

LOCUS OF CONTROL AND SELF-DISCLOSURE UNDER
CONDITIONS OF STRESS AND NON-STRESS

M. KUCHARAW

©

THESIS

Submitted to the Faculty of Graduate Studies
Lakehead University
In Partial Fulfillment of the Requirements for
the Degree of Master of Arts.
Department of Psychology
May, 1986

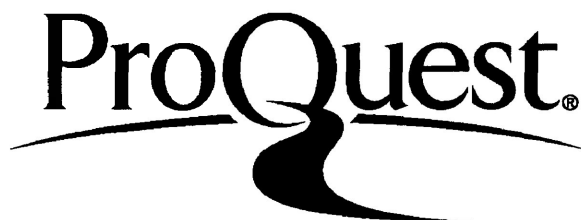
ProQuest Number: 10611304

All rights reserved

INFORMATION TO ALL USERS

The quality of this reproduction is dependent upon the quality of the copy submitted.

In the unlikely event that the author did not send a complete manuscript and there are missing pages, these will be noted. Also, if material had to be removed, a note will indicate the deletion.



ProQuest 10611304

Published by ProQuest LLC (2017). Copyright of the Dissertation is held by the Author.

All rights reserved.

This work is protected against unauthorized copying under Title 17, United States Code
Microform Edition © ProQuest LLC.

ProQuest LLC.
789 East Eisenhower Parkway
P.O. Box 1346
Ann Arbor, MI 48106 - 1346

Permission has been granted to the National Library of Canada to microfilm this thesis and to lend or sell copies of the film.

The author (copyright owner) has reserved other publication rights, and neither the thesis nor extensive extracts from it may be printed or otherwise reproduced without his/her written permission.

L'autorisation a été accordée à la Bibliothèque nationale du Canada de microfilmer cette thèse et de prêter ou de vendre des exemplaires du film.

L'auteur (titulaire du droit d'auteur) se réserve les autres droits de publication; ni la thèse ni de longs extraits de celle-ci ne doivent être imprimés ou autrement reproduits sans son autorisation écrite.

ISBN 0-315-31666-7

ABSTRACT

This study examined the possibility that the apparent adjustment of internal locus of control individuals is due to denial and defensiveness rather than actual adjustment. One hundred and seventeen subjects (thirty-one internals, fifty-one internal-externals, and thirty-five externals) were identified using Rotter's I-E Scale. The dependent measures of state anxiety and self-disclosure were taken under each of two experimental conditions. A pre-test (non-stress) condition allowed for baseline levels of state anxiety and self-disclosure to be obtained. Following a one week interval, all subjects were exposed to a post-test (stress) condition which involved an ego-threatening stress manipulation. The stress manipulation consisted of GATB and PMT tasks which were impossible to complete due to the restricted time limit given. The dependent measures were then taken again. It was hypothesized that all groups would show significantly less self-disclosure after the stress manipulation but that only the internal-external and external groups would report significant anxiety reactivity. Results were in partial agreement with the proposed hypotheses, in that internal male subjects did not show significant anxiety reactivity ($F(1,15)=.29, p>.50$) while showing a trend towards less disclosure (not significant). This was not true for internal females who reported significant anxiety reactivity ($F(1,14)=9.75, p<.01$) and showed a trend, though not

significant, towards more disclosure. The I-E and E groups both reported significant anxiety reactivity and showed a trend, though not significant, towards more disclosure. Unexpected findings were a low level of self-disclosure for female internal subjects and a positive relationship between anxiety and self-disclosure, such that self-disclosure increased with increasing anxiety. Implications for future research are outlined.

LOCUS OF CONTROL AND SELF-DISCLOSURE UNDER
CONDITIONS OF STRESS AND NON-STRESS

INTRODUCTION

The locus of control dimension, derived from Rotter's social learning theory (Rotter, 1954, 1960), is a relatively stable dimension of personality which refers to an individual's generalized expectations of reinforcement (Rotter, 1966). An individual who perceives reinforcement as being under personal control, that is contingent upon his own behaviour or attributes, is said to have an internal locus of control. Individuals who perceive reinforcement as being under the control of external forces such as luck, fate or chance are described as externals.

