

LOCUS OF CONTROL, EXTRAVERSION
11
AND
PREFERRED STYLE OF DEFENSE

A Thesis
Presented to
The Faculty of the Department of Psychology
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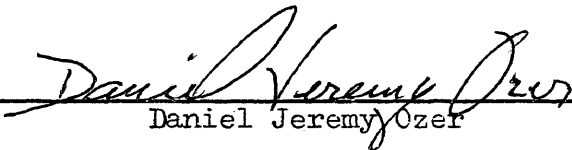
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Daniel Jeremy Ozer

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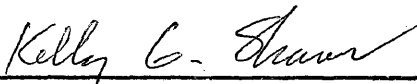


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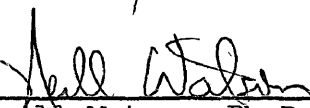
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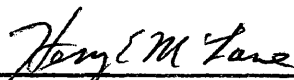
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ABSTRACT

Previous studies focusing on the relationships between locus of control, adjustment, and defensive style were reviewed; and both conceptual and practical limitations of these latter two variables were discussed. A multivariate approach using extraversion and locus of control to predict defensive style was advocated and then implemented in a sample of 76 college students. These subjects were extreme scorers on both Rotter's (1966) Internal Versus External Locus of Control Scale and the Extraversion scale of the Eysenck Personality Inventory (EPI) (Eysenck & Eysenck, 1968). Defensive Style was assessed by Gleser and Ihilevich's (1969) Defense Mechanism Inventory (DMI), and four behavioral measures of repression were also employed. Results affirmed the previous finding that locus of control accounts for little of the variance in the DMI scales. Extraversion was associated with high scores on the DMI Reversal scale, but was unrelated to the other DMI scales. An unexpected finding was that the EPI Neuroticism scale was significantly related to low scores on the DMI scales of Reversal and Principalization, and to high scores on the Projection, Turning Against the Object, and Turning Against the Self scales. The manipulation necessary to obtain behavioral measures of repression was unsuccessful.

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Introduction

Locus of control, extraversion, and defense are each topics which subsume a large portion of psychological research. Rotter (1975) recently estimated that there have been over 600 published reports dealing with locus of control in the past 15 years. Carrigan (1960) notes that extraversion has been one of the most enduringly productive constructs in personality research, and interest in extraversion has not abated in more recent years. Since the pioneering efforts of Anna Freud (1966), the notion of defense has been inexorably tied to the larger construct of adjustment; and is important in a number of theories of personality and psychopathology (e.g., Cameron, 1963). Despite the importance and widespread use of these variables, there has been no attempt to examine them in concert. Locus of control has been related to both adjustment and defense in a large number of studies, yet no firm conclusions have been achieved (Lefcourt, 1976; Phares, 1976). The extraversion literature has focused on the relationship between extraversion and adjustment, while nearly ignoring the whole area of defense.

This investigation attempts to integrate locus of control, extraversion, and defense for several reasons. As noted, the literature of locus of control and extraversion is extensive, yet disparate. Any systematic examination of both of these variables may eventually yield a finer conceptualization of each of them. Also, an integration of these variables may yield valuable insights into those areas where

neither extraversion nor locus of control provides a sufficient explanation. Since this study focuses on defensive style, it is hoped that some of the limitations encountered in previous studies of locus of control and defense may be circumvented by considering the role of extraversion.

Since no prior study has examined locus of control, extraversion, and defense, there is no firm foundation from which one may work. Rather, there are studies which focus on only a segment of the relevant issues. These pieces must be assembled in order to provide a base for empirical investigations. This foundation will be expressed in the form of several specific hypotheses, though to some extent this obscures the exploratory nature of this study. The goal here is not to provide definitive answers, but rather to identify important questions.

Locus of Control

Internal versus external locus of control is a construct referring to a person's generalized expectancy concerning the extent to which he believes that rewards are contingent upon his behavior. The notion of locus of control grew out of the social learning theory of Julian Rotter (1954). Since that time, increasing numbers of research reports have been generated concerning locus of control and its influence upon a wide range of behaviors. On the basis of locus of control, differential predictions of behavior are possible in a wide range of tasks and situations. Evidence of this construct's broad utility is presented in several reviews (Joe, 1971; Lefcourt, 1966, 1976; Phares, 1976) and will not be reiterated here.

Though locus of control has been applied to topics ranging from operant conditioning to attitude change, the concept initially developed

in response to an applied clinical problem: the maladjustment of a particular patient (Phares, 1976). While there have been numerous studies, a clear picture of the relationship between adjustment and locus of control has yet to emerge, though there are two alternatives: the relationship might be curvilinear, so that persons toward the center of the distribution of locus of control are better adjusted than those at either extreme (Phares, 1976); or the relationship might be linear, such that internals are better adjusted than externals (Lefcourt, 1976). Rotter (1975) asserts that neither hypothesis has been convincingly verified, and he attributes this to problems arising in the assessment of adjustment. When no difference between the scores of psychiatric patients and normals on a locus of control scale can be found (Harrow & Ferrante, 1969), one must question the hypothesis that locus of control and adjustment are directly related.

Another difficulty in the formulations of both Phares (1976) and Lefcourt (1976) is that they describe adjustment as a function only of locus of control. Surely, one might expect that factors independent of locus of control are at least somewhat related to adjustment. Wallach (1967) has suggested that one-dimensional approaches often fail to yield much predictive power, so that the failure to find a relationship between locus of control and adjustment may be due to the inadequacies of a univariate approach.

In light of these criticisms, a multivariate examination of different modes of adjustment, or defensive styles, may be a more fruitful avenue of investigation.

Defensive Styles

A defensive style is a characteristic method of responding to stress or threat. An examination of defensive styles rather than adjustment results in two advantages. First, Rotter (1975) noted that studies relating locus of control to adjustment seemed to presuppose that an internal locus of control is the more desirable orientation. Defensive styles are less value-laden, as it is presumed that all persons respond to threat in one way or another, and there is no a priori reason to believe that any style is superior. A second advantage is that defensive style is a richer construct than adjustment. Adjustment is a single continuum. There are a variety of different ways of characterizing defensive style, but most conceptions (e.g., Freud, 1966; Haan, 1965) consider a variety of dimensions so that any given predictor may be valid for none, some, or all of the different styles. Such a construct clearly allows for greater precision than a single continuum.

Measurement of Defensive Styles

Despite the conceptual advantage of defensive styles, there is a paucity of measures which are both valid and wide in scope. The best known measure is the repression-sensitization scale (Byrne, 1961; Byrne, Barry & Nelson, 1963), but this assesses only one defensive style. Gleser and Thilevich (1969) note that this problem also exists in other measures of defensive preference prior to describing their own Defense Mechanism Inventory (DMI). They also provide data and review a variety of studies supporting the reliability and validity of the DMI. Further studies of the DMI's reliability (Weissman, Ritter & Gordon, 1971) and construct validity (Dodd, 1972; Gleser & Sacks, 1973) have also been

favorable. Walsh's (1972) review of the DMI concluded that it was the best measure for examining a variety of defensive styles.

The five areas of defense measured by the Defense Mechanism Inventory are:

1. Turning against Object (TAO). This class of defenses deals with conflict through attacking a real or presumed external frustrating object. Such classical defenses as identification-with-the-aggressor and displacement can be placed in this category.

2. Projection (PRO). Included here are defenses which justify the expression of aggression toward an external object through first attributing to it, without unequivocal evidence, negative intent, or characteristics.

3. Principalization (PRN). This class of defenses deals with conflict through involving a general principle that "splits off" affect from content and represses the former. Defenses such as intellectualization, isolation, and rationalization fall into this category.

4. Turning against Self (TAS). In this class are those defenses that handle conflict through directing aggressive behavior toward S himself. Masochism and autosadism are examples of defensive solutions in this category.

5. Reversal (REV). This class includes defenses that deal with conflict by responding in a positive or neutral fashion to a frustrating object which might be expected to evoke a negative reaction. Defenses such as negation, denial, reaction formation, and repression are subsumed under this category.

(Gleser & Ihilevich, 1969)

While the DMI appears to be a valid measure of a variety of defensive styles, at least two problems are inherent in the test. The DMI is an ipsative measure; and there are conceptual difficulties in the Reversal (REV) scale.

The Defense Mechanism Inventory and Ipsativity

The original distinction between normative and ipsative measures was made by Cattell (1944). He described an ipsative measure as one in which a person's score on a given scale is dependent on his scores on other scales, and independent of how others scored on the same scale. If a person's score on a given scale is independent of his scores on other scales, and dependent on how others scored on the same scale, then

the measure is normative. Thus, if the scale scores of an ipsative measure are summed, then this sum will be the same for all persons who take the test. The variance of the sum of scale scores will be 0, regardless of sample size. On the Defense Mechanism Inventory the sum of the scale scores is always 200. It should be noted that ipsativity is not an absolute phenomenon. Cattell's (1944) definition describes pure ipsativity. If a test is designed so that an elevation on one scale must produce a depression on another scale and the attributes of pure ipsativity are not present, then the test is partially ipsative (Hicks, 1970). Hicks (1970) notes that the extent to which a test is partially ipsative can be measured by the degree to which total scale score variance deviates from 0.

Ipsative tests have several drawbacks, three of which may be relevant to this investigation. First, inter-individual comparisons are meaningless (Hicks, 1970). If person X obtains a score of 45 on the PRO scale of the DMI, and person Y obtains a score of 35, one cannot conclude that X uses projection more often than Y. Any comparison between X and Y must be made in terms of intra-individual differences. In this example, the most that one can conclude is that X prefers the use of projection more than Y prefers to use projection. A second drawback of ipsative measures is that the mean correlation of the scales to any outside criterion will be 0 if the scale variances are equal (Hicks, 1970). Thus, on the DMI, it is impossible for all the scales to correlate to a criterion in the same direction (unless all five correlation coefficients are 0). Finally, scales on an ipsative test are statistically interdependent. Statistical procedures which require independence

of measures will be difficult to interpret if ipsative scores are used (Anastasi, 1968).

Hicks (1970) has described a variety of strategies whereby purely ipsative measures may be transformed so that they are partially ipsative. He notes that the advantage of such procedures is that the limitations imposed by ipsativity are an inverse function of total score variability. Block (1957) has demonstrated that ipsative ratings treated normatively are equivalent to normative ratings, though Hicks (1970) claims that Block's ipsative ratings were actually partially ipsative. Therefore, there seems to be some advantage in transforming the purely ipsative DMI scores to partially ipsative scores, as this should reduce the power of the limitations described.

Reversal, Repression and Recall

A second problem with the Defense Mechanism Inventory resides in the construction of the Reversal (REV) scale, which includes the defenses of negation, denial, repression, and reaction formation. Both Cameron (1963) and Anna Freud (1966) note that reaction formation is typically associated with obsessive-compulsive neuroses. Reaction formation may be more appropriately placed in the Principalization (PRN) scale, which includes intellectualization, isolation, and rationalization. However, the placement of reaction formation in the REV scale may not be so inappropriate, since reaction formation is usually the consequence of inadequate repression (Cameron, 1963; Freud, 1966). Woodrow's (1973) factor analysis of the DMI adds little clarity to this issue. She found two factors which contained items from both the REV and PRN scales; but Woodrow was unable to explain fully the difference between these two REV-PRN factors.

In practical usage, this problem concerning the nature and proper placement of reaction formation could obscure the relationship between the other REV defenses (denial, negation, repression) and any predictor variables. One method of circumventing this possible difficulty is to obtain other measures of the Reversal defenses.

As will soon be clear, repression is the most important of the REV defenses, since a number of studies have examined it in terms of locus of control. It would be useful to obtain a behavioral measure of repression, as this would provide multi-modal assessment. There have been essentially two different strategies aimed at behaviorally assessing repression. Zeller (1950a) argues that repression is an active inhibition of memory; and that removal of the inhibitory factor restores memory. He was able to demonstrate that failure feedback on a task described to the subjects as being a measure of ability could inhibit memory; and that removal of the inhibitory factor restored memory as measured by rate of relearning (Zeller, 1950b) and recall (Zeller, 1951). The critical measure for examining individual differences in repression in this paradigm is the difference in the amount of material recalled during two recall trials. A second method which has been used to assess repression is simple recall of threatening information, either failure feedback (Efran, 1963) or bogus, negative descriptions of personality (Mischel, Ebbesen & Zeiss, 1976; Phares, Ritchie & Davis, 1968). Here, the critical measure is the amount of material recalled. A curious finding of Phares et al. was that the valence of statements (positive or negative) did not affect the number of statements recalled. That is, the number of positive and negative statements recalled was proportionate to the number of statements of

each type in the initial feedback. One could interpret these results as indicating that the feedback was responded to as an entire gestalt, such that the negative affect presumably associated with the negative statements generalized to include all of the feedback.

