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THE EFFECT OF SECURITY AND DOMINANCE
ON TASK PERSEVERANCE

Gary M. Katz

A Thesis
Presented to
The Faculty of the
Department of Psychology
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of the Requirements for the Degree of
Master of Science

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ABSTRACT

The present study investigated Maslow's assertion that individuals who were insecure and dominant would express their insecurity in a different manner than those individuals who were insecure and submissive. The amount of time spent on a puzzle solving task was used as an index of the expression of insecurity. It was hypothesized that there would be a significant interaction of security and dominance on the amount of time spent on the puzzle solving task, with the insecure-dominant group demonstrating more persistence than the insecure-submissive group at the task.

A pool of potential subjects completed Maslow's (1952) Security-Insecurity Inventory and the E factor of the 16 PF. Individuals with extreme scores were assigned to either the secure-dominant, secure-submissive, insecure-dominant, or insecure-submissive group. Subjects were tested individually.

A total of 52 subjects, 20 males and 32 females, participated in the study. Each cell contained a proportional number of males and females. The hypothesized interaction of security and dominance failed to materialize. There were no significant main effects. These findings were explained in terms of task appropriateness, insufficient task frustration and the lack of validity of Maslow's hypothesis.

The Motivational Adjective Checklist (MACL) (Sciortino, 1963) which yields two factor scores "striving" and "assertive", was used as a paper and pencil measure of motivation. It was found that the secure group obtained higher assertive and striving scores than did the insecure group, suggesting construct validity of the MACL.

The results also indicated that members of the dominant group obtained higher assertive scores, but there were no differences on striving scores when compared to members of the submissive group. These results suggest that a higher assertive factor score reflects a more positive self-concept.

INTRODUCTION

Maslow (1954, 1970) has formulated a theory of motivation in which different needs are arranged in a hierarchy of prepotency. He outlined the five basic needs in the hierarchy, identifying physiological needs, safety needs, belongingness and love needs, esteem needs, and the need for self-actualization.

According to the principle of prepotency, before one can satisfy higher-order needs one must first satisfy the lower needs. It is the gratification of these needs during the early years that is the basis for adult security and the frustration of these needs results in adult insecurity (Maslow, 1943, 1948).

Maslow et al. (1952), defined security as "one of the most important determinants of mental health, almost to the point of being synonymous with it." Further, Maslow (1942a) spoke about security as a syndrome, i.e., a generalized label for specific feelings which overlap and interact and which are all a function of one another. One cannot speak about the security or insecurity of John Smith at any one time without talking about the other feelings of John Smith.

Stotland (1959) also viewed security as a "syndrome" for he looked at security not as a measure of one particular need, but as all needs combined collectively. He postulated that an individual would engage in one behavior versus another depending on the totality of the individual's need. On a more universal basis, Borel (1964) viewed the concept

of security as a motivator of human behavior. He proposed that security, defined as the ability to predict and control one's environment, is one of man's basic needs. Borel also suggested that mental illness could be viewed on a continuum representing varying degrees of perceived insecurity.

A proliferation of opinions regarding the nature of "security" has led to the creation of some useful research instruments. One such instrument was the Security-Insecurity Inventory (S-I) which was developed by Maslow as a "by-product of clinical and theoretical research with the concept of psychological or emotional security" (Maslow, 1952). The particular aspects or subsyndromes of the security syndrome have already been outlined by Maslow (1952).

Blum (1960) developed a measure of security based on the emphasis placed on vocational choice. In a subsequent study, Blum (1961) found that the emphasis on security in a chosen job could be reliably measured with this instrument and security was positively correlated with actual choice of a vocation.

Review of the Literature

Although there have not been a large number of studies that have used the S-I Inventory, many investigators (Goldstein and Rosenfeld, 1969; Hanawalt, 1959; Schludermann and Schludermann, 1970; Webster, 1959; Mathis, 1965) have concluded that the S-I Inventory was a good measure of security.

The first study that used the S-I Inventory was conducted by Rokeach (1943). Both men and women rated other women for beauty. Rokeach correlated these beauty measures with S-I scores and scores

on the Social Personality Inventory (Maslow, 1942b). He found positive correlations which were small but significant. The beauty ratings and the Dominance-feeling scores correlated $\underline{r} = .31$ while the beauty rating correlated $\underline{r} = .26$ with the security score. Rokeach (1943) concluded that a person's perceived beauty was related to personality characteristics such as Security and Dominance-feeling. He also found that Dominance and Security scores correlated highest when only men's ratings of the women were used.

In a study that examined guilt and fear associated with early childhood memories, Purcell (1952) found that the more insecure groups recalled a greater proportion of negative memories. There was a relationship between psychological security and affective characteristics that are usually attributed to early memories.

In an attempt to explain gambling behavior, Morris (1957) hypothesized that persons identified as gamblers based on frequency of card playing would be less secure than non-gamblers. However, the results were clearly in the opposite direction, for gamblers tended to be more secure (as determined by the S-I), more dominant and more masculine.

In a study that used the S-I Inventory, the Minnesota Multiphasic Personality Inventory (MMPI) and a questionnaire to measure autonomy to compare concepts of psychological health; Mehlman and Kaplan (1958a) found that there were no differences between groups which scored "healthy" and "less than healthy" on each questionnaire. They concluded that security is not the equivalent of self-actualization and that if the S-I Inventory measures self-actualization, then operationally there are no differences for those identified as healthy by the S-I Inventory and the MMPI. A subsequent reanalysis of the data in a later article

led Mehlman and Kaplan (1958b) to revise their earlier conclusions. The revised conclusion was that these measures indicated that there are different conceptualizations of psychological health, not only in terms of semantic differences, but by the actual scale scores.

In one of the few studies that used the S-I and a projective measure, the Rosenzweig Picture-Frustration Test, Bennet and Jordon (1958) found that the insecure group was significantly more extrapunitive than the secure group, and the secure group was more impunitive than the insecure group. It can be concluded that the insecure subjects directed aggression in the direction of the environment, while the secure group tended to evade aggression completely.

An early attempt to test Maslow's (1954) theory of psychological development was undertaken by Pyron (1959), who used the S-I Inventory and the Dymond Adjustment Test (Rogers and Dymond, 1954) in an analysis of several measures of psychological health. Although the other measures of psychological growth correlated with each other, and the S-I Inventory correlated with the Dymond Adjustment Test, none of the other measures significantly correlated with either the S-I Inventory or the Dymond Adjustment Test, suggesting that adjustment is a complex process.

In what was an empirical test of Maslow's idea of a relationship between mental health and creativity, Chambers (1964) sent out questionnaires and personality tests to 740 male scientists who were either chemists or psychologists. He divided the total sample into two equal groups: creative scientists, defined either as those who were starred in the American Men of Science or members of the National Academy of Sciences or the American Philosophical Society; and non-creative scientists who lacked these credentials. He found no difference between groups on

the S-I scale; so if a relationship exists between mental health and creativity it is not apparent if mental health is measured by the S-I Inventory. Chambers did find differences between groups on the E Factor (dominance) of the Sixteen Personality Factor Questionnaire (16 PF). He concluded that creative scientists as a group were more dominant than non-creative scientists.

