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THE EFFECT OF DIFFERENCES IN EGO-SUPEREGO PATTERNS
ON REACTIONS TO SUCCESS AND FAILURE

by

NANNETTE SHAHAM

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Faculty in Psychology in partial fulfillment of
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6/2/70
date

Max Herzman
Chairman of Examining Committee

6/2/70
date

Norman C. Weisberg
Executive Officer

W. Paul
[Signature]
Max Herzman
Supervisory Committee

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CHAPTER I

INTRODUCTION

Problem

How the interaction of ego and superego affects the expression of behavior has been of considerable theoretical concern, with experimental research focusing either on ego or on superego functioning separately. The purpose of the present study is to examine selective reactions to success and failure of people in whom different patterns of ego-superego relationships can be identified. The constructs of ego and superego will be used to describe manifestations of the ways in which individuals cope with and adapt to their environment as well as of their attitudes towards themselves and others. The terms "ego" and "superego," therefore, are not references to structural or physiological entities but to functional or behavioral indicators. The particular combinations which were examined were those of strong ego in conjunction with either punitive or sympathetic superego.

Many have theorized that the person with a strong ego necessarily manifests flexible, humanistic superego attitudes. In his introductory remarks to *Group Psychology and the Analysis of the Ego* by Freud, for example, Franz Alexander points out the following: "In mature persons, however, it [superego] can be no longer sharply differentiated from the Ego, which governs by principles more like those prevailing in democratic societies: judgment, flexibility and compromise." (Freud, 1960, p. ix).

But individual personality is not so consistent. Hartmann (1939) warned against making such restricted theoretical assumptions when he discussed the problem of adaptation, as they tend to underestimate the range of adaptive human behavior. Effective ego functioning, characteristic of the strong ego, can combine with an authoritarian, moralistic, punitive superego or a more humanistic, loving one. Both attitudes are present in all persons, though one predominates over the other (Fromm, 1947). To say, then, that one's ego is strong is an insufficient basis for predicting the exact nature of the superego. This investigation made an independent evaluation of the ego-superego interaction. Groups with similar levels of ego strength but varying with respect to punitive and sympathetic superego expression were established. Completed-incomplete sentences were utilized as the experimental intervention to study their reactions to success and failure.

Literature

Theoretical Framework

Ego

Freud (1933) stated that some functions of the ego are to test reality, to perceive the objective world and to synthesize mental processes. He lay the groundwork for the development of ego psychology which was later deepened and elaborated by Anna Freud (1946) and Heinz Hartmann (1964). The former accorded prominence to the ego's defensive operations, while the latter's concepts dealt with the conflict-free functions of memory, motility, imagination, etc. Hartmann was concerned with the ego's adaptation to the environment, its mastery of and coping with inner and outer reality to lend coherence to living. He reemphasized individual

and variable reactions to identical stimulation, an idea well-known to experimental psychology. Thus, he and his followers stress the reciprocal relationship between an individual and his surroundings by way of integration and synthesis of experience and conflict. A person with a strong ego maintains a comparatively congenial reciprocity; one with a weak ego a discordant one.

Superego

Superego activity influences behavioral expression differently. Freud (1923) was clear as to its importance in the transmission of culture and moral codes as well as in individual aspirations and goals. He saw the superego as both the prohibitor and the aspirant, formed in the struggle to resolve Oedipal strivings, paying, however, more attention to its moralistic, punitive nature.

That the superego can also be a spur was hinted at and conceptualized originally as the ego-ideal, a notion which has been extended considerably (Schaefer, 1960; Hartmann and Loewenstein, 1962). Fenichel, too, believed that ". . . the superego has a loving protective role." (Schaefer, 1960, p. 104). Schaefer, in particular, deals not only with the punishing, feared aspects of superego expression but with its helpful, comforting features as well. If a situation is experienced as threatening, even temporarily, the loving side of the superego can strengthen and support an individual, thereby aiding in the recovery from a sense of failure. If one's superego tends to harshness, a similar experience can evoke guilt as well as hostility and anger. Stemming from Freud's original conceptualization of ego-ideal and then superego, present-day thinking regards superego as not only uncompromising but also sympathetic to oneself and to others.

Experimental Studies

Studies Using the Experimental Task

Although numerous investigations focusing on ego functioning have been reported (Herron, 1962), experimental research in relation to failure situations are far more limited in number. Undoubtedly Zeigarnik's method (1927), the prototype of the task applied in the present study, has been the one most frequently employed to probe reactions to success and failure. Her procedure consisted essentially of interrupting subjects at the time they appeared most engaged in a task in order to intensify their sense of discontinuity. In this way, she maintained the subject's interest in a situation which, while artificially contrived, resembled a genuine experience of success and failure (Tamkin, 1957). Working within the framework of Lewinian theory, Zeigarnik discovered that interrupted tasks were remembered approximately twice as well as completed ones. She proposed, then, that personality factors play a part in selective memory and that her "ambitious" subjects especially were those who recalled interrupted tasks. Parenthetically, Spitz (1958) considered this to be experimental proof of the child's tendency to remember parental prohibitions. He suggested that each restriction represents an interrupted task which will be retained and, hopefully, obeyed.

Zeigarnik's procedure, subsequently referred to as the interrupted task paradigm, or ITP (Butterfield, 1964), has been used to explore such theoretical issues in relation to success and failure as repression, need achievement and the mediation-avoidance hypothesis. Additionally, it has investigated developmental theory as it pertains to the ways in which success and failure are apprehended.

In a searching analysis, Butterfield has reviewed the literature on the ITP until 1964 which indicates undeniably that stress instructions increase the proportion of completed to incompleting task recall. Several of the studies cited by him will be discussed in some detail later as they are germane to the present investigation's concern with ego strength. Mention, nonetheless, must be made first of others which, though not directly pertinent, touch it in the specific areas of instructional variations and of reactions to success and failure.

Using the solution of puzzles as the experimental task, Rosenzweig (1943) found that subjects tended to remember a greater number of completed puzzles under formal, or stress, instructions and a lesser number of incompleting ones under informal, or more neutral, instructions. He viewed recall of completions under pressure as a function of repression and arousal of pride--pride which protects against transitory threat because of a sense of failure. He proposed that the nonstress group, possibly as the result of reduced tension, may not have experienced incompleting as failure with no consequent need to repress. No absolute tendencies were observed but rather a continuum from much to little repression. Although Rosenzweig understood that repression had taken place, he failed to explain what kind of individuals are likely to repress.

Rosenzweig's findings were corroborated by Glixman (1949) and Hays (1952). The latter investigator suggested that the type of interpolated task, whether interesting or dull, could additionally influence the direction of selective memory. He had his Ss rate the interpolated task for interest and did find a significant interaction between task and instructions, beyond the .001 level. Recollection of completed tasks was enhanced when instructions were neutral in conjunction with an interesting

interpolated task. Conversely, memory for incompleting tasks increased when instructions were stressful together with a dull interpolated task.

Others, such as Atkinson (1953) and Caron and Wallach (1957, 1959), studied the strength of the achievement motive with Zeigarnik's method. They emphasized the fact that low need achievers, comparable in makeup to low perseverance Ss, ". . . tend to repress the memory of failure experiences . . ." (Caron and Wallach, 1959, p. 243), remembering their successes. High need achievers, who are disposed to persist, ruminate over their failures keeping them "cognitively focal." The authors reiterate their concern which lay primarily with mechanisms assumed to be associated with personality patterns rather than with the underlying traits of persons likely to exhibit particular processes.

The possibility that instructions might not be intrinsically either the inhibitors or releasers influencing the direction of selective recall has suggested itself. Personality variables, that is, might play a more dominant role than had hitherto been considered. Green (1963) investigated three categories of Ss: volunteers who served freely, volunteers required to serve and non-volunteers. He assumed that volunteers would be more curious and interested in research, therefore more task-involved than non-volunteers and likely to recall more incompletions under neutral instructions. He further proposed that non-volunteers would be suspicious of the examiner's motives, consequently more ego-involved than volunteers and predisposed to recall more completions under pressure. He also anticipated that volunteers required to participate in the study would fall somewhere in between the two other groups in terms of involvement. Green found that volunteers were more task-involved, but that the degree of a person's involvement was not necessarily predicated on the type of

instructions. In other words, what, if any, might have been the traits responsible for the extent of an individual's commitment? The present research did not aim explicitly to discover the depth of one's tenacity, but its findings provided gratuitous information along those lines.

More recently, Dutta and Kananga (1967) suggested that under ego-orientation, pleasantness associated with success is felt more fully, resulting in the greater recollection of successes. Conversely, under task-orientation, unpleasantness linked with failure is perceived more intensely, with failure more likely to be remembered. What is lacking in their study, however, is some understanding of underlying dynamics, as if individuals and their reactions to situations were worlds apart and unrelated.

Studies Related to Ego Strength

Perhaps Sanford's (1946) was one of the first explorations to touch specifically on the dimension of ego strength, which he did from a developmental stance. He examined forty-nine "normal, healthy" children from seven to fifteen years and found a link between the tendency to self-criticism and the recall of failures which intensified with both chronological and mental age. Sanford interpreted the increasing proclivity to recall failure as an expression of ego strength which presumably advances as one grows older. He also explained the inclination to forget failure as an example of more childish, primitive behavior. The older children were willing to assume responsibility for their failures, to face them, while the younger ones protected themselves against the sense of failure.

Since Sanford's time, varying degrees of stress have been included regularly in research dealing with ego strength or weakness in the face of failure situations. A salient outcome of the use of neutral versus

stress instructions has been that the later investigations contradicted Sanford's findings. Results of these studies, typified by the works of Eriksen (1954), Tamkin (1957) and Alper (1957), have been consistent in relation to the interaction between experimental conditions and the direction of recall. In particular, instructions considered to be threatening have discriminated differences in ego functioning.

Eriksen (1954) measured recall of completed and incompleting tasks as a function of ego strength and psychological defenses. His definition of ego strength, reminiscent of Hartmann's, is one which stresses the ability to apprehend and appraise the environment "reasonably" and, therefore, to cope with and adapt to it efficiently. Eriksen's sample, consisting of 166 college men, was divided into high and low ego strength subjects. Two conditions, an experimental one of ego-involved instructions and a control of task-oriented instructions, were applied to each group. Subjects were required to arrange scrambled sentences into intelligible ones, of which half only were solvable. Recall of sentences was estimated subsequent to an interpolated task. In support of his hypotheses, Eriksen found high ego strength to be directly related to recall of completed tasks under ego-involved, that is, threat, conditions. Low ego strength, on the other hand, was directly related to recall of incompleting, or failed, tasks when instructions were designed to threaten self-esteem.

Tamkin (1957) corroborated Eriksen's findings in a study comparing twenty-four male schizophrenics of low ego strength with twenty-four normal males of high ego strength. He utilized scrambled puzzles, a non-verbal equivalent of the sentences, to measure selective memory. The Chi Square of 6.89 disclosed a relationship between emotional status and

recall pattern, significant at $.05 > p > .02$. The preponderance of schizophrenics tended to remember incompleting tasks under ego-involved conditions. The majority of normals were more likely to retain either completed tasks or an equal number of completed and incompleting tasks under stress. Thus, two kinds of recall were noted in the non-psychotic group. Tamkin did not, however, attempt to distinguish personality differences within the normal group to account for the variations.

In an experiment with eighteen male subjects, similar to that of Eriksen, Alper (1957) produced analogous results, broadening the scope not only of his study but of a series she herself conducted. She divided her sample according to Murray's system of classification into subjects with a strong ego pattern and those with a weak ego pattern. The former scored high on such traits as "ego strength" and the need for dominance and low on dejection pessimism and ego ideal introgression. Subjects with a weak ego pattern exhibited opposing characteristics.

Alper found that when the two groups were presented with task-oriented instructions, there was no difference in the direction of selective recall. When under stress, however, significant differences were obtained. She proposed that personality structures bolster self-esteem in various ways when threatened and this, in turn, affects the direction of memory. The individual with a strong ego pattern is not overwhelmed by failure to solve the sentences, supporting self-confidence by focusing on successes, or completed tasks. Conversely, the person with a weak ego pattern concerns himself with failure, tending to remember incompleting tasks and, in effect, ". . . admitting his failures before others face him with having failed." (Alper, 1957, p. 160). Thus, each type of recall serves in distinctive fashion to reduce tension and to protect self-esteem caused by

a sense of defeat.

Although Alper expanded her own and Eriksen's work, she accepted the fact that either a strong or a weak ego pattern comprises an invariant constellation of traits. A preliminary testing was carried out by the present writer to determine whether this supposition was entirely warranted. Utilizing *Barron's Ego Strength Scale*, *Grunes Moralistic-Repressive Conscience Scale* and selected *TAT* cards, she found that subjects with high ego strength indications can evidence not only humanistic, well-integrated superego attitudes but harsh and punitive ones as well. At the same time she ascertained that subjects with low ego strength signs consistently manifested punishing, severe superego tendencies. It was concluded, therefore, that prior assumptions as to the homogeneity of characteristics within either strong or weak ego patterns were unjustified.

Studies Related to Superego Expression

Recently some explorations have centered on superego functioning while ignoring that of the ego. Grunes (1956) was interested primarily in the relationship of intelligence to different conscience types in college students. He constructed three conscience scales for his research which have proved useful in other inquiries (Seidman, 1964; Boxer, 1968). One of the scales, the *Moralistic-Repressive Conscience (MRC) Scale* was administered in the current investigation as it measures the punitive aspects of an individual's conscience or superego and will be discussed in some detail in the chapter on methodology.

Grunes hypothesized that a harsh and punitive conscience would tend to sabotage the capacity for learning. Results supported his predictions to a small extent only. Slight negative correlations were obtained between *MRC* and intelligence test scores. The only significant correlation

was attained in relation to scores on a vocabulary test for day and younger evening students, beyond the .05 level. In a rethinking of his postulates, Grunes proposed that if, as A. Freud and Hartmann had stated, intellectualization is especially linked to the severe adolescent conscience, the lack of negative relationship anticipated in his study became comprehensible.

Alper, Levin and Klein (1964) also dealt with variations in superego expression, utilizing Schaefer's notion of the "loving and beloved superego" as well as Fromm's ideas concerning authoritarian versus humanistic conscience (Fromm, 1947). Fromm's authoritarian conscience was equated with Freud's description of the harsh, punitive superego. The sample of both men and women consisted of high and low authoritarians whose approval or disapproval of a hypothetical episode centered ". . . around the implied premarital sexual behavior of a young couple." (Alper, et al., 1964, p. 314). The investigators found that those who rated high on authoritarianism were consistently more rigid, moralistic and disparaging of unconventional behavior. Results for the lows were not so uniform and they suggested that while high authoritarians share common attitudes, low authoritarians may share negative attributes only. Consequently, low scores may reflect, on the one hand, a true lack of authoritarianism and, on the other, a rigid adherence similar in quality to the highs. The importance of this study lies in its ability to demonstrate experimentally two facets of superego expression.

Studies of the Ego-superego Relationship

No experimental study has endeavored to link specifically the functioning of the ego with that of the superego, although a few investigations have explored their interrelationship.

The first to be noted, one by Fromm, Hartman and Marschak (1954), is, as emphasized by the authors, a theoretical paper. It concerns the relationship between ego development and superego variables, among others, and intelligence, a dynamic, clinical approach in the usage of intelligence tests. Fromm, et al, conducted an item analysis of approximately 750 items found in standardized intelligence tests for infants, preschool and school-age children to see what besides intellectual ability entered into the success or failure of each item. One of the findings was that ". . . while at the 28 week level no super-ego factors appear and ego defenses are rudimentary, at 6 years the child has developed testable super-ego and defensive functions." (Fromm, et al, 1954, p. 77). In other words, they ascertained the possibility of evaluating characteristics of individual personality through the use of objective, systematic materials.

Seidman (1964) investigated the three aspects of personality delineated by Freud: ego, superego and id. His population consisted of men in three occupational categories, each assumed to reflect a unique constellation of personality traits: policemen, physicians and students. Ego functioning was measured by a social reality questionnaire, super-ego attitudes by Grunes' Scales and id expression by Rosenzweig's *Picture Frustration Study*. In a general way, Seidman was able to demonstrate some positive relationships within each occupational group with regard to its pattern of responses to the different instruments.

Summary

From the investigations cited, the following can be inferred:

- 1) Stress increases significantly the recollection of successes or completed tasks in studies where groups remained undifferentiated

as to personality variables.

- 2) Other factors in the experimental situation enter into the findings, such as, whether or not tasks seem pleasant or unpleasant, the type of interpolated task and the extent of an individual's commitment to the task at hand.
- 3) Researchers concerned with ego functioning in the face of failure tend to agree with respect to the influence of varying instructions. The greater the stress the more likely high ego strength subjects will recall their successes and, conversely, the more probable that low ego strength subjects will remember their failures.
- 4) The sparseness of investigations dealing with superego attitudes serves to emphasize the need for experimentation in this direction. None has focused on the organization of persons reflecting reactions to success and failure. Studies discussed under ego functioning imply a particular kind of superego expression: if the ego is strong, then the superego is benevolent; if the ego is weak, then the superego is harsh. They did not effect the patterning of the current investigation.

Hypotheses

- I. Recall will be differentially affected by personality patterns in the following ways:
 - i. Greater total recall of sentences by the punitive than by the nonpunitive superego group.
 - ii. Greater recall of failures than of success by the punitive than by the nonpunitive superego group.
 - iii. Greater tendency towards equal recall of successes and of failures by the nonpunitive than by the punitive superego group.

II. The punitive superego group will demonstrate greater anger and hostility than will the nonpunitive superego group.

Based on the questionnaires and measures to be described, the following predictions are made:

1. Individuals with a combination of a high score on *Barron's Es Scale* and a high score on *Grunes' MRC Scale* will manifest:

- a. Greater total recall of completed and incompleted sentences;
- b. Recall of more incompleted than completed sentences;
- c. A high score on the attitude questionnaire;
- d. A less attractive estimate of the examiner as noted on the adjective checklist.

2. Individuals with a combination of a high score on *Barron's Es Scale* and a low score on *Grunes' MRC Scale* will manifest:

- a. Lower total recall of completed and incompleted sentences;
- b. Recall of a more evenly distributed number of completed and incompleted sentences;
- c. A low score on the attitude questionnaire;
- d. A more attractive estimate of the examiner as noted on the adjective checklist.