For reviews of the I-E dimension see Joe (1971); Rotter (1966) and Lefcourt (1966).

Considerable research has been done in an attempt to identify the relationship between internal - external control and adjustment. Rotter (1966, 1975) has proposed a curvilinear relationship. He suggests that individuals falling at either extreme of the I-E continuum would be expected to have greater difficulties in dealing with stressful events than individuals in the moderate range. Rotter reasons that in the case of internals, their high levels of perceived control predispose

these individuals to unrealistic notions of control. In the event of excessive stress this expectation would lead to exaggerated feelings of loss of control, stress and in lowered self-esteem. Individuals at the external end of the I-E continuum are likewise expected to have overexaggerated responses to stressful events owing not to a perceived loss of control as in the case of the internal person but to underestimation of the amount of control that can realistically be exerted.

This proposal has received some confirmation (Fontana et al., 1968). James (1957) found that both extreme internals and extreme externals appeared less adjusted (in Lefcourt, 1966). Gilbert & Mangelsdorff (1979) found that when faced with the actual occurrence of stressful life events both high and low internal subjects reported heightened feelings of stress, loss of control and lowered self-esteem. In general, however, support for a curvilinear relationship between locus of control and adjustment has not been forthcoming in spite of its intuitive appeal.

The majority of research to date has found that externals score significantly higher than internals on a variety of measures of maladjustment and psychopathological behaviour. The present paper questions the validity of these findings. After reviewing the literature dealing with locus of control and

adjustment several criticisms of research in this area will be considered and a hypothesis to explain current findings will be presented. Finally, a study designed to test this hypothesis will be discussed.

LOCUS OF CONTROL AND ADJUSTMENT

An external locus of control orientation has been associated with suicide proneness (Williams & Nickels, 1969); psychiatric disturbance (Goss & Morosko, 1970; Harrow & Ferrante, 1969; Cromwell et al., 1961; Palmer, 1971) and death anxiety (Kuperman & Golden, 1978; Dickstein, 1972; Tolor & Reznikoff, 1967). Externals have also been reported as more vulnerable to stress (Schill et al., 1982; Kilmann, Laval, & Wanlass, 1978) and more likely to seek counselling (MacDonald, 1971).

Significant positive correlations between locus of control and depression have been reported suggesting that externals are more prone to depression (Abramowitz, 1969; Goss & Morosko, 1970; Johnson & Sarason, 1978; Becker & Lesiak, 1977; Prociuk, Breen & Lassier, 1976).

Reviews of the locus of control literature by Joe (1971); Phares (1973) and Lefcourt (1976) consistently report low but significant relationships between externality and self-report

measures of debilitating anxiety. While research dealing with coping in response to stress has generally found that the performance of internal subjects on a variety of cognitive and perceptual tasks has been superior to that of external subjects (Wolk & Bloom,1978; Molinari & Khanna,1980), some studies have found that internals performed poorly when placed in stressful situations (Pittman & Pittman,1979; Phares, Ritchie & Davis,1968). Yet other studies have found no difference between internals and externals for task performance during stress conditions (Watson & Baumal,1967; Houston,1972).

In one of the few studies which suggested that an external orientation may be advantageous Schill, Toves & Ramanaiah (1980) found a significant relationship between loneliness and somatic and psychological distress for internal subjects only.

It would appear then that although in some instances maladjustment has been related to an internal locus of control, research to date has found that persons holding an external locus of control orientation show more incidences of psychiatric disturbance, report more experiences of anxiety and depression and have a less effective coping style in dealing with stress or threat. This general trend of results linking maladaptive behaviour to an external orientation has been interpreted as showing that individuals who experience high levels of stress but who feel they have no control over events (externals) are

more susceptible to the negative effects of that stress. As a result the tendency has been to view internals as "good guys" and externals as "bad guys" (Rotter,1975).