Schludermann and Schludermann (1970) investigated the relationship of emotional security or insecurity and various aspects of the adolescent personality. They noted that the S-I Inventory was made to measure only those symptoms of security which are characteristic of all or most insecure people, and further stated that they would be measuring "inner conscious feelings." They administered the S-I, California Personality Inventory (CPI) and The Self-Activity Inventory (Worchel, 1970) to 328 freshmen college students and found that the S-I correlated significantly with a number of personality traits. Schludermann and Schludermann's hypothesis that emotional-insecurity would have pervasive influence on large areas of personality variables was supported.

Gross (1959) examined the relationship of insecurity and group conformity. He hypothesized that there would be a relationship between amount of conformity in a group situation and degree of insecurity. It was concluded that there was no relationship between conformity and insecurity, and stated that the reason why there was no relationship was the tendency of some insecure individuals to relate poorly to others in group situations.

In the first of three studies that examined the relationship between security and religious belief, Hanawalt (1963) tested Maslow's clinically derived hypothesis that Jews would have a tendency to be simultaneously

high in self-esteem and low in security while Catholic women would be low in self-esteem and high in security. Using a group of college women, Hanawalt found no empirical evidence for support of Maslow's hypothesis. He concluded that religious beliefs have no significant effect on the scores determined from the S-I Inventory or the Social Personality Inventory for college women.

Glass (1963) elaborated on Hanawalt's research by using Roman Catholics, Protestants, and non-affiliated male and female undergraduates. No relationship was found between religious behavior, church attendance, consistency in religious behavior and scores on the S-I Inventory.

Using the Religious Participatory Scale, Williams and Cole (1968) showed that there were no differences in scores on the S-I Inventory between high and intermediate participatory religious groups. However, both the high and the intermediate groups tended to be more secure than the low religious participatory group.

In what might be seen as an indirect test of Maslow's hypothesis of differences in security and religiosity, Willner (1963) compared Jewish day school pupils and public school pupils who attended afternoon Hebrew school. He found that the day school groups manifested a greater degree of insecurity than the Hebrew school group. There was also a positive relationship between the mean number of problems on the Mooney Problem Check List and the degree of insecurity. It can be concluded that insecurity was related to the reported presence of personal problems.

Differences between secure and insecure individuals have been shown to affect the resolution of contradiction; Ferrara and Milofsky (1964) found a positive relationship between reduction of contradiction and

degree of insecurity, and interpreted these findings as indicating that the insecure individual who is experiencing greater stress as a result of contradiction has a greater need to escape from cognitive dissonance even if this escape requires the suppression of information.

Stewart (1965) analyzed female student nurses' complaints of physical illness and found that there were no significant differences between scores obtained by the S-I Inventory and complaints of physical illness. However, an item analysis did disclose that in comparison to the low physical illness group, the high physical illness group more frequently reported feelings of loneliness, inferiority, increased tension, greater alienation, more social isolation, being more easily hurt, thinking more often of themselves, and being more afraid of competition. In addition to the S-I Inventory, Cattell's 16 PF was also administered to the group of nurses. Results showed significant differences between groups on the E Factor of the 16 PF with the high complaint group being more dominant.

One of the most supportive statements on the validity of the S-I Inventory was made by Mathis (1965), who stated that "the S-I Inventory is an effective omnibus measure of personality adjustment." He also concluded that feelings of security do not affect scholastic achievement, despite the fact that he found significant differences between high achieving and low achieving males on the S-I. This conclusion was based on the lack of differences between high achieving and low achieving females. Similar results appeared for males and females combined scores on the S-I Inventory. This conclusion seems to be similar to that of Gough (1948) who found that scores on the S-I Inventory were not related to intelligence, academic performance, or the socioeconomic status of

high school seniors.

A study of Goldstein and Rosenfeld (1969) examined the relationship between insecurity and preference for persons seen as similar to oneself. They tested the assumption that preference for others is based on negative characteristics of dissimilar others. The authors discussed three different measures of security. Goldstein and Rosenfeld concluded that either the Fear of Rejection scale (Rosenfeld, 1964) or Maslow's S-I Inventory could be used for measuring overt insecurity or security, while the Marlowe-Crowne Social Desirability Scale (MC) was a preferred measure for covert insecurity or need for approval. Goldstein and Rosenfeld (1969) chose the S-I Inventory and the MC for their study; they interpreted scores on the MC as reflecting denial of socially undesirable behavior, which was identified as security. Their hypothesis stated that those preferring dissimilar others would be more secure than those preferring similar others. The hypothesis was supported for females when security was measured by the S-I Inventory, and for males when security was measured by the MC. Goldstein and Rosenfeld (1969) concluded that the S-I and the MC were measuring different traits, depending upon the sex of the subjects. There were also significant negative correlations between the S-I and the MC for both males and females. It can be concluded that college males were more reluctant to admit feelings of insecurity while college females were more readily able to admit security when the device is a transparent measure such as the S-I.

In a study that was directly related to classroom participation, Williams (1971) found significant differences on S-I scores between those who were judged to be non-participants and those who were judged to be either intermediate or active participants. The non-participating

students revealed a greater amount of insecurity. They also demonstrated a greater degree of neuroticism, as measured by Eysenck's Personality Inventory. This group also showed lower physical self-esteem and intellectual productivity indices.

A study by Krishna and Prasard (1971), using the S-I Inventory, gave support for Adorno's (1950) hypothesis that highly authoritarian people are insecure and low in self-esteem. Secord and Backman (1964) suggested that this tendency for high authoritarian persons to be low in self-esteem could be related to their environment because the authoritarian person was more personally insecure.

Singh (1973) studied married males and females to analyze the relationship between insecurity and self-disclosure using the Self-Disclosure Questionnaire (Jourard and Lasakow, 1958), and the S-I Inventory. He found that secure subjects disclosed significantly more than insecure subjects.

Finally, Arnn (1973) investigated the possibility that the concept of security has different connotations among varying age levels and cultural backgrounds. Arnn examined three ethnic groups at three different educational levels. White, Mexican-American, and Black college, high school, and junior high school students made self-reports of incidents that made them feel most secure or insecure. Arnn found that there were significant differences in cultural perception of insecurity and security. There were also significant differences in perception of security by age and academic level within the Black and Mexican-American groups. Arnn concluded that culture plays an important part in determining what is to be considered a secure or insecure incident. He further concluded that security was not simply the absence of insecurity.

In summary, a search of the literature suggests that the concept of insecurity has proven to be an important research variable, with fundamental differences between secure and insecure individuals. Secure individuals have been shown to participate more in classroom settings, to be more self-disclosing, and to be less authoritarian than insecure individuals. Research has disclosed no significant relationships between security and intelligence, academic performance, religious participation, complaints of physical illness or conformity in group situations. Based on these findings it is reasonable to examine further the role that security plays in other social behaviors.

Problem

In the discussion of the uses of his Security-Insecurity Inventory (S-I), Maslow (1945) suggested that its primary usefulness was in work with large groups for laboratory and clinical research or survey purposes. He also suggests that:

If more time is available, we have found it useful to administer also the Social Personality Inventory for testing self esteem (Maslow, 1942b). A good deal more information of a qualitative as well as quantitative type is added in this way. For instance, a person testing low in S-I and also testing low in self-esteem will almost certainly express his neurotic tendencies in a more passive fashion, as with schizoid tendencies, withdrawal, fantasy, inhibition. But a person scoring equally low in S-I and scoring high in self esteem will rather be compensating, over-aggressive and dominating. (Maslow, 1945, p. 37).

Maslow provided no data to support this assertion, and his statement was of a purely clinical-hypothetical nature.

