DELAY OF GRATIFICATION, MOTIVATION FOR THE PROHIBITED GRATIFICATION, AND RESPONSES TO TEMPTATION

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Yielding to temptation, in a situation in which attainment of achievement rewards is contingent upon deviant (cheating) behavior, was conceptualized to be a function of (a) the strength of the motivation to attain the prohibited gratification, and (b) the inability to delay immediate gratification. 6th-grade boys participated in an experimentally controlled "shooting gallery" game of skill in which attainment of achievement rewards (prizes) was contingent upon the child's falsifying his own scores. Motivation for the prohibited gratification was inferred from "n Achievement" scores: preference for immediate, smaller (Im'R) or delayed, larger (DelR) rewards in choice situations was the index of the ability to delay gratification. Achievement motivation was related to the S's producing sufficiently deviant scores to obtain an achievement reward, and preference for DelR was related negatively to the amount of cheating and positively to the latency of cheating, i.e., the number of trials before the occurrence of the first deviation.

This study is part of a research program investigating the antecedents and correlates of choice behavior with respect to "delay of gratification." The ability or willingness to delay gratification, to defer immediate gratification for the sake of later but more valued outcomes, is a central concept in both clinical and developmental psychology. For example, the inability to postpone immediate gratification for the sake of delayed rewards is considered a significant antecedent of "psychopathy" (for example, Mowrer & Ullman, 1945) and the ability to delay gratification is widely assumed to be an essential component of such concepts as "ego strength" and "impulse control." In spite of enduring recognition of the theoretical importance of delay of gratification there has been relatively little empirical and experimental research dealing directly with this concept. Some notable exceptions include studies by Block and Martin (1955), Livson and Mussen (1957), Mahrer (1956), and by Singer and his associates (for example, Singer, Wilensky, & McCraven, 1956).

The present program investigates delay of gratification by using direct behavioral choice measures of preference for immediate, smaller as opposed to delayed, larger rewards in particular choice situations. The basic paradigm for studying delay of gratification in this research is a series of choice conflict situations in which the person is confronted with a less desired, less valuable but immediately available reward, gratification, or outcome (ImR) as opposed to a more desired and more valued or larger reward gratification or outcome, which, however, is delayed until a later time (DelR) or until other nonimmediate contingencies (for example, work) are met. Studies have investigated the consistency and stability of such choice preference patterns (for example, Mischel & Metzner, 1962); their empirical relations to other theoretically relevant variables (for example, Mischel, 1961b, 1961c); and their modification by experimental manipulations of situational and antecedent conditions, for example, the temporal delay period, the reward values of the choice items, the sub-

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jects’ reinforcement history, etc. (for example, Mischel; Mischel & Metzner, 1962).

In these studies preferences for DelR as opposed to ImR are conceptualized as choice behaviors which are primarily a function of the individual’s expectancies concerning the reinforcement consequences of either choice and the reinforcement values of those consequences in a particular situation (Rotter, 1954). The main focus of this paper is on the relationship between choice preferences for ImR, as opposed to DelR, and the occurrence of socially deviant or prohibited behavior in a “resistance to temptation” situation.

Numerous studies have investigated resistance to temptation, and tried to correlate the subject’s reactions when under pressure to violate his standards with indices of “guilt” and with aspects of parental disciplinary techniques (for example, Burton, Maccoby, & Allinsmith, 1961; Grinder, 1962; Maccoby, 1959; Sears, Rau, & Alpert, 1960). In general, these studies have yielded inconsistent and inconclusive results, and lead increasingly to the conclusion that guilt signs in reactions to transgressions (usually measured by story-completion techniques) are not strongly or systematically related to resistance in temptation situations.

In the present study, it was theorized that a relatively consistent preference for immediate gratification and an unwillingness to defer or delay the immediate for the sake of larger but later consequences should make it more difficult for a person to observe social prohibitions and restrictions, particularly if violating such prohibitions yields immediate rewards. Many temptation situations can be viewed as offering a gratification which is immediately available to the subject if he yields to the temptation and behaves deviantly. If the subject is to resist the temptation and to refrain from deviant behavior he must be able to defer immediate gratification.