CRITICISMS OF PAST RESEARCH

Careful consideration of the literature dealing with locus of control and adjustment raises several objections as to the validity of making such a generalization and suggests that a reconsideration should be made of Rotter's hypothesis of a curvilinear relationship. These objections, to be discussed in turn, are:

- (1) There has been a failure to distinguish between situational and characteristic locus of control.
- (2) Researchers investigating the relationship between locus of control and stress have not differentiated between the type of stress involved and have not considered the duration of the stress.
- (3) The similarity between the personal attributes of depressives and internals suggests a relationship between the two.

SITUATIONAL VERSUS CHARACTERISTIC LOCUS OF CONTROL

Gilbert (1976) found that individuals admitted to a university counselling centre were able to distinguish between characteristic and situational perceptions of control and, although reporting greater externality in describing their immediate situation, described themselves in many cases as characteristically internal. The correlational nature of most research investigating the relationship between locus of control and adjustment has not allowed for this state-trait distinction to be made. As a result those individuals who experience temporary(state) externality are erroneously being compared to and confused with those who are characteristically(trait) external. The implication of this is that the predominance of maladjusted externals reported in previous studies may be due in many cases simply to a temporary shift towards externality by internals who find themselves faced with immediate environmental stress and unable to cope. Experimental studies are needed to clarify this issue.

DISTINCTION BETWEEN TYPES OF STRESS

A second issue which raises some questions as to the validity of the relationship between internality and adjustment stems from consideration of research dealing with locus of control and performance on cognitive and perceptual tasks in

response to stressful conditions. As was stated previously research has shown that while in some cases the performance of internals appears to suffer under stressful conditions in most instances the opposite is true. That is, under conditions of stress internal subjects have been shown to rise to the occasion and perform well while external subjects have shown significant performance decrements. This has been explained by reference to the internal's superior coping style in response to stress.

After careful consideration of the literature, Wolk & Bloom(1978) have however put forth a proposal which gives new meaning to research in this area. They suggest that apparently contradictory findings in the area of locus of control and reaction to threat have been caused by a failure to differentiate the type of stress involved. When the distinction between performance threatening and ego- threatening stress is made the relationship between locus of control and response to stress becomes more clear. In studies where the stress could be considered performance threatening, internals have been shown to rise to the occasion and perform successfully. When the stress has been ego-threatening however, the performance of internals has been severely affected. This is consistent with Rotter & Mulry's (1965) finding of an interaction between I-E and the nature of the task situation. Situations where outcomes were clearly determined by the skilled performance of the subject were of greater concern to internals whereas comparable

situations where performance was seen as uncorrelated with outcomes were of greater concern to externals.

Moreover, Wortman & Brehm(1975) suggest that the duration of the stressful event is an important variable which must be considered when investigating the relationship between locus of control and performance under stressful conditions. They suggest that for the internally oriented person initial experiences of uncontrollability result in reactance or heightened motivation to regain control. However increased stress and eventual helplessness would follow reactance if the internal's responses continued to be ineffective.

The preceding discussion suggests that contrary to the prevailing notion, internal locus of control individuals are indeed prone to the effects of prolonged stress, especially of an ego-threatening nature and would thus be expected to show signs of maladjustment similar to those more commonly associated with an external locus of control.

LOCUS OF CONTROL AND CHARACTERISTICS OF DEPRESSIVES

With regard to locus of control and self-reported depression, the finding that externality is related to these variables is counter-intuitive. The general psychoanalytic view describes the depressed person as highly self-critical,

accepting of responsibility for the effects of his actions and overly sensitive to the approval of others (Cameron,1963). Schwartz(1964) has found that the depressed person experiences a strong sense of power and responsibility. Depressed individuals have also been reported as having higher levels of aspiration, setting higher standards and as being more self-punishing for failure (Golin & Terrell,1977; Rozensky et al.,1977).