For the present discussion it is also useful to conceptualize security in much the same way as both Borel (1964) and Stotland (1959) have. Security, for these theorists, was a motivating factor in human

behavior. The expression of insecurity should interact with dominance to effect an individual's approach to tasks in general. Some research relating insecurity to behavior has already been published.

Perserverence at a puzzle solving task was used to measure the expression of insecurity. Feather (1966) concluded that persistence could be conceived of as a motivational phenomenon. The effect of this interaction of security and dominance on the ability to perservere is the main object of the present study.

There are some methodological problems, however, in carrying out a study exactly as Maslow suggests. The major difficulty is that Maslow's Social Personality Inventory for self-esteem (Maslow, 1942b) is currently out of print. Accordingly, a reasonable alternative to the Social Personality Inventory would have to be substituted, and would have to measure the same concept.

Rather than calling his concept "self-esteem", which was assessed by the Social Personality Inventory, Maslow (1940) labelled it "Dominance-feeling." The personality variables that constitute high and low dominance feelings (Maslow, 1940, p. 259) appear similar to the concepts that Cattell, Eber, and Tatsuoka (1970, pp. 85-87) consider to be components of the E Factor (Dominance) of the 16 PF. Maslow (1952) reported small non-significant correlations between the S-I and the Social Personality Inventory ($\bar{r} = .08$). This relationship may be weak but it should be recalled that it is an artifact, for Maslow "excluded all questions in the original group of 349 which measured self-esteem at all even if they also measured security" (Maslow, 1945, p. 26).

In the review of the literature on the S-I Inventory, it becomes clear that while there has been some research exploring the interaction

of security and other personality variables, there has been very little research exploring the interface of security with dominance. Both security and dominance have been viewed as separate entities. The purpose of this study was to investigate the interaction of security and dominance on task perserverance. On the basis of what the S-I Inventory and the E Factor of the 16 PF purport to measure, it was expected that security and dominance would interact, yielding a difference in task perserverance. Accordingly, an hypothesis regarding the interaction of these variables was advanced.

Hypothesis

There will be a significant association between the interaction of the security and dominance variables and the amount of time spent on the puzzle solving task. It was predicted that the insecure-dominant group will spend significantly more time on a puzzle solving task than will the insecure-submissive group.

Pilot Study

It was important to obtain a measure of dominance that was relatively independent of the S-I. Using a group of 77 Social Psychology students (48 females and 29 males) at Virginia Commonwealth University, it was found that the E Factor of the 16 PF met the criterion of nonsignificant correlation ($r = -.20$). As a consequence of these results the E Factor of the 16 PF was substituted for the Social Personality Inventory as a measure of dominance.

Method

Design. A 2 x 2 x 2 factorial design was employed using security, dominance and sex as variables.

Subjects. Ss were selected from a population of students who were enrolled in Introductory Psychology classes at Virginia Commonwealth University during Spring semester 1974, and who had earlier attended a mass testing session in which they were administered the S-I Inventory and the E Factor of the 16 PF. The actual Ss, 24 males and 48 females, were selected as a function of their scores on each of the two scales. Due to the skew of the scores on the S-I Inventory towards the secure end, the lower 44% of the scores were used to determine the criterion score of those defined as "secure," while the upper 30% of the scores were used to determine the criterion score of those defined as "insecure." A person who obtained a score of 6 or less was defined as "secure" while those who scored 10 or more were defined as "insecure." Due to sex differences on the E Factor of the 16 PF, different criteria were used for males and females to determine dominance or submission. The upper and lower thirds of E Factor scores were used to determine the cutoff points for dominance and submission for females. Those females who achieved a score of 19 or lower were defined as "submissive" and those who scored 26 or above were defined as "dominant." The upper 36% of the survey sample scores were used to determine "dominance" for males, while the lower 27% were used to determine the cutoff points for submissive males. Males who scored 21 or below on the E Factor were defined as "submissive" while those who scored 29 or above were defined as

"dominant." Ten Ss were eliminated after data collection was completed. One S was not included because it was clear that she did not understand the puzzle solving task. Three Ss were eliminated because they successfully completed the puzzle task during the one hour period. The six remaining Ss were randomly selected out in order to obtain proportional cells. Analyses were run using data gathered on the remaining 52 Ss, 20 males and 32 females.

Table 1 presents mean scores for the S-I Inventory for the insecure and secure groups.

TABLE 1
MEAN S-I INVENTORY SCORES FOR THE INSECURE AND SECURE GROUPS

| Group | N | Mean |
|----------|----|--------|
| Insecure | 26 | 13.538 |
| Secure | 26 | 3.808 |

Table 2 presents mean E Factor scores for the dominant and submissive groups.

TABLE 2
MEAN E FACTOR SCORES OF THE 16 PF FOR THE
DOMINANT AND SUBMISSIVE GROUPS

| Group | N | E Factor |
|------------|----|----------|
| Dominant | 26 | 29.962 |
| Submissive | 26 | 17.077 |

Table 3 presents mean scores of the S-I Inventory and E Factor for all 8 groups.

TABLE 3

MEAN SCORES OF THE S-I INVENTORY AND E FACTOR OF THE 16 PF
FOR EACH GROUP (SECURITY X DOMINANCE X SEX)

| Security | Dominance | Sex | N | S-I Inventory | E Factor |
|----------|------------|---------|---|---------------|----------|
| Insecure | Dominant | Males | 5 | 13.200 | 32.000 |
| Insecure | Dominant | Females | 8 | 12.875 | 27.500 |
| Insecure | Submissive | Males | 5 | 12.600 | 17.000 |
| Insecure | Submissive | Females | 8 | 15.000 | 16.750 |
| Secure | Dominant | Males | 5 | 3.200 | 33.200 |
| Secure | Dominant | Females | 8 | 3.000 | 29.125 |
| Secure | Submissive | Males | 5 | 4.600 | 18.200 |
| Secure | Submissive | Females | 8 | 4.500 | 16.750 |

Instruments. The first 25 items of Maslow's (1952) S-I Inventory were used as a measure of security because of time limitations of the mass testing session. The pilot study disclosed a very high correlation with the 75 item S-I Inventory ($r = .95$, $p < .001$, $df = 73$). A copy of the 25 item S-I Inventory appears in Appendix A.

Further, Maslow (1945) reports "that the subtests (each set of 25 questions) were constructed so as to be comparable and self-sufficient tests of security-insecurity." In order to increase the reliability of the E Factor, form A and form B of the E Factor of the 16 PF were combined yielding a reliability coefficient of .91. A copy of the combined

E Factor of the 16 PF appears in Appendix B. A significant correlation between the S-I Inventory and the E Factor of the 16 PF was obtained in the mass testing (N = 140) but its correlation was low ($r = .17$, $p < .05$) and did not interfere with subject selection.

The Motivational Adjective Checklist (MACL) (Sciortino, 1963) was included as a paper and pencil measure of motivation. The MACL is a factor analytically derived scale. Sciortino defined a criterion of .25 and identified two factors: striving and assertive. The following adjectives loaded above criterion on the striving factor: striving, pursuing, persevering, tenacious, persistent, industrious, determined, planful, idealistic, dedicated, ambitious, and aimful. The following adjectives loaded above criterion on the assertive factor: secure, initiating, independent, assertive, self-confident, poised, individualistic, enterprising, decisive, competitive, willful, achieving, progressive, integrative, and constructive.

The identification of mechanical and non-mechanical interest was achieved by selecting 10 response alternatives from items of the Kuder Preference Record, Vocational Form C (Kuder, 1948) which was included as a post measure. The items were chosen by face validity to reflect mechanical and non-mechanical activities.

