extremely

6. In most situations how free do you think this person is to do what he feels like doing?
   not at all             somewhat            extremely

7. If you were going to play the anagram game with the person in the videotape, and you had the chance, how likely is it that you would try to get to know him before the game started?
   not at all             somewhat            extremely
8. If you were the anagram solver, how likely is it that you could get the person in the videotape to give you more money when you answered correctly?

not at all    somewhat    extremely

9. If you were the anagram solver, how successful would you be in getting the person to take away money less often when you made a mistake?

not at all    somewhat    extremely

10. How likely is it that if you knew him better, you could get the person in the videotape to give you a few more breaks in giving and taking away money?

not at all    somewhat    extremely

11. If you were the anagram solver, how likely is it that you would have made fewer mistakes than the person who was trying to solve the anagrams in his videotape?

not at all    somewhat    extremely
Please judge the person who gave and took back quarters in the videotape by using the following adjective sets. Put a mark along the line which you feel best describes what the person is like on that trait. If the person can't be described in terms of either of the words on a line, mark the middle space on the line, but try NOT to use the middle space unless absolutely necessary.

For example: old : : : : : young

Since the person didn't seem terribly old to me and still not extremely young, I marked on the young side of the scale, but near the center.)

unoriginal : : : : : : original
1. What did you think we were trying to find out in this study?

2. Did what you thought we were doing make a difference in the way you answered the questions?

3. Choose one of the following to describe how you felt about the people in the videotape:
   a) I thought they were true to life and answered as if they were
   b) They seemed a bit fakey, but I tried to answer as if it were a real life situation
   c) They seemed really fakey and it made my answers difficult
   d) They were ridiculous and I answered the whole thing without even thinking
   e) It was boring and I didn't care how I answered

4. What did you know about this experiment when you came today?

5. Did you recognize anyone in the videotape?

6. Did you talk to anyone about the experiment before you took part?

7. How often in the videotape did the person give a quarter? (Please answer with a number.)

8. How many times in the videotape did the person take back a quarter? (Please answer with a number.)

How much money did the anagram solver make?

COMMENTS: