The Journal of Genetic Psychology, 1977, 131, 195-205.

THE NATURE OF THE CONFLICT IN DELAY OF GRATIFICATION*[1]

Department of Psychology, University of Haifa and Hebrew University

ASHER KORIAT AND MORDECAI NISAN

SUMMARY

Five hundred fifty-six Israeli male and female fifth graders received two hypothetical delay of gratification questions in counterbalanced orders. One required a choice between an immediate and a more valuable but delayed reward, the other required Ss to predict a smart child's choice under similar circumstances. Although choices in both cases tended to be similar, Ss attributed significantly more delay of gratification to the smart child than they displayed themselves. The results are discussed in relation to value-expectancy theory, which sees behavior as stemming from utility considerations, and psychoanalysis, which sees it as the outcome of a conflict between pleasure and reality-principle functioning.

A. INTRODUCTION

One of the most crucial developments in early childhood, according to Freud and others, is the ability to delay gratification- This ability constitutes an essential prerequisite for the development of rational thought and a reality orientation (1). At the same time, however, this ability appears to be dependent on the individual's capacity for rational thought (8). Much of the experimental work in the area of delay of gratification has derived its impetus from the original studies of Mischel (e.g., 4). In these studies, the typical procedure employed to assess delay capacity is to confront the child with the choice between an immediate reward and a more valuable, but delayed reward, Mischel has presented data supporting the validity of this measure. His studies indicate that delay of gratification, as measured by his technique, increases with age, differs from culture to culture, and is systematically

* Received in the Editorial Office, Provincetown, Massachusetts, on April 12, 1976.

[1] This research was supported by the Human Development Center of the Hebrew University, Jerusalem. The authors would like to thank Liora Amir for help in the collection and analysis of the data, and Karen Pardo for help in preparation of the manuscript.

correlated with theoretically relevant cognitive and personality variables. However, little is known as yet about the processes operating in delay behavior (5).

It is possible to distinguish two views regarding the nature of the conflict involved in a situation where the individual is confronted with a choice between immediate and delayed rewards. The first is illustrated by Mischel's approach where delay of gratification is conceptualized in the framework of the value-expectancy model (9), according to which the choice between alternative behaviors is a function of the subjective probability that each will lead to particular outcomes and of the subjective values of the outcomes. According to Mischel, delaying an outcome reduces both the subjective value of the outcome (7) and the subjective probability that this outcome will be attained (4). This view is supported by findings that the tendency to prefer a delayed reward can be strengthened by increasing either the value or the expectancy of a reward (4). The assumption underlying this view is that choice between immediate and delayed outcomes is guided by utility considerations.

The second view of the delay phenomenon is based on the psychoanalytic conception, according to which the delay of gratification involves a conflict between two opposing forces. One force derives from the pleasure principle, and represents an unmodulated drive for immediate discharge. The second derives from the reality principle and is guided by "rational" or utility considerations. The two opposing forces emanate from two different structural components of personality, the Id and the Ego, and the capacity to delay discharge is a function of their relative strengths. Thus, in this view, unlike the first, rational considerations of utility constitute only one side of the conflicting forces: the fact that choice of the delayed outcome is judged to be wise on rational or utility grounds does not insure its actual preference, since the individual may not be able to resist the temptation for immediate gratification. The belief that conflict occurs in situations of delay of gratification is consistent with philosophical and popular conceptions of the conflicting forces of reason and emotion, of will power, and of resistance to temptation.

The two different conceptualizations of delay behavior have different theoretical and methodological implications. An example of the divergent predictions following from the two models is to be found in the present study, which attempts to assess their relative merits. Its rationale can best be understood by means of a concrete example. A child is presented with two rewards, one of which can be obtained immediately, and another which is more valuable but is to be received only a while later. The child may be asked which of the two rewards he would rather have. This is the typical procedure

in a delay of gratification experiment. Suppose he is now presented with the same alternatives, but is asked to indicate what a "smart child" would choose. How would the reactions of the child to the two conditions compare? The value-expectancy point of view would predict no difference between the two choices, since in both cases the choices are assumed to be guided by utility considerations. The psychoanalytic point of view, however, would expect the child to attribute more choices of the delayed reward to a smart child than to himself. This is because in the smart child situation the utility considerations are made more salient relative to the impulsive urge for immediate gratification.