Since the use of Zeller's active inhibition paradigm includes the recall paradigm, the Zeller method was employed in order to provide a direct comparison of these two means of assessing repression. Furthermore, a multi-method approach should reveal any difficulties in the Reversal scale created by the inclusion of reaction formation.

Locus of Control, Extraversion, and Defense

It was previously argued that defensive style, rather than adjustment, is likely to be a more productive means of examining the relationship between locus of control and psychopathology. Univariate methods were also criticized. Wallach (1967) suggests that multivariate approaches using orthogonal predictor variables will maximize the effectiveness of multivariate methods. One might extend Wallach's argument and suggest not only empirical, but conceptual orthogonality among multiple predictor variables. In addition, there should be reason to expect that each of the predictors alone is relevant to the criterion. For example, Hochreich (1974, 1975) used Rotter's (1967) measure of interpersonal trust to distinguish among congruent and defensive externals. The defensive (low-trust) externals were more likely than high-trust externals to make external attributions following failure. Interpersonal trust, while moderating the effects of locus of control among externals, failed to differentiate among internals. Furthermore, no rationale which convincingly explains the moderating

effects of trust is provided. It may be that the failure to explain any relationship between trust and blame projection regardless of locus of control obscures rather than clarifies Hochreich's results.

Multiple predictor variables which are relevant, and cannot only be empirically, but also conceptually differentiated may be the most useful. Locus of control and extraversion seem to be two such variables. Evidence supporting this claim will soon be provided, but first, it seems essential to review the meaning and history of extraversion; while the definition and utility of locus of control is relatively unproblematic, this is not the case for extraversion (Carrigan, 1960).

Extraversion: Critical Issues

Extraversion is a rarity among psychological variables for at least two reasons. First, it is an old concept, not just in terms of years, but in relation to the entire history of science. Eysenck (1970) sees considerable similarity between Galen's fourfold typology of personality: choleric, melancholic, sanguinic, and phlegmatic, and his own dimensions of extraversion and neuroticism. Secondly, extraversion is a psychological variable that the common man, the psychologically naive person, can and does use with a degree of accuracy (Shapiro & Alexander, 1975). Unfortunately, this agreement does not extend to psychological theoreticians. Among psychologists there are a variety of definitions of extraversion, and it would be useful to review a few of these.

Jung's 1923 book, Psychological Types, is generally credited with presenting the first explicit use of the introversion-extraversion typology. Jung says that:

The introvert's attitude is an abstracting one; at bottom he is always intent on withdrawing libido from the object, as though he had to prevent the object from gaining power over him. The extravert, on the contrary, has a positive relation to the object. He affirms its importance to such an extent that his subjective attitude is constantly related to and oriented by the object. The object can never have enough value for him, and its importance must always be increased. (Jung, 1971, p. 179)

Six years later, William McDougall (1929) criticized Jung's description as "too rich." He felt that extraversion was a function of temperament and could be explained by an unspecified product of the endocrine system.

In the following years an increasing number of researchers became interested in the study of extraversion, and various tests were used to assess individual differences along this dimension. Much of this work has been reviewed by Carrigan (1960), who felt that the evidence did not convincingly demonstrate the unidimensionality of the construct. Rather, Carrigan felt that the evidence seemed to indicate that extraversion is composed of a variety of dimensions, such as impulsivity, sociability, and optimism. While these dimensions are correlated, it is clear that they are far from identical. While Carrigan sees this as a serious criticism of the construct, one might argue that it supports the theory of H. J. Eysenck, as Eysenck himself does (Eysenck & Eysenck, 1967).

Eysenck (1970) proposes that both introversion and extraversion represent ideal personality types, each of which is composed of a group of intercorrelated traits. Each trait may be described in terms of several habitual response patterns which the individual manifests with some regularity. Each habitual response pattern is no more than a collection of specific responses in specific situations. Eysenck asserts that these specific responses reflect the interplay between situational

demands and an innate biological characteristic, so that consistency of behavior across situations is due largely to this latter element. He proposes that this biological characteristic is the genotypic representation of extraversion; and that the basis of genotypic variance is inherited differences in cortical arousal, with introverts having a higher level of arousal than extraverts.

One of Eysenck's (1956) critical contentions is that extraversion is an inherited biological characteristic. This hypothesis is similar to those advanced by Jung (1970) and McDougall (1929), though Eysenck is more specific in his characterization. Siegalman (1968) has reviewed several studies (three of which compare identical and fraternal twins) which indicate a genetic factor in a variety of measures of extraversion. Eysenck (1967, 1970) reviews a large number of studies which support his contention that extraversion is a biological characteristic. Since Eysenck's theory seems internally valid and is not inconsistent with the data reported by Carrigan (1960), his model will be utilized in this study.

It was stated earlier in this paper that the proper variable to be used in conjunction with locus of control in examining preferred style of defense ought to be clearly different from locus of control, both empirically and conceptually. Locus of control is defined as a generalized expectancy within social learning theory. Generalized expectancies arise as a result of prior experience in specific situations (Rotter & Hochreich, 1975). Thus, a person's beliefs concerning control of reinforcement are learned. Evidence strongly supports the hypothesis that extraversion is primarily an inherited characteristic. Locus of control and extraversion may then be conceptually differentiated

in quite global terms. The former is a product of learning; the latter originates in heredity.

However, it would be foolhardy to claim that learned and inherited factors can never covary in a systematic fashion. A closer examination of locus of control may reveal the likelihood of such an interaction with extraversion. Inserting locus of control into the general formula of Rotter's social learning theory (Rotter, Chance & Phares, 1972), we find that the probability of attempting to exert control over reinforcers is a function of the expectancy of whether control can be exerted and the value of reinforcement that will be obtained if control is established. These three factors--control behavior, feasibility of control (the actual generalized expectancy of locus of control), and the value of control--are not included as habits or traits associated with either introversion or extraversion in any theory examined. There seems to be no a priori reason for believing that locus of control and extraversion are systematically related.

There is also evidence that locus of control, as measured by Rotter's (1966) scale and extraversion, as measured by the Eysenck Personality Inventory (Eysenck & Eysenck, 1968) may be empirically differentiated. Platt, Pomeranz and Eisenman (1971) found that in a sample of 635 males and 542 females, the correlations between these measures were .00 and .01, respectively. Two other studies (Collins, Martin, Ashmore & Ross, 1973; Shriberg, 1972) found nearly identical correlation coefficients. It appears as if these two measures cannot only be conceptually differentiated, they are empirically orthogonal.

At this point, a brief review may be useful. I have suggested that defensive style is a richer, less value-laden construct than adjust-

ment; and that the Defense Mechanism Inventory, despite some drawbacks, is the best available measure of defensive style. A multivariate approach to prediction has been advocated. Locus of control and extraversion were selected as predictor variables due to their lack of correlation and conceptual dissimilarity. It was also suggested that there should be reason to suspect that any predictors chosen are relevant to the criterion. This can be demonstrated best by reviewing the literature which has examined locus of control, extraversion, and defense.

Locus of Control and Defense

Rotter (1966) hypothesized that an external locus of control may serve as a defense in and of itself by protecting self-esteem through blame avoidance following failure. Phares, Wilson and Klyver (1971) found that externals, more so than internals, will make external attributions for failure; and that externals make these attributions regardless of aspects in the environment which were manipulated so as to make the objective likelihood of these attributions more, or less, true. This effect has been replicated by Davis and Davis (1972) and by Stebbins and Stone (1977). Both of these studies also demonstrated that externals are less likely to assume responsibility for failure, and are more likely to place the blame on external factors.

While an external locus of control may provide a convenient method of blame avoidance, Davis (1970) identified a group of subjects who used a belief in external locus of control solely for blame avoidance. These subjects appeared to be externals on the basis of Rotter's (1966) locus of control scale; but on a variety of behavioral measures, these subjects performed more like internals. Davis labelled these subjects defensive externals as opposed to congruent externals. As previously

mentioned, Hochreich (1974, 1975) presented further evidence supporting this dichotomy between defensive and congruent externals; and in addition, she found that a measure of interpersonal trust (Rotter, 1967) was a moderator variable in predicting behavioral differences among externals. The low trust externals were found to be defensive externals, while congruent externals scored higher on the trust measure.

If internals are more likely to accept blame and responsibility, how do they deal with the threat or stress which presumably follows? There is evidence indicating that they tend to use repression, or denial, to a greater extent than externals. Efran (1963) found that internals were unable to recall as many failures as externals. Phares, Ritchie and Davis (1968) administered bogus personality feedback of both positive and negative statements to internal and external subjects. Internals were unable to recall as much of the feedback as were externals. However, as previously noted, there was no interaction between recall and valence of the statement in either group of subjects. Apparently, the entire group of statements formed a negative gestalt, and items were forgotten without regard to valence. Considering these results, one would expect internality to be associated with repression as measured by Byrne's (1961) scale. Two studies (Altrocchi, Palmer, Hellman & Davis, 1968; Tolor & Reznikoff, 1967) found a significant correlation between these variables in the expected direction.

Lipp, Kolstoe, James and Randall (1968) gave normal and disabled subjects tachistoscopic presentations of pictures of disabled people. The disabled subjects required more trials to recognize the stimuli than normal subjects; and among the disabled subjects, internals required more trials to recognize the stimuli than did externals. A

curious and unexplained finding in this study was that the subjects in the middle range of locus of control required the most trials in order to recognize the stimuli.

Both Phares (1976) and Lefcourt (1976), after reviewing the evidence relating locus of control to defense, reach the conclusion that externals are more concerned with dealing with past failure or threat, while internals are more likely to be concerned with future experiences. Two studies (Erickson, Smyth, Donovan & O'Leary, 1976; O'Leary, Donovan & Hague, 1975) have correlated the Defense Mechanism Inventory scales to locus of control. The subjects in both studies were male alcoholics. These authors have also characterized each DMI scale as either an approach (Turning Against the Object, Projection) or avoidance (Principialization, Turning Against the Self, Reversal) strategy. If Phares (1976) and Lefcourt (1976) are correct in their characterizations, externals should prefer approach defenses, while internals should prefer avoidance defenses. With the exception of the TAS scale (where the correlations to locus of control were .00 and .05 in the Erickson et al. and O'Leary et al. studies, respectively) all correlations were in the expected direction. Though several correlations were significant, none of them was even moderately large (the largest in both studies was a .22 correlation between TAO and locus of control). Erickson et al. (1976) conclude that the locus of control scale accounts for too little of the variance in the DMI scales. In light of the earlier discussion, one might suggest that the inclusion of another variable in the regression equation might improve matters considerably by accounting for some of the previously unexplained variance.

Extraversion and Defense

While there have been a variety of studies relating defense and locus of control, this is not the case with extraversion. A large portion of the literature concerned with extraversion has focused on psychopathology. Jung (1971) observed that neurotic introverts tended to be characterized by psychasthenia, while neurotic extraverts tended to be hysterics. Eysenck (1955) demonstrated the empirical validity of this claim (though he contrasted hysteria with dysthymia, a broader descriptive category), and Hildebrand (1958) replicated this finding. Both Eriksen (1954) and Wilke (1958) have found that hysterics engage in more repression than dysthymics. Becker (1967) found that on the repression-sensitization scale, extraverts tended to be repressors while introverts tended to be sensitizers. Byrne (1961) characterizes repressors as persons using defenses which permit minimal awareness of threat, such as repression and denial; while sensitizers employ defenses allowing maximal awareness of threat, such as isolation and intellectualization.¹ In terms of the DMI scales, extraverts should score higher on Reversal, while introverts should score higher on Principalization. Unfortunately, there is little empirical evidence which might generate predictions for the other DMI scales. However, Jung's (1971) observations that extraverts focus on the object while introverts are oriented toward themselves suggests that extraverts may score higher on the Turning Against the Object scale, while introverts might score higher on the Turning Against the Self scale. Eysenck (1955) has shown that

¹Note the contradiction between Byrne's description of intellectualization and isolation as approach strategies, while O'Leary et al. and Erickson et al. describe PRN, which include these same defenses, as an avoidance maneuver. This is certainly a confusing situation!

anxiety neuroses and depressive reactions are more common among introverts. Cameron (1963) suggests that projection is associated with both of these forms of psychopathology. Introverts might, therefore, be more likely to score higher on the Projection scale of the DMI.