CHAPTER II

METHOD

Several investigations pertaining to reactions to success and failure utilizing scrambled sentences have been conducted on undergraduate college students (Alper, 1946, 1957; Eriksen, 1954). A comparable population comprised the sample for the present study with tests and questionnaires considered commensurate with its abilities.

Subjects

Subjects were eighty male college students in introductory psychology courses at various divisions of the City University of New York drawn from a pool of 200. Selection was based on the scores of two inventories, *Barron's Ego Strength Scale* and *Grunes' Moralistic-Repressive Conscience Scale*, to be detailed later on. Although 239 men answered the two questionnaires, anyone whose birthdate, the only identifying information provided, was prior to June, 1947, that is, older than 21, was discarded to control for age. Ages ranged from 18 years, 10 months, to 21 years, with a median of 19 years, 7 months.

Procedure

Selection of Groups

The sample consisted of two groups of forty subjects each, chosen because of equivalent high ego strength. The t test for the difference

in ego strength between groups was not significant, $t = .12$. High ego strength subjects were those who scored in the upper 40 per cent on *Barron's Ego Strength Scale* and had a minimum raw score of 48. This score is consonant with the cut-off of 49 employed by Barron (1963) to identify individuals of high ego strength.

The groups differed, however, with respect to superego expression which was of two kinds: nonpunitive and punitive. (See Appendix A.) Nonpunitive Ss had a score of 84 or less, while punitive Ss had a score of 87 or more on *Grunes' Moralistic-Repressive Conscience Scale*. At first the median served to separate the two groups, so that persons with a score of 85 or less, the lower 50 per cent, were regarded as having a nonpunitive superego and those with a score of 86 or more, the upper 50 per cent, were considered to have a punitive superego. Since a cluster of scores was found at the median, Ss with scores of 85 and 86 were eliminated in order to accentuate differences in superego behavior.

As presented in Appendix B, scores of subjects with a nonpunitive superego ranged from 52 to 84 with a mean of 74.4. Scores of subjects with a punitive superego ranged from 87 to 118 with a mean of 96.37. The two groups were then designated as those with a combination of high ego strength and nonpunitive superego, or nonpunitive Ss, and those with a combination of high ego strength and punitive superego, or punitive Ss. The superego dimension thus became the critical independent variable.

Treatment of Groups

Each group was further subdivided. Half of the nonpunitive Ss and half of the punitive Ss received laissez-faire (L-F) instructions in the experimental task. These instructions focused on simply doing a task for

its own sake and not for the purpose of self-enhancement or the good opinion of others.

The remaining half of each group was given ego-involved (E-I) instructions in the experimental task. These instructions were designed to create in an individual a sense of having performed in an inferior manner. Their intention was to engender a self-depreciating attitude as well as the expectation of disapproval by others. The object of the ego-involved condition was to enhance and clarify the functioning of the personality dimensions under consideration. There were thus four groups in all: nonpunitive L-F, nonpunitive E-I, punitive L-F and punitive E-I.

Each nonpunitive group was carefully matched as was each punitive group for scores on the *Moralistic-Repressive Conscience Scale*. The nonpunitive L-F group had a mean score of 73.7, while the nonpunitive E-I group had one of 75.7. The punitive L-F group had a mean of 96.8, while that of the punitive E-I group was 95.85. When homogeneity of variance was calculated, F for nonpunitive Ss was 1.03 and for punitive Ss was 1.43, both of which are nonsignificant. Subdivisions within each major group, therefore, came from a common population.

Questionnaires and Tests

Testing which was on a group basis consisted of three parts divided into two sessions: 1) pretesting and 2) experimental task and posttesting. Session 1 included *Barron's Ego Strength Scale* and *Grunes' Moralistic-Repressive Conscience Scale* presented in rotated order for selection and partitioning of the population. Session 2 contained the experimental task of completed-incompleted sentences with two differing sets of instructions followed by an interpolated task. Then a measurement of recall test,

a questionnaire concerning attitudes toward research, a personality checklist and a debriefing interview for Ss in the ego-involved only were administered. The posttests were always presented in the same sequence. All testing was conducted with permission of the classroom instructors. Students were told that they were to be subjects in a personality study and that strict confidentiality would be preserved. To insure anonymity, each student was assigned a number to be used on all materials. The only identification was the birthdate of each subject which, as mentioned previously, served to provide a homogeneous age grouping.

Pretesting for Selection of Sample

Barron's Ego Strength Scale

Barron's Ego Strength (ES) Scale consists of 68 items from the *MMPI* to be answered True or False. Originally it was devised to predict patients' responses to psychotherapy and contains a number of broad areas indicative of ego strength: good physical functioning, spontaneity and the ability to share emotional experiences, conventional church membership, permissive morality, good contact with reality, feelings of personal adequacy and vitality and physical courage. Barron (1953) found it valuable whenever adaptability and resourcefulness were to be evaluated and a useful measure of personality integration (1963). Apart from its utility in therapy or clinical situations, the scale can apply to so-called normal individuals, is predictive of coping ability and has been used extensively in research (Herron, 1962). It is positively correlated with Witkin's measure of field independence and Asch's experimentation on how group pressure can influence judgments, as well as with a number of estimates

of intelligence, with r 's ranging from .36 to .52 (Barron, 1956). The *Es Scale* is also negatively correlated, $r = -.46$, with scores on the *Prejudice Scale (E Scale)* developed by the authors of *The Authoritarian Personality* (Barron, 1956). Frank's (1967) survey states that the *Es Scale* tends to make gross rather than very fine discriminations. Since one extreme only of the scale was used, it was appropriate for the present investigation.

Some statements illustrative of those in the *Es Scale* are:

"My sleep is fitful and disturbed."

"I am easily downed in an argument."

"Some people are so bossy that I feel like doing the opposite of what they request, even though I know they are right."

"I am not afraid to handle money."

"Often I cross the street in order not to meet someone I see."

"I am afraid of finding myself in a closet or small closed place."

A copy of the *Es Scale* together with additional buffer items from the *MMPI*, bringing the total number to 141, is presented in Appendix C.

Grunes' Moralistic-Repressive Conscience Scale

The Moralistic-Repressive Conscience (MRC) Scale, one of three conscience measures devised by Grunes (1956), was chosen as it appraises a conscience tending to punitiveness and harshness rather than to flexibility. Grunes has asserted that individuals with high scores are ". . . characterized by attitudes of rigid moral discipline towards oneself [himself] and others and the presence of excessive control over impulses and self-expression. In general, this conscience is highly punitive. . . ." (Grunes, 1956, pp. 19-20). Persons with low scores, on the other hand, possess antithetical traits, those similar to Fromm's humanistic,

non-punitive conscience which he portrays as well-integrated. Grunes found that he was able to discriminate high from low scorers at the .001 level of confidence. Consequently, an internally consistent personality trend was being measured with each item on the scale related significantly to the total score. Split-half reliability, corrected by the Spearman-Brown formula, was found to be .85. In his 1956 investigation, Grunes details in depth the construction and rationale of the three conscience scales, utilized subsequently by both Seidman (1964) and Boxer (1968).

Seidman predicted modal responses for each of three occupational groups: policemen, physicians and students. Making use of all of Grunes' scales in their entirety, he found, as had been anticipated, that policemen had significantly high scores on the *MRC Scale*, $p < .01$, while physicians had somewhat lower ones, $p < .05$. In addition, he established a negative correlation between the *MRC Scale* and the Rosenzweig *P-F Study* Need-persistent type and a positive correlation between the *MRC Scale* and the *P-F Study* Ego-defensive type, both beyond the .01 level of significance. A positive overall relation between patterns of conscience measured by Grunes' *Scales* and ways of adjustment to reality evaluated by a Social Reality Questionnaire was supported by the data.

Boxer, too, found Grunes' *Scales* reliable and discriminating in his examination of the level of superego development in marital partners with and without emotional disorder. Three groups of married couples were examined: an experimental group wherein one partner was hospitalized for emotional difficulties; and two controls, one in which one spouse was hospitalized for medical reasons and another with neither partner treated for psychiatric or physical reasons. Boxer predicted a significant disparity in superego level in his experimental group and a minimal difference

in both control groups. He employed ten items only on the *MRC Scale*. Although results were not always in the anticipated direction, Boxer was able to differentiate within groups at the .10 level. Thus, this measuring instrument has provided quantitative information permitting statistical analysis of differing aspects of superego expression.

The *MRC Scale* comprises 35 items: seven from Adorno's *F Scale* and the remainder devised by the author himself. It is exemplified by such statements as:

"I believe there is no acceptable excuse for suicide."

"Young people sometimes get rebellious ideas, but as they grow up they ought to get over them and settle down."

"I prefer to leave some things to chance rather than plan them carefully in advance."

"The most important qualities of a real man are determination and driving ambition."

"People who get away with such things as cheating on examinations, fill me with rage."

Items are weighted from 1 to 4 in the manner of Likert's scale construction. A weight of 4 is indicative of the choice reflecting the greatest degree of punitiveness and harshness, generally answerable by True. A weight of 3 is assigned to the answer Somewhat True, a weight of 2 to the answer Somewhat False and 1 to the answer False. In order to prevent Ss set, one-quarter of the items are so worded that the weight of 4 demands a False rather than a True response. A copy of the *MRC Scale* is shown in Appendix D.

For the administration of both the *Es* and *MRC Scales*, instructions printed at the beginning of each test were read aloud by the examiner and silently at the same time by the subjects.

Experimental Task

After selection and division of the sample, the experimental task, one utilized by Eriksen (1954) was presented. It consists of sixteen 20-word sentences scrambled into two- and three-word phrases, to be re-arranged into comprehensible sentences. Eight are solvable; eight are not. To facilitate recall, each sentence has a two- or three-word phrase underlined, known as its "title" or "name phrase".

An example of a solvable sentence is:

HIS SOUL THE BODY OF THEREBY HE LOST
 THE MEDIEVAL PHYSICIAN PROFIT IN SAVING
 COULD SEE NO A MAN IF

An example of an unsolvable sentence is:

MAN'S NATURE KINDS OF WILD RUNS TO THE
 THE MORE JUSTICE WHICH REVENGE IS A
 MORE OUGHT LAW THE MORE

The complete list of sentences can be found in Appendix E.

Each sentence was typed on an individual five inch by eight inch index card. Packets of the sixteen scrambled sentences were made up in such a way that the order of solvable and unsolvable sentences would control for positional effects. Every fourth student had a packet containing the same sequence. Although sequences differed in four ways, the order of solvable and unsolvable sentences remained the same for all subjects: two successes, two failures, two successes, one failure, one success, two failures, one success, two failures, one success, one failure, one success.

Ss were permitted to view each sentence for a period of two and a half minutes, during which time they wrote their solutions on separate pages of examination booklets distributed by the examiner. No subject was allowed to return to an earlier sentence nor to go on to the next sentence until the allotted time had been used up.

At the start of the session before the actual testing, the examiner explained a scrambled sentence. She wrote the sentence "Johnny went down town to buy a new suit and a new hat" on the blackboard. She then demonstrated how the sentence could be disarranged into two- and three-word phrases and reassembled to the original intelligible sentence. As soon as she had ascertained that everyone understood what was expected, instructions for each condition were read aloud.

Subjects in the laissez-faire condition were told: "See how many of these disarranged two- and three-word phrases you can reassemble to make a sensible sentence. Work as quickly as you can, putting each answer on a separate page. Do not go on to the next sentence until I tell you to. When I do, put the card at the back of the packet and continue on with the next sentence."

Subjects in the ego-involved condition were instructed the following:

"This is a test of abstract reasoning. Anyone with an I. Q. of 115 or better should have no difficulty in solving all or almost all of the sentences. See how many you can reassemble to make a sensible sentence. Work as quickly as you can as I am also interested in how long this test takes. Put each answer on a separate page. Do not go on to the next sentence until I tell you to. When I do, put the card at the back of the packet and continue on with the next sentence."

A five-minute interpolated task was then administered whereby Ss were told:

"Close your booklets and return the packets to me. The next test is a word fluency test. You are to write down on the back of the booklet all the four-letter words you can think of that begin with the letter 't'. Work as quickly as you can."

Posttesting

Recall of Sentences

After the examination booklets were collected and paper distributed to each subject, the examiner announced:

"The next test is a memory test. I want you to write down as many of the titles or name phrases, that is, the underlined words, as you can recall. If you cannot remember the title or name phrase, write down the idea of the sentence, what it was about, so that I can identify it."

Recall of sentences was scored by the examiner. If the subject could remember the name phrase or reproduce enough of the idea or content of the sentence so that it was recognizable, it was scored as 1. If not, no score was assigned. A recording was also made as to whether the sentences recalled were solvable or unsolvable. After the memory test, papers were collected and the attitude questionnaires and adjective checklists were distributed.

Attitude Questionnaire

The attitude questionnaire was based on one formulated by Feshbach (1955) for an investigation of aggressive behavior and fantasy. It

measured differences in aggression between two groups, one which was permitted the expression of hostile fantasy while the other was not. Questions germane to this study and therefore to the assessment of hostility and anger aroused were added. The ten questions are as follows:

1. How did you feel about participating in the study just recently conducted?
2. How worthwhile was it to participate in the study just recently conducted?
3. If you were asked by the experimenter who conducted the study in which you just participated to volunteer for another study, would you volunteer?
4. In your opinion, how much of a contribution will this study make to the field of psychology?
5. In your opinion, how competent was the psychologist who conducted the experiment in which you just participated?
6. What is your reaction now to the psychologist who conducted the experiment in which you just participated--how much do you like or dislike her?
7. Is there anything about the experiment that you disliked?
8. Is there anything about the experiment that you liked?
9. How do you feel you did on the sentences?
10. How many of the sentences do you think you answered correctly?

Questions 1 through 6 were rated on a six-point scale. The least hostile response was assigned a value of 1 and the most hostile a value of 6. Three measures of hostility were obtained from the first six questions: a measure of general hostility (items 1 through 6); a measure of reactions to the examiner (items 3, 5, and 6); and a measure of reactions to the experiment per se (items 2 and 4). Since item 1 could not be assigned to either of the more specific categories, the general measure is greater than the sum of the more restricted ones.

The seventh and eighth questions were answered by either "yes" or "no." Comparisons based on the proportion of Ss giving the more hostile of the two responses were made. Since Ss were asked to elaborate answers to these two questions, qualitative as well as quantitative information was provided.

Question 9 contained five possible choices graded from "very well" to "very poorly." The tenth question, as can be seen, simply noted how many sentences each subject estimated he unscrambled correctly. A copy of the complete attitude questionnaire is attached to Appendix F.

Adjective Checklist

The adjective checklist consisted of a list of twenty polar adjectives in order to determine Ss reactions to the examiner. Such dichotomized attributes as, restrained--talkative, warm--cold, polite--blunt, irritable--good-natured, imaginative--unimaginative, were selected. The list in its entirety can be found in Appendix G.

Adjectives were arranged so that at times the more personally attractive appeared first and at times the less attractive. Similar lists were used by Asch (1946). Although he applied them in a different experimental context, one dealing with hypothetical persons, he stated they could be used profitably in an evaluation of real people.

Subjects were asked to check the adjective in each pair which they felt best described the examiner. For each subject, the adjectives considered to be the more hostile were totalled, so that individual scores were based on that number, ranging theoretically from 0 to 20. Thus, the patterning of impressions added greater specificity to the more general statements in the attitude questionnaire, helping in the comparison of reactions within and between groups.

Debriefing

After the questionnaires and checklists were collected, subjects in the ego-involved groups received a debriefing interview to apprise them that their instructions were intended to create an atmosphere of stress and that "all or almost all" of the sentences were incapable of solution.

CHAPTER III

RESULTS

Organization of Scrambled Sentence Recall

The prediction was made that punitive Ss would recall a significantly greater number of all sentences as well as of incompleting sentences than would nonpunitive Ss. A further expectation was that nonpunitive Ss would disclose more evenly balanced recall between completed and incompleting sentences than would punitive Ss.

Recall results for all Ss can be found in Appendix H. Counter to expectation, not all sentences intended for completion were unscrambled successfully, so that the number of solved sentences varied from subject to subject. In order to adjust for individual differences in the number of actual completions, recall percentages for both completed and incompleting sentences were calculated. Then, as can be seen in Appendix J, prior to the application of tests of significance, percentages were converted into angles by the arc sin $\sqrt{\text{percentage}}$ transformation using Bliss' tables (Snedecor, 1946, p. 449). These are the figures which appear in tables containing statistical analysis of completions and incompleting. The foregoing was not necessary for the analysis of total recall scores, as comparisons were based on a constant number of sentences. A summary of all recall data is presented below. (See Table 1.)

Analysis of variance, shown in Tables 2, 3 and 4, was applied to ascertain whether the kind of personality pattern influenced each of the three recall scores.