The Kuder items were included to examine the possible relationship of mechanical or non-mechanical interest and the amount of time spent on the task. Questions which dealt with the rating of difficulty and frustration of this puzzle as well as general experience with puzzles were also included to assess the efficacy of task frustration.

A puzzle with twelve geometric shapes which could be assembled to yield a rectangle was utilized as the puzzle solving task. The puzzle

was selected because informal use had indicated that the puzzle was of a level of difficulty sufficient to prevent complete solution. The instructions for the puzzle and a copy of the puzzle pieces appear in Appendix C.

Procedure. Ss were contacted randomly in advance and asked to participate in a study for which they would receive one hour's credit in their Introductory Psychology classes. They were informed that their participation may or may not involve a full hour but it would be necessary to schedule a full hour for the appointment. Upon arrival, Ss were read the following instructions by the E.

This is a study to investigate how people solve puzzles. You will go into a room, where you will find a puzzle. Read the instructions about the puzzle before you begin. You will have up to one hour to work on the puzzle. You may work on it for any length of time you wish. Regardless of the amount of time you spend on the puzzle you will receive one hour's credit. There are over 200 correct solutions to the puzzle. You do not have to solve the puzzle, for we are interested in how you go about trying to solve it. When you are finished, leave the puzzle in the room and inform the E, then I will give you some questions to answer. Do you understand what you are supposed to do?

Ss were tested individually. They were led into a room to begin working on the puzzle. The amount of time the subject spent in the room was recorded.

After the S told the E that he or she was finished, the S was given a "puzzle solving booklet," that included the MACL (Sciortino, 1963), a scale to rate the difficulty and frustration of the puzzle, a question to assess the S's experiences with puzzles and 10 response alternatives selected from items of the Kuder Preference Record (Kuder, 1948). An additional question to assess how the subject tried to solve

the puzzle was included to conceal the actual purpose of the study. However the response to the question was not intended for analysis. A copy of the puzzle solving booklet appears in Appendix D.

After completing the booklet the Ss were thanked for their participation and asked to fill out their home address on an envelope if they desired more information about the study. After data collection was completed, a short explanation of the study was sent to those who requested additional information. A copy of the letter of explanation appears in Appendix E.

RESULTS AND DISCUSSION

Eight 2 x 2 x 2 (sex x security x dominance) analyses of variance were performed on the following measures: time, assertive scores, striving scores, rating of experience, rating of difficulty, rating of frustration, mechanical interest and intellectual interest. Table 4 presents the analysis of variance results for sex, security and dominant groups on the amount of time spent on a puzzle solving task.

TABLE 4

ANALYSIS OF VARIANCE FOR SEX, SECURITY, AND DOMINANT GROUPS
ON THE AMOUNT OF TIME SPENT ON A PUZZLE SOLVING TASK

| Source | SS | df | MS | F |
|---------------|----------|----|--------|------|
| Security (A) | 135.69 | 1 | 135.69 | 0.52 |
| Dominance (B) | 432.69 | 1 | 432.69 | 1.67 |
| Sex (C) | 28.62 | 1 | 28.62 | 0.11 |
| A x B | 409.92 | 1 | 409.92 | 1.59 |
| A x C | 81.61 | 1 | 81.61 | .31 |
| B x C | 33.51 | 1 | 33.51 | .13 |
| A x B x C | 8.38 | 1 | 8.38 | .03 |
| Error | 11368.50 | 44 | 285.38 | |
| Total | 12498.92 | 51 | 245.08 | |

No significant difference between any groups appeared. The means and

standard deviations for the amount of time spent on the puzzle solving task for the security and dominant groups appear in Appendix F.

The hypothesis that there would be a significant association between the interaction of the security and dominance variables and the amount of time the Ss would spend on a puzzle solving task was not supported. Maslow's hypothesis of a difference in the manner in which individuals express insecurity via dominance or submission is therefore not supported by the present study.

There are several possible explanations for the lack of appearance of the anticipated interaction. One, a puzzle solving task under the guise of an experiment in learning may not have been an appropriate task to evaluate the expression of dominant or submissive behavior. In addition, the implicit assumption that persistence is an adequate indication of expression of insecurity may also be incorrect.

A more robust explanation may be that the task was not sufficiently frustrating to involve a threat to the individual's self-concept. Had the threat existed, the subject might have had to rely on other behaviors, including the hypothesized expectation of differential persistence. The insecure dominant individuals would then have behaved differently than the insecure submissive individuals. This possibility is seen in the observed trend, significant at the .10 level ($F = 2.91$, $df = 1/44$, $p < .09$) in which submissive individuals tended to rate the task as more frustrating than did dominant individuals.

Another possibility which may have contributed to the lack of significance was that the one-hour maximum was not of sufficient length to discriminate among the groups. There were 13 individuals who spent the entire hour at the task. Eight of these individuals were in the

dominant group, while five individuals were in the submissive group. There was a seven-six split between the insecure and secure groups, respectively. Had the maximum amount of time been increased, it is possible that the increased variability would have affected the results in the hypothesized directions.

Although the situation of the puzzle solving task was structured in such a way as to minimize any demand characteristics, there is always the possibility that some demand characteristics were operating which may serve to obscure the effects of the personality variables. Rosenthal (1966) and Orne (1962) have shown that this is often the case in laboratory settings. The mere fact that the study was carried out in a laboratory situation may imply demand characteristics that cannot be isolated. Maslow's hypothesis was based on a clinical observation in an environment which creates a different set of demands on the individual than does a laboratory setting. These different sets of demands may be due to the influence of the clinical setting on the individual creating an impression of significant psychopathology, "faking bad" (Gough, 1947). Finally, the instructions to the subject that he did not have to solve the puzzle may have had demand characteristics that altered the subjects' behavior.

The high rating of difficulty ($M = 5.3$) and the relatively low rating of frustration ($M = 4.4$) were obtained on a scale from 1 (not at all difficult or frustrating) to 7 (very difficult or frustrating). These perceptions may have interacted to increase the amount of time spent on the task for all subjects. This spurious increase in the amount of time in solution may have erased any effect of the two personality

variables. There was a significant difference ($t = 3.71$, $df = 51$, $p < .001$) between the difficulty rating and the frustration rating. The implications of a more frustrating task has been described previously.

Using Sciortino's (1967) cut off of .25 as the criterion in a unit scoring system for the striving and assertive factors of the MACL, it was found that members of the secure group obtained higher assertive and striving scores than do members of the insecure group. Table 5 presents the analysis of variance for the sex, security, and dominant groups on the striving factor of the MACL.

TABLE 5

ANALYSIS OF VARIANCE FOR THE SEX, SECURITY, AND DOMINANT GROUPS
ON THE STRIVING FACTOR OF THE MOTIVATIONAL ADJECTIVE CHECKLIST (MACL)

| Source | SS | df | MS | F |
|---------------|---------|----|--------|-------|
| Security (A) | 138.94 | 1 | 138.94 | 4.91* |
| Dominance (B) | 1.96 | 1 | 1.56 | .06 |
| Sex (C) | .09 | 1 | .09 | --- |
| A x B | 1.56 | 1 | 1.56 | .06 |
| A x C | 16.63 | 1 | 16.63 | .59 |
| B x C | 65.82 | 1 | 65.82 | 2.32 |
| A x B x C | 45.02 | 1 | 45.02 | 1.59 |
| Error | 1244.90 | 44 | 28.29 | |
| Total | 1514.52 | 51 | 29.70 | |

* $p < .05$

Table 6 presents the analysis of variance for the sex, security and dominant groups on the assertive factor of the MACL.