These attributes are clearly descriptive of the internal individual and not the external. While externals have been shown to deny personal responsibility for outcomes, internals have been shown to readily accept personal responsibility (Phares & Lamiell,1974; Phares,Wilson & Klyver,1979; Stebbins & Stone,1977; Davis & Davis,1972).

Not only is he more likely to accept responsibility for failure, the internal person has also been shown to react more negatively to perceived loss of control. Storms and McCaul (1976) found that internals experienced more pronounced loss of self-esteem and self-confidence and had subsequent performance decrements when faced with negative feedback. Similar findings of the tendency for internal locus of control subjects to react strongly and negatively to loss of control have been found by Abramson & Sackheim,1978; Wortman,1976; Klein,Morse & Seligman,1976; and Pittman & Pittman,1979. Breen & Prociuk(1977) found that compared to externals, internal

subjects endorsed significantly more items that suggested a lack of control, shared responsibility and hostility guilt when faced with negative feedback. Judging from this high degree of similarity between the attributes of depressives and internals, one would expect a greater incidence of anxiety and depression for internal locus of control persons than current research suggests.

To summarize our discussion thus far, internal locus of control persons hold to a world view which places upon them a great deal of personal responsibility. They have been shown to be susceptible to the effects of prolonged stress especially of an ego-threatening nature. Internals, furthermore, possess many traits characteristically associated with depressed individuals. How then can the contradictory findings which associate internality with adjustment and externality with maladjustment be explained?

LOCUS OF CONTROL AND DEFENSIVE STYLE

One plausible explanation which can account for this pattern of results is a difference in defensive styles between internals and externals. It has been suggested that unlike extreme externals and moderate internal-externals, extreme internals tend to emphasize repression and denial in dealing with threat. In support of this, Lipp, Kolstoe, James &

Randall(1968) found using a perceptual defense paradigm, that physically disabled externals were quicker than internals in recognizing stimuli containing disabled persons. This non-recognition by internals was interpreted as defensiveness on the part of disabled internal subjects. Phares, Ritchie & Davis (1968) found that although there was no difference reported between externals and internals in the discomfort they felt after receiving negative personal feedback, externals later recalled significantly more of the interpretations used as the feedback information than did the internals. Once again, these findings were interpreted as suggesting the greater need for internals to forget negative personal feedback as a defense against anxiety.

Lefcourt (1972) rejects the notion of greater defensiveness on the part of internals, and offers alternative explanations for these studies which do not rely on a greater defensiveness for internals. He proposes that internal locus of control disabled subjects had higher recognition thresholds for the perception of disability related stimuli because of the lower salience such information had for them. That is, these subjects were less attentive to these stimuli because of their greater adjustment to their disability. Concerning the Phares, Ritchie & Davis study(1968) Lefcourt points out that externals remembered more positive as well as negative information and adds that internals have been shown to be more flexible in their

attributions for the cause of failure, accepting personal responsibility if the situation dictates and blaming external sources only when this is justifiable.

Lefcourt reasons that the primitive nature of defense mechanisms such as repression as compared to intellectualization and isolation are incompatible with the notion of social competence and maturity usually associated with an internal orientation. He concludes that, "the assumption that internals, like classic hysterics, might become repressive and perceptually avoidant of such information is not convincing" (Lefcourt, 1972, p.88). Lefcourt's argument must however be questioned in light of considerable evidence to the contrary.

DISCREPANCY BETWEEN PHYSIOLOGICAL AND REPORTED AROUSAL

Both internal and external subjects have been shown to experience increased physiological arousal in the event of stressful situations. Internal subjects however characteristically exhibit a discrepancy between physiological and self-report measures of arousal.

Harrell (1980) found that an internal orientation was associated with more rapid heart rate compared to an external orientation when subjects were exposed to signalled stressful

tones. Internal subjects who were subsequently provided with relaxation training also reported the greatest reductions in ratings of aversiveness of the tones. Houston (1972) found that although internal and external subjects reported the same amount of anxiety in stressful skill and chance situations internal subjects showed greater physiological arousal. In light of the Rappaport & Katkin (1972) study which found that high anxiety subjects when exposed to a stressful situation showed a significant increase in galvanic skin response compared with low anxiety subjects, Houston's proposal that the above results suggest a greater defensiveness on the part of internals must be considered a possibility.