TABLE 1
SUMMARY OF ALL RECALL SCORES

Group	R E C A L L O F C O M P L E T I O N S				
	Number of Sentences Completed			Number of Completions Recalled	Percentage of Completions Recalled
	Total	Mean	S.D.		
Nonpunitive L-F (N = 20)	123	6.15	1.63	57	46.3
Nonpunitive E-I (N = 20)	102	5.1	1.1	60	58.8
Punitive L-F (N = 20)	93	4.65	1.49	57	61.3
Punitive E-I (N = 20)	83	4.15	1.76	43	51.8
All Nonpunitive (N = 40)	225	5.63	1.32	117	52.0
All Punitive (N = 40)	176	4.4	1.61	100	56.8

TABLE 1--CONTINUED

RECALL OF INCOMPLETIONS					RECALL OF ALL SENTENCES		
Number of Sentences Not Completed			# of In-comple-tions Recalled	% of Incom-pletions Recalled	Total # of Completions & Incomple-tions	Mean	S.D.
Total	Mean	S.D.					
197	9.85	1.66	21	10.7	78	3.9	1.6
218	10.9	1.68	24	11.0	84	4.2	1.59
227	11.35	1.46	57	25.1	114	5.7	1.7
237	11.85	1.84	65	27.4	108	5.4	1.2
415	10.4	1.67	45	10.8	162	4.05	1.6
464	11.6	1.62	122	26.3	222	5.55	1.5

TABLE 2

ANALYSIS OF VARIANCE: EFFECT OF PERSONALITY PATTERN ON
TOTAL RECALL OF SENTENCES

Source of Variation	df	Mean Square	F
Personality group	1	43.5	17.06**
Condition	1	0	0
Interaction	1	2.1	.82
Within groups	76	2.55	

**p < .01

TABLE 3

ANALYSIS OF VARIANCE: EFFECT OF PERSONALITY PATTERN ON
RECALL OF COMPLETED SENTENCES

Source of Variation	df	Mean Square	F
Personality group	1	363.96	.67
Condition	1	464.07	.85
Interaction	1	2319.5	4.23*
Within groups	76	548.7	

*p < .05

TABLE 4

ANALYSIS OF VARIANCE: EFFECT OF PERSONALITY PATTERN ON
RECALL OF INCOMPLETED SENTENCES

Source of Variation	df	Mean Square	F
Personality Group	1	4309.8	25.3**
Condition	1	85.7	.50
Interaction	1	2.66	.02
Within groups	76	170.1	

**p < .01

For both total and incompleted sentence scores, a significant F for personality group was achieved, beyond the .01 level. It was not, therefore, the instructions, whether laissez-faire or ego-involved, which affected these findings. Rather, it was the personality pattern which became the salient factor. Punitive Ss recalled significantly more incompletions as well as a greater number of all sentences regardless of the way instructions were worded.

Results for completions, on the other hand, revealed a significant F for interaction, beyond the .05 level. Instructions affected personality differentially. In the laissez-faire condition, punitive Ss recalled more completions, whereas in the ego-involved condition, it was the non-punitive Ss who recalled a greater number of completions.

Recall Pattern of Nonpunitive Ss

When the recall pattern of nonpunitive Ss was examined, t tests

revealed that, contrary to prediction, the number of completions recalled was significantly greater than that of incompletions for both the larger nonpunitive group and for each of the subgroups, beyond the .01 level. (See Table 5.)

T tests were then carried out to determine whether disparities between the means of completions and incompletions recalled were significant. Discrepancy scores based on the transformations found in Appendix J were calculated for all subjects. Table 6 shows no significant differences between nonpunitive L-F and nonpunitive E-I Ss.

In addition, the Chi Square analysis of the distribution of recall scores of Table 7 discloses no significant differences between the two conditions.

Recall Pattern of Punitive Ss

T tests presented in Table 5 to ascertain if the number of completions recalled differed from the number of incompletions were significant for all punitive Ss and for those in the L-F condition, beyond the .01 level. For punitive E-I Ss, however, significance which had been anticipated was not achieved. The latter finding resulted in a significant difference in discrepancy scores between punitive L-F and punitive E-I Ss, $p < .05$ (See Table 6.) Despite the fact that all punitive Ss recalled more incompletions than did nonpunitive Ss, under stress the discrepancy between the two types of recall lessened significantly. Thus, ego-involved instructions evoked a simultaneous decrease in recall of completions and increase in recall of incompletions for punitive Ss.

Comparison of Ss in the Laissez-faire Condition

A comparison of how each group performed within each condition will

TABLE 5

DIFFERENCES BETWEEN MEANS OF COMPLETED AND INCOMPLETED SENTENCES RECALLED FOR ALL Ss

Group	Completed Sentence Mean	Incompleted Sentence Mean	t	p
Nonpunitive L-F (N = 20)	41.96	15.76	6.7	<.01
Nonpunitive E-I (N = 20)	49.67	16.45	5.6	<.01
Punitive L-F (N = 20)	57.28	29.84	5.6	<.01
Punitive E-I (N = 20)	41.69	31.76	1.9	n.s.
All Nonpunitive (N = 40)	45.81	16.11	8.5	<.01
All Punitive (N = 40)	49.49	30.3	5.2	<.01

TABLE 6

DIFFERENCES BETWEEN MEANS OF DISCREPANCY SCORES FOR ALL Ss

Group	Total Discrepancy Score	Mean	t	p
Nonpunitive L-F (N = 20)	508.9	25.45	1.3	n.s.
Nonpunitive E-I (N = 20)	634.1	31.7		
Punitive L-F (N = 20)	565.6	28.28	2.4	.05
Punitive E-I (N = 20)	198.6	9.93		
All Nonpunitive (N = 40)	1143	28.6	1.3	n.s.
All Punitive (N = 40)	746.2	19.1		

TABLE 7
 CHI SQUARE FOR THE DISTRIBUTION OF RECALL SCORES FOR ALL Ss
 (N = 80)

Group	c>i	c<i	c=i	Total
Nonpunitive L-F	19	0	1	20
Nonpunitive E-I	20	0	0	20
All Nonpunitive Ss	39	0	1	40
Punitive L-F	17	2	1	20
Punitive E-I	14	5	1	20
All Punitive Ss	31	7	2	40

Chi Square for Nonpunitive Ss = 0
 Chi Square for Punitive = .702 } n.s.¹

¹Chi Square calculation omits c = i results.

now be offered to examine the differential influence of instructions. The first comparison will be for nonpunitive and punitive Ss receiving laissez-faire instructions.

Scheffé's test for multiple comparisons was utilized to ascertain which means were significantly different from each other. This test is suggested by Edwards (1956) when interaction between an organismic variable and treatment is of concern and when analysis of variance yields significant results. The test is a conservative one and Scheffé advocates taking $\alpha = .10$ rather than $\alpha = .05$ as suitable for testing significance.

Table 8 indicates that punitive L-F Ss recalled a significantly higher number of all sentences than did nonpunitive L-F Ss, beyond the .01 level.

From Appendix H, it was apparent that punitive L-F Ss achieved the highest total recall score of any subgroup, whereas nonpunitive L-F Ss obtained the lowest. For instance, while a maximum score of 7 was attained by S-number 160 in the nonpunitive group, there were three scores of 7, one of 8 and two of 9 in the punitive group. Both recall of completions and of incompletions, as well, were significantly greater for punitive Ss in the L-F condition, beyond the .01 level of confidence.

The laissez-faire instructions did not affect the two groups differentially in terms of the distribution of recall of completions and incompletions. Both nonpunitive and punitive Ss recalled comparatively more completions than incompletions.

Comparison of Ss in the Ego-involved Condition

Further inspection of Table 8 discloses significant differences between all types of recall of nonpunitive and punitive Ss in the E-I condition. For the latter group, total and incompleting sentence recall were

TABLE 8

SCHEFFÉ'S TEST FOR MULTIPLE COMPARISONS:
EFFECT OF PERSONALITY PATTERN ON RECALL

Groups Compared	D			D ²			A		
	c	i	t	c	i	t	c	i	t
Nonpunitive L-F vs. Nonpunitive E-I	-119	- 13.9	- 7	14161	193.21	49	3540.3	48.3	1.22
Nonpunitive L-F vs. Punitive L-F	-306.4	-281.5	-36	93880.96	79242.25	1296	23470.2***	19810.6***	27.22***
Nonpunitive E-I vs. Punitive E-I	124.4	306.2	-24	15475.36	103758.44	576	3868.8*	25939.6***	22.5***
Punitive L-F vs. Punitive E-I	291.7	- 38.5	6	85088.87	1482.25	36	21272.2***	370.6	.9

***p < .01 *p < .10

Note: c = difference in recall of completions between groups.
i = difference in recall of incompletions between groups.
t = difference in total recall scores between groups.

significantly higher beyond the .01 level, whereas that of completed sentences recalled were significantly higher beyond the .05 level.

Examination of Table 9 shows that the ego-involved condition produced a tendency for punitive Ss to have a more even division between completions and incompletions recalled than did nonpunitive Ss, though significant beyond the .10 level only.

Data and Conclusions Pertinent to Hypothesis

Hypothesis (I,i) stated that there would be greater total recall of sentences by the punitive than by the nonpunitive superego group. It was anticipated, consequently, that persons in the former group would recall a greater number of completed and incompleting sentences combined. This hypothesis was confirmed.

Hypothesis (I,ii) stated that there would be greater recall of failures than of successes by the punitive than by the nonpunitive superego group. The prediction was then made that the punitive group would recall more incompleting sentences. Hypothesis (I,ii) also was confirmed. Further, confirmation of this hypothesis was the influential factor in the significance of the results of Hypothesis (I,i). It could, therefore, be concluded that failure situations carry more weight when one's superego is punishing.

Hypothesis (I,iii) stated that there would be greater tendency toward equal recall of successes and failures by the nonpunitive than by the punitive superego group. Thus, it was anticipated that nonpunitive subjects would recall a more evenly distributed number of completed and incompleting sentences. Hypothesis (I,iii) was rejected. Results were significant, but not in the direction predicted. All groups, with the exception of punitive

TABLE 9
 CHI SQUARE FOR THE DISTRIBUTION OF RECALL SCORES
 FOR BOTH CONDITIONS
 (N = 80)

Group	c>i	c<i	c=i	Total
Nonpunitive L-F	19	0	1	20
Punitive L-F	17	2	1	20
All L-F Ss	36	2	2	40
Nonpunitive E-I	20	0	0	20
Punitive E-I	14	5	1	20
All E-I Ss	34	5	1	40

Chi Square for L-F Ss = .21, n.s.*
 Chi Square for E-I Ss = 2.67, p< .10*

*Chi Square calculation omits c = i results.

Ss in the ego-involved condition, revealed a discrepancy between recall of completions and incompletions.

Organization of Hostility Reactions

The expectation was that punitive Ss would demonstrate greater hostility and anger than would nonpunitive Ss. Two measures were used to evaluate the expression of hostility: the attitude questionnaire and the adjective checklist.

Attitude Questionnaire

The attitude questionnaire is a direct measure of differences in hostility between and within groups (Feshbach, 1955). The initial step in examining the data consisted of an item analysis of the first eight questions. For the first six, comparisons were based on the proportion of Ss choosing the most hostile alternatives, scored 5 and 6 on a six-point scale. For questions 7 and 8, differences depended on the proportion of Ss selecting the more hostile response. All percentages can be found in Appendix K.

T tests were carried out to determine which questions discriminated significantly the manifestation of extreme hostility. As in Feshbach's research, all tests were one-tailed, with $p < .10$ taken as significant. (See Table 10.)

When nonpunitive within group comparisons were made, questions 1, 4 and 8 were highly significant. Nonpunitive Ss in the laissez-faire condition evidenced greater hostility than those in the ego-involved condition. Within the punitive group, all items, with the exception of number 6, distinguished effectively the more from the less hostile subgroup. The more hostile punitive Ss were those in the ego-involved condition. When, however, the two larger groups were compared, significances became diluted

TABLE 10

ITEM ANALYSIS OF EXTREME HOSTILE RESPONSES ON THE
ATTITUDE QUESTIONNAIRE (SCORED 5 AND 6)

Question ¹	Difference between Nonpunitive L-F and Nonpunitive E-I (L-F>E-I)			Difference between Punitive L-F and Punitive E-I (E-I>L-F)			Difference between Nonpunitive and Punitive (Nonpunitive > Punitive)		
	t	p		t	p		t	p	
1. (Participation in study)	.20	1.82	<.04**	.20	6.67	<.01***	.05	.68	<.25
2. (Worthwhile to participate)	.15	1.07	<.15	.25	2.38	<.01***	.15	1.84	<.04**
3. (Would volun- teer again)	.15	.96	<.17	.30	2.0	<.03**	.075	.68	<.25
4. (Contribution of study)	.35	2.2	<.03**	.25	1.8	<.04**	.15	1.36	<.09*
5. (Competence of examiner)	0	- -	- -	-.10	-5.0	<.01***	.05	1.43	<.08*
6. (Reaction to examiner)	-.05	-1.02	<.16	-.05	-1.0	<.16	0	- -	- -
7. (Dislike study)	-.10	- .63	<.27	.25	1.56	<.06*	.025	.23	<.41
8. (Like study)	-.30	2.0	<.03**	-.60	4.0	<.01***	0	- -	- -

***p< .01 **p< .05 *p< .10

¹Phrases in parenthesis refer to substance of question.

because of opposing tendencies within groups, especially for questions 1, 3 and 8. Despite this, question 2 differentiated beyond the .05 level and questions 4 and 5 beyond the .10 level, in that nonpunitive Ss were more hostile than were punitive Ss. It could then be concluded that the attitude questionnaire, as Feshbach had ascertained in his study, was able to estimate whether or not hostility was aroused in this investigation.

Hostility Results

Hostility scores for the first six questions yielded three measures: one of hostile reactions to the examiner, a second of hostile reactions to the experiment per se and a third of general hostility which included, yet exceeded, the combined examiner and experiment hostility scores. (See Appendix L.) A summary of all hostility scores on the questionnaire is presented in Table 11.

Statistical analyses in terms of hostility expressed on the questionnaire, similar to those for recall data, can be seen in Tables 12, 13 and 14.

For purposes of discussion, first general, then examiner and lastly experiment hostility will be examined in that order. Analysis of variance of general hostility indicated that while neither the groups of Ss nor the conditions differed significantly, a significant interaction occurred between personality group and type of instruction. Thus, laissez-faire and ego-involved instructions influenced groups differentially, beyond the .01 level. When instructions were neutral, nonpunitive Ss evidenced greater hostility. When, conversely, instructions were ego-involved, punitive Ss exhibited significantly greater general hostility.

Table 12 shows that analysis of variance did not attain significance in the expression of examiner hostility in any respect. These findings will

TABLE 11
SUMMARY OF ALL HOSTILITY SCORES ON THE ATTITUDE QUESTIONNAIRE

Group	NONPUNITIVE S s									
	L-F (N = 20)			E-I (N = 20)			Combined L-F and E-I (N = 40)			
	a	b	c	a	b	c	a	b	c	
Total	191	177	448	185	150	395	376	327	843	
Mean	9.55	8.85	22.4	9.25	7.5	19.75	9.4	8.17	21.07	
S. D.	2.01	1.6	3.7	2.54	2.14	4.3	2.38	1.94	4.17	
	PUNITIVE S s									
	Total	171	136	360	197	159	425	368	295	785
	Mean	8.55	6.8	18	9.85	7.95	21.25	9.2	7.37	19.62
S. D.	2.6	1.6	4.4	2.1	2.2	4.5	2.38	1.97	4.47	

Note: a = personal hostility to E (Questions 3, 5, 6).
b = hostile evaluation of experiment (Questions 2, 4).
c = general hostility (Questions 1 through 6).

TABLE 12

ANALYSIS OF VARIANCE: EFFECT OF PERSONALITY PATTERN
ON GENERAL HOSTILITY

Source of Variation	df	Mean Square	F
Personality Group	1	41.9	2.255
Condition	1	1.7	.12
Interaction	1	174.05	9.367**
Within Groups	76	18.58	

**p < .01

TABLE 13

ANALYSIS OF VARIANCE: EFFECT OF PERSONALITY PATTERN
ON HOSTILE REACTIONS TO THE EXPERIMENTER

Source of Variation	df	Mean Square	F
Personality Group	1	.8	.15
Condition	1	5.0	.93
Interaction	1	12.8	2.37
Within Groups	76	5.4	

TABLE 14
ANALYSIS OF VARIANCE: EFFECT OF PERSONALITY PATTERN ON
HOSTILE EVALUATION OF THE EXPERIMENT

Source of Variation	df	Mean Square	F
Personality group	1	12.8	3.92*
Condition	1	.2	.06
Interaction	1	31.25	9.59**
Within groups	76	3.26	

*p < .05

**p < .01

be discussed later in conjunction with some significant results when the adjective checklist was the method of evaluating reactions to the investigator.

The way in which the experiment itself was assessed by subjects was to some extent like their general hostility pattern. While the mean difference between conditions did not achieve significance, the difference between personality groups did, beyond the .05 level. Nonpunitive Ss displayed greater experiment hostility than did punitive Ss. Further, a significant F for interaction revealed that laissez-faire and ego-involved instructions affected the groups differentially, beyond the .01 level. Nonpunitive Ss were more hostile to the experiment in the laissez-faire condition, while punitive Ss were more hostile in the ego-involved condition.

Based on the foregoing results, it can be stated that Ss attitude to

the experiment per se was the influential factor in the significance of general hostility results and that how they viewed the investigator was not.

Hostility Pattern of Nonpunitive Ss

The Chi Square analysis for the distribution of hostility scores for all Ss is presented in Table 15.

In order to obtain comparability between examiner and experiment hostility scores, each subject's score was converted to a percentage, so that $P_a = \frac{\text{examiner hostility score}}{18}$ and $P_b = \frac{\text{experiment hostility score}}{12}$.

Eighteen and twelve were the highest attainable scores for each type of hostility. No significant difference was achieved and it could be concluded that for nonpunitive Ss the kind of instructions did not affect the relative distribution of examiner and experiment hostility.

Hostility Pattern of Punitive Ss

Table 15 also shows that the distribution of hostility scores for punitive Ss revealed no difference from one condition to the other. Thus, instructions did not influence the relative distribution of examiner and experiment hostility for them.

Comparison of Ss in the Laissez-faire Condition

Ss within each condition were then compared in a manner identical with comparisons for recall findings. For the L-F condition, Scheffé's test indicated that nonpunitive Ss displayed more general hostility than did punitive Ss, beyond the .05 level. (See Table 16.)

As pointed out before, examiner hostility did not attain significance in the analysis of variance. Experiment hostility, however, did.

TABLE 15
 CHI SQUARE FOR THE DISTRIBUTION OF HOSTILITY SCORES
 FOR ALL Ss
 (N = 80)

Group	$P_a > P_b$	$P_a < P_b$	$P_a = P_b$	Total
Nonpunitive L-F	0	19	1	20
Nonpunitive E-I	1	19	0	20
All Nonpunitive Ss	1	38	1	40
Punitive L-F	4	14	2	20
Punitive E-I	5	15	0	20
All Punitive Ss	9	29	2	40

Chi Square for Nonpunitive Ss = 0* } n.s.
 Chi Square for Punitive Ss = .05* }

*Chi Square calculation omits $P_a = P_b$ results.