TABLE 6

ANALYSIS OF VARIANCE FOR THE SEX, SECURITY, AND DOMINANT GROUPS
ON THE ASSERTIVE FACTOR OF THE MOTIVATIONAL ADJECTIVE CHECKLIST (MACL)

| Source | SS | df | MS | F |
|---------------|---------|----|---------|---------|
| Security (A) | 1026.17 | 1 | 1026.17 | 23.81** |
| Dominance (B) | 360.94 | 1 | 360.94 | 8.37* |
| Sex (C) | 36.89 | 1 | 36.89 | .86 |
| A x B | 20.94 | 1 | 20.94 | .48 |
| A x C | .11 | 1 | .11 | --- |
| B x C | 6.14 | 1 | 6.14 | .14 |
| A x B x C | 2.29 | 1 | 2.29 | .05 |
| Error | 1896.58 | 44 | 43.10 | |
| Total | 3350.06 | 51 | 65.69 | |

** $p < .001$

* $p < .01$

Sciortino (1967) defined striving as the subject's "readiness to make efforts in a purposive and persistent manner, while assertive refers to the subject's confidence in oneself, freedom from control of others, and a readiness to follow one's will with determination." It seems that the striving factor reflects a more general approach to a situation, while the assertive factor has an implication of a positive self-concept

for the individual. The fact that the secure individuals have higher scores seems to indicate some construct validity for the MACL if security is taken as a component of these factors.

When the scores of dominant and submissive individuals are examined in relation to the striving and assertive factors, parallel findings do not appear. Dominant individuals scored higher on the assertive factor than did submissive individuals, however there were no significant differences on the striving factor for the two groups. This finding may be attributed to the conceptual differences between the striving and assertive factors even though the correlation between the striving and assertive scores was $.68$ ($p < .0001$, $df = 50$). The positive self-concept of the assertive factor may be reflected in the dominant personality while the general nature of the striving factor is not strong enough to discriminate between the dominant and submissive groups.

To examine the usefulness of the MACL as a measure of motivation, a $2 \times 2 \times 2$ (sex x security x dominance) analysis of variance was performed on each adjective of the MACL. Table 7 presents adjectives from the MACL which discriminated the secure and insecure groups at the .05 level. Members of the secure group viewed themselves in a more favorable light than did members of the insecure group. This may also indicate a positive self-concept for the secure group. These results tend to support the construct validity of the MACL.

Table 8 presents adjectives from the MACL which discriminate the dominant and submissive groups at the .05 level. These differences support the hypothesis that dominant individuals have a more favorable self-concept than do submissive individuals. This held true for all adjectives except for the adjective achieving, for which the submissive

TABLE 7

MEAN RATINGS OF THE ITEMS OF THE MOTIVATIONAL ADJECTIVE CHECKLIST
WHICH DISCRIMINATED THE SECURE AND INSECURE GROUPS AT
AT THE .05 LEVEL

| Adjective | Insecure Group n = 26 | Secure group n = 26 |
|----------------|-----------------------|---------------------|
| Self-directed | 3.500 | 4.346 |
| Secure | 2.846 | 3.885 |
| Initiating | 2.808 | 3.461 |
| Independent | 3.154 | 4.154 |
| Self-respect | 3.423 | 4.500 |
| Self-confident | 3.077 | 4.192 |
| Poised | 3.038 | 3.692 |
| Decisive | 3.038 | 3.885 |
| Competitive | 2.923 | 3.731 |
| Tenacious | 3.885 | 4.308 |
| Dedicated | 3.346 | 4.007 |
| Achieving | 3.462 | 4.192 |
| Enterprising | 3.269 | 3.885 |

TABLE 8

MEAN RATINGS OF THE ITEMS OF THE MOTIVATIONAL ADJECTIVE CHECKLIST
WHICH DISCRIMINATED THE DOMINANT AND SUBMISSIVE GROUPS
AT THE .05 LEVEL

| Adjective | Submissive group n = 26 | Dominant group n = 26 |
|-----------------|----------------------------|--------------------------|
| Self-directed | 3.538 | 4.308 |
| Initiating | 2.615 | 3.654 |
| Independent | 3.346 | 3.962 |
| Assertive | 2.115 | 3.423 |
| Individualistic | 3.385 | 4.077 |
| Tenacious | 3.808 | 4.385 |
| Enterprising | 3.308 | 3.846 |
| Achieving | 4.038 | 3.615 |

Ss rated themselves higher. This finding may indicate that submissive individuals see themselves as more able to obtain their goals than do dominant individuals. This finding may reflect the overcompensating effect that Maslow referred to in discussing insecure dominant individuals and insecure submissive individuals. It is also interesting to note that while the submissive Ss view themselves as more achieving than the dominant Ss, there were no differences between the groups on the amount of time spent on the puzzle solving task. Table 9 shows the MACL adjectives that discriminated significantly between sexes. Males saw themselves

TABLE 9

MEAN RATINGS OF THE ITEMS OF THE MOTIVATIONAL ADJECTIVE CHECKLIST
WHICH DISCRIMINATED THE MALE AND FEMALE AT THE
.05 LEVEL

| Adjective | Female group n = 32 | Male group n = 20 |
|-------------|------------------------|----------------------|
| Enduring | 3.469 | 4.050 |
| Competitive | 3.031 | 3.800 |
| Aimful | 4.250 | 3.800 |

as more enduring and competitive yet felt they had less general purpose or intention. Table 10 presents those adjectives from the MACL which differentiated between security and dominance variables at the .10 level.

TABLE 10

MEAN RATINGS OF THE ITEMS OF THE MOTIVATIONAL ADJECTIVE CHECKLIST
WHICH DISCRIMINATED BETWEEN SECURITY AND DOMINANCE AT
THE .10 LEVEL

| Adjective | Insecure Dominant n = 13 | Insecure Submissive n = 13 | Secure Dominant n = 13 | Secure Submissive n = 13 |
|--------------|--------------------------------|----------------------------------|------------------------------|--------------------------------|
| Initiating | 3.077 | 2.538 | 4.231 | 2.692 |
| Independent | 3.692 | 2.615 | 4.230 | 4.077 |
| Enterprising | 3.308 | 3.231 | 4.385 | 3.385 |

From Table 10 it can be inferred that secure dominant individuals view

themselves as more initiating, independent and enterprising, than insecure submissive individuals. If individuals who are both insecure and submissive are overcompensating in their feelings of self worth, it is not supported by this study. The results clearly show that the secure dominant individuals see themselves as more initiating, independent and enterprising.

In an attempt to ascertain the effectiveness of puzzle solving as a valid dependent measure, Ss were asked to rate the difficulty and the frustration of the puzzle as well as their experience with puzzles of similar nature. As anticipated, no relationships were found between experiences with puzzles and difficulty, frustration or amount of time spent on the task. In addition, there was a nonsignificant correlation between ratings of frustration and the amount of time spent on the task ($r = .24$, $p \approx n.s.$, $df=50$) which indicates the wisdom of selecting the puzzle solving task for the present study. Finally, the rating of difficulty did correlate significantly with the ratings of frustration ($r = .49$, $p < .001$, $df = 50$), as well as with the amount of time spent on the task ($r = .32$, $p < .05$, $df = 50$). Clearly the task as defined could be used as an independent behavioral measure of persistence since the non significant correlations suggest that the task is not influenced by experience.