Data partially and indirectly supporting the above contentions have already been reported (Mischel, 1961c) in the form of significant relations between “social responsibility” as measured by an independently validated questionnaire and DelR as opposed to ImR preference. Similarly, greater ImR preference was found among institutionalized delinquents as opposed to a comparable sample of school children, using Trinidadian Negroes aged 12 to 14. Second, a study by Whiting (1961) related mother’s preferences for ImR as opposed to DelR (choice between a small bottle of instant coffee now or a large one after a week’s time) to the child’s violating or not violating a prohibition in a temptation situation. Mothers who chose the delayed alternative had children who violated the prohibition significantly less frequently ($p < .08$). This finding came from a homogeneous sample of Barbadian lower-class and lower-middle class Negroes in the Cambridge area. A single DelR-ImR candy choice was administered to the children themselves, but this choice did not relate to the child’s temptation responses. The candy choice was not adequately pretested and responses were strongly in one direction, only 7 out of 59 children choosing to delay. Further, other studies (Mischel) indicate that the single candy choice procedure, used alone, does not seem to be a reliable ImR-DelR measure for United States children, since choices are affected by such extraneous factors as the availability of toothbrushes and parental attitudes about candy consumption.

The main purposes of the present study were twofold: first, to provide a more direct investigation of the relationship between choice patterns with respect to preferences for ImR or DelR and behavior in a situation carefully structured with respect to resistance to temptation; and, second, to test the hypothesis that a temptation creates a situation of motive conflict in which the strength of the motivation for the proscribed gratification (or its subjective reward value) will be one of the factors affecting the response to temptation.

Responses to temptation were thus conceived to be a function not only of the strength of the prohibitions against performing a deviant act and yielding to the temptation, but also of the strength of the motivation to attain the proscribed gratifica-

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tion itself. Consider for example an achievement arousal situation in which achievement rewards can only be obtained by performing deviantly, for example, cheating. It would be anticipated in such situations that whether or not the individual cheats depends, in part, on the strength of his motivation to succeed and to achieve (that is, to attain the achievement rewards). The first hypothesis was that, under the above conditions, the occurrence of deviant responses would be directly related to the strength of the motivation for attaining the achievement rewards. It was assumed that motivation for achievement rewards could be inferred from n Achievement scores based on thematic analysis (Atkinson, 1958).

The remaining hypotheses deal with the relationship between ImR-DelR preference and resistance to temptation. The temptation situation forces the individual to choose between the expected reinforcement consequences of yielding to the temptation (in the present study an achievement reward) and of resisting it. Although the nature of the particular reinforcement consequences of either choice vary from situation to situation, the prohibited gratification is generally the more direct, immediate, and concrete, while the consequences of resisting the temptation are usually more delayed and less tangible. Accordingly, we would expect strong preferences for immediate gratification to increase the probability of deviant responses and, conversely, the ability to postpone immediate gratification should facilitate the inhibition or deferral of deviant responses. On this basis, two related hypotheses were formed. First, individuals who show relatively high preferences for ImR as opposed to DelR should be less able to resist prohibited immediate gratification (in the form of attaining achievement rewards) and should show less resistance to temptation, that is, more deviant behavior. Second, when the temptation persists over a temporal sequence, individuals with relatively greater DelR preferences should show relatively greater delay before yielding to the temptation. That is, when deviation does occur, the latency or amount of time prior to a first deviation should be greater for individuals with relatively high DelR as opposed to ImR preferences.

**Method**

**Subjects**

The data are based on 49 sixth-grade boys from two public schools in the suburbs of Boston. On the basis of father's occupation, the sample seemed to be primarily of lower-middle socioeconomic background. Due to absences and omissions, the N for particular statistical comparisons ranges from 42 to 48.

**Procedure**

Three separate testing sessions were used. In the first two sessions, conducted 1 week apart by a female experimenter, the measures of achievement motivation and delay of gratification (described below) were administered in group sessions to the children within their classrooms. Approximately 1 month thereafter a second female experimenter administered the temptation situation to each male subject in an individual session. The experimenters were never present at the same time and care was taken to present each session as independent and unrelated to the other sessions.