Note: P_a = the number of examiner hostility score.
 18

P_b = the number of experiment hostility score.
 12

TABLE 16

SCHÉFFÉ'S TEST FOR MULTIPLE COMPARISONS:
EFFECT OF PERSONALITY PATTERN ON
GENERAL HOSTILITY AND ON
EXPERIMENT HOSTILITY

Groups Compared	D		D ²		A	
	c	b	c	b	c	b
Nonpunitive L-F vs. Nonpunitive E-I	53	27	2809	729	70.2	18.2
Nonpunitive L-F vs. Punitive L-F	79	41	6241	1681	156.0*	42.0*
Nonpunitive E-I vs. Punitive E-I	-30	- 9	900	81	22.5	2.0
Punitive L-F vs. Punitive E-I	-56	-23	3136	529	78.4	13.2

*p < .05

Note: c = general hostility.
b = experiment hostility.

Further inspection of Table 16 shows that Scheffé's test disclosed results resembling those of general hostility in that nonpunitive Ss were significantly more hostile than were punitive Ss, beyond the .05 level.

The Chi Square analysis for the distribution of hostility scores did not achieve significance at the level selected for this study. (See Table 17.)

A pronounced trend, though, was evident in that there was significance beyond the .10 level. While both groups were rather more hostile to the study than to the examiner, this was more characteristic of the nonpunitive Ss. Punitive Ss at times displayed greater examiner hostility, which was not done by one single nonpunitive S, at least on a comparative basis.

Comparison of Ss in the Ego-involved Condition

Table 16 also shows that Scheffé's test disclosed no significant differences between nonpunitive and punitive Ss for any of the hostility scores.

Table 17 reveals that the Chi Square results almost coincided with those for the laissez-faire condition, except that no totally even balance between examiner and experiment hostility was noted. Both groups, subject by subject, demonstrated somewhat greater experiment than examiner hostility. Nonpunitive Ss exhibited this to a greater extent than did punitive Ss who, in turn, did show comparatively greater examiner hostility.

Adjective Checklist

The adjective checklist was a more incisive method of particularizing impressions of the examiner than were items 3, 5 and 6 on the attitude questionnaire. Scores for all Ss can be found in Appendix M with a

TABLE 17
 CHI SQUARE FOR THE DISTRIBUTION OF HOSTILITY SCORES
 FOR BOTH CONDITIONS
 (N = 80)

Group	$P_a > P_b$	$P_a < P_b$	$P_a = P_b$	Total
Nonpunitive L-F	0	19	1	20
Punitive L-F	4	14	2	20
All L-F Ss	4	33	3	40
Nonpunitive E-I	1	19	0	20
Punitive E-I	5	15	0	20
All E-I Ss	6	34	0	40

Chi Square for L-F Ss = 2.8* } $p < .10$
 Chi Square for E-I Ss = 3.12* }

*Chi Square calculation omits $P_a = P_b$ results.

Note: P_a = the number of examiner hostility score.
 18

P_b = the number of experiment hostility score.
 12

summary of the results presented in Table 18.

Comparisons Between and Within Groups

Analysis of variance results can be seen in Table 19.

Neither personality group nor instructions achieved significance, but a significant F for interaction occurred, beyond the .05 level. Once again, laissez-faire and ego-involved conditions influenced the groups differentially. When instructions were laissez-faire, nonpunitive Ss were more hostile to the examiner than when instructions were ego-involved. When, on the other hand, instructions were ego-involved, punitive Ss evidenced greater hostility to the examiner than when not experiencing stress. These findings differ from those on the questionnaire where significance was not obtained.

Upon further examination, Scheffé's test revealed that the difference between mean scores of nonpunitive Ss in the two conditions was non-significant. (See Table 20.)

While the same was true of punitive Ss, their A score approached significance. An A of 48.17 would have been needed to achieve significance beyond the .10 level. It was clear that punitive E-I Ss were the most hostile of all to the examiner, at least when the adjective checklist was the method of measurement. Two Ss in that group obtained scores of 12 out of a possible 20 which can be considered extremely high. Appendix M, in addition, shows that, with a criterion of at least five hostile adjectives, twice as many punitive as nonpunitive Ss checked that amount.

Since the adjective checklist produced significant results, it was of value to determine which pairs discriminated the expression of hostility effectively. Scores of the individual adjectives in each pair assumed to be hostile to the examiner are attached to Appendix N. With a minimum of

TABLE 18
 SUMMARY OF ALL HOSTILITY SCORES ON THE ADJECTIVE CHECKLIST

Group	NONPUNITIVE S s			
	L-F (N = 20)	E-I (N = 20)	Combined L-F and E-I (N = 40)	
Total	80	63	143	
Mean	4.0	3.15	3.57	
S. D.	2.99	2.2	2.61	
Group	PUNITIVE S s			
	Total	62	105	167
	Mean	3.1	5.25	4.17
	S. D.	2.3	3.2	2.9

TABLE 19

ANALYSIS OF VARIANCE: EFFECT OF PERSONALITY PATTERN
ON HOSTILE REACTIONS TO THE EXPERIMENTER
(UTILIZING ADJECTIVE CHECKLIST)

Source of Variation	df	Mean Square	F
Personality Group	1	7.2	.97
Condition	1	8.45	1.14
Interaction	1	45.0	6.08*
Within Groups	76	7.4	

*p < .05

TABLE 20

SCHEFFÉ'S TEST FOR MULTIPLE COMPARISONS: EFFECT OF PERSONALITY
PATTERN ON EXAMINER HOSTILITY ON THE ADJECTIVE CHECKLIST

Groups compared	D	D ²	A
Nonpunitive L-F vs. Nonpunitive E-I	17	289	7.2
Nonpunitive L-F vs. Punitive L-F	18	324	8.1
Nonpunitive E-I vs. Punitive E-I	-42	1764	44.1
Punitive L-F vs. Punitive E-I	-43	1849	46.2

five Ss out of twenty within each group selecting the more hostile adjective, it can be seen that punitive E-I Ss chose the greatest number. Where a sufficient difference in the manifestation of hostility occurred, even though not significant (see Table 20), Wilcoxon's test indicated that thirteen of the pairs discriminated beyond the .01 level between punitive Ss in the two conditions and also between nonpunitive and punitive Ss in the ego-involved condition

TABLE 21
WILCOXON TEST TO DETERMINE THE DISCRIMINATING
ADJECTIVES ON THE CHECKLIST

Comparison Group	T	p
Punitive vs. Nonpunitive	17	n.s.
Punitive E-I vs. Nonpunitive E-I	0	<.01
Punitive E-I vs. Punitive L-F	7.5	<.01

Note: The first group in the comparison always has the higher hostile adjective score.

Citing the more hostile adjective of each pair, the thirteen were: irritable, humorless, unstable, talkative, unimaginative, weak, cold, blunt, emotional, sad, proud, unfriendly and slow. It is possible that these particular adjectives can serve as a basis for distinguishing sympathetic from critical evaluations of persons.

Data and Conclusions Pertinent to Hypothesis

Hypothesis II stated that the punitive superego group would demonstrate greater anger and hostility than would the nonpunitive superego

group. Hence, it was anticipated that punitive Ss would disclose higher scores on the questionnaire as well as a greater number of hostile adjectives on the checklist. Hypothesis II was only partially supported by the data. The pattern of hostility evoked was, with one exception--that of examiner hostility on the questionnaire--similar throughout. When instructions were presented in a laissez-faire way, individuals in the nonpunitive group expressed greater hostility. And, in contrast, when instructions were presented in an ego-involved fashion, those in the punitive group displayed more hostility. Experiment hostility only was significantly more pronounced for the punitive superego group. Thus, in general, the manifestation of hostility was contingent upon the interaction between the type of instructions and the particular personality pattern.

Estimations of Test Performance

The two items on the attitude questionnaire dealing with subjective estimations of solutions to the scrambled sentences rather than directly with hostility will now be considered. Question 9 sought a verbal, somewhat ambiguous response. Question 10 asked how many of a possible eight sentences Ss felt they had unravelled correctly--a more quantitative assessment. The estimated number of question 10 was then compared with the number actually solved. (See Appendix O for all the foregoing information.) First question 10 will be scrutinized and then the less exact findings of the ninth question. Table 22 presents a summary of these data.

Table 23 shows that the discrepancy between the means of punitive E-I Ss, by far the largest of the groups, was the only one to achieve significance, beyond the .05 level.

TABLE 22

SUMMARY OF ESTIMATED AND ACTUAL NUMBER OF SENTENCES UNSCRAMBLED SUCCESSFULLY

Group	Nonpunitive L-F (N = 20)		Nonpunitive E-I (N = 20)		Punitive L-F (N = 20)		Punitive E-I (N = 20)	
	Estimated Correct	Actually Correct	Estimated Correct	Actually Correct	Estimated Correct	Actually Correct	Estimated Correct	Actually Correct
Total	99	123	97	102	99	93	102	83
Mean	4.95	6.15	5.1	5.1	5.5	4.65	5.67	4.15
S. D.	2.65	1.63	3.1	1.1	2.26	1.49	2.93	1.76

TABLE 23
DIFFERENCES BETWEEN MEANS OF ESTIMATED AND ACTUAL SCORES
ON SCRAMBLED SENTENCES

Group	Estimated Scores	Actual Scores	t	p
Nonpunitive L-F (N = 20)	4.95	6.15	1.74	n.s.
Nonpunitive E-I (N = 20)	5.1	5.1	0	n.s.
Punitive L-F (N = 20)	5.5	4.65	1.51	n.s.
Punitive E-I (N = 20)	5.67	4.65	2.05	<.05

From the findings of Table 23, the percentages of successfully completed sentences were computed to compare differences between groups. (See Table 24.)

T tests revealed that all differences were significant. It could then be concluded that nonpunitive Ss solved a greater proportion of the sentences designed for completion than did punitive Ss.

Question 9 was the less definite counterpart of the tenth item. It attempted through categorization to ascertain Ss feelings as to how well they felt they did on the sentences. The proportion of Ss in each of the five classifications is shown in Table 25.

It is difficult to evaluate the categories, as their meaning for each S was not known precisely. Subjective standards vary. What is "middling" to one may be "fairly well" to another or "somewhat poorly" to a third, and so on. The relationship between the categories of item 9 and the number of sentences estimated to have been unscrambled correctly on item 10 attest the accuracy of this observation (see Appendix O). For example, in the nonpunitive L-F group "somewhat poorly" meant any number from 2 to 5, which, in turn, overlapped with "middling," from 4 to 7. More strikingly, though, among the nonpunitive E-I Ss, "middling" ranged from as low as 0 to as high as 10.

Punitive L-F Ss utilized the "middling" category more than any other group. The tendency of this group was to display, perhaps cautiously, an attitude analogous to regression to the mean, wherein there were no "very well" or "very poorly" judgments. Punitive E-I Ss seemed never to feel, at least numerically, as if they had performed in an inferior way, three sentences being their lowest estimate. The difference, however, between one subject's "fairly well" and another's was conspicuous. To exemplify, what S-number 66 meant by "fairly well" was that he felt he

TABLE 24
DIFFERENCES BETWEEN PERCENTAGES OF ACTUAL COMPLETIONS

Groups Compared	% Completions	z	p
Nonpunitive L-F (N = 20) and Punitive L-F (N = 20)	77 58	4.8	<.01
Nonpunitive E-I (N = 20) and Punitive E-I (N = 20)	68 52	2.0	<.03
All Nonpunitive (N = 40) and All Punitive (N = 40)	70 55	12.5	<.01

TABLE 25
PERCENTAGE OF SUBJECTS IN EACH CATEGORY OF QUESTION 9

Category	Nonpunitive		Punitive	
	L-F	E-I	L-F	E-I
Very Well	5	0	0	0
Fairly Well	25	17	11	22.3
Middling	35	68.5	78	55.5
Somewhat poorly	25	5	11	16.7
Very Poorly	10	10.5	0	5.5

had achieved a score of 15, whereas Ss number 230 and 82, who also believed they had performed "fairly well" thought they had attained a score of 5 each.

In brief, nonpunitive L-F Ss showed a decided predisposition for undervaluation, while nonpunitive E-I Ss revealed no difference. Both punitive groups, on the other hand, tended to overestimation, though Ss in the E-I condition only achieved significance. As far as could be determined, no association was established on an individual basis between responses to question 9 and to question 10.

Comparison Between Measures

Adjective Checklist and Examiner Hostility Scores on the Questionnaire

F for interaction was significant beyond the .05 level when the adjective checklist was the estimate used to appraise hostile reactions to the investigator. When the attitude questionnaire was the method of evaluation, results did not attain significance. Consideration of the degree of correlation between the two instruments then became of interest. Ranks were assigned (see Appendix P) and Spearman's Rho revealed that though correlations within each of the nonpunitive groups were not significant, significance beyond the .01 level was achieved for both punitive groups. (See Table 26).

It must be borne in mind that the checklist was decidedly more specific than were the three questions on the questionnaire, despite a six-point scale, and also more direct in its approach with no room for intermediate, compromise reactions.

General Hostility and Total Recall Scores

Two other comparisons were carried out stemming from the nature of

TABLE 26
CORRELATIONS BETWEEN EXAMINER HOSTILITY ON THE ATTITUDE
QUESTIONNAIRE AND ON THE ADJECTIVE CHECKLIST

Group	Nonpunitive		Punitive	
	L-F	E-I	L-F	E-I
Rho	.11	.17	.66	.67
p	n.s.	n.s.	<.01	<.01

Hypothesis (I,i) and (I,ii). One had to do with the extent of the association between general hostility scores on the questionnaire and recall of all sentences. The other concerned itself with the degree of the relationship between general hostility and recall of incompleting sentences. Predictions had been made that Ss expressing greater anger and hostility would concomitantly be those with both greater total recall and recall of failure situations.

That punitive Ss disclosed significantly greater total recall than did nonpunitive Ss was confirmed. That nonpunitive L-F and punitive E-I Ss manifested significantly greater hostility than did nonpunitive E-I and punitive L-F Ss was ascertained. Based on the foregoing findings, an assumption then could be made that a significant positive correlation would obtain between general hostility and total recall scores for both nonpunitive L-F and punitive E-I Ss. Conversely, the supposition could be made that a significant negative relationship would exist between

general hostility and total recall scores for nonpunitive E-I as well as for punitive L-F Ss. After scores were ranked, according to Appendix Q, Spearman's Rank Difference Method disclosed that the two highest correlations were within the two former groups, though neither was significant. (See Table 27.)

They were, however, opposite to the anticipated direction. Nonpunitive E-I Ss revealed the only correlation in the direction expected, but too slight for significance. Thus, it may be concluded that no correlation of any importance was found between total sentence recall and general hostility scores when each individual was compared with himself.

General Hostility and Recall of Incompletions

Similar results were predicted for within group correlations between general hostility and incompleting sentence recall scores. Rankings can be found in Appendix R. Once again, Table 27 shows that Spearman's Rho for all groups was nonsignificant, with correlations patterned along the same lines as those between general hostility and total recall scores, except that the punitive E-I Ss had a slight positive correlation. The same inference then can be drawn, that is, that for the measures employed in this study, there was no association between scores of general hostility and of recall of incompleting sentences.

Summary of Results

Recall Results

Hypothesis I was based on the assumption that failure would be more important for punitive than for nonpunitive Ss. It stated that recall will be differentially affected by personality patterns in the following ways:

TABLE 27

CORRELATIONS BETWEEN GENERAL HOSTILITY AND RECALL OF TOTAL NUMBER OF
SENTENCES AND BETWEEN GENERAL HOSTILITY AND RECALL
OF INCOMPLETED SENTENCES

Group	NONPUNITIVE			
	L-F		E-I	
	c & t	c & i	c & t	c & i
Rho	-.26	-.23	-.09	-.32
p	n.s.	n.s.	n.s.	n.s.
	PUNITIVE			
Rho	.14	.14	-.19	.12
p	n.s.	n.s.	n.s.	n.s.

Note: c = general hostility.
t = recall of total number of sentences
i = recall of incompleted sentences

- A. Greater total recall of sentences by those in the punitive superego group.
- B. Greater recall of failures than of successes by the punitive superego group.
- C. Greater tendency towards equal recall of successes and of failures by the nonpunitive superego group.

In support of Hypothesis (I,i) and (I,ii), Ss with punitive superego expression recalled a significantly greater number of all sentences as well as of incompleting sentences. Their recall was a function of their particular personality and independent of the way instructions were worded.

The number of completions recalled, however, was contingent upon the interaction between personality and instructions. When instructions were laissez-faire, punitive Ss recalled more completed sentences than did nonpunitive Ss. When instructions were ego-involved, nonpunitive Ss recalled more completed sentences than did punitive Ss.

The distribution of recall of completed and incompleting sentences was rather evenly balanced for punitive Ss in the ego-involved condition, while all nonpunitive Ss and punitive Ss in the laissez-faire condition displayed a marked discrepancy in their tendency to recall more completed than incompleting sentences. Thus, Hypothesis (I,iii) was rejected.

Hostility Results

Hypothesis II stated that the punitive superego group will demonstrate greater anger and hostility than will the nonpunitive superego group.

Hostility results were more intricate than were those for recall, only partially confirming Hypothesis II. Scores on the attitude questionnaire disclosed that the manifestation of general hostility depended on the interaction between instructions and personality. When instructions

were laissez-faire, nonpunitive Ss demonstrated greater hostility than did punitive Ss. When instructions became ego-involved, punitive Ss manifested greater hostility than did nonpunitive Ss.

When experiment hostility was examined, punitive Ss were more hostile in both conditions than were nonpunitive Ss. Additionally, a significant interaction occurred between personality group and condition identical with that for general hostility.

Although examiner hostility was in no respect significant when the attitude questionnaire was the measure, the adjective checklist elicited a significant F for interaction. Nonpunitive Ss were more hostile in the ego-involved than in the laissez-faire condition. Thirteen of the twenty pairs of adjectives discriminated effectively feelings of hostility.

The attitude questionnaire was also concerned with estimates of how well subjects felt they did in unscrambling the sentences. It was found that nonpunitive L-F Ss were predisposed to underestimate, while nonpunitive E-I Ss as a group estimated the same number as they actually solved. All punitive Ss inclined to overestimate, especially so when experiencing stress.