Hypotheses

To this point, locus of control, extraversion, and defense have been defined, and studies concerned with the interrelationships among these variables have been reviewed. Problems in the assessment of defense have also been addressed. This entire discussion may be summarized by the five hypotheses which follow. The first two hypotheses are directed toward the prediction of preferred style of defense on the basis of locus of control and extraversion. These hypotheses form the base necessary to initiate the following empirical study. The final three hypotheses deal with the measurement of repression. Though necessary for methodological reasons already described, these hypotheses are somewhat peripheral to the central purpose of this study.

Hypothesis 1

The essential relationships between locus of control and the DMI scales found in previous studies will be replicated, except that internals are expected to score higher on TAS than externals. Specifically, it is expected that internals will prefer (score higher on) PRN, TAS and REV, while externals will prefer TAO and PRO.

Hypothesis 2

Extraversion, when considered in a multiple regression equation along with locus of control, will improve predictions to the criterion of DMI scales. Thus, extraversion contributes unique variance to the

DMI scales. The predicted direction of effects are: extraverts will prefer TAO and REV; introverts will prefer PRO, INT, and TAS.

Hypothesis 3

Commensurate with the findings of Phares, Ritchie and Davis (1968), behavioral measures of repression which include all items, regardless of valence, will correlate higher to a criterion (REV) than measures which only include negative feedback.

Hypothesis 4

Using REV as the criterion, the active inhibition paradigm will produce a better measure of repression than the simple recall paradigm.

Hypothesis 5

If Hypotheses 3 and 4 are verified, then the difference in the amount of information recalled at the two recall trials (the second trial is after the removal of threat) will be the best measure of repression. If Hypotheses 1 and 2 are verified, then repression should be related to extraversion and internality. To substantiate further the prediction that the difference in the amount of information recalled is the best measure of repression, all measures of repression will be correlated to extraversion and locus of control. It is expected that the difference in the amount of information recalled will correlate highest among the measures of repression to the new criteria of extraversion and locus of control.

Method

Subjects

The initial pool of subjects were 155 males and 238 females enrolled in two large introductory psychology courses at the College of William and Mary. These students voluntarily completed a packet of questionnaires during the regular class period. The students were asked to place their names and phone numbers on the packet so that they might be contacted in the future.

Subject Selection Materials. The questionnaire packet included Rotter's (1966) Internal versus External Locus of Control Scale and the Eysenck Personality Inventory (EPI), Form A (Eysenck & Eysenck, 1968), which contains scales assessing Extraversion and Neuroticism, as well as a validity check, the Lie scale.

The EPI scales are scored so that high scores on each scale are indicative of extraversion rather than introversion, neuroticism rather than stability, and a "faking good" response orientation. Eysenck and Eysenck (1968) have reviewed the evidence concerning the reliability and validity of the EPI; and it appears that the test is a satisfactory measure of two orthogonal dimensions: extraversion and neuroticism.

Rotter (1966) reports data supporting the reliability and validity of his measure of locus on control, and his results have been successfully replicated (Hersh & Scheibe, 1967). Rotter's scale is scored such that high scores indicate externality.

One possible weakness of Rotter's (1966) locus of control scale

is its multidimensionality. Rotter (1975) rebuts such criticism with two claims: most of the factor analyses which support the multidimensionality of locus of control have been based on modified versions of the scale, and there is no evidence to suggest that the entire scale is less powerful than any of the obtained factors. If these claims are true, then one might be moved to ignore the possible multidimensionality of the locus of control scale. There is, however, reason to doubt Rotter's claims. Mirels (1970) administered the locus of control scale as it was originally designed, and he obtained two factors: Factor I concerns personally relevant outcomes; Factor II is related to control over political affairs. The efficacy of these factors in predicting differential behavior has been demonstrated by Abramovitz (1973). Since defensive style seems more relevant to Factor I, it seems important to use subjects whose total locus of control score accurately reflects their beliefs concerning personally relevant outcomes.

Subject Selection Procedure. The test results of the 393 students were examined. Any subject who failed to respond to at least 90% of the items on both the EPI and the Locus of Control Scale, or scored 5 or higher on the EPI Lie scale, was immediately eliminated from further consideration. Scores on the EPI Extraversion scale, the Locus of Control Scale, and Mirels' Factor I scale (9 items on Rotter's scale which load $\pm .30$ for both sexes on Mirels' Factor I) were converted to standard scores. Subjects whose score on Mirels' Factor I were more than 1 standard deviation less extreme than their score on the entire Locus of Control Scale were also eliminated from consideration. A median split of the distributions of both locus of control and extraversion was then performed, so that each subject fit into one of four categories:

internal introvert, internal extravert, external introvert, external extravert.

Within each of these four groups, the absolute value of the differences between the standard scores on locus of control and extraversion was calculated. Subjects were then rank ordered from lowest to highest on this difference measure. Then, the standard scores of the subjects within each group were summed; and subjects were rank ordered from highest to lowest on the basis of these sums. Finally, for each subject, the two ranks were summed and subjects were rank ordered on the basis of the sum of ranks from lowest to highest. The 20 males and 20 females within each group with the lowest sum of ranks were then selected to form an intermediate pool of subjects. Thus, the intermediate subject pool was comprised of cases best conforming to the following criteria: (a) maximally distant from the mean on both measures, and (b) equidistant from the mean on both measures.

Originally, I hoped to obtain 10 persons within each sex X group block matched on EPI Neuroticism scores, but this proved impossible due to difficulties encountered in reaching subjects who agreed to participate. Therefore, subjects in each of the 8 sex X group blocks were contacted by phone, and subjects with the lowest sum of ranks were contacted first. The phone message, which occurred from 8-10 weeks after the initial testing session, was:

Hello, my name is Dan Ozer, and I am a graduate student in psychology. I came into your introductory psychology class early in the semester and passed out a packet of questionnaires. I am calling you now to see if you are interested in participating further in my thesis research. It would take about an hour and fifteen minutes, and I can pay you \$2.00.

Students who agreed to participate were then able to select which

one of several experimental sessions they wished to attend. A total of eight experimental sessions were conducted and each session ranged from 6-12 subjects in size. In all, a total of 76 students participated. The distribution of these subjects by sex X group blocks is shown in Table 1.

Table 1
Number of Subjects in Sex X Group Blocks

Group	Males	Females	Total
Internal introverts	10	11	21
Internal extraverts	7	8	15
External introverts	11	10	21
External extraverts	<u>11</u>	<u>8</u>	<u>19</u>
Total	39	37	76

Experimental Materials

Bogus Personality Feedback Sheets. This material was presented on computer printout and contained the subject's name, a brief introductory paragraph which noted that the statements which followed were based on the previously administered tests, and instructed the students to write a paragraph about their reactions to the profile. The printout then listed 15 statements (5 positive, 10 negative) which supposedly described the subject's personality. Actually, all subjects received the same 15 statements, though the order of the statements was randomized across subjects. A sample feedback sheet, and a description of how the statements were chosen appears in Appendix A.

Defense Mechanism Inventory. The Defense Mechanism Inventory (DMI) (Gleser & Ihilevich, 1969) consists of ten stories asking the subject to imagine himself in a variety of stressful situations. There are separate male and female forms which are identical except for two of the stories, in which gender is specified. Each story is followed by four groups of five alternative responses to the situation. The four groups of alternatives ask the subject how he would actually respond, how he would in fantasy like to respond, what he would think, and how he would feel. The five alternatives represent responses typical of each of the five defense areas tested: Turning Against the Object (TAO), Projection (PRO), Principalization (PRN), Turning Against the Self (TAS), and Reversal (REV). In each of the four groups, the subject must select from the five alternatives the ones which are most and least representative of his reaction to the situation. The response marked most likely is scored 2, the response marked least likely is scored 0, and the other responses are scored as 1. Thus, each subject receives a score on all 200 alternatives (10 stories X 4 questions X 5 alternatives). A copy of the DMI appears in Appendix B. Problems encountered in using the DMI, and studies supporting the reliability and validity of the test have already been discussed.

Procedure

Approximately three minutes after a session was to begin, the experimenter closed the door to the room (a typical college classroom) and introduced himself to the students. I then said:

Before we get started, I would like to pass out a piece of computer printout to each of you. The printout contains 15 statements which are based on the personality tests you took earlier, and they describe your personality. Please read the entire printout carefully, because you are to write a brief paragraph

on the back. Actually, the whole thing is self-explanatory, so I'll just pass the sheets out to you. You will have 10 minutes before I ask you to hand the sheets in. If you have any questions, just raise your hand.

The printouts were then distributed and collected 10 minutes later. The DMI test forms and answer sheets were then distributed, and the subjects were told to read the instructions carefully and then to complete the test. When the first student was finished, the experimenter requested that when each person finished, he should wait quietly until everyone had completed the test. When all the students had completed the test, the materials were collected and a blank sheet of paper was distributed. Subjects were asked to place their name at the top of the paper, and were then told:

You will recall that at the beginning of this session, I gave you each a piece of computer printout which contained 15 statements which describe your personality. I now want you to recall as many of those 15 statements as you can, and write them on the paper. If you can't remember an entire statement, write what you are able to remember. Even just a key word or phrase might be sufficient. You will have 5 minutes to work on this, beginning right now.

After the 5 minutes passed, the subjects were told to stop working and turn the paper over. They were told first to write the number "2" at the top of the paper, and then:

I can now tell you that the 15 statements on the printout are not based on any personality test given by me or anyone else. In fact, you all received the same, identical 15 statements. I have no way of knowing how true any of the statements are about you. Now, for the last task of the study, I want you to again try to recall the 15 statements on the printout. Do not turn your paper over to see what you just wrote. Write down as many of the statements as you can, even the ones you just wrote on the other side. Again, you will have 5 minutes to work. Go ahead and begin.

After 5 minutes, the subjects were told to stop and the materials were then collected. The subjects were then completely debriefed and paid

\$2.00 each.

After all the data had been collected, the names on the bogus personality feedback sheets were blacked out and replaced by a subject identification number. The printouts were then passed, through an intermediary, to a rater unknown to the experimenter. The rater was to examine the paragraphs and rate each paragraph on how accurate the subject thought the statements were, and whether or not he felt threatened by the printout. Along with the printout, the rater received a description of the criteria to use in order to do the ratings. A copy of these instructions to the rater appears in Appendix C. The intermediary between the experimenter and the rater did not know anything of the purposes of the study.

In order to assess rater reliability, 20 of the printouts were randomly selected by the experimenter and given, along with a copy of the rating instructions, to a second rater. This rater knew something of the hypotheses of the study (but not in any great detail), but did not know from which group any particular printout had come.

Results

Subject Selection

Of the 393 students who returned questionnaire packets, 11 subjects failed to complete enough items (90%) on either the Locus of Control Scale or the EPI. An additional 40 subjects received scores of 5 or higher on the EPI Lie scale. These 51 subjects were immediately eliminated from consideration. There were 24 subjects whose scores on Mirels' (1970) Factor I were greater than or equal to 1 standard deviation less extreme than their score on Rotter's entire scale. These subjects were also eliminated from consideration. This left a total of 318 students (126 males and 192 females), who were then placed in the 8 sex X group categories and rank-ordered as described. The 20 subjects who obtained the lowest rank in each sex X group block were considered eligible for participation. The 76 students who participated were those students out of a total of 160 (20 per each sex X group block) who could be reached by phone and who agreed to participate. Thus, 76 of the original 393 students participated in the study. Considering the elaborate selection process that was employed, there was a possibility that the selected subjects were different from those not selected in a manner that was not planned. For example, on both locus of control and extraversion, though subjects were selected for high and low scores, the mean scores of all those selected should not differ from the mean of those not selected. The means and standard deviations of extraversion, neuroticism and locus of control for the

selected and unselected subjects appear in Table 2.

Table 2
Means and Standard Deviations of Extraversion,
Neuroticism and Locus of Control for
Selected and Unselected Subjects

	Extraversion	Neuroticism	Locus of Control
Unselected Subjects			
Males: Mean (n = 116) ^a <u>SD</u>	11.78 4.17	11.26 4.57	10.90 4.35
Females: Mean (n = 199) ^b <u>SD</u>	12.22 4.34	11.65 4.33	11.56 4.32
Selected Subjects			
Males: Mean (n = 39) <u>SD</u>	11.77 5.01	10.33 4.28	11.56 4.99
Females: Mean (n = 37) <u>SD</u>	11.08 5.66	12.40 4.73	11.30 5.65

^an = 111 for Locus of Control

^bn = 195 for Locus of Control

A t-test for independent samples was used to compare each set of means (a total of 6 comparisons). None of these comparisons revealed any significant differences. The largest difference obtained ($t(234) = 1.18, p > .20$) was for females on the extraversion variable. The subject selection procedure introduced no detectable and unplanned bias.