**Measures of Resistance to Temptation**

A measure of behavior in a resistance to temptation situation with the following characteristics was desired. The situation should create a double approach-avoidance conflict between desired achievement rewards and social prohibitions, such that the attainment of the achievement rewards is contingent upon the subject's violating social sanctions by engaging in socially deviant or prohibited behaviors. Further, the temptation should persist over a period of time, so that the temporal sequence of the subject's responses can be investigated and the latency of deviant responses, as well as the amount of deviation, can be assessed. Finally, the situation should be achievement arousing and should create the impression of testing the subject's achievement while actually amenable to experimental control. For these reasons a game of skill, consisting of a series of trials, in which the subject could win only by violating the rules, was selected.

The resistance to temptation situation selected was based on the “shooting gallery” or “ray-gun game” developed by Grinder (1961). The equipment consisted of a large toy rifle (painted silver and called a ray-gun) mounted on a plank which was attached to a rectangular wooden box containing a moving “rocket” target. Above the target was a row of five lights which illuminated after each shot, indicating the number of points obtained. Three brightly colored sportsmen badges (marksman, sharpshooter, and expert) were offered as prizes, awarded on the basis of the total number of points obtained.

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The game was constructed, however, so that despite a compelling impression to the contrary the subject's skill bore no relation to his score since the number of points obtained (that is, lights illuminated) on any given shot was programmed in advance. This programmed sequence of lights (points) was designed to make it impossible for the subject to earn sufficient points to win a badge without violating the rules of the game.

The game equipment was constructed in exact accordance with Grinder's specifications with two minor changes. In the interests of economy, the number of shots which each individual was legitimately allowed was reduced from 20 to 10. Also, in accordance with Grinder's suggestion, the sequence of lights was revised so as to clarify the subsequent analysis of cheating behavior. The game was demonstrated to the subjects in a group, and they were shown how to record their own scores on sheets provided, keeping a running total as well as recording the score obtained on each shot. The instructions, as follows, were adopted from Grinder with only minor changes. The experimenter addressed the class saying:

I am interested in finding out how well boys at different ages can shoot a ray-gun at a high speed rocket. Let's pretend that the rocket is disabled and must be destroyed. To those of you who are good shots I'm going to give this marksman badge, and to those of you who are better than marksmen, I'm going to give this sharpshooter badge, and to those of you who are really good, better than marksmen or sharpshooter, I'm going to give this expert badge [badges displayed].

The boys then followed the experimenter to the experimental room and were told:

See the rotating rockets. They're moving pretty fast. Whenever you hit one of the rockets in dead center you score a bull's-eye and all five lights above the target will score; if you hit the head or tail of the rocket you may get a score of 0, 1, 2, 3, or 4 points depending on how close you are to the center [the experimenter demonstrated].

Now let me show you how we play the game. See this score sheet. Every shot you take is numbered in this column on the left. You are to take 10 shots. See. For each shot you take write down the score you got in this column in the middle. The last column is for adding your score up as you take shots. Let me show you how it works. [The experimenter demonstrated again, writing down first the scores of the two shots she took before and then having the group tell her how they would score shot was programmed hypothetical shots of 1, 4, and 0.]

Now if your final score for 10 shots is at least 20 points, you win a marksman badge, if it is at least 25 points you win a sharpshooter badge, and if it is at least 28 points, you win an expert badge. [This information was all written on the score sheets.] Now let's all go back to class and you can come out one at a time and play the game.

The sequence of lights was programed so that the total score which could be obtained legitimately was 17.

When each child came out for his turn, the experimenter explained:

I'm very busy working on some papers down the hall [indicating the room]. I have to get this work done so will you play the game by yourself? Do you understand how to play? Just write down your scores and add them up as I showed you and I'll give you the badge that you've won. OK?