Comparisons Between Measures

Spearman's Rho revealed that:

- (1.) there was no significant correlation between scores on the adjective checklist and the questionnaire for the nonpunitive groups, but it was highly significant for the punitive groups;
- (2.) there was no significant relationship between scores of general hostility and of recall of all sentences;
- (3.) and there was no significant correlation between scores of general hostility and of incompleting sentences.

Qualitative Analysis

Qualitative information derived from questions 7 and 8 on the attitude questionnaire. Question 7 asked whether there was anything about the experiment subjects disliked, whereas the eighth question asked if they liked the experiment. If the answer to either item was affirmative, the students were requested to elaborate their reasons.

The scrambled sentences evoked the largest number of comments, almost equally divided between favorable and unfavorable. Six persons liked and one disliked *Barron's Es Scale*. The *MRC Scale* was alluded to once only and then negatively.

What, though, were comments of a more general nature, not directly occasioned by the questionnaires and tests, which shed some light on reactions? Consider each question individually. In response to the seventh question, the most frequent objection concerned time. Either the study was experienced as too long or as too time-consuming or as simply time wasted, therefore boring and stupid. The notion that a person might be doing something else more personally engaging or useful was suggested any number of times, so that a pervasive sense of irritation not quite erupting into anger was conveyed. Question 7 precipitated substantially more statements for all groups than did question 8, with the exception of Ss in the punitive L-F group. This finding follows a pattern consonant with quantitative results where the same subjects consistently displayed the least hostility. The other three groups were almost equally vocal in the frequency of "dislike" assertions.

When question 8 was responded to positively, it seemed to evoke answers of a less specific bent than did the seventh question. It might have been more difficult to pinpoint why subjects felt they liked the study, in contrast to greater ease in spelling out antipathy. As one

young man, S-number 62, said, he liked the study but couldn't say why. In addition, an outlet for whatever hostility and anger were aroused, especially at the close, might have provided relief from what seemed a demanding and strenuous experience, thus leading to the more definite reasons put forth in question 7. Responses to question 8 were in the vein of: "it was fun"; "I liked the challenge"; "it could be a worthwhile contribution." Some subjects liked the structured aspects, such as, "required yes or no answer" and "leaves no room for indecision" or "swiftness so as to produce." One interesting feature emerged in that, while 95 percent of the punitive Ss in the ego-involved condition liked something about the experiment, not a single individual in this group expressed any reason for purported enjoyment.

CHAPTER IV

DISCUSSION

The present investigation increased knowledge concerning reactions to success and failure in individuals whose personalities differed in a fundamental way. The sample of male undergraduate college students was chosen within clearly stated limits. All subjects tested high in ego strength and differed from each other in having either nonpunitive or punitive superego attitudes. Thus, their reactions to failure, their anger and their evaluation of performance on the recall task could be related to specific personality traits. The two experimental conditions provided an additional dimension, that of the interaction between inner feelings and outer pressure, for further clarification of responses.

The study disclosed that while recall and the ability to appraise it appropriately depended primarily on personality organization, the demonstration of anger stemmed from the interdependence of internal and external conditions.

Prior experimental investigations had explored reactions to success and failure, but in such a way that they merged groups of subjects who were in actuality different. This research, on the other hand, differentiated its subjects to a greater degree.

According to psychoanalytic theory, people with harsh, overly strict superegos tend to obsessive rumination, are likely to experience considerable guilt and consequent self-punishment to allay their anxieties (Freud, 1924). Their focusing on failure and diminishing success

are effective methods of self-chastisement. These same individuals incline to angry, antagonistic feelings, creating much inner pressure. When in an atmosphere of comparative ease, their hostility can be contained. Under added external stress, rigid controls are weakened and anger flares up.

People with non-punitive superego expression have different leanings, so that failure situations are not likely to engender the equivalent degree of guilt and self-punishment (Schaefer, 1960). Anger and hostility, of course, are present but inner turmoil is not so debilitating. Controls are not so firmly encased; antagonisms can be exhibited more suitably and with greater candor. It must be borne in mind that the high ego strength of the population under scrutiny probably reduced differences in the manifestation of hostility and concomitantly heightened the importance of the superego.

Test Performance

Recall

Before discussing the findings, it should be pointed out that the recall task used in the present study has intrinsic structural elements tending to modify the direction of selective memory. The eight solvables make sense and therefore lend themselves to being remembered. The eight unsolvables do not as they are meaningless. There were, nevertheless, solvables not completed by all subjects. These then became unsolvables, undoubtedly experienced as failures.

With the foregoing in mind, results revealed that non-punitive students were not as a whole concerned with their failures while punitive individuals were. The non-punitive people must have had a sense of

completion with apparently little need to remember their unsolved sentences. Failure was consequently relatively unimportant for them.

The punitive group, however, must have taken for granted that they had solved an insufficient number of all sentences, whether solvable or not. Thus, they had no sense of fulfillment and were troubled by their inability to solve the unsolvables, perseverating in an ongoing, valiant but miscarried attempt to accomplish the impossible. Their feelings were further compounded by failure to solve the solvables. The findings substantiate this assertion. Punitive subjects did solve significantly less sentences intended for completion than did nonpunitive persons. Pressure, in particular, served to intensify the former group's difficulties in unravelling the scrambled sentences. It is likely that the greater rigidity of punitive individuals curbed their capacity to solve the solvables through the indecision so typical of obsessional uncertainty.

In relation to the preceding comments, it will be remembered that Grunes (1956) postulated a negative correlation between a harsh, punishing superego and both intelligence and abstract reasoning in a comparable population. His predictions in general were not supported by the data. This investigation employed an experimental intervention which included the application of intelligence. It was able to establish the inverse relationship Grunes had sought unsuccessfully and to point up the restrictive effects of punitive superego expression on intellectual functioning.

The sense of failure of punitive people was accentuated further in that not a single one of them failed to recollect at least one incompleting sentence. In contrast, nine out of forty, or 22.5 per cent of the non-

punitive individuals had zero scores for recall of the incompletions. Guilt on the part of the punitive students for a presumably mediocre, inadequate showing took its toll in anxiety and self-punishment. Retention of failure heightened by repetitious reflection can become a self-castigation. That these same persons remembered their successes as well in no way negates the preceding statement. Indeed, it is most likely that the high ego strength of the punitive individuals moderated their sense of failure. They were able, therefore, to persevere, to continue striving for a feeling of completion.

As far as the differing instructions were concerned, neither group was affected in terms of recall of incompletions and of all sentences, although the literature attests unremittingly the differential influence of stress versus nonstress (Butterfield, 1964). In particular, it has been reported that added pressure has tended to increase recollection of completed tasks. The present study corroborates these findings for nonpunitive subjects only. Additional stress served to decrease recall of completed sentences for punitive people, once more emphasizing their concentration on failure.

Butterfield states that, in investigations dealing with ego functioning, the assumption was made that ego strength or weakness as such comprised a consistent and invariant pattern of traits. As will be recalled from the discussion of the literature, strong ego functioning subsumed a benevolent superego while weak ego functioning implied a harsh superego. Differing superego expression within levels of ego functioning was not controlled for, so that the influence of instructions became obscured.

Green (1963) had questioned the weight of dissimilar instructions

on the direction of selective memory despite the fact that his findings agreed with those of previous investigations. But, as was pointed out, he did not distinguish the underlying personality variables in his sample which might account for the degree to which individuals are more or less interested in the matter at hand and was, consequently, too speculative.

The present study, which took cognizance of specific personality dimensions, demonstrated that recall patterns for all groups remained virtually untouched by the type of instructions, with the exception of that of punitive students under greater stress. The comparable division of the recollection of successes and failures in the other three groups upholds this position. Perhaps in a college population selected for high ego strength, with emphasis on reasoning and remembering especially for tests and test-like material, contrasting instructions may not always convey the intended varying degrees of pressure. On a deeper, more basic level, the kind of person one is may well determine the extent of the need for commitment to a task for, as was revealed, the direction of selective recall on the whole remained unaffected by exhortation.

Level of Aspiration

The difference between the number of sentences presumed unscrambled correctly and their actual number is analogous to level of aspiration studies, although the latter concern themselves with estimates of future performance. The current investigation did not include this in its original conception. Some of the questions asked, however, lend themselves to interpretations comparable to those in level of aspiration

research.*

The notion of level of aspiration was introduced by Dembo in 1931 to describe a person's expectations and goals in a given task which extended considerably beyond the immediate situation (Lewin, et al., 1944). Hoppe, in 1930, in addition to Dembo, performed the first of numerous experiments of this nature. In the present study, subjects were requested to appraise past performance as is so frequently done following examinations. The question was not the difference per se between endeavor and accomplishment but rather what might be the underlying dynamics contributing to how individuals perceive themselves and present themselves to others.

This investigation disclosed distinct variations in aspiration level which were contingent upon personality differences. The tendency for nonpunitive persons to underestimate somewhat in the neutral condition and to reveal no difference as a group under stress contrasts with results for punitive people. The latter, especially when pressured, inclined to overestimation. Their sense of failure appears decidedly more acute.

Both Frank (1935) and Gould (1939) proposed that the sense of failure is independent of the objective, physical nature of a situation, though not entirely. It depends primarily on individual standards of performance which vary with inner motivation. Relatively lasting and consistent traits define behavior vis-à-vis one's aspirations. With reference to the present study, punitive students in particular may have attempted to avoid or deny their feeling of having failed, with its accompanying anxiety. This endeavor can be viewed as a compensatory,

*See chapters on method and results.

face-saving maneuver similar to magical thinking to provide substitute satisfaction and some measure of a successful experience. Such compensation can aid in maintaining a threatened self-esteem.

Nonpunitive individuals may also have sensed failure but did not have to deny it. Indeed, their inclination for underestimation when not under stress suggests an awareness of failure. Whether or not they experienced anxiety comparable to that of punitive people remains at the moment a moot point. How they coped with the failure experience and the anxiety generated, however, was notably different. They appeared to confront their feelings more straightforwardly.

As has been emphasized, the importance of failure for punitive superego persons was the most striking feature of the recall findings. Its significance affected the three aspects of the first hypothesis: confirmation of Hypothesis (I,i) and (I,ii) which postulated that individuals with punitive superego expression would recollect a greater number of all sentences as well as of incompletes; and the rejection of Hypothesis (I,iii) which forecast recall of a more equitable distribution of completions and incompletes among those with non-punitive superego attitudes.

Hostility Patterns

Disparate instructions did influence the demonstration of anger and hostility. This inquiry established that, in a less threatening atmosphere, nonpunitive individuals manifested considerable general hostility. Their overall animosity was the most conspicuous and uniform, reflected in the relatively small dispersion of the group as a whole. They seemed freer in their ability to be appropriately indignant, in accordance with Schaefer's thesis that a benevolent

superego ". . . will provide a basis for relief from guilt and free the individual to resume adaptive functioning." (Schaefer, 1960, p. 182.)

With greater pressure, when the situation was assumed to be more precarious, nonpunitive persons appeared to bind their resentment, reacting with greater caution. Perhaps such vigilance indicates awareness of a charged atmosphere and that, when sensing danger, they know to restrict antagonism and to pull in their horns. This again agrees with Schaefer's proposition that the loving superego will comfort and demonstrate flexibility when circumstances change and threat is experienced.

A rather different, less uniform finding emerged in relation to animosity toward the examiner. A pattern similar to that of general hostility was noted on the adjective checklist but not on the questionnaire. Correlation between the measures was slight. The group's somewhat capricious evaluation of the experimenter was not the focus of their annoyance, whereas assessment of the experiment was, regardless of the degree of stress. Since essentially the study had a built-in failure experience, their antagonism seems realistic and objective. The implication is that nonpunitive individuals were task-oriented with anger suitably directed.

Punitive individuals revealed a different pattern of hostility in response to external pressure. In a more neutral situation, they restricted and inhibited angry feelings, with hostility scores the lowest of the subgroups. Their seemingly compelling need to present themselves as better, more laudable, even more noble coincides with Freud's observation that reaction formation is a major defense of obsessional neurotics (Freud, 1924). It serves to protect against painful, distressing anger and the anxiety connected with it. Denial of concern over failure

may also have contributed to lowered scores. The sense of failure, discussed in relation to aspiration level, can engender anxiety and hostility. This, in turn, can lead to denial of anger because of a failure experience. Once more, as with reaction formation, the individual defends against his underlying, unacceptable feelings.

With the imposition of greater pressure, punitive superego people, while probably still wishing to propitiate and to communicate their merit, may have felt the situation as less tolerable, their buried anger surfacing. Increased pressure subverted their rigid controls which no longer rescued and sustained them. The adjective checklist, in particular, uncovered their dislike of the investigator. Here, the added strain resulted in less predictable, more variable reactions when considered on an individual basis. Since variations in comparison to other groups did not achieve statistical significance, however, this observation is tentative only.

The two measures of examiner hostility correlated for punitive subjects only and not for nonpunitive people. This may hinge upon the proposition that the former were more exacting and conscientious about the seriousness of the undertaking. Once again, conclusions concur with Freud's conception of obsessive behavior which inclines to orderliness and compulsive rigidity. It is thus feasible that the regularity of responses of these students met the demands of severe conscience.

Another telling finding for punitive persons centered around their more constant irritation toward the researcher rather than toward the project itself. It is quite possible that people rather than situations are more accessible targets and a more satisfying channel for relief of their anxieties and tensions.

The above seems to underscore problems which punitive superego individuals experience in relation to anger when failure rankles. As has been suggested, under conditions of comparative ease, they appeared unaffected by what truly may have been a source of grievance and discomfort. Denial and reaction formation were their principal defenses and anger erupted only when they felt threatened. A major predicament, therefore, might be the relevancy of their indignation in a situation requiring some objectivity. To display more intense resentment at an individual who is merely an intermediary in the interest of research rather than at the research itself is inappropriate. If animosity is handled ineptly, one can be placed in an awkward, even untenable position which then will increase guilt and anxiety.

Implications for Further Research

1) Results indicated clearly how people of high ego strength in combination with either nonpunitive or punitive superego expression reacted to the failure experience and what inner and outer conditions contributed toward the demonstration of their anger. Since the study is readily replicable, it would be of value to investigate the ways in which a population considered to evidence low ego strength would respond in a similar experimental situation.

2) Further, since the study explored reactions of male college students only, there is a need to evaluate those of females and possibly to see what are the correspondences between them.

Limitations of the Study

The relative paucity of qualitative information is the major limitation of this research. On the whole, test scores indicated explicitly

the nature of group functioning. Individual interviews, however, with a selected number of both those who were average for their group and those who deviated perceptibly would have provided a deeper understanding of inner experience in several respects:

- 1) Discussions of the importance of failure and the need to counteract it might have proved of especial interest and value, among punitive E-I Ss in particular. That nineteen out of twenty of this group claimed to have enjoyed the study, yet chose not to specify why suggests their attempt to mask anger in an acceptable fashion, as the attitude questionnaire had disclosed their hostility to the experiment.
- 2) Although correlations, whether positive or negative, between hostility and recall of incompletions had been anticipated, no significance was achieved. There were, nonetheless, individuals whose expression of anger coupled with failure was quite consistent.
- 3) The meaning of the categories of question 9 concerning how well subjects felt they did in unscrambling sentences could have been illuminated.
- 4) Probing the influence of external pressure might have clarified whether or not students were consciously task-oriented or ego-involved.

Implications for Personality Theory

The most important inference to be drawn from this study is that specific, predetermined ego-superego patterns were able to differentiate behavior in a situation containing elements of both success and failure. Within the confines of experimental treatment, it was demonstrated that

recall results did not change with the degree of stress nor did appraisal of past performance on the whole. The exhibition of hostility, on the other hand, was not so uniform and indeed was related to outer pressure. Still, some associations were made which impart meaning to these seemingly isolated experiences.

Bearing in mind that all subjects were of high ego strength, the assumption that a person's superego is nonpunitive and humanistic can prompt some typical expectations. Although unlikely to dwell on failure or to give it prominence, the study indicated his awareness of it. Because failure does not loom so important and because he is not guilty for having failed, the anger he harbors adapts to the exigencies of outer circumstance. Thus, he can allow anger when not threatened and can contain it when sensing danger.

Awareness that a person's superego is harsh, unrelenting and punitive can signal the gravity of failure for him. It can also alert one to how he copes with some of the feelings surrounding that sense of failure. Whatever the exterior strains, he tends in some measure to counterbalance the feeling of having failed by means of denial. Additionally and somewhat unfittingly, he can conceal his antipathy associated with not succeeding sufficiently when in a fairly nonthreatening atmosphere. But what he finds so difficult, despite his high ego strength, is that, with increased outer stress, his hostility and internal pressures can no longer be restrained comfortably.

Gould (1939) has stated that everyone wants to succeed, as her subjects strove for good performance. She suggested that raising their expectations was culturally determined, an unrealistic optimism serving to deny the reality of the economic depression of those years. But this

study established that many really choose to concentrate on failure, especially when their consciences are strict and unbending. It would be most improbable, then, that success for them would be a pleasurable, gratifying experience, for, although failure was inherent in the investigation, so was some degree of success.

CHAPTER V

SUMMARY

The ways in which individuals with differing patterns of ego-superego relationships react to success and failure was the focus of this inquiry. Previous experimentation had assumed that people of high ego strength necessarily manifested more humanistic, nonpunitive superegos. Especially under pressure, they tended to remember a preponderance of successes over failures. The present investigation included punitive as well as nonpunitive superego expression in its conception of ego strength. It made use of completed-incompleted sentences as its experimental intervention. They are modelled on Zeigarnik's procedure which had been applied many times to explore various theoretical issues.

Subjects consisted of eighty male undergraduate students at several branches of the City University of New York, selected according to scores on *Barron's Ego Strength Scale* and *Grunes' Moralistic-Repressive Conscience Scale*. All were of high ego strength, but with two differing kinds of superego attitudes: nonpunitive and punitive. Half of each group received the experimental task under *laissez-faire* instructions and half were given ego-involved instructions. Subsequent to an interpolated task, recall was determined and hostility was measured by means of an attitude questionnaire and an adjective checklist. Subjects in the ego-involved condition only were debriefed.

It was hypothesized that punitive individuals would recall a

greater number of all sentences in addition to more of their failures. The same group would also manifest more anger and hostility. It was further predicted that nonpunitive people would remember a more balanced number of successes and failures and would disclose less anger and hostility.