The means and standard deviations for the eight sex X group categories on extraversion, neuroticism, and locus of control are shown in Table 3.

Table 3
Means and Standard Deviations of Extraversion,
Neuroticism, and Locus of Control in
Sex X Group Categories

	Extraversion		Neuroticism		Locus of Control	
	Mean	SD	Mean	SD	Mean	SD
Internals						
Introverts						
Males	6.80	2.49	12.40	4.30	7.00	1.83
Females	6.27	2.05	13.36	4.08	6.36	2.06
Extraverts						
Males	16.00	2.45	7.14	3.76	6.14	2.97
Females	16.88	2.36	11.62	3.93	6.12	2.36
Externals						
Introverts						
Males	8.64	2.06	10.09	4.23	15.09	2.62
Females	7.00	2.79	13.00	5.85	16.50	2.01
Extraverts						
Males	16.73	2.65	10.73	3.88	15.64	2.46
Females	17.00	2.14	11.12	5.25	16.75	2.44

Reduction of Ipsativity

Several of the problems in using ipsative scores were described earlier. Hicks (1970) notes that one means of reducing ipsativity is to refer the scale scores to different normative transformations on the basis of some characteristic of the subjects. This was accomplished by transforming the DMI scale scores obtained here to standard scores based on the male and female norms for unsystematically selected adults (from Gleser & Ihilevich, 1969). This sample included housewives, secretaries, a variety of professionals, and college students. The

means and standard deviations on the DMI scales for the William and Mary students used in this study and the general adult norms appear in Table 4.

Table 4
Means and Standard Deviations of the DMI Scales
for General Adult Subjects and
William and Mary Students

DMI Scale	General Adults				William and Mary Students			
	Males		Females		Males		Females	
	\bar{X}	<u>SD</u>	\bar{X}	<u>SD</u>	\bar{X}	<u>SD</u>	\bar{X}	<u>SD</u>
TAO	39.4	7.8	34.8	8.1	39.8	9.4	37.1	9.4
PRO	38.4	6.7	36.9	5.4	41.6	6.0	37.8	7.5
PRN	48.4	6.8	47.3	6.4	45.1	7.5	47.4	5.8
TAS	34.4	7.6	41.9	4.9	36.5	5.8	42.3	6.5
REV	39.6	6.3	39.2	6.8	36.9	7.8	35.3	10.6

Note. For General Adults, males = 43, females = 71 (from Gleser & Ihilevich, 1969); for William and Mary Students, males = 39, females = 37.

This Z score transformation introduced some variance into the total DMI scores (the sum of the 5 scales). Prior to the transformation, the variance of total scores was 0 for both males and females. With the Z score transformations, the variance was .150 for all subjects, .07 for males, and .16 for females. As a consequence of this transformation, the DMI scale scores are no longer purely ipsative; but are now partially ipsative, since a given scale score is somewhat dependent on how the

normative sample scored on that scale. As a result, the five DMI scales are no longer completely interdependent, and the mean correlations of the five scales to an outside criterion can deviate from 0 (though the little variance introduced by the transformation suggests that the range of such a deviation cannot be too great). The extent to which this transformation allows for inter-individual comparisons is questionable.

Locus of Control, Extraversion, and the DMI

In order to gauge the effects of the organismic variables employed, a 2 X 2 X 2 analysis of covariance (locus of control X extraversion X sex) with neuroticism as the covariate was used to analyze the transformed scores of each of the five DMI scales. Neuroticism was used as a covariate because the planned matching of subjects on this variable could not be accomplished. Two significant main effects were found in this analysis. On the PRN scale, females were more likely, $F(1,67) = 8.47$, $p = .005$, to score higher. The mean scores of the males and females on the PRN scale were $-.49$ and $.02$, respectively. Since these are Z -scores based on general adult norms, the difference found implies that while females preferred PRN as much as the standardization sample, males preferred PRN considerably less than the standardization sample. The second significant main effect was for extraversion on the REV scale, $F(1,67) = 3.97$, $p = .048$. The means for introverts and extraverts on the REV scale were $-.61$ and $.19$, respectively. There were no significant interactions involving locus of control, extraversion, and sex.

The effect of the covariate, neuroticism, was significant in all five analyses. High neuroticism scores were associated with high scores on TAO, $F(1,67) = 4.95$, $p = .028$, PRO, $F(1,67) = 4.36$, $p = .038$ and TAS,

$F(1,67) = 8.68$, $p = .005$; and with low scores on PRN, $F(1,67) = 7.67$, $p = .007$ and REV, $F(1,67) = 16.87$, $p = .001$. In order to gain an insight into the strength of these relationships, Pearson product-moment correlations were computed for males, females, and both sexes. These correlations between neuroticism and the DMI transformed scale scores are shown in Table 5.

Table 5
Pearson Correlations Between Neuroticism
and the DMI Scales

DMI Scale	Subjects		
	Males (n=39)	Females (n=37)	Males and Females (n=76)
TAO	.26	.22	.25*
PRO	.06	.41**	.23*
PRN	-.32*	-.45**	-.30**
TAS	.38*	.34*	.31**
REV	-.34*	-.44**	-.43***

* $p \leq .05$

** $p \leq .01$

*** $p \leq .001$

The only major inconsistency between sexes in this pattern of correlations occurs with the PRO scale. These data suggest that while neurotic females may prefer projection more than stable females, the same may not be said of males.

Hypothesis 1. It was predicted that the correlations between the DMI scales and locus of control found by Erickson, Smyth, Donovan and O'Leary (1976) and O'Leary, Donovan, and Hague (1975) would be replicated. A problem with such a comparison is that both of these prior studies used Pearson product-moment correlations to measure direction and strength of relations. However, since the Pearson coefficient assumes a normal distribution within each variable, it is clearly inappropriate here. The sample employed was selected to produce bi-modal distributions on both locus of control and extraversion. Therefore, Spearman rank-order coefficients, which require only continuous distributions, were used.

Table 6 shows the correlations between the DMI scales and locus of control scale obtained by Erickson et al. (1976), O'Leary et al. (1975), and those found in this study. One must be cautious in examining the coefficients reported in Table 6. First, the coefficients obtained in this study are based on extreme scorers on the locus of control scale, while the two samples of alcoholics contain the full range of scores with essentially a normal distribution. This is likely to inflate the coefficients obtained in the sample of undergraduates. Secondly, there is no reason to believe that Spearman and Pearson coefficients are directly comparable. Finally, because of the discrepancies in sample size, significance levels are inappropriate criteria for the purposes of comparison. For these reasons, the correlation coefficients within each row of Table 6 were rank ordered from most positive to most negative. It now becomes possible to compare the rank of each DMI scale across the various samples. An inspection of these ranks shown in Table 6 reveals that the only major discrepancy

Table 6
Correlations Between Locus of Control
and the DMI Scales

Sample	DMI Scale				
	TAO	PRO	PRN	TAS	REV
160 Male Alcoholics ^a (Erickson <u>et al.</u> , 1976)	.12 (2)	.18*(1)	-.16*(5)	.00 (3)	-.13 (4)
105 Male Alcoholics ^a (O'Leary <u>et al.</u> , 1975)	.22*(1)	.14 (2)	-.20*(4)	.05 (3)	-.21*(5)
39 Male undergraduates ^b	.21 (1)	.10 (2)	.08 (3)	-.20 (4)	-.20 (5)
37 Female undergraduates ^b	.40*(1)	.22 (2)	-.34*(5)	-.03 (3)	-.28 (4)
76 Male & Female (Combined) undergraduates ^b	.28*(1)	.17 (2)	-.10 (4)	-.09 (3)	-.23*(5)

Note. Number in () is the rank (from most positive to most negative) of the coefficient, within each row.

^aPearson Coefficients

^bSpearman Coefficients

* $p \leq .05$

between the findings of this study and those of previous research occurs among the male undergraduates on the PRN and TAS scales. Since neither of these correlations is significant, and since the ranks across the samples on each DMI scale are otherwise rather homogeneous, Hypothesis 1 is accepted. That is, to the extent that the differences in methodologies allow, the correlations between the locus of control scale and the DMI scales found here are consistent with the results of Erickson et al. (1976) and O'Leary et al. (1975).

Hypothesis 2. In order to gauge the unique contribution of extraversion to the variance in the DMI scales, multiple regression coefficients were calculated for locus of control, and for locus of control and extraversion. These coefficients were based on the nominal (viz., internal or external, introvert or extravert) rather than interval (viz., scores on the EPI, and locus of control scale) quality of the data; and were calculated after the DMI scale scores had been adjusted for the effects of the covariate neuroticism. These coefficients are shown in Table 7.

Table 7
Multiple Regression Coefficients of Predictor
Variables with the DMI Scales

Predictor Variables	DMI Scales				
	TAO	PRO	PRN	TAS	REV
Locus of Control (after covariate adjustment)					
Males	.326	.188	.320	.488	.395
Females	.269	.415	.505	.350	.455
Locus of Control and Extraversion (after covariate adjustment)					
Males	.328	.189	.324	.557	.455
Females	.330	.422	.507	.351	.501

On the TAO scale, the expectation was that extraverts would score higher than introverts. Among males, there was no difference between introverts and extraverts; and among females, the mean scores on TAO were .51 and -.05, respectively. This difference, in the opposite direction hypothesized, accounts for the increase in the multiple

regression coefficients shown for females on the TAO scale in Table 7. It is clear from Table 7 that Extraversion accounts for nearly no unique variance on either the PRO or PRN scales. On the TAS scale, it was hypothesized that introverts would score higher than extraverts. Among the males, TAS scores were .54 for introverts and -.02 for extraverts. This difference accounts for the increase in the multiple regression coefficient for males on this scale. No such difference was obtained for females.

The only significant main effect for extraversion in the analysis of covariance reported earlier occurred on the REV scale. Here, the means for male and female introverts were -.26 and -.96, respectively; while the means for male and female extraverts were .41 and -.06, respectively. The only scale where extraversion contributed unique variance was the REV scale (as evidenced by the significant main effect, $F(1,67) = 3.97$, $p = .048$, in the analysis of covariance). The effects of extraversion on the TAO scale for females, and on the TAS scale for males may well be due to chance, since the Extraversion X Sex interactions were not significant in either case in the analyses of covariance. Hypothesis 2 can be accepted only for the REV scale of the DMI.

The Assessment of Repression

Five different measures of repression were obtained in this study: the REV scale of the DMI, and four behavioral measures based on the recall of the bogus personality feedback. The behavioral measures were obtained due to the conceptual problems in the REV scale described earlier. The behavioral measures of repression required that the subjects not only believe the statements on the feedback sheet were true, but that the feedback be perceived as somewhat threatening. In order to assess how

well these prerequisites were met, the subjects were asked to write a paragraph on their reactions to the feedback. The rater evaluated these paragraphs using the criteria listed in Appendix C. The results of these ratings appear in Table 8.

Table 8
Frequency Distribution of Accuracy and Threat Ratings

Rating	Number of Subjects Receiving Rating	Percent of Subjects Receiving Rating
Accuracy Ratings		
Very Accurate	28	36.8
Accurate	38	50.0
Inaccurate	10	13.2
Unratable	0	0.0
Total	76	100.0
Threat Ratings		
Present	13	17.1
Absent	20	26.3
Unratable	43	56.6
Total	76	100.0

Thus, most of the subjects believed that the statements were either accurate or very accurate, and only 26.3% noted they did not feel threatened.

Rater Reliability. In order to assess the reliability of the ratings, 20 paragraphs were randomly selected and given to a second rater. On these 20 paragraphs, the two raters agreed on 85% of the accuracy ratings. The resulting contingency coefficient was .75, and when this measure was corrected by the Spearman-Brown formula, the

correlation between the two sets of accuracy ratings was .92. The ratings on accuracy seem to be reliable.

On the threat ratings, there was only 60% agreement between the two raters. The obtained contingency coefficient was .46, for a correlation of .77 between the two ratings after using the Spearman-Brown correction. In order to gain an insight into what might be causing this rather low reliability coefficient, a third rater examined the same 20 paragraphs. This rater agreed with the first rater in 70% of the cases; the contingency coefficient was .63, and the correlation after the Spearman-Brown correction was .87. The three sets of ratings were then examined. In 10 of the 20 cases, all three raters were in agreement. In 6 of the remaining 10 cases, one of the two raters agreed with the first rater. A remarkable thing was noted about the remaining four paragraphs; the first rater had thought that all of them were unratable, the second had felt that feelings of threat were absent in all four cases, while the third rater felt that feelings of threat were present in all four cases. An examination of these four cases revealed the ambivalence reflected in the ratings. One of these subjects wrote:

Reading this printout is like looking into the mirror . . . It does make me feel strange to think that such a far-reaching and accurate composite of my personality can be put together from a questionnaire. It makes me feel funny that weaknesses in my personality which I thought were inconspicuous came right out in the analysis. However, it's good to know that I see myself the way I am. Though I have many weaknesses, it's good to know that self-deception is not one of them.