To examine the possibility that mechanical interest may have influenced puzzle solving behavior and thereby affecting the amount of time spent on the task, a factor analysis was performed on the ten response alternatives of the Kuder Preference Record, Vocational, Form C (Kuder, 1948). A principle component analysis, varimax rotation (Kaiser, 1958) revealed four factors. The first two factors accounted for 65% of the

variance and were retained for subsequent analysis. The remaining factors were eliminated because each factor was unit defined. The factor loadings and items for the retained factors are presented in Table 11. The first factor appears to reflect mechanical interest,

TABLE 11
 FACTOR LOADINGS FOR 10 RESPONSE ALTERNATIVES
 FOR KUDER'S (1948) PREFERENCE RECORD*

| Item # | Factor | |
|--------|-----------------------|--------------------------|
| | I-Mechanical Interest | II-Intellectual Interest |
| 1 | -.20 | .61 |
| 2 | .07 | -.04 |
| 3 | .82 | -.11 |
| 4 | -.42 | .09 |
| 5 | .74 | -.01 |
| 6 | .00 | .85 |
| 7 | .28 | .61 |
| 8 | .83 | .07 |
| 9 | -.17 | .01 |
| 10 | .82 | -.01 |

* criterion for inclusion of item was .60

while the second factor apparently reflects intellectual interests. Using a unit scoring system for items with a loading greater than .60 as the criterion, it was found that the amount of time spent on the task did not correlate with mechanical or intellectual interests. There was a

significant correlation ($\underline{r} = .29, p < .05, df = 50$) between intellectual interest and the assertive score of the MACL, yet no correlation between intellectual interest and the striving score of the MACL ($\underline{r} = .15, p = n.s., df = 50$). This may lend support to the interpretation of the assertive score as an indication of a positive self-concept. From the results of this factor analysis, it is clear that mechanical interest did not affect the time spent on the puzzle solving task.

SUMMARY AND CONCLUSION

Maslow (1970) viewed security to be one of the most important determinants of mental health; the gratification or lack of gratification of basic needs results in security or insecurity, respectively. Maslow also considered self-esteem, which he equated with dominance, as equally important. Maslow' asserted that individuals who are low in security yet differ in degree of self-esteem will express their insecurity differentially. This assertion was not supported by the present study. There were no significant differences between secure and insecure individuals on persistence at a puzzle solving task. A paper and pencil measure of motivation also failed to show significant differences between the groups.

Although the present study failed to support Maslow's assertion, his hypothesis, derived from clinical observation, should not be summarily rejected. A more exhaustive research program, utilizing several levels of task frustration and several tasks with different degrees of ego involvement might be undertaken. Special attention should be directed to the possibility that the operation of demand characteristics artificially created in the laboratory situation may profoundly affect individual performance. One novel way of approaching this problem might be to determine different criteria which would better assess a behavioral concept of insecurity. It is quite possible that task perseverance is not an adequate measure of insecurity. A search for alternative measures may be productive.

Other vistas which would profit from research include the construction

of an instrument that is more similar to Maslow's Social Personality Inventory than the E Factor of the 16 PF appears. Maslow suggested his original hypothesis on the conceptual structure of the S-I Inventory and the Social Personality Inventory. Maslow's assertion may be correct when measures are derived from these two instruments but in general, the prediction should not be specific to the measures.

Should Maslow's assertion be eventually substantiated, a scale combining the S-I Inventory and a Dominance scale might prove useful in a variety of situations, in which insecurity is a critical factor. An example of this might be the identification of clients who would be more likely to remain in counseling until mutual termination.

Perhaps the concept of insecurity-security should not be isolated as a discrete variable, but should be considered with other personality variables. It may be possible that insecurity under certain situations could be viewed as a motivator of behavior rather than an inhibitor of behavior.

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A P P E N D I C E S

GENERAL INSTRUCTIONS

Read carefully

If at all possible answer all questions, being sure to choose only one answer, "Yes," "No," "?" (undecided). Write an X under the answer that is *nearest* true for you. Your answers and any comments you may wish to add will, of course, be considered strictly confidential.

| | Answers | | |
|---|---------|----|---|
| | YES | NO | ? |
| 1. Do you ordinarily like to be with people rather than alone? | | | |
| 2. Do you have social ease? | | | |
| 3. Do you lack self-confidence? | | | |
| 4. Do you feel that you get enough praise? | | | |
| 5. Do you often have a feeling of resentment against the world? | | | |
| 6. Do you think people like you as much as they do others?..... | | | |
| 7. Do you worry too long over humiliating experiences? | | | |
| 8. Can you be comfortable with yourself? | | | |
| 9. Are you generally an unselfish person? | | | |
| 10. Do you tend to avoid unpleasantness by running away? | | | |
| 11. Do you often have a feeling of loneliness even when you are with people? | | | |
| 12. Do you feel that you are getting a square deal in life? | | | |
| 13. When your friends criticize you, do you usually take it well? | | | |
| 14. Do you get discouraged easily? | | | |
| 15. Do you usually feel friendly toward most people? | | | |
| 16. Do you often feel that life is not worth living? | | | |
| 17. Are you generally optimistic? | | | |
| 18. Do you consider yourself a rather nervous person? | | | |
| 19. Are you in general a happy person? | | | |
| 20. Are you ordinarily quite sure of yourself? | | | |
| 21. Are you often self-conscious? | | | |
| 22. Do you tend to be dissatisfied with yourself? | | | |
| 23. Are you frequently in low spirits? | | | |
| 24. When you meet people for the first time do you usually feel they will not like you? | | | |
| 25. Do you have enough faith in yourself? | | | |

INSTRUCTIONS: On this and the following page are some questions to see what attitudes and interests you have. There are no "right" and "wrong" answers because everyone has the right to his own views. To be able to get the best advice from your results, you will want to answer them exactly and truly.

Place the letter corresponding to your choice on the blank to the left of each statement.

Make sure you answer all questions, and please do not leave any answers blank.

- ___ 1. I hold back from criticizing people and their ideas. (a) yes, (b) sometimes, (c) no.
- ___ 2. I make smart, sarcastic remarks to people if I think they deserve it. (a) generally, (b) sometimes, (c) never.
- ___ 3. When telling a person a deliberate lie I have to look away, being ashamed to look **him** in the eye. (a) true, (b) uncertain, (c) false.
- ___ 4. I **am** uncomfortable when I work on a project requiring quick action affecting others. (a) true, (b) in between, (c) false.
- ___ 5. I have some characteristics in which I feel definitely superior to **most** people. (a) yes, (b) uncertain, (c) no.
- ___ 6. If it is useful to others, I don't mind taking a dirty job that others look down on. (a) true, (b) uncertain, (c) false.
- ___ 7. The use of foul language, even when it is not in a mixed group of **men** and women, still disgusts **me**. (a) yes, (b) in between, (c) no.
- ___ 8. I think I am better described as: (a) polite and quiet, (b) in between, (c) forceful.
- ___ 9. I occasionally tell strangers things that seem to **me** important, regardless of whether they ask about them. (a) yes, (b) in between, (c) no.
- ___ 10. If the odds are really against something's being a success, I still believe in taking the risk. (a) yes, (b) in between, (c) no.
- ___ 11. I like it when I know so well what the group has to do that I naturally become the one in **command**. (a) yes, (b) in between, (c) **no**.
- ___ 12. I am known as an "idea **man**" who almost always puts forward some ideas on a problem. (a) yes, (b) in between, (c) no.
- ___ 13. I think I **am** better at showing: (a) nerve in **meeting** challenges, (b) uncertain, (c) tolerance of other people's wishes.
- ___ 14. I like to be told how to do things instead of finding out for **myself**. (a) yes, (b) uncertain, (c) no.
- ___ 15. My ideas appear to be: (a) ahead of the **times**, (b) uncertain, (c) with the **times**.