Recall results revealed that punitive persons did recollect more of their failures than did nonpunitive people. They also recalled a larger amount of all sentences whether successes or failures. These results were obtained regardless of instructions, a finding which contradicted previous research. Nevertheless, stress served to increase somewhat the number of failures recalled and to decrease to some extent the number of successes remembered by punitive subjects. It was then concluded that they accorded greater prominence to failure situations than did nonpunitive individuals.

Coupled with the foregoing, punitive subjects tended to overestimate their recall performance in an effort to achieve an experience of success, while unrealistically denying failure. Nonpunitive subjects, on the other hand, appeared to come to grips with their sense of failure and not evade it.

In contrast to recall results, hostility findings disclosed a significant interaction between instructions and personality organization. Nonpunitive individuals as a group were less shackled in their expression of anger when not pressured. Under stress, they behaved with greater circumspection, apparently aware of threat. They directed their anger at the experiment primarily rather than at the examiner, and thus were more suitably task-oriented.

In less appropriate fashion, punitive people restrained and denied their anger when not under pressure. In a more threatening atmosphere, controls weakened, discharging their hidden hostility. Animosity toward the examiner was more consistent than toward the experiment, the former possibly a more acceptable outlet for alleviating their anxieties.

In sum, the direction of recall depended on personality only, whereas the demonstration of hostility sprang from the interaction between personality and outer circumstances.

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APPENDICES

APPENDIX A

RANKING OF NONPUNITIVE Ss ACCORDING TO Es SCORES OF 48 PLUS
(N = 40)

S #	LAISSEZ-FAIRE CONDITION		S #	EGO-INVOLVED CONDITION	
	Es Score	MRC Score		Es Score	MRC Score
132	56	64	150	55	75
16	55	79	192	54	69
153	55	63	198	54	70
216	55	77	202	54	69
1	54	68	51	53	75
124	54	75	59	53	75
4	53	70	71	53	82
160	53	78	72	53	78
218	53	54	85	53	52
206	53	70	98	53	81
23	52	82	135	53	77
130	52	81	138	53	75
167	51	83	43	52	81
8	50	73	54	52	80
118	50	79	238	52	75
119	50	82	67	51	83
126	50	69	56	50	83
133	50	74	104	48	77
220	50	72	121	48	67
227	49	72	103	48	84
Total	1045	1474		1042	1515
Mean	52.25	73.7		52.1	75.7
S. D.	2.1	7.6		2.1	7.5

APPENDIX A--Continued

RANKING OF PUNITIVE Ss ACCORDING TO Es SCORES OF 48 PLUS
(N = 40)

S #	LAISSEZ-FAIRE CONDITION		S #	EGO-INVOLVED CONTITION	
	Es Score	MRC Score		Es Score	MRC Score
28	56	101	101	58	96
2	55	96	52	54	93
32	55	99	231	54	91
181	54	96	215	53	94
29	53	92	137	52	96
123	53	88	143	52	101
219	52	87	142	51	97
3	51	90	60	50	91
7	51	100	82	50	91
107	51	103	207	50	88
112	50	102	213	50	90
165	50	94	76	49	97
170	50	98	94	49	95
225	50	94	95	49	100
5	49	99	230	49	98
25	49	91	66	49	112
174	49	96	88	48	96
228	49	118	97	48	92
19	48	95	149	48	89
62	48	97	144	48	102
Total	1023	1936		1010	1910
Mean	51.15	96.8		50.5	95.85
S.D.	2.4	6.7		2.65	5.6

APPENDIX B

RANKING OF Ss ACCORDING TO MORALISTIC-REPRESSIVE CONSCIENCE SCALE SCORES
(N = 80)

NONPUNITIVE Ss				PUNITIVE Ss			
S#	L-F Score	S#	E-I Score	S#	L-F Score	S#	E-I Score
167	83	103	84	228	118	66	112
23	82	67	83	107	103	144	102
119	82	56	83	112	102	143	101
130	81	71	82	28	101	95	100
16	79	51	81	7	100	230	98
118	79	98	81	32	99	142	97
160	78	43	81	5	99	76	97
216	77	54	80	170	98	81	96
124	75	72	78	62	97	137	96
133	74	135	77	2	96	88	96
8	73	104	77	181	96	94	95
220	72	150	75	174	96	215	94
227	72	59	75	19	95	52	93
4	70	138	75	165	94	97	92
206	70	238	75	225	94	231	91
126	69	198	70	29	92	60	91
1	68	192	69	25	91	82	91
132	64	202	69	3	90	213	90
153	63	121	69	123	88	149	89
218	54	85	52	219	87	207	88
Total	1474	+	1514		1936	+	1919
Mean	73.7		75.7		96.8		95.85
S. D.	7.6		7.5		6.7		5.6
Possible Range = 35-85 Actual Range = 52-84				Possible Range = 86-136 Actual Range = 87-118			

This inventory consists of numbered statements. Read each statement and decide whether it is true as applied to you or false as applied to you. If a statement is TRUE or MOSTLY TRUE as applied to you, circle T. If a statement is FALSE or NOT USUALLY TRUE, as applied to you, circle F. Remember to give YOUR OWN opinion of yourself. Do not leave any blank spaces if you can avoid it.

1. I have a good appetite.....T F
2. I have diarrhea once a month or more.....T F
3. Once in a while I think of things too bad to talk about.....T F
4. At times I have fits of laughing and crying that I cannot control.....T F
5. At times I feel like swearing.....T F
6. I find it hard to keep my mind on a talk or job.....T F
7. I have had very peculiar and strange experiences.....T F
8. I have a cough most of the time.....T F
9. I seldom worry about my health.....T F
10. At times I feel like smashing things.....T F
11. My sleep is fitful and disturbed.....T F
12. I do not always tell the truth.....T F
13. When I am with people I am bothered by hearing very queer things.....T F
14. I am in just as good physical health as most of my friends..T F
15. Everything is turning out just like the prophets of the Bible said it would.....T F
16. I do not read every editorial in the newspaper every day....T F
17. Parts of my body often have feelings like burning, tingling, crawling, or like "going to sleep.".....T F
18. I think a great many people exaggerate their misfortunes in order to gain the sympathy and help of others.....T F
19. I get angry sometimes.....T F

20. I am easily downed in an argument.....T F
21. It takes a lot of argument to convince most people of the truth.....T F
22. Once in a while I put off until tomorrow what I ought to do today.....T F
23. I do many things which I regret afterwards (I regret things more or more often than others seem to).....T F
24. I go to church almost every week.....T F
25. I have very few quarrels with members of my family.....T F
26. I have met problems so full of possibilities that I have been unable to make up my mind about them.....T F
27. Sometimes when I am not feeling well I am cross.....T F
28. Some people are so bossy that I feel like doing the opposite of what they request, even though I know they are right....T F
29. My table manners are not quite as good at home as when I am out in company.....T F
30. Most people will use somewhat unfair means to gain profit or an advantage rather than to lose it.....T F
31. Often I can't understand why I have been so cross and grouchy.....T F
32. I like collecting flowers or growing house plants.....T F
33. At times my thoughts have raced ahead faster than I could speak them.....T F
34. If I could get into a movie without paying and be sure I was not seen I would probably do it.....T F
35. Criticism or scolding hurts me terribly.....T F
36. I like to cook.....T F
37. I certainly feel useless at times.....T F
38. It makes me impatient to have people ask my advice or otherwise interrupt me when I am working on something important.....T F
39. I would rather win than lose in a game.....T F
40. During the past few years I have been well most of the time.T F
41. I have never felt better in my life than I do now.....T F
42. I like to know some important people because it makes me feel important.....T F

43. What others think of me does not bother me.....T I
44. It makes me uncomfortable to put on a stunt at a party even when others are doing the same sort of things.....T I
45. I have never had a fainting spell.....T I
46. I find it hard to make talk when I meet new people.....T I
47. When I get bored I like to stir up some excitement.....T F
48. I am against giving money to beggars.....T F
49. I have nightmares every few nights.....T F
50. My hands have not become clumsy or awkward.....T F
51. I am liked by most people who know me.....T F
52. Any man who is able and willing to work hard has a good chance of succeeding.....T F
53. I feel weak all over much of the time.....T F
54. I have had no difficulty in keeping my balance in walking....T F
55. I do not like everyone I know.....T F
56. I like to flirt.....T F
57. It would be better if almost all laws were thrown away.....T F
58. My soul sometimes leaves my body.....T F
59. Sometimes I am strongly attracted by the personal articles of others such as shoes, gloves, etc., so that I want to handle or steal them though I have no use for them.....T F
60. I believe my sins are unpardonable.....T F
61. I frequently find myself worrying about something.....T F
62. A minister can cure disease by praying and putting his hand on your head.....T F
63. I believe in law enforcement.....T F
64. I like science.....T F
65. I gossip a little at times.....T F
66. I like to talk about sex.....T F
67. As a youngster I was suspended from school one or more times for cutting up.....T F
68. I get mad easily and then get over it soon.....T F
69. I see things or animals or people around me that others do not see.....T F

70. Sometimes I feel as if I must injure either myself or someone else.....T I
71. I am not afraid to handle money.....T I
72. My hearing is apparently as good as that of most people.....T I
73. I brood a great deal.....T F
76. I commonly hear voices without knowing where they come from.T I
77. Someone has been trying to rob me.....T I
78. My way of doing things is apt to be misunderstood by others.T I
79. I have had blank spells in which my activities were interrupted and I did not know what was going on around me.....T I
80. There are persons who are trying to steal my thoughts and ideas.....T I
81. I can be friendly with people who do things which I consider wrong.....T I
82. Sometimes at elections I vote for men about whom I know very little.....T I
83. If I were an artist I would like to draw flowers.....T I
84. When in a group of people I have trouble thinking of the right things to talk about.....T I
85. When I leave home I do not worry about whether the door is locked and the windows closed.....T F
86. At times I am all full of energy.....T F
87. Once in a while I laugh at a dirty joke.....T I
88. I have periods in which I feel unusually cheerful without any special reason.....T F
89. I think nearly anyone would tell a lie to keep out of trouble.....T I
90. I worry over money and business.....T F
91. At times I hear so well it bothers me.....T F
92. Often I cross the street in order not to meet someone I see.T F
93. I have strange and peculiar thoughts.....T F
94. At times it has been impossible for me to keep from stealing or shoplifting something.....T F
95. I am very religious (more than most people).....T F
96. Sometimes I enjoy hurting persons I love.....T F

97. Sometimes some unimportant thought will run through my mind and bother me for days.....T F
98. I am not afraid of fire.....T F
99. At periods my mind seems to work more slowly than usual...T F
100. I do not like to see women smoke.....T F
101. When someone says silly or ignorant things about something I know about, I try to set him right.....T F
102. People often disappoint me.....T F
103. I feel unable to tell anyone all about myself.....T F
104. My plans have frequently seemed so full of difficulties that I have had to give them up.....T F
105. I have sometimes felt that difficulties were piling up so high that I could not overcome them.....T F
106. I often think, "I wish I were a child again.".....T F
107. I have often met people who were supposed to be experts who were no better than I.....T F
108. I would certainly enjoy beating a crook at his own game...T F
109. I have had some very unusual religious experiences.....T F
110. One or more members of my family is very nervous.....T F
111. I am attracted by members of the opposite sex.....T F
112. The man who had most to do with me when I was a child (such as my father, stepfather, etc.) was very strict with me.....T F
113. I find it hard to set aside a task that I have undertaken, even for a short time.....T F
114. Christ performed miracles such as changing water into wine.T F
115. I pray several times every week.....T F
116. I feel sympathetic towards people who tend to hang on to their griefs and troubles.....T F
117. I am afraid of finding myself in a closet or small closed place.....T F
118. I like to let people know where I stand on things.....T F
119. Dirt frightens or disgusts me.....T F
120. I can sleep during the day but not at night.....T F
121. It does not bother me particularly to see animals suffer..T F
122. I have been told that I walk during sleep.....T F

123. I think Lincoln was greater than Washington.....T F
124. In my home we have always had the ordinary necessities
(such as enough food, clothing, etc.).....T F
125. My neck spots with red often.....T F
126. I am made nervous by certain animals.....T F
127. Children should be taught all the main facts of sex.....T F
128. My skin seems to be unusually sensitive to touch.....T F
129. I feel tired a good deal of the time.....T F
130. No one cares much what happens to you.....T F
131. I have reason for feeling jealous of one or more members
of my family.....T F
132. I never attend a sexy show if I can avoid it.....T F
133. The only interesting part of the newspapers is the
"funnies".....T F
134. I can easily make other people afraid of me and sometimes
do it for the fun of it.....T F
135. If I were an artist I would like to draw children.....T F
136. I usually expect to succeed in things I do.....T F
137. I am never happier than when alone.....T F
138. I sometimes feel that I am about to go to pieces.....T F
139. I believe there is a God.....T F
140. I have often been frightened in the middle of the night....T F
141. I very much like horseback riding.....T F

You can respond to the statements on the following pages in one of four ways by circling the appropriate letter or letters. (T) indicates that you feel that the statement is true. (ST) indicates that you feel that the statement is somewhat true or mildly true, but still more true than false. (F) indicates you feel the statement is false. (SF) indicates you feel the statement is somewhat or mildly false, but still more false than true.

So that:

(T) = True

(ST) = Somewhat true, but more true than false

(SF) = Somewhat false, but more false than true

(F) = False

Make sure to answer every statement, and circle only one of the choices for each question.

- | | | | | | |
|-----|---|---|----|----|---|
| 1. | Abnormal people are ruled by their emotions, normal people by their reason..... | T | ST | SF | F |
| 2. | I watch diligently over my secret thoughts..... | T | ST | SF | F |
| 3. | A person should not be lenient to his faults and should keep his pardon for others..... | T | ST | SF | F |
| 4. | I am not particularly concerned about doing right or wrong - in the moral sense..... | T | ST | SF | F |
| 5. | A strict sense of duty is an essential part of my character..... | T | ST | SF | F |
| 6. | What youth needs most is strict discipline and strong determination..... | T | ST | SF | F |
| 7. | I believe there is no acceptable excuse for suicide.. | T | ST | SF | F |
| 8. | Children ought to be taught the main facts of sex at an early age..... | T | ST | SF | F |
| 9. | I show respect to all elderly people..... | T | ST | SF | F |
| 10. | I have a great deal of admiration for a woman who keeps a spotlessly clean kitchen..... | T | ST | SF | F |
| 11. | Nowadays when so many different kinds of people mix together so much, a person has to protect himself especially carefully against infection and disease... | T | ST | SF | F |
| 12. | I do not consider the observance of social manners and customs an essential part of life..... | T | ST | SF | F |

13. The essence of virtue is a struggle in which we overcome our own weaknesses.....T ST SF F
14. Young people sometimes get rebellious ideas, but as they grow up they ought to get over them and settle down.....T ST SF F
15. I feel that people who persist in getting into trouble even after proper warning, do not deserve any sympathy.....T ST SF F
16. I do not object to the use of bad language by women..T ST SF F
17. Children owe their parents more than their parents owe them.....T ST SF F
18. Sex crimes, such as rape and attacks on children, deserve more than mere imprisonment; such criminals ought to be whipped or worse.....T ST SF F
19. No matter what he actually says, a man who has sexual relations with a woman before marriage loses some of his respect for her.....T ST SF F
20. I prefer to leave some things to chance rather than plan them carefully in advance.....T ST SF F
21. I decide what to do by thinking of general principles of correct conduct.....T ST SF F
22. The most important qualities of a real man are determination and driving ambition.....T ST SF F
23. A woman whose children are messy or rowdy has failed in her duties as a mother.....T ST SF F
24. I just put my things anywhere before going to bed, rather than arrange them in an orderly fashion.....T ST SF F
25. I have a feeling of undying gratitude for some of the things my parents have done for me.....T ST SF F
26. I control my sexual impulses by instituting prohibitions and restrictions.....T ST SF F
27. No sane or decent person could ever think of hurting a close friend or relative.....T ST SF F
28. I don't keep a very accurate account of the money I spend.....T ST SF F
29. To my way of thinking, if a person is wrong, he is wrong, and ifs and buts are beside the point.....T ST SF F
30. People who get away with such things as cheating on examinations fill me with rage.....T ST SF F
31. I am irritated by people with poor table manners.....T ST SF F

32. There is nothing necessarily wrong with a person who does not feel great love, gratitude and respect for his parents.....T ST SF F
33. I am like the man from Missouri — before I will believe anything, I say: "Show me.".....T ST SF F
34. Most of our social problems would be solved if we could somehow get rid of the immoral, crooked and feeble-minded people.....T ST SF F
35. I am not particularly careful of the food I eat in restaurants.....T ST SF F

APPENDIX E

The Sixteen Scrambled Sentences

Solvable

HIS SOUL THE BODY OF THEREBY HE LOST THE MEDIEVAL PHYSICIAN
PROFIT IN SAVING COULD SEE NO A MAN IF

HOMeward PASSAGE THE FIRST ONWARD WAS FAR MORE PASSAGE OF DISCOVERY
THEN THE TO EUROPE FROM AMERICA DIFFICULT AND DANGEROUS

ROOFING DEMONS AGES THERE HOLY MAN HAD WAS A VERY IN THE MIDDLE
THE GIFT OF WIDESPREAD BELIEF THAT A

EXECUTE LAWS THE HEREST TRUISM CIVILIZED MAN SHOULD MAKE AND
IT SEEMS TO THE TO SAY THAT ONLY THE GOVERNMENT

HUMAN MIND THE OLDER HEPAPHYSICS IN THE AWAITED THE FUSAL
GREAT STEE FORWARD THE NEXT REPOPULATION OF EXTENSION OF THE

GROW WINGS IN ORDER THAT BIRDS WERE NOT BUT THEY FLEW
HAPPENED TO GIVEN WINGS BECAUSE THEY THEY MIGHT FLY

MUCH WARMER IN THE RECENT DECADES THERE IS CONSIDERABLE
TWO CENTERS EVIDENCE IN NORTHERN HEMISPHERE ARE GROWING

WESTERN CIVILIZATION HORSES WERE DESTINED MEN SOON HISTORY OF
AN INCESSANTLY REALIZED THAT HENCEFORWARD IN THE TO PLAY
MINOR ROLE