This paragraph fulfills the rating criteria for both the presence and absence of threat. The other three paragraphs were similar to this one. The weakness then, is in the criteria used to instruct the raters. However, since no category for "ambivalence" was available, perhaps the first rater's solution, using the unratable category, is best.

Behavioral Measures of Repression. There were four behavioral measures of repression. The first two were those employed by Phares, Ritchie, and Davis (1968): the total number of statements recalled during the first recall trial (TR), and the number of negative statements recalled during the first recall trial (NR). The second two measures of repression are based on Zeller's (1950a, 1950b, 1951) active inhibition model of repression; the first of these is the number of statements recalled on the second recall trial (after the partial debriefing) minus TR; this was labelled DTR. The other was the number of negative statements recalled on the second recall trial minus NR. This was labelled DNR. The means and standard deviations for each of the sex X category groups on these four measures appear in Table 9.

Table 9

Means and Standard Deviations of the Behavioral Measures
of Repression in Sex X Group Categories

	TR		NR		DTR		DNR	
	Mean	<u>SD</u>	Mean	<u>SD</u>	Mean	<u>SD</u>	Mean	<u>SD</u>
Internals								
Introverts								
Males	7.70	2.91	5.00	2.16	-.20	.79	-.10	.57
Females	8.00	2.65	4.54	2.02	-.09	1.14	-.18	1.33
Extraverts								
Males	6.43	1.90	4.29	1.60	-.14	.38	-.43	.79
Females	8.12	1.96	4.75	2.05	-.88	.99	-.50	1.19
Externals								
Introverts								
Males	7.46	1.97	4.46	1.37	.00	1.09	.00	1.00
Females	9.20	1.69	5.50	1.65	-.40	1.71	-.10	1.52
Extraverts								
Males	7.27	1.62	4.36	1.03	-.18	.98	.00	.89
Females	8.62	1.85	5.62	.92	-.12	.84	-.25	.89

These data were analyzed by four 2 X 2 X 2 (locus of control X extraversion X sex) analyses of covariance, with neuroticism as the covariate. The only significant main effect was for sex on the TR measure, where the mean scores for males and females, respectively, were 7.28 and 8.49. Females recalled more statements on the first recall trial, $F(1,67) = 6.54, p = .012$.

Validity of Behavioral Measures of Repression

In the previous analyses, all subjects were employed without regard to their ratings on the accuracy and threat measures. This strategy was adopted because a measure should be of relatively constant validity. A measure which is sometimes valid and other times not is of dubious worth. In the previous analyses, the assumption was made that the behavioral measures of repression were valid. In the course of attempting to verify the final three hypotheses advanced earlier, this assumption will be tested. Testing the validity of these measures is a two-part question. First, one must find out how often the manipulation works; and then the question of how well it works, given that the manipulation is effective, must be answered.

The answer to the first part of this question is already available. Of the 76 subjects, 30 of them, or 39.47%, believed either that the bogus personality statements were inaccurate or not threatening. While this figure is disappointingly high, if the measures are valid for the 46 subjects for whom the manipulation was effective, then it may be worthwhile to make the personality feedback more believable and threatening.

The construct validity of the behavioral measures of repression were assessed in terms of their correlations to the REV scale of the

DMI, locus of control, and extraversion. The intercorrelations of these measures appear in Table 10. Spearman coefficients were employed because of the bi-modal distributions of locus of control and extraversion. Due to the small number of subjects (23 males and 23 females), correlations for each sex were not calculated.

Table 10
Spearman Correlations Between Extraversion, Locus of
Control, and Measures of Repression

	E	LC	REV	TR	NR	DTR	DNR
E	--	.06	.32*	-.18	-.03	-.03	-.04
LC		--	-.34*	.26	.25	-.01	-.04
REV			--	-.29	-.21	.13	.20
TR				--	.84***	-.32*	-.27
NR					--	-.38**	-.39**
DTR						--	.90***
DNR							--

* $\underline{p} \leq .05$

** $\underline{p} \leq .01$

*** $\underline{p} \leq .001$

Hypotheses 3, 4, and 5 concerned the correlations of the behavioral measures of repression to REV, extraversion and locus of control. As shown in Table 10, none of the behavioral measures of repression correlated significantly with locus of control, extraversion or REV. It is, therefore, impossible to test Hypotheses 3, 4, and 5 as planned. One

may only conclude that there is no evidence here which supports the construct validity of any of the behavioral measures employed.

Discussion

Locus of Control, Extraversion, and Defense

Both O'Leary et al. (1975) and Erickson et al. (1976) correlated the DMI scales to Rotter's (1966) Locus of Control Scale using samples of male alcoholics. The essential relationships between the DMI scales and locus of control found in these studies was replicated here in a sample of college students. The conclusion reached by Erickson et al. (1976) is also supported. That is, locus of control accounts for very little variance in the DMI scales. The analyses of covariance failed to indicate any effect of locus of control on any of the DMI scales. An examination of Table 6 shows that among all 76 subjects, TAO is significantly related to externality and REV is significantly correlated to internality. This discrepancy between these two methods of analysis indicates just how weak the effects are. When the nominal quality of the locus of control scores is employed, there is no evidence of an effect. If at least the ordinal quality of the data is considered, a small effect is detected.

The small correlation found here between TAO and locus of control supports the findings of Phares, Wilson, and Klyver (1971), Davis and Davis (1972), and Stebbins and Stone (1977). However, as shown in Table 6, this effect is stronger in females than in males. The possibility of a sex difference was not addressed in these previous studies. Phares et al. (1971) used only male subjects; Davis and Davis (1972) used different manipulations on males and females, and so could not

directly compare the results for sex differences; and Stebbins and Stone (1977) did not analyze the data in terms of sex.

Numerous studies (Altrocchi, Palmer, Hellman & Davis, 1968; Efran, 1963; Phares, Ritchie & Davis, 1968; Tolor & Reznikoff, 1967) have suggested that internals are more likely to forget or repress failure or threat. The small, negative correlation obtained here between REV and locus of control further substantiates this claim.

Except for the Reversal scale, where extraverts scored higher than introverts, the inclusion of extraversion in a regression equation with locus of control did not substantially increase the amount of variance explained in the DMI scales. Eysenck (1970) has shown that extraversion is related to type, rather than extent, of maladjustment. It was expected that extraversion would thereby be related to style of defense. Except for the Reversal defenses, this expectation was not realized.

Neuroticism and Defense

Eysenck (1967, 1970) has demonstrated that extraversion and neuroticism are independent types of activation; the former is associated with cortical arousal, the latter with visceral arousal and anxiety. In this study, neuroticism was significantly related to all of the DMI scales. High scorers on the Neuroticism Scale preferred Projection, Turning Against the Object, and Turning Against the Self. Low scorers preferred Principalization and Reversal. As shown in Table 5, some of these effects are relatively powerful. This was an unexpected outcome. It appears from this evidence that style of defense is related to the degree, rather than style, of adjustment. That is, there are neurotic and stable defensive styles. This conclusion cannot be asserted strongly, as it is based on a sample of college students who, for the

most part, presumably lack neurotic symptoms. The only direct comparison between normal and clinical samples on the DMI is that of Gleser and Ihilevich (1969). They found that a group of psychiatric outpatients tended to score somewhat higher on the TAS and REV scales than college students or unsystematically selected adults. However, Gleser and Ihilevich note that this finding is confounded by age differences among the three samples. While the relationships between neuroticism and the DMI scales found here must be interpreted with caution due to the homogeneity of the sample, a fruitful avenue for future research would be direct comparisons between normal and clinical sub-populations.

Repression, Reversal, and Recall

One of the lesser goals of this study was to examine various strategies of assessing repression. Measures included the Reversal scale of the DMI, and two types of behavioral measures, one based on the active inhibition theory of Zeller, and the other a replication of the method used by Phares, Ritchie, and Davis (1968). As noted, both extraversion and locus of control were related to the Reversal scale in the expected direction. None of the behavioral measures were related to any of the three criteria employed: locus of control, extraversion, and the Reversal scale. This may reflect the failure of the subjects to perceive the feedback as threatening. Only 17.1% of the subjects wrote paragraphs that the rater scored as showing the presence of threat. An examination of these paragraphs shows that most of these subjects felt threatened by the accuracy of the statements. They were uncomfortable with the belief that a personality inventory could reveal so much. In the course of debriefing the subjects, I discovered that very few of the subjects felt that the statements were particularly

derogatory; while almost all of them were astounded by the revelation that the statements were bogus feedback. In general, the debriefing revealed that very few, if any, of the subjects felt threatened by the content of the statements. If the statements were not perceived as threatening, then the behavioral measures of repression could not be expected to be effective.

Conclusions

This study has examined a number of different variables from a variety of theoretical orientations. Extraversion and neuroticism are critical variables in Eysenck's Biological Stimulus-Response Theory. Locus of control is an integral part of Rotter's Social Learning Theory; and while the DMI is somewhat atheoretical, the notion of defense mechanisms is critical in psychodynamic theories. The magnitude of the multiple regression coefficients in Table 7 clearly shows that, although the variables involved are quite different in terms of their place in theory, there are some important relationships among these variables. This study was an exploratory attempt to integrate a variety of variables. While very few of the initial hypotheses can be accepted, the overall purpose of this research has been accomplished. The strength of the multiple correlations in Table 7 indicate that an eclectic, multivariate orientation may be an effective approach to the study of personality.

APPENDICES

Appendix A

Bogus Personality Feedback Sheets

Phares, Ritchie, and Davis (1968) devised 19 statements (8 positive, 11 negative) descriptive of a variety of aspects of personality and told the subjects in their study that, based on prior personality testing, the statements were descriptive of them. The number of statements recalled later by the subjects served as an operational measure of repression. I hoped to obtain a copy of these 19 statements to use in this study, as the materials used by Phares et al. were of proven effectiveness. I communicated this desire to Dr. Phares, but unfortunately, he was unable to locate a copy of the statements. Therefore, a new set of statements had to be developed for use in this study.

If this technique of repression induction is to be effective, subjects must perceive the statements as accurate descriptions of themselves. Denying the accuracy of such statements may be indicative of a defensive style, but such behavior can be interpreted as repression only in a rather oblique manner.

Recognizing the constraint that the statements had to be believable, I generated 24 statements (10 positive, 14 negative) which seemed to me somewhat common descriptions of positive and negative attributes. In order to ascertain which of the statements would be perceived as most accurate, I entered an upper-level psychology course containing 25 students (19 females, 6 males) and read the following:

I am going to read you 24 statements. On a scale of 1-5, please rate how true each statement is about you. Use a rating of "5" if you think the statement is very true, or accurate, of you; and a rating of "1" if you think the statement is very untrue, or inaccurate.

The 24 statements were then read to the students in a random order; and

the students recorded their ratings. A copy of these statements, along with the mean rating of the students appears in Table 11. Statements marked with an asterisk (*) were accepted as the most believable, and were then used in the actual study.

Table 11
Mean Accuracy Ratings for 24 Statements

<u>Mean Accuracy Rating</u>	<u>Positive Statements</u>
3.84	*1. You have a relaxed attitude toward everyday responsibilities, and tend to be self-confident.
4.04	*2. You are realistically ambitious; you aim to achieve goals which are high, but within reach.
3.40	3. You are able to accept constructive criticism in a positive manner.
3.76	4. You seek a variety of different experiences; in this sense you are adventurous.
3.48	5. Rather than accept the opinions of others, you prefer to think for yourself.
3.76	6. Enthusiasm marks the way in which you approach new tasks.
4.12	*7. In general, you are able to get along with most people.
3.36	8. Even when you are angry, you seldom lose your temper.
4.08	*9. You are able to recognize your strengths and weaknesses.
4.20	*10. When others need your assistance, you are usually willing to help.
	<u>Negative Statements</u>
4.08	*1. There are times when you become apathetic and bored for no particular reason.
2.20	2. Sexual conflicts may often disrupt your relationships with members of the opposite sex.
2.68	*3. When you feel depressed, you are unable to bring yourself out of it; you tend to dwell upon your problems.
2.80	*4. In response to psychological stress you have a tendency to develop physical symptoms such as headache or fatigue.
3.16	*5. You worry about problems which others might consider unimportant.
2.64	*6. At times you doubt the correctness of your decisions.