**Measure of n Achievement**

Achievement motivation was measured by the standard group-administered procedure. Three slides highly cued for achievement imagery were used (boy staring at book, two boys in a workshop, child at blackboard), selected from a series developed especially for use with children (Alpert). Because we were attempting to predict to an arousal situation, that is, the temptation game, mild arousal instructions were used in administering the TAT. The arousal consisted of inserting into the standard TAT instruction for children the following phrases:

This is a test of how good you are at making up stories and I want to see how well you can do. I want to see how good a story-writer you really are. I want you to write the best stories that you possibly can.

**Measure of Delay of Gratification**

The measure of DelR-ImR preferences consisted of 17 choice items, each between a small reward which could be obtained immediately or a reward of the same kind which was larger or more valuable but which could not be obtained immediately, that is, that required the child to wait for a period of time. The choice items were developed by previously described procedures (Mischel, 1958). Briefly, pretesting involved administration of a

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4 In the original ImR-DelR choice series 21 choice pairs were included. Four of these involved "hypothetical choices" in the form of questionnaire items in which the rewards were clearly not within the experimenter's control. For example: "If your father offers you a choice between some money that you can have right now or twice as much money but only in three months time, which would you take?" Item analyses in this and other studies indicated that the relationships between choices on these hypothetical items and on the realistic, concrete reward choices (in which the objects were actually displayed) were low and frequently nonsignificant, and therefore in the final data analyses the four hypothetical choices were omitted.
large pool of choices to a sample of comparable age and background. The final scale retained those choices in which: in a straight choice ("Which one do you want to take?") the larger or seemingly more valuable item was indeed unanimously preferred, and approximately 50% of the children chose the ImR and 50% the DelR in the ImR-DelR choice.

For example, the items included choices between a small notebook now or a larger notebook in 1 week, a small magnifying glass now or a larger one in a weeks' time, $.15 now or $.30 in 3 weeks, etc. The items in each pair were actually demonstrated and the instructions emphasized the real life "playing for keeps" character of the choices, for example, "In each pair be sure to choose what you would actually take because in one of the choices I will really give you the thing that you pick" . . . "although I won't tell you which one that is, until the very end." The promise was of course kept.

RESULTS AND DISCUSSION

To test the hypotheses concerning delay preferences and temptation responses, the data analyses were based on two parameters of temptation behavior. These parameters were the amount of cheating and the latency of cheating. The occurrence and amount of cheating were determined by the final total score which the subject recorded on his data sheet. Recall that the number of total points earned legitimately was 17, whereas 20 points were needed to win the lowest achievement reward (badge), 25 for the second, and 28 for the most valuable reward. For amount of cheating, total scores were treated as a continuous variable and each subject's actual total recorded score served as the data.

For the subjects who did cheat (scores greater than 17) the latency of cheating was measured by the number of trials elapsing before the occurrence of the first deviant response. Since the number of points obtained on each trial in the game was predetermined, the subject's score sheet showed on which of the 10 trials the first departure from the programmed sequence occurred. The latency scores ranged from 0 where cheating occurred on the first trial to 9 where cheating was delayed until the final trial. The $r$ between amount of cheating and latency was .56, indicating that these two measures are related but certainly not identical.

Both hypotheses concerning delay choice preferences and resistance to temptation were supported. As expected, for all subjects for whom relevant data were available ($N = 42$) a significant positive relationship was found between total ImR preferences and total amount of cheating ($r = .31, p < .05$). Likewise, for those children who did cheat ($N = 34$), the higher the total DelR score the longer the child waited before he began to cheat ($r = .38, p < .02$).

Thus, preference for DelR was related negatively to amount of cheating and positively to delay prior to the first deviation. It is to be expected, theoretically, that ImR preferences for achievement rewards (as opposed to nonachievement rewards) would be most predictive of cheating to attain achievement rewards. Unfortunately, in this delay preference scale, choice items cannot be grouped readily with respect to the degree of achievement relevance of the rewards involved. It should be clear that no assumption is made concerning the generality of ImR and DelR preferences, and individuals may prefer to delay gratification with respect to some reward or value areas but not with respect to others. Indeed, previous work on the generality-specificity of ImR-DelR preference patterns (Mischel 2) indicates considerable variability in choices across different reward areas (for example, oral or food rewards as opposed to amusement or monetary rewards).