- ___ 16. I have had accidents because I was deep in thought. (a) hardly ever, (b) in between, (c) several times.
- ___ 17. If I had a gun in my hand that I knew was loaded, I would feel nervous until I unloaded it. (a) yes, (b) in between, (c) no.
- ___ 18. In a strange city, I would: (a) walk wherever I liked, (b) uncertain, (c) avoid the parts of the town said to be dangerous.
- ___ 19. It is more important to: (a) get along smoothly, (b) in between, (c) get your own ideas put into practice.
- ___ 20. I dislike people who are too self confident and act as if they are superior to the general run of humanity. (a) true, (b) in between, (c) false.
- ___ 21. If I disagree with a class teacher on his views, I would usually: (a) keep my opinion to myself, (b) uncertain, (c) tell him in class that my opinion differs.
- ___ 22. When I need immediately the use of something belonging to a friend but he is out, I think it is all right to borrow it without his permission. (a) yes, (b) in between (c) no.
- ___ 23. I have on occasion torn down a public notice forbidding me what I feel I had a perfect right to do. (a) yes, (b) in between, (c) no.
- ___ 24. People have sometimes called me a proud, "stuck-up" individual. (a) yes, (b) in between, (c) no.
- ___ 25. Government lawyers are mainly interested in: (a) making convictions, regardless of the person, (b) uncertain, (c) protecting the innocent.
- ___ 26. My speaking voice is: (a) strong, (b) in between, (c) soft.

APPENDIX C

INSTRUCTIONS

There are twelve (12) pieces in an envelope. You are to try to put these pieces together so they fit into the box. (There will be a little room on each side)

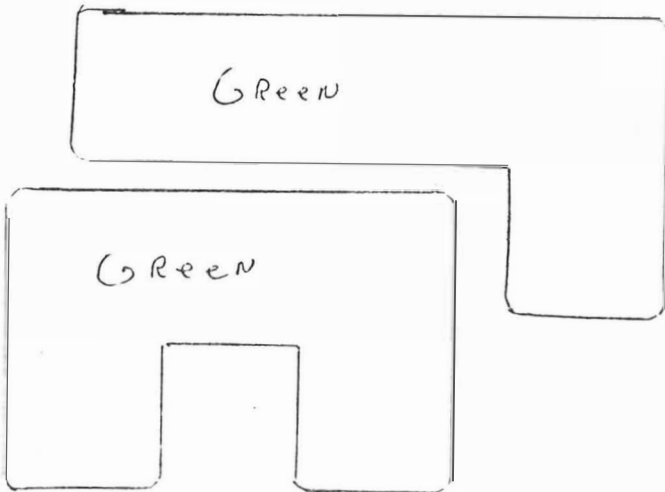
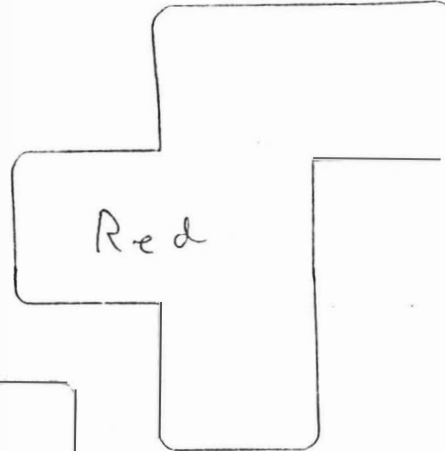
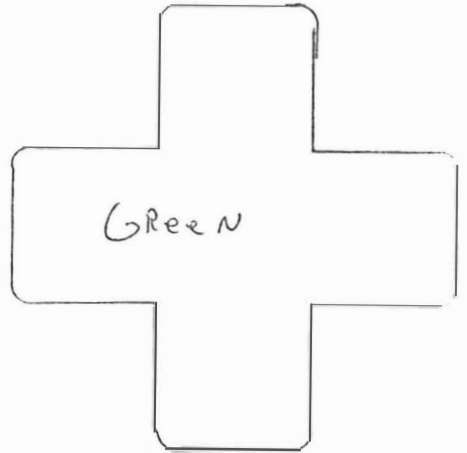
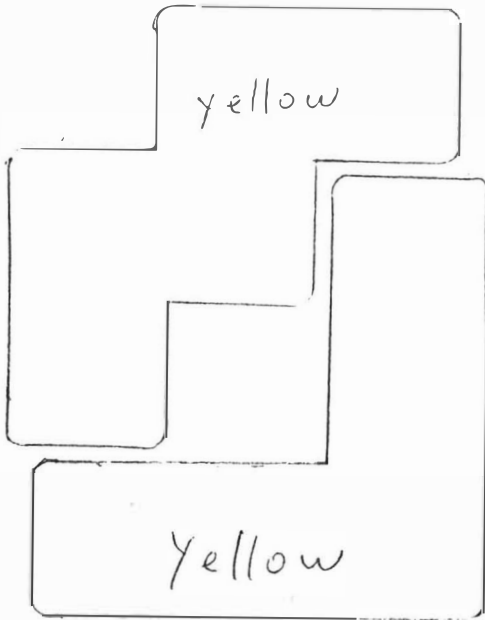
You may work on the puzzle as long as you like. (You may use either side of the pieces.) When you are finished (YOU DO NOT HAVE TO SOLVE THE PUZZLE) put the pieces back in the envelope and tell the experimenter.