Table 11 -- Continued

<u>Mean Accuracy Rating</u>	<u>Negative Statements</u>
1.96	7. You have difficulties in working at a level equal to your ability.
2.36	*8. You are often unable to admit your own mistakes.
2.20	9. You have continuing conflict between what you want to do and what you think you ought to do.
2.20	10. You have difficulty controlling your aggressive impulses.
3.16	*11. You are jealous of others who are more successful than yourself.
3.40	*12. Unfamiliar social situations often make you feel anxious or uncomfortable.
2.64	*13. There are times when you are intolerant of the ideas of others.
2.96	*14. Sometimes you feel confused or upset without knowing why.

The mean accuracy for all 10 positive statements was 3.80; and 2.74 for all negative statements. The mean ratings for the 5 positive and 10 negative statements chosen for use were 4.05 and 2.99, respectively.

Computer printout was used as the medium for presenting the statements to subjects in the study. This method was not only convenient, but also likely to maximize the likelihood that the subjects would believe the statements were a result of prior personality testing. The printout contained: the subject's name, an introductory paragraph, and the 15 statements. The statements were arranged in 16 different random orders so that no more than five subjects received the same order. A sample copy of the printout appears in Figure 1.

Figure 1
A Sample Copy of the Bogus
Personality Feedback Sheet

JANE SMITH

THE PERSONALITY TESTS WHICH YOU COMPLETED EARLIER HAVE BEEN SCORED AND INTERPRETED. THE STATEMENTS PRINTED BELOW HAVE BEEN SELECTED FROM A LARGE POOL OF SUCH STATEMENTS ON THE BASIS OF THIS INTERPRETATION. WHILE THE STATEMENTS SELECTED CANNOT DESCRIBE YOUR ENTIRE PERSONALITY, THEY SHOULD BE ACCURATE DESCRIPTIONS WITHIN THE AREAS EXAMINED. PLEASE READ THE STATEMENTS CAREFULLY, AND THEN, ON THE OTHER SIDE OF THIS PRINTOUT, PLEASE WRITE A PARAGRAPH ABOUT YOUR REACTIONS TO YOUR PROFILE. (E.G. HOW ACCURATE IS IT? HOW DOES IT MAKE YOU FEEL?)

YOU WORRY ABOUT PROBLEMS WHICH OTHERS MIGHT CONSIDER UNIMPORTANT.

YOU ARE ABLE TO RECOGNIZE YOUR STRENGTHS AND WEAKNESSES.

WHEN OTHERS NEED YOUR ASSISTANCE, YOU ARE USUALLY WILLING TO HELP.

WHEN YOU FEEL DEPRESSED YOU ARE UNABLE TO BRING YOURSELF OUT OF IT; YOU TEND TO DWELL UPON YOUR PROBLEMS.

IN GENERAL, YOU ARE ABLE TO GET ALONG WITH MOST PEOPLE.

THERE ARE TIMES WHEN YOU BECOME APATHETIC AND BORED FOR NO PARTICULAR REASON.

YOU ARE REALISTICALLY AMBITIOUS; YOU AIM TO ACHIEVE GOALS WHICH ARE HIGH, BUT WITHIN REACH.

YOU ARE JEALOUS OF OTHERS WHO ARE MORE SUCCESSFUL THAN YOURSELF.

YOU HAVE A RELAXED ATTITUDE TOWARD EVERYDAY RESPONSIBILITIES, AND TEND TO BE SELF-CONFIDENT.

UNFAMILIAR SOCIAL SITUATIONS OFTEN MAKE YOU FEEL ANXIOUS OR UNCOMFORTABLE.

IN RESPONSE TO PSYCHOLOGICAL STRESS YOU HAVE A TENDENCY TO DEVELOP PHYSICAL SYMPTOMS SUCH AS HEADACHE OR FATIGUE.

THERE ARE TIMES WHEN YOU ARE INTOLERANT OF THE IDEAS OF OTHERS.

SOMETIMES YOU FEEL CONFUSED OR UPSET WITHOUT KNOWING WHY.

YOU ARE OFTEN UNABLE TO ADMIT YOUR OWN MISTAKES.

AT TIMES YOU DOUBT THE CORRECTNESS OF YOUR DECISIONS.

Appendix B

The Defense Mechanism Inventory

Developed by:

Goldine Gleser

David Ihlevich

(Included with the permission of
the authors)

DO NOT MAKE ANY MARKS ON THIS BOOKLET

INSTRUCTIONS: READ CAREFULLY

On each of the following pages is a short story. Following each story are four questions with a choice of five answers for each. The four questions relate to the following four kinds of behavior: actual behavior, behavior in fantasy, thoughts, and feelings. Of these, only actual behavior is outwardly expressed; the other three take place in the privacy of one's mind and, therefore, have no external consequences. On the answer sheet the stories are identified with the same letters as in the story booklet: b.---, a.---, u.---, s.,d.---, m.---, etc..

What we want you to do is to select the one answer of the five which you think is the most representative of how you would react. Then find the number corresponding to that answer on the answer sheet and mark the box in the column labeled "m." Then select the one answer which you think is least representative of how you would react and fill in the box by that number in the column labeled "l." For example, let us assume that out of the five possible answers to a question (e.g., numbers 236, 237, 238, 239, 240), answer number 237 is the one you consider most representative of the way you would react, and answer number 240 is the least representative. In this case, the corresponding part of the answer sheet would look like this:

	m	l
236	<input type="checkbox"/>	<input type="checkbox"/>
237	<input checked="" type="checkbox"/>	<input type="checkbox"/>
238	<input type="checkbox"/>	<input type="checkbox"/>
239	<input type="checkbox"/>	<input type="checkbox"/>
240	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Note that two boxes in each group of five will be filled in; one box will be in the "m" column; one box will be in the "l" column; the remaining boxes will be blank.

Read all the five answers following the question before you make your choices. In marking your answers on the answer sheet, be sure that the number of the statement agrees with the number on the answer sheet. Note that each story is answered in a separate column. Fill out the answer sheet using only a soft, black pencil. If you change your answer, be sure to erase the undesired one completely. Make no marks outside the boxes--all marks must be inside the boxes.

There are no right or wrong answers here; the only thing that should guide your selections is your own knowledge of yourself. Allow your mind to imagine for a moment that the event described in the story is really happening to you, even though you may never have experienced such an event. When you select your answers, remember we are not asking which answer you like most and like least, but rather the answers which would most and least represent the way you would act and feel in these situations.

If you have no questions, fill out the answer sheet on the top line and mark the boxes corresponding to your age, sex and number of years of education, then turn the page and begin. Be sure to note that the story booklet is printed on both sides.

b.

You are waiting for the bus at the edge of the road. The streets are wet and muddy after the previous night's rain. A car sweeps through a puddle in front of you, splashing your clothing with mud.

What would your ACTUAL reaction be?

1. I would note the car's license number so that I could track down that careless driver.
2. I'd wipe myself off with a smile.
3. I'd yell curses after the driver.
4. I would scold myself for not having worn at least a raincoat.
5. I'd shrug it off; after all things like that are unavoidable.

What would you IMPULSIVELY (in fantasy) want to do?

6. Wipe that driver's face in the mud.
7. Report that incompetent driver to the police.
8. Kick myself for standing too close to the edge of the road.
9. Let the driver know that I don't really mind.
10. Let that driver know that bystanders also have rights.

What THOUGHT might occur to you?

11. Why do I always get myself into things like this?
12. To hell with that driver!
13. I'm sure that basically that driver is a nice fellow.
14. One can expect something like this to happen on wet days.
15. I wonder if that fellow splashed me on purpose.

How would you FEEL and why?

16. Satisfied; after all it could have been worse.
17. Depressed, because of my bad luck.
18. Resigned, for you've got to take things as they come.
19. Resentment, because the driver was so thoughtless and inconsiderate.
20. Furious that he got me dirty.

a.

In the army you hold a post of responsibility for the smooth operation of an important department which is constantly under great pressure to meet deadlines. Because things haven't been running as smoothly as they should lately, despite your initiative and resourcefulness, you have planned some changes in personnel for the near future.

Before you do so, however, your superior officer arrives unexpectedly, asks some brusque questions about the work of the department and then tells you that he is relieving you of your post and assigning your assistant to your place.

What would your ACTUAL reaction be?

21. I'd accept my dismissal gracefully, since the superior is only doing his job.
22. I'd blame my superior for having made up his mind against me even before the visit.
23. I'd be thankful for being relieved of such a tough job.
24. I'd look for an opportunity to undercut my assistant.
25. I'd blame myself for not being competent enough.

What would you IMPULSIVELY (in fantasy) want to do?

26. Congratulate my assistant on his promotion.
27. Expose the probable plot between my superior and my assistant to get rid of me.
28. Tell my superior to go to hell.
29. I'd like to kill myself for not having made the necessary changes sooner.
30. I'd like to quit, but one can't do that in the army.

What THOUGHT might occur to you?

31. I wish I could come face to face with my superior in a dark alley.
32. In the army it is essential to have the right man in the right job.
33. There is no doubt that this was just an excuse to get rid of me.
34. I'm really lucky that I only lost my job and not my rank as well.
35. How could I be so dumb!

How would you FEEL and why?

36. Resentful, because he had it in for me.
37. Angry, at my assistant for getting my job.
38. Pleased that nothing worse had happened.
39. Upset that I am a failure.
40. Resigned; after all, one must be satisfied with having done the best one can.

u.

You are living with your aunt and uncle, who are helping to put you through college. They have taken care of you since your parents were killed in an automobile accident when you were in your early teens. On a night that you have a late date with your "steady," there is a heavy storm outside. Your aunt and uncle insist that you call and cancel your date because of the weather and the late hour. You are about to disregard their wishes and go out the door when your uncle says in a commanding tone of voice, "Your aunt and I have said that you can't go, and that is that."

What would your ACTUAL reaction be?

41. I would do as my uncle said because he has always wanted what was best for me.
42. I'd tell them, "I always knew you didn't want me to grow up."
43. I would cancel my date, since one must keep peace in the family.
44. I'd tell them it was none of their business and go out anyway.
45. I'd agree to remain at home and apologize for having upset them.

What would you IMPULSIVELY (in fantasy) want to do?

46. Knock my head against the wall.
47. Tell them to stop ruining my life.
48. Thank them for being so concerned with my welfare.
49. Leave, slamming the door in their faces.
50. Keep my engagement, rain or shine.

What THOUGHT might occur to you?

51. Why don't they shut up and let me alone?
52. They never have really cared about me.
53. They are so good to me, I should follow their advice without question.
54. You can't take without giving something in return.
55. It's all my own fault for planning such a late date.

How would you FEEL and why?

56. Annoyed, that they think I am a baby.
57. Miserable, because there is nothing much I can do.
58. Grateful for their concern.
59. Resigned; after all, you can't get your own way every time.
60. Furious, because they interfere with my business.

(Male form only)

8.

You are extremely eager to do well in sports, but of all those at which you have tried your hand, only in basketball have you been able to achieve a measure of success. However, until now, whenever you have applied for membership in a team or sports club, although the judges have appeared impressed with your initial performance, their final decision has always been the same -- they tell you that you've just missed making the grade.

One afternoon your car breaks down and you are forced to take a bus home during the rush hour. As you stand in the crowded bus, you hear your wife's voice. She is seated together with the manager of the team to which you have just applied. You overhear the manager tell her, "Your husband has a nice style of play, we're thinking of asking him to join our club." Then you hear your wife laugh and reply, "Take it from me, he hasn't got what it takes in the long run."

What would your ACTUAL reaction be?

61. I'd tell her off when we got home.
62. I would greet her affectionately, as usual, when I arrived home because I know she really appreciates me.
63. I'd be quiet and withdrawn for the rest of the evening, not mentioning what I had overheard.
64. I'd take it in my stride, for women's talk is never taken seriously.
65. I'd tell her that I wasn't surprised by what I'd overheard because I had always thought she was two-faced.

What would you IMPULSIVELY (in fantasy) want to do?

66. Tell my wife that I overheard her, and was proud of her frankness.
67. Break her neck.
68. Tell her that men expect loyalty from their wives.
69. Let her know that I'd always suspected her of talking behind my back.
70. Stop off somewhere so I wouldn't have to face her.

What THOUGHT might occur to you?