Unsolvable

MAN'S NATURE KINDS OF WILD RUNS TO THE THE MORE JUSTICE WHICH
REVERGE IS A MORE OUGHT LAW THE MORE

COOLING-OFF PERIOD INSTEAD OF HIS NECK BE WORTH FOUR
TALKING ABOUT A TO DROP THREE OR ICE WHILE IT MIGHT

LAST DECADE AND MELT INCREASE IN THE PETROLEUM INDUSTRY
IS THE DEAD FIRE BURNS OUR CONSUMPTION OF THE FACT IN

THE ILLUSIONS BOTH ARE TO FUTURE NO A SYMBOL THAT CONNECTION WITH
THINGS WILL EXAMINE THE REAL OF IGNORANCE SEX

INTELLECTUALLY BANKRUPT WAS ALREADY THERE WAS STILL GREATER IGNORANCE
BEFORE THE AND THERE THE WORLD PLUNGED IT INTO ACCOMPANYING DISORDERS

SCIENTIFIC RAINMAKERS THE RECENT CONFUSED THE OF SUCCESS
HAS GREATLY ACTIVITY OF UNUSUAL MAN ABOUT THE POSSIBILITY

THE TALE MISSES THAT THIS LESSON CARRY TO HARRY
A PROPER MATE I RELATE BUT PROPER TIME CHOSE NOT ALONE

THE WIND AND CAME DOWN SMOTE HIS IN THE WINTER STANTING LINES
THAT GRAND PINES IN OLD HARPER THUNDERBARK OF

APPENDIX F

A SURVEY OF REACTIONS TO RESEARCH PARTICIPATION

1. How did you feel about participating in the study just recently conducted? (Check one)

I liked it very much
 I liked it somewhat
 I liked it a little but on the whole was indifferent
 I was somewhat irritated by it
 I was very irritated by it
 I was extremely irritated by it

2. How worthwhile was it to participate in the study just recently conducted? (Check one)

It was extremely worthwhile
 It was very worthwhile
 It was somewhat beneficial
 It was somewhat of a waste of time
 It was a considerable waste of time
 It was a complete waste of time

3. If you were asked by the experimenter who conducted the study in which you just participated to volunteer for another study, would you volunteer? (Check one)

Yes, I definitely would volunteer
 Yes, I probably would volunteer
 Yes, I might volunteer, but I'm not sure
 No, I don't think I would volunteer, but I'm not sure
 No, I probably would not volunteer
 No, I definitely would not volunteer

4. In your opinion, how much of a contribution will this study make to the field of psychology? (Check one)

A very large contribution
 A fairly large contribution
 Some contribution but not very much
 A small contribution
 Very little contribution
 None at all

5. In your opinion, how competent was the psychologist who conducted the experiment in which you just participated? (Check one)

Extremely competent
 Very competent
 Fairly competent
 Somewhat incompetent
 Very incompetent
 Extremely incompetent

6. What is your reaction now to the psychologist who conducted the experiment in which you just participated - how much do you like or dislike her? (Check one)

I like her very much
 I like her quite a bit
 I like her a little
 I dislike her a little
 I dislike her very much
 I dislike her intensely

7. Is there anything about the experiment that you disliked?

No
 Yes (What was it that you disliked?)

8. Is there anything about the experiment that you liked?

No
 Yes (What was it that you liked?)

9. How do you feel you did on the sentences?

Very well
 Fairly well
 Middling
 Somewhat poorly
 Very poorly

10. How many of the sentences do you think you answered correctly?

Appendix G

CHECK ONE OF EACH PAIR OF ADJECTIVES

- | | |
|--|--|
| 1. <input type="checkbox"/> Unhappy | <input type="checkbox"/> Happy |
| 2. <input type="checkbox"/> Irritable | <input type="checkbox"/> Good-natured |
| 3. <input type="checkbox"/> Humorous | <input type="checkbox"/> Humorless |
| 4. <input type="checkbox"/> Unreliable | <input type="checkbox"/> Reliable |
| 5. <input type="checkbox"/> Important | <input type="checkbox"/> Insignificant |
| 6. <input type="checkbox"/> Persistent | <input type="checkbox"/> Unstable |
| 7. <input type="checkbox"/> Frivolous | <input type="checkbox"/> Serious |
| 8. <input type="checkbox"/> Restrained | <input type="checkbox"/> Talkative |
| 9. <input type="checkbox"/> Imaginative | <input type="checkbox"/> Unimaginative |
| 10. <input type="checkbox"/> Strong | <input type="checkbox"/> Weak |
| 11. <input type="checkbox"/> Dishonest | <input type="checkbox"/> Honest |
| 12. <input type="checkbox"/> Warm | <input type="checkbox"/> Cold |
| 13. <input type="checkbox"/> Polite | <input type="checkbox"/> Blunt |
| 14. <input type="checkbox"/> Emotional | <input type="checkbox"/> Unemotional |
| 15. <input type="checkbox"/> Informal | <input type="checkbox"/> Formal |
| 16. <input type="checkbox"/> Cheerful | <input type="checkbox"/> Sad |
| 17. <input type="checkbox"/> Modest | <input type="checkbox"/> Proud |
| 18. <input type="checkbox"/> Intelligent | <input type="checkbox"/> Unintelligent |
| 19. <input type="checkbox"/> Unfriendly | <input type="checkbox"/> Friendly |
| 20. <input type="checkbox"/> Fast | <input type="checkbox"/> Slow |

APPENDIX H

RECALL SCORES AND PERCENTAGES FOR NONPUNITIVE Ss ACCORDING TO RANKINGS ON THE MORALISTIC-REPRESSIVE CONSCIENCE SCALE

L A I S S E Z - F A I R E C O N D I T I O N						E G O - I N V O L V E D C O N D I T I O N					
S#	Comp- letions Score	Per- cent- age	Incomp- pletions Score	Per- cent- age	Total Score	S#	Comp- letions Score	Per- cent- age	Incomp- pletions Score	Per- cent- age	Total Score
167	3	60.	1	9.	4	103	3	37.5	1	12.5	4
23	3	42.9	2	22.2	5	67	3	50.	1	10.	4
119	0	0.	0	0.	0	56	3	60.	1	10.	4
130	2	28.6	2	22.2	4	71	2	40.	1	9.	3
16	5	62.5	0	0.	5	51	3	33.3	2	30.	5
118	2	40.	1	10.	3	98	2	66.7	2	15.4	4
160	4	66.7	3	30.	7	43	3	50.	1	10.	4
216	3	42.9	1	11.1	4	54	1	25.	0	0.	1
124	3	50.	0	0.	3	72	2	33.3	0	0.	2
133	2	33.3	0	0.	2	135	4	57.1	1	11.1	5
8	4	50.	1	12.5	5	104	3	37.5	1	12.5	4
220	4	80.	1	9.	5	150	4	100.	1	25.	5
227	2	66.7	3	23.1	5	59	5	100.	3	27.3	8
4	5	71.4	1	11.1	6	138	5	71.4	1	11.1	6
206	3	60.	1	9.	4	238	3	42.9	2	22.2	5
126	3	37.5	0	0.	3	198	2	50.	1	8.3	3

APPENDIX H--Continued

L A I S S E Z - F A I R E C O N D I T I O N						E G O - I N V O L V E D C O N D I T I O N					
S#	Comp- letions Score	Per- cent- age	Incomp- letions Score	Per- cent- age	Total Score	S#	Comp- letions Score	Per- cent- age	Incomp- letions Score	Per- cent- age	Total Score
1	2	33.3	2	20.	4	192	3	50.	0	0.	3
132	2	25.	0	0.	2	202	4	100.	1	8.3	5
153	2	33.3	0	0.	2	121	2	25.	0	0.	2
218	3	37.5	2	25.	5	85	3	50.	2	20.	5
Total	57	46.3	21	10.7	78		60	58.8	24	11.0	84
Mean	--	--	--	--	3.9		--	--	--	--	4.2
S. D.	--	--	--	--	1.6		--	--	--	--	1.59
Combined L-F and E-I Scores Total 117						Mean of Combined Total 4.05					
45						S. D. 1.6					
162											

Note: completions score = number of completions recalled.
 completions percentage = ratio of completions score to number of sentences completed correctly.
 incompletions score = number of incompletions recalled.
 incompletions percentage = ratio of incompletions score to number of sentences not completed.
 total score = completions score plus incompletions score.

APPENDIX H--Continued

RECALL SCORES AND PERCENTAGES FOR PUNITIVE Ss ACCORDING TO RANKINGS ON THE MORALISTIC-REPRESSIVE CONSCIENCE SCALE

L A I S S E Z - F A I R E C O N D I T I O N						E G O - I N V O L V E D C O N D I T I O N					
S#	Comp- letions Score	Per- cent- age	Incomp- letions Score	Per- cent- age	Total Score	S#	Comp- letions Score	Per- cent- age	Incomp- letions Score	Per- cent- age	Total Score
228	3	75.	1	8.3	4	66	4	80.	2	18.2	6
107	3	100.	2	15.4	5	144	1	25.	3	25.	4
112	1	33.3	1	7.7	4	143	3	60.	3	27.3	6
28	1	25.	3	25.	4	95	1	50.	3	21.4	4
7	3	42.9	6	66.7	9	230	4	66.7	2	20.	6
32	1	50.	4	28.6	5	142	1	50.	3	21.4	4
5	4	100.	4	33.3	8	76	3	60.	3	27.3	6
170	1	33.3	3	23.	4	81	0	0.	4	28.6	4
62	2	40.	5	44.6	7	137	3	50.	3	39.	6
2	3	100.	2	15.4	5	88	0	0.	7	46.7	7
181	2	50.	3	25.	5	94	3	60.	2	18.2	5
174	3	75.	2	16.7	5	215	2	66.7	2	15.4	4
19	5	71.	2	22.2	7	52	0	0.	5	50.	5
165	4	90.	2	18.2	6	97	3	60.	2	18.2	5
225	3	60.	4	36.4	7	231	3	50.	3	30.	6
29	4	100.	2	16.7	6	60	3	27.5	4	50.	7

APPENDIX H--Continued

L A I S S E Z - F A I R E C O N D I T I O N						E G O - I N V O L V E D C O N D I T I O N					
S#	Comp- letions Score	Per- cent- age	Incomp- letions Score	Per- cent- age	Total Score	S#	Comp- letions Score	Per- cent- age	Incomp- letions Score	Per- cent- age	Total Score
25	3	42.9	2	22.2	5	82	4	100.	4	33.3	8
3	6	100.	3	30.	9	213	1	25.	4	33.3	5
123	2	40.	3	27.3	5	149	2	50.	2	16.7	4
219	3	50.	3	30.	6	207	2	50.	4	33.3	6
Total	57	61.3	57	25.1	114		43	51.8	65	27.4	108
Mean	--	--	--	--	5.7		--	--	--	--	5.4
S. D.	--	--	--	--	1.7		--	--	--	--	1.2
Combined L-F and E-I Scores						Mean of					
Total 100			122			Combined Total 5.55			S. D. 1.5		

Note: completions score = number of completions recalled.
 completions percentage = ratio of completions score to number of sentences completed correctly.
 incompletions score = number of incompletions recalled.
 incompletions percentage = ratio of incompletions score to number of sentences not completed.
 total score = completions score plus incompletions score.

APPENDIX J

COMPLETED AND INCOMPLETED RECALL PERCENTAGES CONVERTED INTO ANGLES BY ARC SIN $\sqrt{\text{PERCENTAGE}}$ TRANSFORMATION

NONPUNITIVE S s						PUNITIVE S s					
L-F Condition			E-I Condition			L-F Condition			E-I Condition		
S#	Arc Sin c	Arc Sin i	S#	Arc Sin c	Arc Sin i	S#	Arc Sin c	Arc Sin i	S#	Arc Sin c	Arc Sin i
167	50.77	17.46	103	37.76	20.70	228	60.00	16.74	66	63.44	25.25
23	40.92	28.11	67	45.00	18.44	107	90.00	23.11	144	30.00	30.00
119	0.	0.	56	50.77	18.44	112	35.24	16.11	143	50.77	31.50
130	32.33	28.11	71	39.23	17.46	28	30.00	30.00	95	45.00	27.56
16	52.24	0.	51	35.24	33.21	7	40.92	54.76	230	54.76	26.56
118	39.23	18.44	98	54.76	23.11	32	45.00	32.33	142	45.00	27.56
160	54.76	33.21	43	45.00	18.44	5	90.00	35.24	76	50.77	31.50
216	40.92	19.46	54	30.00	0.	170	35.24	28.66	81	0.	32.33
124	45.00	0.	72	35.24	0.	62	39.23	41.90	137	45.00	33.21
133	35.24	0.	135	49.08	19.46	2	90.00	23.11	88	0.	43.11
8	45.00	20.70	104	37.76	20.70	181	45.00	30.00	94	50.77	25.25
220	63.44	17.46	150	90.00	30.00	174	60.00	24.12	215	54.76	23.11
227	54.76	28.73	59	90.00	31.50	19	57.42	28.11	52	0.	45.00
4	57.67	19.46	138	57.67	19.46	165	71.56	25.25	97	50.77	25.25
206	50.77	17.46	238	40.92	28.11	225	50.77	37.11	231	45.00	33.21
126	37.76	0.	198	45.00	16.74	29	90.00	24.12	60	37.76	45.00

APPENDIX J--Continued

NONPUNITIVE S s						PUNITIVE S s					
L-F Condition			E-I Condition			L-F Condition			E-I Condition		
S#	Arc Sin c	Arc Sin i	S#	Arc Sin c	Arc Sin i	S#	Arc Sin c	Arc Sin i	S#	Arc Sin c	Arc Sin i
1	35.24	26.56	192	45.00	0.	25	40.92	28.11	82	90.00	35.24
132	30.00	0.	202	90.00	16.74	3	90.00	33.21	213	30.00	35.24
153	35.24	0.	121	30.00	0.	123	39.23	31.50	149	45.00	24.12
218	37.76	30.00	85	45.00	26.56	219	45.00	33.21	207	45.00	35.24
Total	839.15	315.16		993.43	329.07		1145.53	596.70		833.80	635.24
Mean	41.96	15.76		49.67	16.45		57.28	29.84		41.69	31.76
S. D.	13.5	12.3		18.1	10.5		21.9	8.7		21.8	6.6
Combined L-F and E-I Transformations						Combined L-F and E-I Transformations					
Total	Arc Sin c 1832.58		Arc Sin i 644.23			Total	Arc Sin c 1979.33		Arc Sin i 1231.94		
Mean	45.81		16.11			Mean	49.49		30.3		
S. D.	15.8		11.4			S. D.	21.8		7.7		

APPENDIX K

PERCENTAGE OF Ss IN EACH GROUP GIVING EXTREME HOSTILE RESPONSES ON ATTITUDE QUESTIONNAIRE (SCORED 5 AND 6)

No.	Q U E S T I O N	Response	Nonpun. L-F	Nonpun. E-I	Pun. L-F	Pun. E-I	Nonpun.	Pun.
1.	How did you feel about participating in the study just recently conducted?	Very and extremely irritated	25	5	0	20	15	10
2.	How worthwhile was it to participate in the study just recently conducted?	Considerable and complete waste of time	35	20	0	25	27.5	12.5
3.	If you were asked by the experimenter who conducted the study in which you just participated to volunteer for another one, would you?	Probably and definitely would not	50	35	20	50	42.5	35
4.	In your opinion, how much of a contribution will this study make to the field of psychology?	Very little and none at all	65	30	20	45	47.5	35
5.	In your opinion, how competent was the psychologist who conducted the experiment in which you must participated?	Very and extremely incompetent	0	0	10	0	0	5

APPENDIX K--Continued

No.	Q U E S T I O N	Response	Nonpun. L-F	Nonpun. E-I	Pun. L-F	Pun. E-I	Nonpun.	Pun.
6.	What is your reaction now to the psychologist who just conducted the experiment in which you just participated? How much do you like or dislike her?	Dislike her very much and intensely	0	5	5	0	2.5	2.5
7.	Is there anything about the experiment you disliked?	Yes	50	60	40	65	55	52.5
8.	Is there anything about the experiment you liked?	No	20	50	65	5	35	35

APPENDIX L

HOSTILITY SCORES ON THE ATTITUDE QUESTIONNAIRE FOR NONPUNITIVE Ss
 ACCORDING TO RANKINGS ON THE MORALISTIC-REPRESSIVE CONSCIENCE SCALE

Laissez-Faire Condition				Ego-Involved Condition			
S#	a	b	c	S#	a	b	c
167	6	6	15	103	6	5	14
23	11	8	23	67	8	4	15
119	5	6	15	56	15	12	30
130	9	12	25	71	6	5	15
16	11	10	27	51	7	5	14
118	10	11	27	98	9	7	19
160	9	9	22	43	11	11	26
216	9	7	19	54	10	6	20
124	13	11	30	72	13	8	26
133	11	9	23	135	7	6	17
8	9	10	22	104	5	7	13
220	10	7	22	150	8	8	17
227	8	9	20	59	10	9	23
4	9	9	21	138	11	9	22
206	9	8	20	238	10	7	19
126	12	10	26	198	11	8	22
1	7	9	22	192	9	10	22
132	10	9	22	202	11	8	23
153	12	8	24	121	7	7	17
218	11	9	23	85	11	8	21
Tot.	191	177	448		185	150	395
Mean	9.55	8.85	22.4		9.25	7.5	19.75
S.D.	2.01	1.6	3.7		2.54	2.14	4.3
Combined L-F and E-I Scores							
Tot.	376	327	843				
Mean	9.4	8.17	21.07				
S.D.	2.38	1.94	4.17				

Note: a = personal hostility to (Questions 3, 5, 6)
 b = hostile evaluation of experiment (Questions 2, 4)
 c = general hostility (Questions 1 - 6)

APPENDIX L

HOSTILITY SCORES ON THE ATTITUDE QUESTIONNAIRE FOR PUNITIVE Ss
 ACCORDING TO RANKINGS ON THE MORALISTIC-REPRESSIVE CONSCIENCE SCALE