Further support for the proposed defensiveness of internals comes from research which suggests that while up to a certain stimulus intensity both physiological arousal and experienced anxiety increase, beyond this point physiological arousal continues to increase while reported anxiety decreases due possibly to the operation of inhibitory mechanisms (Epstein, 1967; Burch & Greiner, 1960; Moxness, 1974). Furthermore, Hersch & Schiebe (1967) found that internals scored high on the Adjective Check List (ACL; Gough & Heilbrun, 1965) measures of defensiveness and good impression. Naditch, Gargan & Michael (1975) found a negative correlation between locus of control and denial suggesting that internals make use of denial as a defense mechanism.

Byrne's Repression-Sensitization(R-S) Scale (Byrne,Barry & Nelson, 1963) which is a measure of defensive styles, has been shown by a number of researchers to be significantly correlated with the I-E scale (Shriberg,1972; Tolor & Reznikoff,1967; Altrocchi,Palmer,Hellman & Davis,1968). Internal scores on the I-E scale have been shown to be related to a repressive coping style characterized by the use of such defenses as avoidance, denial and repression which act to keep threat outside the self-system of the individual. External scorers on the I-E scale on the other hand, tend towards a sensitizing coping style which includes the use of intellectualization ,rationalization, overinterpretation and alertness. Consideration of the research on the R-S dimension would therefore be relevant to the present discussion of locus of control.

For reviews of the literature on repression-sensitization see Bell & Byrne(1976) and Byrne(1964).

Although the relationship between R-S and adjustment has shown that repressors generally tend to be better adjusted than sensitizers, extreme repression has been associated with maladjustment (Byrne,1964; Maher, 1966). Repressors like internals have also been shown to be highly aroused by ambiguous or ego-threatening situations. Stein (1971) found that in a non-contextual situation, repressors who were not told beforehand that they would later be required to give free

associations which might be self-revealing, became more highly aroused when asked to give these free associations than a group of sensitizers placed in a similar situation. Epstein (1967) found that hysterics (repressors) were more susceptible to massive surges of arousal because they were inattentive to anxiety based warning signals that could be used to initiate defenses. While they were well defended in their perceptual processes, repressors became vulnerable in more revealing situations. They also had difficulty learning from prior anxiety-inducing events and were more prone to higher levels of emotional reactivity when similar events arose in the future.

Baldwin & Cabianca (1972) studied the strategies of repressors and sensitizers in the face of self-discrepant information. The self-discrepant information consisted of false feedback (in the form of low maturity ratings) on the Byrne Health and Opinion Survey which had been completed by the subjects at an earlier date. Physiological measures of stress showed that repressors experienced greater increases in heart rate relative to sensitizers after the presentation of the self-discrepant information. Yet other studies have shown repressors to have higher recognition thresholds to unpleasant or anxiety-linked stimuli (Byrne, 1964; Byrne, 1976; Neufeld, 1975).

The above findings of increased physiological response to

stressful conditions especially of an ego-threatening nature and higher recognition thresholds for anxiety-linked stimuli on the part of repressors is reminiscent of the internal's behaviour under similar circumstances and is highly suggestive of the use by internals of denial and repression as defense mechanisms when faced with stress.

Returning to the initial problem, if the hypothesis of a curvilinear relationship between locus of control and adjustment is to be accepted one is faced with a need to explain the relative lack of results associating an internal locus of control to measures of maladjustment. If it can be shown that when placed in a stressful situation internals show a discrepancy between reported anxiety and actual behaviour we have some basis for attributing the apparent adjustment of internals to denial rather than to actual adjustment.

Research dealing with self-disclosure and anxiety suggest potential use of the former as a measure of defensiveness. Self-disclosure has been defined as "the communication of information about one's affects, behaviours, and cognitions with the implication that the material disclosed is either secret, intimate, or emotionally charged" (Post, Wittmaier & Radin, 1978).