Please leave the puzzle in this room

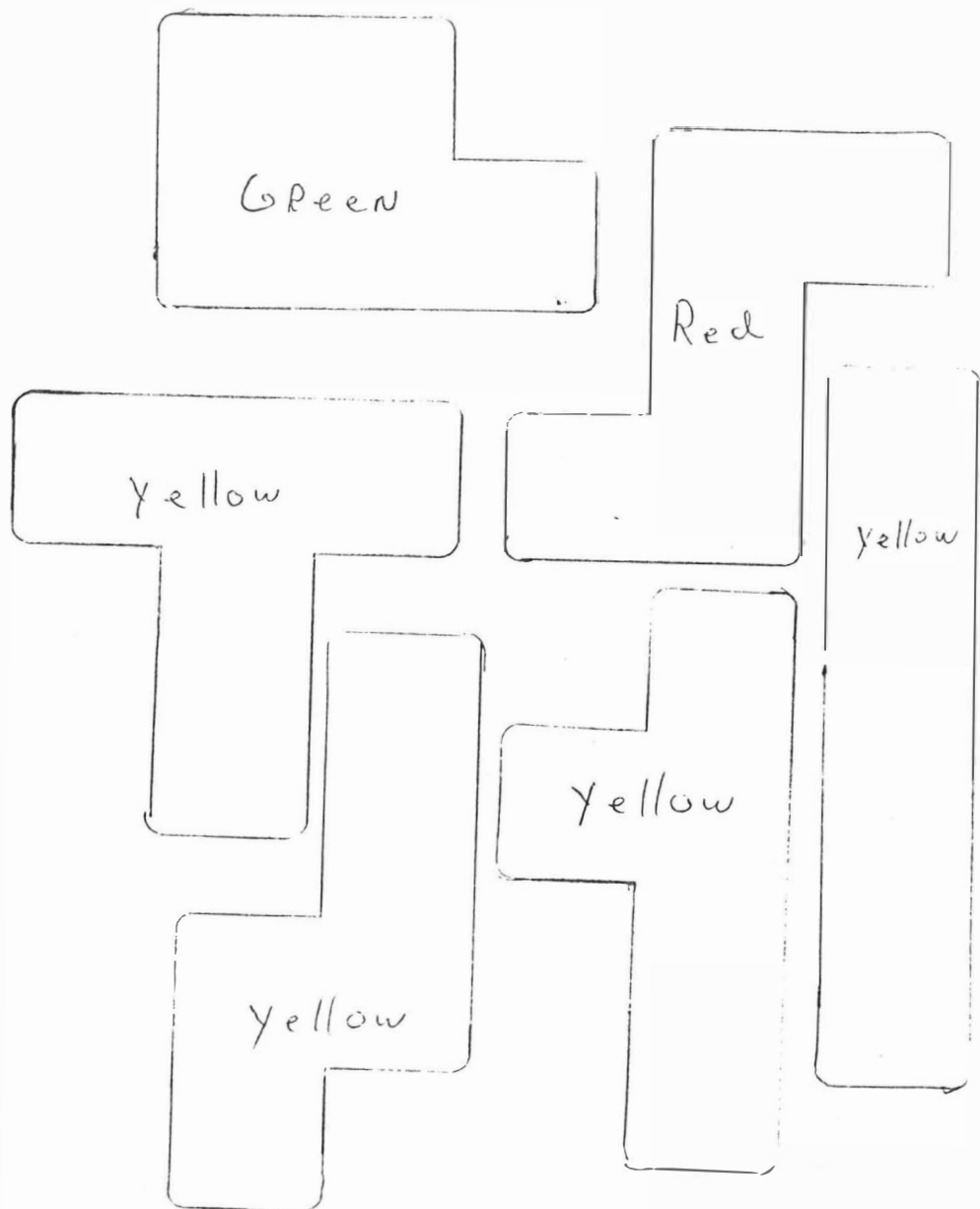
If you do not have 12 pieces when you begin please inform the experimenter.

The puzzle pieces were to be assembled to yield a 6 in. x 9 in. rectangle. The Ss were given a shallow cardboard carton of the above dimensions.

Copy of puzzle pieces



Copy of puzzle pieces



Name _____

Rate yourself on each of the following adjectives. Use the scale below to indicate how each of the adjectives describe you:

1. very unlike
2. unlike
3. ?
4. like
5. very like

- _____ 1. Self-directed- guided by one's self
- _____ 2. Secure - free from risk of loss
- _____ 3. Initiating - taking the first step or move
- _____ 4. Independent - not requiring or relying on someone else
- _____ 5. Assertive - being forceful with others
- _____ 6. Self-respecting - having a proper respect for oneself
- _____ 7. Self-confident - confident in oneself and one's power and ability
- _____ 8. Poised - marked by easy composure of manner or bearing
- _____ 9. Individualistic - pursuing a markedly independent course in one's thoughts or actions
- _____ 10. Decisive - marked by or indicative of determination or firmness in making decisions
- _____ 11. Striving - devoting serious effort or energy
- _____ 12. Pursuing - finding or employing measures to obtain or accomplish one's goals
- _____ 13. Persevering - persisting in an undertaking in spite of opposition or discouragement

- _____ 14. Enduring - remaining firm under suffering or misfortune without yielding
- _____ 15. Competitive - inclined, desiring, or suited to compete
- _____ 16. Willful - acting deliberately, intentionally
- _____ 17. Tenacious - tending to hold fast, adhering to something valued
- _____ 18. Persistent - continuing to exist in spite of interference
- _____ 19. Industrious - persistently active
- _____ 20. Determined - decided or resolved, firm
- _____ 21. Planful - anticipating your decisions ahead of time
- _____ 22. Idealistic - being guided by high ideals
- _____ 23. Dedicated - devoted to a cause, ideal, or purpose
- _____ 24. Ambitious - having desire to achieve a particular goal
- _____ 25. Achieving - succeeding in obtaining your goals
- _____ 26. Progressive - making use of or being interested in new ideas
- _____ 27. Integrative - ability to bring parts of a problem together into a whole
- _____ 28. Enterprising - marked by independent energetic spirit and by readiness to undertake or experience
- _____ 29. Constructive promoting improvement or development
- _____ 30. Aimful - having purpose or intention

The next 10 questions deal with certain types of activities. Assuming that you have equal ability to do any of these activities, indicate using the following scale how much you would enjoy each activity:

1. would not enjoy
2. ?
3. would enjoy

- _____ 1. Write a novel
- _____ 2. Make pottery
- _____ 3. Repair a broken connection on an electric iron
- _____ 4. Sketch an interesting scene
- _____ 5. Take apart a new mechanical toy to see how it works
- _____ 6. Play chess
- _____ 7. Teach architecture
- _____ 8. Repair watches
- _____ 9. Add columns of figures
- _____ 10. Take a broken lock apart to see what is wrong with it
-

- _____ 1. On a scale from one (not at all difficult) to seven (extremely difficult) rate how difficult you thought the puzzle was.
- _____ 2. On a scale from one (no experience) to seven (a great deal of experience compared to other people) rate how much experience you have had with puzzles of this kind.
- _____ 3. On a scale from one (not at all frustrating) to seven (very frustrating) rate how frustrating you felt this puzzle was.

EXPLAIN HOW YOU TRIED TO SOLVE THE PUZZLE (List as many reasons as you can)
Use the back of this sheet.

Appendix E

Gary M. Katz
Department of Psychology
Virginia Commonwealth University
Richmond, Virginia
April, 1974

Dear Student,

This semester you participated in a study in which you were asked to solve a puzzle. The data have been analyzed and I would like to give you some information on the results of the study.

This study investigated dominance, submission, and other personality variables which were hypothesized to be related to perseverance. Previous research has suggested that there would be differences between groups of individuals in the amount of time spent on a particular task. However, in the study in which you participated there were no differences between personality groups and the length of time people spent trying to solve the puzzle. It was found that dominant individuals view themselves as more self-directed, initiating, independent, assertive, individualistic, tenacious, and enterprising.

Of the 62 students who participated in this study only 3 individuals were able to solve the puzzle. As you might have guessed this puzzle was extremely difficult. The average rating of difficulty was 5.29 on a scale of 1 to 7 with 7 being extremely difficult. A difficult task was chosen so we could investigate task perseverance.

I would like to take this opportunity to thank you for your participation in the study. You have helped psychologists by contributing to knowledge about certain personality traits and perseverance in a problem solving task.

Please feel free to contact me if you would like to know more about the study in which you participated. Once again, I thank you.

Sincerely yours,

Gary M. Katz

APPENDIX F

MEANS AND STANDARD DEVIATIONS OF TIME SPENT ON
PUZZLE SOLVING TASK FOR THE FOUR GROUPS

| Group | N | Mean | SD |
|------------|----|--------|--------|
| Insecure | 26 | 45.077 | 16.304 |
| Secure | 26 | 41.846 | 15.123 |
| Dominant | 26 | 40.577 | 17.452 |
| Submissive | 26 | 46.346 | 13.344 |