A related question is whether increasing the salience of utility considerations by presenting the child with the "smart child" situation first might subsequently lead to a stronger preference for a delayed reward for himself. Again, such an effect would not be predicted by the value-expectancy model, but would be consistent with the psychoanalytic view in which the salience of rational considerations is assumed to oppose an impulsive preference for immediate discharge.

B. METHOD

1. *Subjects*

Five hundred and fifty-six fifth graders enrolled in 18 classes in 10 different schools in Jerusalem served as 5s. All children were enrolled in regular classes and represented a wide range of SES.

2. *Procedure*

All 5s were tested in groups in their ordinary classes by a female graduate student. All instructions and materials were included in a booklet which was distributed to the children. The first page of the booklet included introductory instructions, which were also read aloud by *E*. These instructions were followed by delay of gratification questions pertaining to Self and to a Smart Child. Two hundred and seventy-one of the 5s (group 1) received the Self question first, while 267 5s (group 2) received the Smart question first. A filler task between the two questions, requiring Ss to choose one geometrical figure that they preferred in each of 29 pairs took about three minutes. Booklets of the two forms were randomly distributed among the pupils of each class. The delay of gratification questions (originally in Hebrew) read as follows: *Self:* Imagine that there was a contest in your class and you won. You are to receive a prize and may choose either a chocolate bar that costs 1 Israeli pound

now or a bigger chocolate bar that costs 1.50 pounds in two weeks. Which would you choose?

Smart: Imagine that there was a contest in your class and Uriel won. He is to receive a prize, and may choose between one chocolate bar that costs one Israeli pound now or a bigger bar that costs *1.50* pounds in two weeks. You know that Uriel is a smart boy. Which prize do you think Uriel will choose?

The Self and Smart questions were followed by open questions regarding the reasons for the choice made, a question that assessed the 5's liking for chocolate, and a personality questionnaire. Only the results of the delay of gratification choices will be presented in this paper.

C. RESULTS

Twenty booklets were discarded because of missing data. In the remaining 538 5s there were 260 boys and 278 girls.

We will first present a between-individuals analysis to compare choices for Self with choices for Smart. Later, a within-individual analysis will be used to examine the relationship between the individual's choices for Self and for Smart.

1. *Between-Individual Analyses*

Table 1 presents the frequency of immediate and delayed choices for Self and Smart by group and sex.

The safest conclusions can be drawn from analysis of response to the first question presented. A chi square analysis comparing choices for Self (group 1) and Smart (group 2) revealed a significant difference ($x^2 = 5.55$, $df = 1$, $p < .02$). The proportion of delayed choices was 49.8% for Self and 59.9% for Smart.

The same trend was evident with regard to the second question presented. A chi square comparing choices for Self (group 2) and Smart (group 1) yielded $X^2 = 10.87$, $df = 1$, $p < .001$. Thus in both analyses5s attributed more delay of gratification to the smart child than they displayed themselves.

Repetition of the above analysis separately for boys and girls yielded the following results. With regard to responses to the first question presented, a comparison of boys in Group 1 (Self) with those in Group 2 (Smart) yields $x^2 = .629$, n.s.; the respective comparison for girls yields $x^2 = 5.84$, $p < .02$. With regard to responses to the second question, a comparison of boys in Group 1 (Smart) with boys in Group 2 (Self) yields $x^2 = 2.058$, n.s. The respective comparison for girls yields $x^2 = 10.99$, $p < .001$. Thus, it appears that the findings reported above for the total sample are mostly or entirely due to the