71. I bet she talks about me that way to everybody.
72. What could I have done that makes her feel this way about me?
73. I'm sure she's only kidding.
74. One shouldn't be bothered by such talk.
75. She needs to be taught a lesson.

How would you FEEL and why?

76. Worthless, because I'd realize what a failure I was as a husband.
77. Furious at her for speaking about me that way.
78. Unconcerned, because women are like that.
79. Outraged, because her gossip has probably contributed to most of my past failures.
80. Serene, because I know the manager will realize that she doesn't know what she is saying.

.....

(Female form only)

d.

You are spending your vacation visiting an old friend who has found an exciting new job in another town and has gone to live there. She invites you to go with her to a dance given that weekend at the community clubhouse.

Shortly after you arrive, she accepts an invitation to dance, leaving you with a group of strangers to whom you have barely been introduced. They talk with you, but for some reason no one asks you to dance. Your friend, on the other hand, seems to be very popular that evening; she looks as if she is having a wonderful time. As she dances past, she calls out to you, "Why aren't you dancing?"

What would your ACTUAL reaction be?

61. I'd say sarcastically, "I'm not dancing because I'd rather watch you."
62. I'd tell her that I really didn't feel like dancing.
63. I'd go to the powder room to see what's wrong with me.
64. I'd tell her that it's easier to become acquainted through conversation, than it is by dancing.
65. I'd get up and leave because she apparently wants to embarrass me.

What would you IMPULSIVELY (in fantasy) want to do?

66. Assure her that I am perfectly content and happy, so she won't worry.
67. I'd like to slap her face.
68. Point out that one cannot expect to be the belle of the ball one's first evening in a strange place.
69. Tell her that I know now what sort of a "friend" she really is.
70. I'd like to sink into the floor and disappear.

What THOUGHT might occur to you?

71. She has it in for me.
72. I should never have come here in the first place.
73. I'm glad my friend is enjoying herself.
74. Experiences like this one can't be avoided at a party where you don't know the crowd.
75. I'll make her regret her behavior.

How would you FEEL and why?

76. Upset, because I was so unsuccessful.
77. Furious at her for embarrassing me.
78. Resigned, because this is a situation every newcomer must endure.
79. Angry at being entrapped by her like that.
80. Grateful, for having had such a pleasant evening.

m.

At your job you want to impress upon your foreman the fact that you are more skilled than your fellow workers. You are eagerly awaiting an opportunity to prove yourself.

One day a new machine is brought into the factory. The foreman calls all the workers together and asks whether anyone knows how to operate it. You sense the chance you have been waiting for, so you tell the foreman that you have worked with a similar machine and would like a chance to try your hand at this one. But he refuses, saying, "Sorry, we can't take a chance," and calls a veteran worker to come over and try to get the machine started.

No sooner has the veteran worker pulled the starter, than sparks begin to fly and the machine grinds to a halt. At this point the foreman calls and asks you if you still want a chance to try and start the machine.

What would your ACTUAL reaction be?

81. I'd say that I doubt if I could do it either.
82. I'd tell my fellow workers that the foreman wants to hold me responsible for the machine's crack-up.
83. I'd tell the foreman that I appreciated his giving me the chance.
84. I'd decline, cursing the foreman under my breath.
85. I'd tell the foreman that I would try because one must never back down from a challenge.

What would you IMPULSIVELY (in fantasy) want to do?

86. Tell that foreman that he'll not make me the scapegoat for a broken machine.
87. Thank the foreman for not letting me try it first.
88. Tell the foreman that he should try to start a broken machine himself.
89. Point out to the foreman that experience doesn't guarantee success.
90. Kick myself for talking myself into an unbearable situation.

What THOUGHT might occur to you?

91. That foreman is really a pretty decent guy.
92. Damn him and his blasted machine.
93. This foreman is out to get me.
94. Machines are not always reliable.
95. How could I be so stupid as to even think of operating that machine.

How would you FEEL and why?

96. Indifferent, because when one's abilities are not appreciated one's enthusiasm is lost.
97. Angry that I was asked to do an impossible job.
98. Glad that I didn't wreck the machine.
99. Annoyed that I was purposely put on the spot.
100. Disgusted with myself because I risked making a fool of myself.

t.

On your way to catch a train, you are hurrying through a narrow street lined with tall buildings. Suddenly a piece of masonry comes crashing down from a roof where repairmen are working. A piece of brick bounces off the sidewalk, bruising you in the leg.

What would your ACTUAL reaction be?

101. I'd tell them I ought to sue them.
102. I'd curse myself for having such bad luck.
103. I'd hurry on, for one should not permit oneself to be diverted from one's plans.
104. I'd continue on my way, grateful that nothing worse had happened.
105. I'd try to discover who the negligent persons are.

What would you IMPULSIVELY (in fantasy) want to do?

106. Remind the men of their obligation to public safety.
107. Assure those men that nothing serious had happened.
108. Give them a piece of my mind.
109. Kick myself for not having watched where I was going.
110. See to it that those careless workers lose their jobs.

What THOUGHT might occur to you?

111. Those men don't know how to do their job right.
112. I'm lucky that I wasn't seriously hurt.
113. Damn those men!
114. Why do these things always happen to me?
115. One can't be too careful these days.

How would you FEEL and why?

116. Angry, because I was hurt.
117. Furious, because I could have been killed by their negligence.
118. Calm, for one must practice self control.
119. Upset by my bad luck.
120. Thankful that I'd gotten away with no more than a scratch.

P.

Driving through town in the late afternoon, you arrive at one of the busiest intersections. Although the light has changed in your favor, you see that pedestrians are not obeying the "wait" sign and are blocking your path. You attempt to complete your turn with due caution before the light turns against you. As you complete the turn, a traffic policeman orders you over to the side and charges you with violating the pedestrians' right-of-way. You explain that you had taken the only possible course of action, but the policeman proceeds to give you a ticket nevertheless.

What would your ACTUAL reaction be?

- 121. I'd blame myself for having been careless.
- 122. I'd go to court and bring counter charges against the policeman.
- 123. I'd ask the policeman why he has such a grudge against drivers.
- 124. I'd try to cooperate with the policeman, who, after all, is a good guy.
- 125. I'd take the ticket without question, since the policeman was just doing his duty.

What would you IMPULSIVELY (in fantasy) want to do?

- 126. Tell the policeman he can't use his position to push me around.
- 127. Kick myself for not having waited for the next green light.
- 128. Thank the policeman for saving me from a possible accident.
- 129. Stand up for my rights as a matter of principle.
- 130. Slam the door in his face and drive off.

What THOUGHT might occur to you?

- 131. He's doing the right thing; actually I ought to thank him for teaching me an important lesson.
- 132. Each man must carry out his job as he sees it.
- 133. This guy ought to go back to pounding a beat.
- 134. How could I be so stupid!
- 135. I bet he gets a kick out of giving tickets to people.

How would you FEEL and why?

- 136. Boiling anger, because he's making trouble for me.
- 137. Resentment, because he's picking on me.
- 138. Ashamed, because I was negligent.
- 139. Indifferent; after all, this sort of thing happens all the time.
- 140. Relieved, because I'd been prevented from getting into worse trouble.

f.

You return home after spending two years in the army. At the time you joined you had had a choice between enlistment and a position in your father's business. You preferred the army despite parental advice. Now that you are home again, you find that your range of opportunity hasn't widened appreciably. You can either join your father's business or get a job as an untrained worker. You would like to open a coffee shop, but you lack the capital necessary to carry out such an enterprise. After a great deal of hesitation, you decide to ask your father to put up the money. After listening to your proposal, he reminds you that he had wanted you to take a job with his firm instead of joining the army. Then he tells you, "I'm not prepared to throw away my hard-earned money on your crazy schemes. It's time you started helping me in my business."

What would your ACTUAL reaction be?

- 141. I'd accept his offer, since everyone depends on everyone else in this world.
- 142. I would admit to him that I guess I am a bad risk.
- 143. I'd tell him off in no uncertain terms.
- 144. I'd tell him that I'd always suspected that he had a grudge against me.
- 145. I'd thank him for holding a job open for me all these years.

How would you IMPULSIVELY (in fantasy) want to react?

- 146. Go to work for him and make him happy.
- 147. Give up trying and end it all.
- 148. Take my father's offer since offers like that don't grow on trees.
- 149. Let him know what a miser everyone thinks he is.
- 150. Tell him that I wouldn't work for him if he were the last man on earth.

What THOUGHT might occur to you?

- 151. He'll get what's coming to him one day.
- 152. Family considerations can't enter into business decisions.
- 153. Why was I so stupid as to bring the subject up.
- 154. I must admit that my father is acting for my own good.
- 155. This proves what I've suspected all along, that my father has never believed in me.

How would you FEEL and why?

- 156. Angry, because he doesn't want me to succeed on my own.
- 157. Grateful for his offer of a job with a future.
- 158. Resentful that he is sabotaging my future.
- 159. Resigned, since you can't have everything your own way all the time.
- 160. Hopeless, because I couldn't get my father's support.

(Male form only)

8.

One afternoon while you and a close friend are cramming for exams, your girlfriend drops by unexpectedly. Although you and she have been going steady for over a year, you have not been able to see much of each other lately; therefore you are very happy she has come. You invite her in and introduce her to your friend and the three of you spend a pleasant hour together.

A few days later you ring her up and invite her to go out on the town to celebrate the end of exam week, but she tells you that she has come down with a bad cold and thinks that it is best for her not to leave the house. After dinner you feel sort of let down and decide to go to the movies by yourself.

Coming out of the movie theater, you come upon your pal arm-in-arm with your girlfriend.

What would your ACTUAL reaction be?

- 161. I'd tell my girl she could have told me it was over instead of cheating behind my back.
- 162. I'd greet them politely as a civilized person should.
- 163. I'd make sure they both knew I wanted nothing more to do with them.
- 164. I'd tell them that I am delighted that they have become friends.
- 165. I'd duck out of sight to avoid facing them.

What would you IMPULSIVELY (in fantasy) want to do?

- 166. Go home and have a good cry.
- 167. Knock him out and grab the girl away.
- 168. Show them that I really don't mind their being together.
- 169. Tell them if that's the way they want it they can have each other.
- 170. Indicate that it takes more than one battle to win a war.

What THOUGHT might occur to you?

- 171. This wouldn't have happened if I had been more attentive to her.
- 172. All's fair in love and war.
- 173. They certainly are a pair of double-crossers.
- 174. I hope they get what they deserve.
- 175. I was getting tired of her, anyhow.

How would you FEEL and why?

- 176. Relieved that I was free again.
- 177. Upset, because I shouldn't have been so trusting.
- 178. Resigned, because you've got to take life as it comes.
- 179. Disgusted, because of their dishonesty.
- 180. Furious, because they behaved as they did.

(Female form only)

c.

One afternoon while you and your best friend are cramming for exams, your boyfriend drops in unexpectedly. Although you and he have been going steady for over a year, you have not been able to see much of each other lately; therefore you are very happy he has come. You invite him in for a cup of coffee and introduce him to your girlfriend.

When you ring up to invite him to your house for dinner to celebrate the end of exam week, he tells you that he has come down with a bad cold and thinks that it is best for him not to leave the house. After dinner you feel sort of let down but you decide to join your parents who are going to the movies.

Coming out of the movie theater with your parents you come upon your boyfriend arm-in-arm with your best friend.

What would your ACTUAL reaction be?

- 161. I'd ignore them, since I'm sure they'd try to pretend that they didn't see me.
- 162. I'd greet them politely as a civilized person should.
- 163. I'd curse them under my breath.
- 164. I'd tell them that I am delighted that they have become friends.
- 165. I'd go home and have a good cry.

What would you IMPULSIVELY (in fantasy) want to do?

- 166. Hide somewhere in order to avoid facing them.
- 167. Slap his face.
- 168. Show them that I don't mind that they are together.
- 169. Ask her if stealing is the only way she knows of getting a man.
- 170. Indicate that one can understand their attraction for each other.

What THOUGHT might occur to you?

- 171. Naturally he likes her, she's so much prettier than I am.
- 172. Self-interest can cause the best of friends to be disloyal.
- 173. They certainly are a pair of double-crossers.
- 174. I hope they get what they deserve.
- 175. They really do make a handsome couple.

How would you FEEL and why?

- 176. Pleased that both my friends get along so well.
- 177. Upset, because I shouldn't have been so trusting.
- 178. Resigned, because you've got to take life as it comes.
- 179. Enraged, because of their dishonesty.
- 180. Furious, because they behaved as they did.

c.