Laissez-Faire Condition				Ego-Involved Condition			
S#	a	b	c	S#	a	b	c
228	7	7	16	66	8	4	16
107	6	4	11	144	11	6	21
112	11	10	25	143	8	7	19
28	9	5	16	95	12	10	27
7	7	7	18	230	8	7	18
32	6	7	15	142	7	7	17
5	9	9	21	76	8	7	18
170	4	4	10	81	11	9	23
62	10	8	21	137	7	8	17
2	11	6	20	88	8	4	14
181	15	9	28	94	11	9	25
174	7	7	16	215	11	7	21
19	7	6	14	52	12	6	21
165	8	6	17	97	7	6	15
225	6	6	15	231	10	10	23
29	8	6	17	60	13	9	26
25	9	8	20	82	13	11	29
3	11	7	20	213	9	10	22
123	12	8	23	149	13	11	29
219	8	6	17	207	10	11	24
Total	171	136	360		197	159	425
Mean	8.55	6.8	18.0		9.85	7.95	21.25
S.D.	2.6	1.6	4.4		2.1	2.2	4.5
Combined L-F and E-I Scores							
Total	368	295	785				
Mean	9.2	7.37	19.62				
S.D.	2.38	1.97	4.47				

Note: a = personal hostility to E (Questions 3, 5, 6)
 b = hostile evaluation of experiment (Questions 2, 4)
 c = general hostility (Questions 1 through 6)

APPENDIX M

ADJECTIVE CHECKLIST SCORES FOR ESTIMATION OF HOSTILE
REACTIONS TO EXPERIMENTER

Nonpunitive Ss				Punitive Ss			
S#	L-F Score	S#	E-I Score	S#	L-F Score	S#	E-I Score
167	6	103	2	228	1	66	7
23	1	7	0	107	1	144	5
119	10	56	5	112	6	143	2
130	1	71	2	28	3	95	8
16	7	51	0	7	0	230	4
118	7	98	4	32	3	142	2
160	3	43	2	5	4	76	3
216	5	54	5	170	3	81	5
124	2	72	7	62	4	137	2
133	3	135	3	2	2	88	4
8	6	104	5	181	6	94	4
220	5	150	5	174	1	215	8
227	1	59	2	19	1	52	8
4	2	138	1	165	1	97	1
206	1	238	2	225	2	231	8
126	7	198	8	29	1	60	2
1	0	192	4	25	4	82	12
132	1	202	4	3	7	213	4
153	9	121	2	123	8	149	12
218	3	85	0	219	4	207	4
Total	80		63		62		105
Mean	4.0		3.15		3.1		5.25
S.D.	2.99		2.2		2.3		3.2
Combined scores: Total		Nonpunitive Ss 143		Punitive Ss 167			
Mean		3.57		4.17			
S.D.		2.61		2.9			

APPENDIX N

SCORES OF INDIVIDUAL ADJECTIVES YIELDING A HOSTILE RESPONSE
TO THE EXAMINER

ADJECTIVE	G R O U P					
	Nonpunitive		Punitive		Combined	
	L-F	E-I	L-F	E-I	L-F	E-I
Unhappy	2	1	3	2	3	5
Irritable	2	3	2	5	5	7
Humorless	6	5	5	8	11	13
Unreliable	1	0	1	0	1	1
Insignificant	0	4	7	7	13	14
Unstable	0	1	0	2	1	2
Frivolous	2	1	1	2	3	3
Talkative	8	7	7	12	15	19
Unimaginative	5	4	4	8	9	12
Weak	3	2	3	6	5	9
Dishonest	0	0	0	0	0	0
Cold	6	6	5	7	12	12
Blunt	4	6	2	6	10	8
Emotional	6	10	6	10	16	16
Formal	10	9	12	11	19	23
Sad	3	2	1	4	5	5
Proud	7	6	2	6	13	8
Unintelligent	1	1	1	1	2	2
Unfriendly	3	3	3	5	6	8
Slow	3	3	2	4	6	6

APPENDIX O

ACTUAL AND ESTIMATED PERFORMANCE ON SCRAMBLED SENTENCES
BY INDIVIDUAL NONPUNITIVE L-F Ss

S#	Category	Number Estimated Correct	Actual Number Correct
167	Somewhat poorly	2	5
23	Somewhat poorly	5	7
119	Middling	5	7
130	Very well	4	7
16	Fairly well	12	8
118	Somewhat poorly	2	3
160	Middling	4	6
216	Middling	5	7
124	Middling	4	5
133	Very Poorly	2	6
8	Middling	6	8
220	Very Poorly	4	5
227	Somewhat poorly	5	5
4	Fairly Well	8	8
206	Middling	5	3
126	Fairly well	8	8
1	Fairly well	7	4
132	Fairly well	0	6
153	Middling	7	7
218	Somewhat poorly	4	8
Total		99	123
Mean		4.95	6.15
S.D.		2.65	1.63

- Note: 1. Category based on question 9 of the attitude questionnaire.
 2. Estimated performance scores were based on question 10 of the attitude questionnaire.
 3. Actual performance scores were based on the number of solvable sentences correctly unscrambled.

APPENDIX O--Continued

ACTUAL AND ESTIMATED PERFORMANCE ON SCRAMBLED SENTENCES
BY INDIVIDUAL NONPUNITIVE E-I Ss

S#	Category	Number Estimated Correct	Actual Number Correct
103	Middling	2	3
67	Very Poorly	4	5
56	Middling	4	5
71 ¹	- - - - -	-	5
51	Middling	8	7
98	Fairly well	10	7
43	Middling	0	5
54	Somewhat poorly	2	4
72	Very poorly	0	2
135	Middling	8	7
104	Middling	9	8
150	Middling	2	1
59	Middling	8	6
138	Middling	5	6
238	Middling	6	7
198	Middling	5	4
192	Fairly well	5	4
202	Middling	5	5
121	Fairly well	4	6
85	Middling	10	5
Total		97	101
Mean		5.1	5.1
S.D.		3.1	1.1

¹Subject #71 did not answer questions 9 and 10.

APPENDIX O--Continued

ACTUAL AND ESTIMATED PERFORMANCE ON SCRAMBLED SENTENCES
BY INDIVIDUAL PUNITIVE L-F Ss

S#	Category	Number Estimated Correct	Actual Number Correct
228	Middling	4	4
107	Middling	7	2
112 ¹	- - - - -	-	4
28	Fairly well	5	4
7	Middling	7	5
32	Middling	5	3
5	Middling	9	4
170	Somewhat poorly	3	4
62 ¹	- - - - -	-	5
2	Middling	3	4
181	Somewhat poorly	2	3
174	Middling	10	3
19	Middling	5	7
165	Fairly well	3	7
225	Middling	5	5
29	Middling	6	6
25	Middling	4	5
3	Middling	8	7
123	Middling	5	5
219	Middling	8	6
Total		99	93
Mean		5.5	4.65
S. D.		2.26	1.49

¹Subjects #112 and 62 did not answer questions 9 and 10.

APPENDIX O--Continued

ACTUAL AND ESTIMATED PERFORMANCE ON SCRAMBLED SENTENCES
BY INDIVIDUAL PUNITIVE E-I Ss

S#	Category	Number Estimated Correct	Actual Number Correct
66	Fairly well	15	4
144 ¹	- - - - -	-	3
143	Middling	4	5
95	Middling	5	3
230	Fairly well	5	5
142	Middling	9	6
76 ¹	- - - - -	-	5
81	Middling	4	5
137	Middling	5	6
88	Middling	5	2
94	Middling	5	5
215	Middling	4	2
52	Somewhat poorly	5	6
97	Middling	3	4
231	Middling	4	4
60	Fairly well	9	8
82	Fairly well	5	2
213	Somewhat poorly	4	4
149	Somewhat poorly	8	2
207	Very poorly	3	2
Total		102	83
Mean		5.67	4.15
S. D.		2.93	1.76

¹Subjects #144 and 76 did not answer questions 9 and 10.

APPENDIX P

SCORES AND RANKS FOR HOSTILE REACTIONS TO THE EXAMINER ON ATTITUDE
QUESTIONNAIRE AND ON ADJECTIVE CHECKLIST FOR INDIVIDUAL
NONPUNITIVE Ss

Laissez-faire Condition					Ego-involved Condition				
S#	a Score	Adj. Score	a Rank	Adj. Rank	S#	a Score	Adj. Score	a Rank	Adj. Rank
167	6	6	2.	14.5	103	6	2	2.5	8.5
23	11	1	15.5	4.	67	8	0	7.5	2.
119	5	10	1.	20.	56	15	5	20.	16.5
130	9	1	7.5	4.	71	6	2	2.5	8.5
16	11	7	15.5	17.	51	7	0	5.	2.
118	10	7	12.	17.	98	9	4	9.5	13.
160	9	3	7.5	10.	43	11	2	16.	8.5
216	9	5	7.5	12.5	54	10	5	12.	16.5
124	13	2	20.	7.5	72	13	7	19.	19.
133	11	3	15.5	10.	135	7	3	5.	11.
8	9	6	7.5	14.5	104	5	5	1.	16.5
220	10	5	12.	12.5	150	8	5	7.5	16.5
227	8	1	4.	4.	59	10	2	12.	8.5
4	9	2	7.5	7.5	138	11	1	16.	4.
206	9	1	7.5	4.	238	10	2	12.	8.5
126	12	7	18.5	17.	198	11	8	16.	20.
1	7	0	3.	1.	192	9	4	9.5	13.
132	10	1	12.	4.	202	11	4	16.	13.
153	12	9	18.5	19.	121	7	2	5.	8.5
218	11	3	15.5	10.	85	11	0	16.	2.

Note: a score = examiner hostility score on questionnaire.
a rank = examiner hostility rank on questionnaire.

APPENDIX P--Continued

SCORES AND RANKS FOR HOSTILE REACTIONS TO THE EXAMINER ATTITUDE
QUESTIONNAIRE AND ON ADJECTIVE CHECKLIST FOR INDIVIDUAL
PUNITIVE Ss

Laissez-faire Condition					Ego-involved Condition				
S#	a Score	Adj. Score	a Rank	Adj. Rank	S#	a Score	Adj. Score	a Rank	Adj. Rank
228	7	1	6.5	4.5	66	8	7	6.	14.
107	6	1	3.	4.5	144	11	5	13.5	12.5
112	11	6	17.	17.5	143	8	2	6.	3.5
28	9	3	13.	11.	95	12	8	16.5	16.5
7	7	3	6.5	1.	230	8	4	6.	9.
32	6	3	3.	11.	142	7	2	2.	3.5
5	9	4	13.	14.5	76	8	3	6.	6.
170	4	3	1.	11.	81	11	5	13.5	12.5
62	10	4	15.	14.5	137	7	2	2.	3.5
2	11	2	17.	8.5	88	8	4	6.	9.
181	15	6	20.	17.5	94	11	4	13.5	9.
174	7	1	6.5	4.5	215	11	8	13.5	16.5
19	7	1	6.5	4.5	52	12	8	16.5	16.5
165	8	1	10.	4.5	97	7	1	2.	1.
225	6	2	3.	8.5	231	10	8	10.5	16.5
29	8	1	10.	4.5	60	13	2	19.	3.5
25	9	4	13.	14.5	82	13	12	19.	19.5
3	11	7	17.	19.	213	9	4	9.	9.
123	12	8	19.	20.	149	13	12	19.	19.5
219	8	4	10.	14.5	207	10	4	10.5	9.5

Note: a score = examiner hostility score on questionnaire.
a rank = examiner hostility rank on questionnaire.

APPENDIX Q

SCORES AND RANKS FOR GENERAL HOSTILITY AND RECALL OF TOTAL NUMBER
OF SENTENCES FOR INDIVIDUAL NONPUNITIVE Ss

Laissez-faire Condition					Ego-involved Condition				
S#	c Score	t Score	c Rank	t Rank	S#	c Score	t Score	c Rank	t Rank
167	15	4	1.5	10.	103	14	4	2.5	9.5
23	23	5	13.	15.5	67	15	4	.5	9.5
119	15	0	1.5	1.	56	30	4	20.	9.5
130	25	4	16.	10.	71	15	3	4.5	5.
16	27	5	18.5	15.5	51	14	5	2.5	15.
118	27	3	18.5	6.	98	19	4	9.5	9.5
160	22	7	9.	20.	43	26	4	18.5	9.5
216	19	4	3.	10.	54	20	2	11.	2.
124	30	3	20.	6.	72	26	2	18.5	2.
133	23	2	13.	3.	135	17	5	7.	15.
8	22	5	9.	15.5	104	13	4	1.	9.5
220	22	5	9.	15.5	150	17	7	7.	19.
227	20	5	4.5	15.5	59	23	8	16.5	20.
4	21	6	6.	19.	138	22	6	14.	18.
206	20	4	4.5	10.	238	19	5	9.5	15.
126	26	3	17.	5.	198	22	3	14.	5.
1	22	4	9.	9.5	192	22	3	14.	5.
132	22	2	9.	2.	202	23	5	16.5	15.
153	24	2	15.	2.	121	17	2	7.	2.
118	23	5	13.	15.	85	21	5	12.	15.

Note: c score = general hostility score.
c rank = general hostility rank.

APPENDIX Q--Continued

SCORES AND RANKS FOR GENERAL HOSTILITY AND RECALL OF TOTAL NUMBER
OF SENTENCES FOR INDIVIDUAL PUNITIVE Ss

Laissez-faire Condition					Ego-involved Condition				
S#	c Score	t Score	c Rank	t Rank	S#	c Score	t Score	c Rank	t Rank
228	16	4	7.	3.	66	16	6	3.	14.
107	11	5	2.	8.	144	21	4	10.	3.5
112	25	2	19.	1.	143	19	6	8.	14.
28	16	4	7.	3.	95	27	4	18.	3.5
7	18	9	12.	19.5	230	18	6	6.5	14.
32	15	5	4.5	8.	142	17	4	4.5	3.5
5	21	8	16.5	18.	76	18	6	6.5	14.
170	10	4	1.	3.	81	23	4	13.5	3.5
62	21	7	16.5	16.	137	17	6	4.5	14.
2	20	5	14.	8.	88	14	7	1.	18.5
181	28	5	20.	8.	94	25	5	16.	8.5
174	16	5	7.	8.	215	21	4	10.	3.5
19	14	7	3.	16.	52	21	5	10.	8.5
165	17	6	10.	13.	97	15	5	2.	8.5
225	15	7	4.5	16.	231	23	6	13.5	14.
29	17	6	10.	13.	60	26	7	17.	18.5
25	20	5	14.	8.	82	29	8	19.5	20.
3	20	9	14.	19.5	213	22	5	12.	8.5
123	23	5	18.	8.	149	29	4	19.5	3.5
219	17	6	10.	13.	207	24	6	15.	14.

Note: c score = general hostility score
c rank = general hostility rank

APPENDIX R

SCORES AND RANKS FOR GENERAL HOSTILITY AND RECALL OF INCOMPLETED SENTENCES FOR INDIVIDUAL NONPUNITIVE Ss

Laissez-faire Condition					Ego-involved Condition				
S#	c	i	c Rank	i Rank	S#	c	i	c Rank	i Rank
167	15	17.46	1.5	9.	103	14	20.70	2.5	13.5
23	23	28.11	13.	16.5	67	15	18.44	4.5	9.
119	15	0.	1.5	3.5	56	30	18.44	20.	9.
130	25	28.11	16.	16.5	71	15	17.46	4.5	7.
16	27	0.	18.5	3.5	51	14	33.21	2.5	20.
118	27	18.44	18.5	11.	98	19	23.11	9.5	15.
160	22	33.21	9.	20.	43	26	18.44	18.5	9.
216	19	19.46	3.	12.5	54	20	0.	11.	2.5
124	30	0.	20.	3.5	72	26	0.	18.5	2.5
133	23	0.	13.	3.5	135	17	19.46	7.	11.5
8	22	20.70	9.	14.	104	13	20.70	1.	13.5
220	22	17.46	9.	9.	150	17	30.00	7.	18.
227	20	28.73	4.5	18.	59	23	31.50	16.5	19.
4	21	19.46	6.	12.5	138	22	19.46	14.	11.5
206	20	17.46	4.5	9.	238	19	28.11	9.5	17.
126	26	0.	17.	3.5	198	22	16.74	14.	5.5
1	22	26.56	9.	15.	192	22	0.	14.	2.5
132	22	0.	9.	3.5	202	23	16.74	16.5	5.5
153	24	0.	15.	3.5	121	17	0.	7.	2.5
218	23	30.00	13.	19.	85	21	26.56	12.	16.

APPENDIX R--Continued

SCORES AND RANKS FOR GENERAL HOSTILITY AND RECALL OF INCOMPLETED SENTENCES FOR INDIVIDUAL PUNITIVE Ss

Laissez-faire Condition					Ego-involved Condition				
S#	c	i	c Rank	i Rank	S#	c	i	c Rank	i Rank
228	16	16.74	7.	2.	66	16	25.25	3.	4.
107	11	23.11	2.	3.5	144	21	30.00	10.	9.
112	25	16.11	19.	1.	143	19	31.50	8.	10.5
28	16	30.00	7.	11.5	95	27	27.56	18.	7.5
7	18	54.76	12.	20.	230	18	26.50	6.5	6.
32	15	32.33	4.5	14	142	17	27.56	4.5	7.5
5	21	35.24	16.5	17.	76	18	31.50	6.5	10.5
170	10	28.66	1.	10.	81	23	32.33	13.5	12.
62	21	41.90	16.5	19.	137	17	33.21	4.5	13.5
2	20	23.11	14.	3.5	88	14	43.11	1.	18.
181	28	30.00	20.	11.5	94	25	25.25	16.	4.
174	16	24.12	7.	5.5	215	21	23.11	10.	1.
19	14	28.11	3.	8.5	52	21	45.00	10.	19.5
165	17	25.25	10.	7.	97	15	25.25	2.	4.
225	15	37.11	4.5	18.	231	23	33.21	13.5	13.5
29	17	24.12	10.	5.5	60	26	45.00	17.	19.5
25	20	28.11	14.	8.5	82	29	35.24	19.5	16.
3	20	33.21	14.	15.5	213	22	35.24	12.	16.
123	23	31.50	18.	13.	149	29	24.12	19.5	2.
219	17	33.21	10.	15.5	207	24	35.24	15.	16.