TABLE 1

FREQUENCY OF IMMEDIATE AND DELAYED CHOICES FOR SELF AND SMART ACCORDING TO GROUP AND SEX

	Group 1						Group 2						Total					
	Boys		Girls		Total		Boys		Girls		Total		Boys		Girls		Total	
Choice	Self	Smart	Self	Smart	Self	Smart	Self	Smart	Self	Smart	Self	Smart	Self	Smart	Self	Smart	Self	Smart
Immediate	55	40	81	53	136	93	54	52	75	55	129	107	109	92	156	108	265	200
Delayed	71	86	64	92	135	178	80	82	58	78	138	160	151	168	122	170	273	338
Total	126	126	145	145	271	271	134	134	133	133	267	267	260	260	278	278	538	538

girls. For the boys, little difference is obtained in delay behavior between Self and Smart instructions.

Comparisons of boys' and girls' responses with regard to Self yield the following results: 56.3% of the boys in Group 1 preferred the delayed reward as against 44.1% for girls ($x^2 = 4.02$, $p < .05$); the same trend is evident in Group 2, where 59.7% of the boys preferred the delayed reward as against 43.6% for girls ($x^2 = 6.92$, $p < .01$). Thus, girls in our sample appear to display more impulsive choices than boys.

Comparison of boys' and girls' choices for the "smart child" yield the following results. In Group 1 68.3% of the boys indicated the delayed reward, as compared with 63.4% for girls ($x^2 = .69$, n.s.). For Group 2 the respective figures are 61.2% for boys and 58.6% for girls ($x^2 = .18$, n.s.).

Thus, while no sex difference is obtained in responses to Smart, girls display more impulsive choices than boys for Self.

To examine the statistical significance of the sex differences observed in the Self-Smart discrepancy, a three-way (Sex X Question X Choice) chi-square partition (12) was carried out for the responses made to the first question administered. The triple interaction yielded ax^2 ($df = 1$) = 1.248, which is not significant.

2. *Order Effects*

To examine whether increasing the salience of utility considerations (by first presenting the "smart child" question) affects choices for Self, responses to Self of Group 2 were compared to those of Group 1:49.8% of the children in Group 1 preferred the delayed reward as compared with 51.7% in Group 2 ($x^2 = 19$, n.s.). The results of this analysis do not support the hypothesis that making a choice for a smart child increases the probability of delaying gratification for self in a subsequent task. Smart following Self elicited more delayed responses (65.7%) than Smart administered first (59.9%). The difference, however, was not significant.

3. *Consistency and Change in Self and Smart Choices*

To examine intraindividual consistency and change in reaction to Self and Smart, all 5 s were classified into four types according to the patterns of choices displayed: delayed for both smart and self; immediate for both; delayed for self, immediate for smart; and immediate for self, delayed for smart. The number of children displaying each pattern is presented in Table 2, according to group and sex.

TABLE 2

FREQUENCY OF PATTERNS OF CHOICES FOR SELF AND SMART ACCORDING TO GROUP AND SEX

Choice		Group 1			Group 2			Total		
Self	Smart	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total
Immediate	Immediate	31	46	77	42	47	89	73	93	166
Delayed	Delayed	62	57	119	70	50	120	132	107	239
Delayed	Immediate	9	7	16	10	8	18	19	15	34
Immediate	Delayed	24	35	59	12	28	40	36	63	99
Total		126	145	271	134	133	267	260	278	538

Across both groups and sexes, a considerable consistency is evident in 5s' responses to Self and Smart. Thus, of the 538 5s in the sample, 405, or 75.3% made the same choice for Self and Smart. The relationship between choice for Self and choice for Smart is highly significant, as revealed by a x^2 of 145.02. The contingency coefficient (C) is .52.

Examination of the 133 5s who gave different responses to Self and Smart indicates that the number of 5s who preferred an immediate reward for Self but a delayed reward for Smart was about three times as high as the number of those exhibiting the reverse pattern. A chi-square analysis of changes (3) yielded $x^2 = 31.77, p < .001$.