You and an old schoolfriend are competing for a newly vacated executive position in the firm where you work. Although both your chances seem about equal, your friend has had more opportunity to show resourcefulness in critical situations. Recently, however, you have successfully pushed through some excellent deals. In spite of this, the board of directors decides to promote your friend rather than you.

What would your ACTUAL reaction be?

- 181. I'd try to find out which director "blackballed" me.
- 182. I'd continue to do my duty as a responsible person must.
- 183. I'd accept the outcome as proof that I'm not executive material.
- 184. I'd protest the decision of the board most vehemently.
- 185. I'd congratulate my friend on the promotion.

What would you IMPULSIVELY (in fantasy) want to do?

- 186. Ask the board to reconsider, since a mistake would be detrimental to the company.
- 187. Kick myself for having aspired to a job for which I wasn't qualified.
- 188. Show the board how biased they've been in their unjust treatment of me.
- 189. Help my friend make a success at the new job.
- 190. Break the neck of each and every member of the board of directors.

What THOUGHT might occur to you?

- 191. I guess I just don't have what it takes.
- 192. I probably wouldn't enjoy an executive position as much as the one I have now.
- 193. There certainly is something fishy about the board's decision.
- 194. One must take a blow such as this in one's stride.
- 195. Damn that board of directors.

How would you FEEL and why?

- 196. Happy that I still have the job I am used to.
- 197. Upset because my inadequacy was made public.
- 198. Furious at the directors because of their treatment of me.
- 199. Resigned, for that's the way it goes in the business world.
- 200. Angry, because I have been the victim of an unjust decision.

Appendix C

Instructions to Rater

Read the paragraphs on the rear of each page carefully, then rate each paragraph as follows:

A. Accuracy

Rating 1 = Complete, or near complete acceptance of the accuracy of the statements. This rating cannot be given if more than one statement is strongly questioned.

Rating 2 = A moderate level of acceptance. Here, general accuracy of the statements must be explicitly affirmed, but four or fewer specific statements may be regarded as false.

Rating 3 = Moderate to complete rejection of the statements. If five or more specific statements are regarded as false, then this rating is appropriate.

Rating 9 = Cannot rate. Use the rating as sparingly as possible.

B. Feelings of Threat

Rating 1 = Explicit statement that the person feels threatened or uncomfortable with the feedback. If the subject expresses any negative affect state (e.g., "I dislike reading about myself"), use this rating.

Rating 2 = Explicit statement showing a lack of feeling threatened (e.g., "I felt quite comfortable reading this profile"), or an expression of positive affect (e.g., "I enjoy reading about myself").

Rating 9 = Cannot rate. This category is not a middleground between the previous two. Use it only when no scorable response is available.

References

- Abramovitz, S. I. Internal-external control and social political activism: A test of the dimensionality of Rotter's internal-external scale. Journal of Consulting and Clinical Psychology, 1973, 40, 196-201.
- Altrocchi, J., Palmer, J., Hellman, R., & Davis, H. The Marlowe-Crowne repressor-sensitizer, and internal-external scales and attribution of unconscious hostile intent. Psychological Reports, 1968, 23, 1229-1230.
- Anastasi, A. Psychological testing. New York: MacMillan Publishing Co., Inc., 1968.
- Becker, G. Ego-defense patterns in extraverts and introverts. Psychological Reports, 1967, 20, 387-392.
- Byrne, D. The repression-sensitization scale: Rationale, reliability and validity. Journal of Personality, 1961, 29, 334-349.
- Byrne, D., Barry, J., & Nelson, D. Relation of the revised repression-sensitization scale to measures of self-description. Psychological Reports, 1963, 13, 323-334.
- Block, J. A comparison between ipsative and normative ratings of personality. Journal of Abnormal and Social Psychology, 1957, 54, 50-54.
- Cameron, N. Personality development and psychopathology. Boston: Houghton Mifflin Co., 1963.

- Carrigan, P. M. Extraversion-introversion as a dimension of personality: A reappraisal. Psychological Bulletin, 1960, 57, 329-360.
- Cattell, R. B. Psychological measurement: normative, ipsative, interactive. Psychological Review, 1944, 51, 292-303.
- Collins, B. E., Martin, J. C., Ashmore, R. D., & Ross, L. Some dimensions of the internal-external metaphor in theories of personality. Journal of Personality, 1973, 41, 471-492.
- Davis, D. E. Internal-external control and defensiveness. Unpublished doctoral dissertation, Kansas State University, 1970.
- Davis, W. L., & Davis, D. E. Internal-external control and attribution of responsibility for success and failure. Journal of Personality, 1972, 40, 123-136.
- Dodd, C. D. Individual differences in the generality-specificity of ego-defense mechanisms across threat content areas. Unpublished doctoral dissertation, University of Texas, 1972.
- Efran, J. S. Some personality determinants of memory for success and failure. Unpublished doctoral dissertation, Ohio State University, 1963.
- Erickson, R. C., Smyth, L., Donovan, D. M., & O'Leary, M. R. Psychopathology and defensive style of alcoholics as a function of congruence-incongruence between psychological differentiation and locus of control. Psychological Reports, 1976, 39, 51-54.
- Eriksen, C. W. Psychological defenses and "ego-strength" in the recall of completed and incompleting tasks. Journal of Abnormal and Social Psychology, 1954, 49, 45-50.
- Eysenck, H. J. Cortical inhibition, figural aftereffect and theory of personality. Journal of Abnormal and Social Psychology, 1955, 51, 94-106.

- Eysenck, H. J. The inheritance of extraversion-introversion. Acta Psychologica, 1956, 12, 95-110.
- Eysenck, H. J. The biological basis of personality. Springfield, Illinois: Charles C. Thomas, 1967.
- Eysenck, H. J. The structure of human personality (3rd ed.). London: Methuen, 1970.
- Eysenck, H. J., & Eysenck, S. B. G. On the unitary nature of extraversion. Acta Psychologica, 1967, 26, 383-390.
- Eysenck, H. J., & Eysenck, S. B. G. Manual for the Eysenck Personality Inventory. San Diego, Calif.: Educational and Industrial Testing Service, 1968.
- Freud, A. The writings of Anna Freud (Vol. II): The ego and the mechanisms of defense (Rev. Ed.). New York: International Universities Press, Inc., 1966.
- Gleser, G. C., & Thilevich, D. An objective instrument for measuring defense mechanisms. Journal of Consulting and Clinical Psychology, 1969, 33, 51-60.
- Gleser, G., & Sacks, M. Ego defenses and reactions to stress: A validation study of the Defense Mechanism Inventory. Journal of Consulting and Clinical Psychology, 1973, 40, 181-187.
- Haan, N. Coping and defense mechanisms related to personality inventories. Journal of Consulting Psychology, 1965, 29, 373-378.
- Harrow, M., & Ferrante, A. Locus of control in psychiatric patients. Journal of Consulting and Clinical Psychology, 1969, 33, 582-589.
- Hersch, P. D., & Scheibe, K. E. Reliability and validity of internal-external control as a personality dimension. Journal of Consulting Psychology, 1967, 31, 609-613.

- Hicks, L. E. Some properties of ipsative, normative, and force-choice normative measures. Psychological Bulletin, 1970, 74, 167-184.
- Hildebrand, H. P. A factorial study of introversion-extraversion. British Journal of Psychology, 1958, 49, 1-11.
- Hochreich, D. J. Defensive externality and attribution of responsibility. Journal of Personality, 1974, 42, 543-557.
- Hochreich, D. J. Defensive externality and blame projection following failure. Journal of Personality and Social Psychology, 1975, 32, 540-546.
- Joe, V. C. Review of the internal-external control construct as a personality variable. Psychological Reports, 1971, 28, 619-640. Monograph Supplement 3-U28.
- Jung, C. G. The portable Jung. J. Campbell (Ed.) & R. F. C. Hull (trans.). New York: Viking Press, 1971.
- Lefcourt, H. M. Internal versus external control of reinforcement: A review. Psychological Bulletin, 1966, 65, 206-220.
- Lefcourt, H. M. Locus of control: Current trends in theory and research. Hillsdale, N.J.: Lawrence Erlbaum Associates, 1976.
- Lipp, L., Kolstoe, R., James, W., & Randall, H. Denial of disability and internal control of reinforcement: A study using a perceptual defense paradigm. Journal of Consulting and Clinical Psychology, 1968, 32, 72-75.
- McDougall, W. The clinical theory of temperament applied to introversion and extraversion. Journal of Abnormal and Social Psychology, 1929, 24, 293-309.
- Mirels, H. L. Dimensions of internal versus external control. Journal of Consulting and Clinical Psychology, 1970, 34, 226-228.

- Mischel, W., Ebbesen, E. G., & Zeiss, A. M. Determinants of selective memory about the self. Journal of Consulting and Clinical Psychology, 1976, 44, 92-103.
- O'Leary, M. R., Donovan, D. M., & Hague, W. H. Relationship between locus of control and defensive style among alcoholics. Journal of Clinical Psychology, 1975, 31, 362-363.
- Phares, E. J. Locus of control in personality. Morristown, N.J.: General Learning Press, 1976.
- Phares, E. J., Ritchie, D. E., & Davis, W. L. Internal-external control and reaction to threat. Journal of Personality and Social Psychology, 1968, 10, 402-405.
- Phares, E. J., Wilson, K. G., & Klyver, N. W. Internal-external control and the attribution of blame under neutral and distractive conditions. Journal of Personality and Social Psychology, 1971, 18, 285-288.
- Platt, J. J., Pomeranz, D., & Eisenman, R. Validation of the Eysenck Personality Inventory, the MMPI and internal-external control scale. Journal of Clinical Psychology, 1971, 27, 104-105.
- Rotter, J. B. Social learning and clinical psychology. Englewood Cliffs, N.J.: Prentice-Hall, 1954.
- Rotter, J. B. Generalized expectancies for internal versus external control of reinforcements. Psychological Monographs, 1966, 80 (1, Whole No. 609).
- Rotter, J. B. A new scale for the measurement of interpersonal trust. Journal of Personality, 1967, 35, 651-665.
- Rotter, J. B. Some problems and misconceptions related to the construct of internal versus external locus of control. Journal of

- Consulting and Clinical Psychology, 1975, 43, 56-67.
- Rotter, J. B., Chance, J. E., & Phares, E. J. Applications of social learning theory of personality. New York: Holt, Rinehart & Winston, 1972.
- Rotter, J. B., & Hochreich, D. J. Personality. Glenview, Ill.: Scott, Foresman & Co., 1975.
- Shapiro, K. J., & Alexander, I. E. The experience of introversion: an integration of phenomenological, empirical, and Jungian approaches. Durham, N.C.: Duke University Press, 1975.
- Shriberg, L. D. Intercorrelations among repression-sensitization, extraversion, neuroticism, social desirability, and locus of control. Psychological Reports, 1972, 31, 925-926.
- Siegelman, M. "Origins" of extraversion-introversion. Journal of Psychology, 1968, 69, 85-91.
- Stebbins, P., & Stone, G. L. Internal-external control and the attribution of responsibility under questionnaire and interview conditions. Journal of Counseling Psychology, 1977, 24, 165-168.
- Tolor, A., & Reznikoff, M. Relation between insight, repression-sensitization, internal-external control, and death anxiety. Journal of Abnormal Psychology, 1967, 72, 426-430.
- Wallach, M. A. Thinking, feeling, and expressing: Toward understanding the person. In R. Jessor and S. Feshbach (Eds.), Cognition, personality, and clinical psychology. San Francisco: Jossey-Bass, Inc., 1967.
- Walsh, J. A. Defense mechanism inventory: Review. In O. K. Buros (Ed.), The seventh mental measurements Yearbook (Vol. 1). Highland Park: Gryphon Press, 1972.

- Weissman, H. N., Ritter, K., & Gordon, R. M. Reliability study of the Defense Mechanism Inventory. Psychological Reports, 1971, 29, 1237-1238.
- Wilke, M. M. Experimentally induced "repression" as a function of personality variables. Unpublished doctoral dissertation, New York University, 1958.
- Woodrow, J. Z. A factor analysis and revision of the defense mechanism inventory. Unpublished doctoral dissertation, Ohio University, 1973.
- Zeller, A. G. An experimental analogue of repression: I. Historical summary. Psychological Bulletin, 1950a, 47, 39-51.
- Zeller, A. F. An experimental analogue of repression: II. The effect of individual failure and success on memory measured by relearning. Journal of Experimental Psychology, 1950b, 40, 411-422.
- Zeller, A. F. An experimental analogue of repression: III. The effect of individual failure and success on memory measured by recall. Journal of Experimental Psychology, 1951, 42, 32-38.

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