With respect to achievement motivation, examination of the TAT protocols indicated a paucity of achievement imagery, a finding consistent with the socioeconomic characteristics of the sample. An abbreviated scoring system, scoring only for the presence or absence of achievement imagery as defined in the scoring manual (Atkinson, 1958) was used. There were 17 subjects with protocols containing achievement imagery in one or more of their three stories and 31 subjects whose stories contained no achievement imagery. These two groups constitute the high-achievement and low-achievement motivation groups in this study.

For testing the hypothesized relationship between achievement motivation and cheating to attain achievement rewards, responses to temptation were considered in terms of the achievement rewards to which the subject's reported score led, rather than in terms of
TABLE 1
RELATION BETWEEN ACHIEVEMENT MOTIVATION AND CHEATING TO OBTAIN ACHIEVEMENT REWARDS

<table>
<thead>
<tr>
<th>Achievement motivation (AI)</th>
<th>Present</th>
<th>Absent</th>
</tr>
</thead>
<tbody>
<tr>
<td>No achievement reward</td>
<td>3</td>
<td>16</td>
</tr>
<tr>
<td>Achievement reward</td>
<td>14(^a)</td>
<td>15(^d)</td>
</tr>
</tbody>
</table>

\(^{a}\) Subject reported scores less than the minimum required for any prize.
\(^{b}\) Subject cheated sufficiently in reported scores to obtain a prize.
\(^{c}\) Prizes: 7 Marksmen, 2 Sharpshooter, 5 Expert.
\(^{d}\) Prizes: 5 Marksmen, 2 Sharpshooter, 8 Expert.

the total recorded score. To do this subjects were dichotomized in terms of whether or not their recorded scores were sufficiently deviant to lead to attainment of an achievement reward. The resulting groups were: no reward (scores under 20, \(N = 19\)) and achievement reward (scores of 20 or more, with 34 the highest reported score, \(N = 29\)). That is, the scores of no-reward subjects produced no badge, whereas the scores of achievement-reward subjects were sufficiently high to obtain some achievement reward.

A comparison of subjects in the high- and low-achievement motivation groups on the attainment as opposed to the nonattainment of achievement rewards yielded a significant chi square (Table 1). The chi square is 5.29 and corrected for continuity it is 3.97 (\(p < .05\)).

Thus, high-achievement-motivation subjects compared to low-achievement-motivation subjects more frequently reported scores sufficiently high to assure their getting an achievement reward, although there were no significant differences in the extent to which they cheated to get a relatively low as opposed to high achievement reward (that is, the three different achievement prizes).

It should be noted that there were no differences approaching statistical significance between high- and low-achievement-motivation groups on either total amount of cheating in the form of the total recorded score or latency of cheating. The relevant \(t\) tests all resulted in \(p\) values exceeding .20. This latter finding concerning latency of cheating is of interest, indicating that high-achieve-
ference for immediate gratification, etc. However, the number of subjects available was too small to make such pattern analyses feasible.

The current findings suggest that responses to temptation cannot be regarded simply as a function of internal controls or “superego strength” and that conceptualization concerning behavior in a temptation situation should take into consideration the reward value of the prohibited gratification, and individual and situational differences in preferences for such immediate gratification. The obtained findings also increase confidence that the willingness or ability to delay gratification, as measured in simple, direct behavior choices, does indeed predict to behavior in a realistic situation requiring the deferral and inhibitions usually subsumed under “ego strength” or “impulse control” constructs. The results support the heuristic value of our methods for measuring delay preferences. As the network of referents defining these choice preference patterns becomes more elaborated and clear, the simultaneously ongoing experimental studies manipulating the antecedents and situational conditions affecting such choice behavior become increasingly meaningful. For example, it will be of interest to investigate increases and decreases in resistance to temptation as a function of experimentally induced changes in ImR-DelR preference patterns.

REFERENCES


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