The above analyses were repeated for boys and girls separately. For boys a C of .49 was obtained between choices for Self and choices for Smart ($x^2 = 81.91$). The respective analysis for girls yielded C of .43 ($x^2 = 64.53$). A chi-square analysis of changes yielded $x^2 = 5.25, p < .05$, for boys, and $x^2 = 29.54, p < .001$ for girls.

Thus it can be concluded that in general (a) both boys and girls displayed a considerable consistency in choices for Self and Smart; (6) of those who displayed inconsistent choices, a larger proportion chose an immediate reward for Self and a delayed reward for Smart, compared with those who displayed the reverse pattern. This latter conclusion appears to gain stronger support from the analyses of intraindividual changes than from the between-individual analysis presented. This is reflected in the sizes of the x^2 figures obtained and in the fact that the x^2 obtained for boys reached a conventional level of significance in the within-individual analysis, though it did not in the between-individual analysis.

4. *Order Effects*

Analyses of order effects based on the within-individual patterns of responses to Self and Smart revealed the following trends. First, there was a tendency for 5s in Group 2 to display more consistent choices for Self and Smart than Ss in Group 1. Thus, a chi-square analysis of the contingency of Self and Smart choices for Group 1 yielded $x^2 = 60.23$. The respective analysis for Group 2 yielded $x^2 = 86.91$. In group 1 72.3% displayed consistent choices compared to 78.3% in Group 2. Second, 5s who chose an immediate reward for Self but a delayed reward for Smart constituted a larger proportion (. 79) of consistent 5s in Group 1 than in Group 2 (.69). Both of these trends are consistent with the hypothesis advanced regarding order effects, but neither of these trends is statistically significant.

D. DISCUSSION

The main findings of this study can be summarized in terms of three topics: (a) the difference between Self and Smart, *(b)* order effects, and *(c)* sex differences. The findings pertaining to the last two topics will be commented upon only briefly. With regard to order effects, although certain analyses of the data indicate slight order effects in the predicted directions, the results as a whole seem to yield no definitive support for the hypothesis that delaying gratification to Self may be strengthened by exposure to a question which increases the salience of utility considerations. Still, the experimental conditions employed in the present study might not have been sensitive enough to obtain order effects, and it would be instructive to retest the hypothesis under conditions which maximize the discrepancy between Self and Smart choices (see below). As for sex differences, it should be noted that although these have been obtained consistently in both groups of the present work, other studies in the field do not report a similar finding (e.g., 11). We therefore feel that the evaluation of these findings should await further research.

Turning now to the main question posed in this work, the results on the whole tend to support the hypothesis that children attribute more delay of gratification to a smart child than they are willing or able to display themselves. Thus, across both groups the delayed reward was chosen for Self by 50.7% of the children, as compared with 62.8% for Smart children. Similarly, of those 5s indicating different choices for Self and Smart, 99 (or 74.4%) indicated an immediate reward for Self and a delayed reward for Smart, compared with 34 who exhibited the reverse pattern. A larger discrepancy between Smart and Self choices may be expected with actual rather than hypothetical choices, and with younger children whose self-control is less developed. For both conditions we would expect a stronger preference for immediate reward for Self compared with Smart condition.

These findings seem to suggest the operation of certain tendencies or forces within the individual which press him towards a stronger preference for the immediate reward than he considers wise. The responses of the children to the postchoice inquiry suggest that some of them are quite aware of the fact that their choice deviates from what they consider a wise choice. The difference between Self and Smart choices was predicted on the basis of the psychoanalytic model of delay. The value-expectancy model, however, would require additional assumptions regarding the determinants of one's choice and the perceived determinants of a wise choice to account for this difference. Indeed, Mischel bases the explanation of some of his recent findings on the assumption

that waiting for a delayed reward is "frustrating" (6). In a value-expectancy model of delay, the element of frustration associated with waiting could be represented as one of the possible outcomes of delay, having a negative value, and can be assumed to affect the individual's estimate of the overall utility of a given choice. The psychoanalytic model of delay on the other hand, would seem to prefer the conception that the urge for immediate gratification, or the repulsion from inhibiting discharge, is a force which stands in opposition to rational or utility consideration, rather than as an element which enters into estimates of utility. Mischel himself has indeed invoked the concept of frustration only as a determinant of waiting behavior, not as a determinant of choice. In the former case frustration refers to a motivating force; in the latter it would refer to a cognitive element: i.e., anticipated frustration.

The considerable consistency observed between Self and Smart choices appears, on the other hand, to be consistent with the assumption that delay behavior is guided by utility considerations. Thus, about 75% of all children displayed the same choice for Smart and Self. The observation that about 41% of those displaying consistent choice indicated immediate choices for Self and Smart might suggest that utility considerations do not necessarily lead to a choice of the delayed reward; the apparently "impulsive" choice of the immediate reward may also be based quite often on such considerations.

It seems useful to draw a distinction between two types of nondelay behavior. Refusal to delay gratification might be displayed because of one or both of the following reasons: (a) the individual judges the choice of the delayed reward as a wiser behavior, but being unable to resist the temptation of the immediate reward, he "chooses" it over the delayed more valuable one; *(b)* the immediate reward is chosen on the basis of rational or utility considerations (e.g., "a bird in the hand is worth two in the bush"). We would hypothesize that the first type of nondelay behavior is more prevalent in early childhood. Indeed, psychoanalytic and related discussions of failure to delay gratification center on the insufficiently well-developed capacity to inhibit discharge or resist temptation. The conception of delay as dependent on *capacity* is clearly implied in such concepts as impulse *control,* ego *strength,* will *power,* and the like. From late childhood on, nondelayed behavior is predominantly of the second type: i.e., based on utility considerations. Thus, the often observed "failure" to delay gratification in a lower class (10) might rest on rational considerations, such as the belief that long-run promises have a low likelihood to be fulfilled (2). We suspect, however, that even in adulthood the capacity to resist temptation still plays an important role in delay behavior.

REFERENCES

1. FREUD, S. (1911) Formulations regarding the two principles in mental functioning. In *Collected Papers* (Vol. 4). London: Hogarth, 1946.
2. LIEBOW, E. Tally's Corner: A Study of Negro Street Corner Men. Boston: Little, Brown, 1967.
3. McNEMAR, Q. Psychological Statistics. New York: Wiley, 1962.
4. MISCHEL, W. Theory and research on the antecedents of self-imposed delay of reward. In B. A. Maher (Ed.), *Progress in Experimental Personality Research* (Vol. 3). New York: Academic Press, 1966. Pp. 85-132.
5. -------- Introduction to Personality. New York: Holt, Rinehart & Winston, 1971.
6. MISCHEL, W., EBBESEN, E. B., & ZEISS, A. R. Cognitive and attentional mechanisms in delay of gratification. *J. Personal. & Soc. Psychol.*, 1972, 21, 204-218.
7. MISCHEL, W., GRUSEC, J., & MASTERS, J. C. Effects of expected delay time on the subjective value of rewards and punishments. *J'. Personal. & Soc. Psychol.*, 1969, 11, 363-373.
8. RAPAPORT, D. Toward a theory of thinking. In D. Rapaport (Ed.), *Organization and Pathology of Thought.* New York: Columbia Univ. Press, 1951.
9. ROTTER, J. B. Social Learning and Clinical Psychology. Englewood Cliffs, N.J.: Prentice-Hall, 1954.
10. SCHNEIDER, L. S., & LYSGAARD, S. The deferred gratification pattern: A preliminary study. *Amer. Social. Rev.*, 1953, 18, 142-149.
11. STRICKLAND, B. R. Delay of gratification as a function of race of experimenter. *J. Personal. & Soc. Psychol.*, 1972, 22, 108-112.
12. WINER, B. J. Statistical Principles in Experimental Design. New York: McGraw-Hill, 1962.

Department of Psychology
University of Haifa Haifa
Israel