Jourard (1971) has hypothesized that self-disclosure is

causally related to psychological well-being with low disclosure related to maladjustment and high disclosure associated with mental health. Self-disclosure has been shown to be inversely related to measures of anxiety and personal adjustment, that is, as anxiety increases self-disclosure tends to decrease. Post, Wittmaier & Radin (1978) have found that compared to "normals" individuals experiencing high state anxiety disclose less and are less intimate in their self-disclosure. They interpret their findings as suggesting that low levels of self-disclosure function to protect the individual from threat. Supporting this is the finding of Highlen & Gillis (1978) that expression of negative feelings sharply increased anxiety levels of subjects in a simulated dyadic interaction. Research with other traits related to anxiety also suggests that these subjects tend to disclose less than "normal" subjects. Anchor, Vojtisek & Berger (1972) found that subjects high on the Marlowe-Crowne Social Desirability Scale (MCSDS; Crowne & Marlowe, 1964) made a significantly lower proportion of self-statements in a group therapy session. Burhenne & Mirels (1970) found high need for approval to be correlated with low self-disclosure on 5 essay-type questions.

The above data lend support for the use of self-disclosure as a measure of defensiveness. That is, if a person's level of self-disclosure is initially measured and he is subsequently exposed to a stressful situation, the finding of a significantly

lower level of self-disclosure without a corresponding increase in reported anxiety provides some evidence for inferring a defensive attitude on the part of that person.

On the basis of this relationship between anxiety and self-disclosure, the present study was designed to explore the possibility that the apparent adjustment of internal locus of control individuals may be a consequence of denial rather than actual adjustment.

Internal and external locus of control subjects were identified using Rotter's I-E scale. These subjects were given measures of state anxiety using the State Trait-Anxiety Inventory, A-State portion(STAI A-STATE) and level of self-disclosure using Greene's(1964) 20 item Sentence-Completion Blank (SDSB). under a non-stress condition and also after a stress manipulation. The stress manipulation involved the completion of a Porteus Maze Test(PMT) task. Subjects were also given parts 3 and 4 of the General Aptitude Test Battery(GATB). In order to induce ego-involvement, subjects were told that the problems were designed to measure intelligence but should present no problem for persons of their educational level.

The hypotheses generated were as follows:

- (1) Extreme internal(I) subjects will show no significant change in state anxiety level from the non-stress to the

stress conditions, but they will have higher self-disclosure scores(indicating less disclosure).

- (2) Extreme external(E) and internal-external(I-E) subjects will report significantly higher levels of state anxiety from the non-stress to the stress condition and will have higher self-disclosure scores(indicating less disclosure).

METHOD

Subjects

The subjects were 144 volunteers, 47 males and 97 females, who were recruited from introductory psychology classes at Lakehead University. Subjects received course credit for their participation. Subjects in the experimental groups were divided into 3 locus of control groups based on their scores on Rotter's I-E Scale, which were collected as part of the pre-test session. Internals(I) were 16 males and 15 females with scores on the I-E Scale ranging from 0-8, while the internal-externals(I-E) were 10 males and 41 females who received I-E scores ranging from 9-13. Externals(E) were 8 males and 27 females whose scores ranged from 14-19. These groups represented the lower, middle, and upper one-third of the I-E distribution respectively. A control group consisting of 13 males and 14 females, drawn from the same population as the experimental groups, was included in order to control for the effects of repeated testing.

Measures

Rotter Internal-External Locus of Control Scale- The I-E Scale (Rotter, 1966) is a 29 item forced-choice questionnaire (including 6 filler items) which measures a person's generalized

expectations about how reinforcement is controlled; that is by his own actions or attributes or by external forces. High scores indicate an expectancy of external control of reinforcement while low scores indicate an expectancy of internal control of reinforcement. Data on the I-E scale offer support for it's discriminant and construct validity; test-retest reliability; and freedom from a social desirability response set (Rotter,1966).

State Trait Anxiety Inventory- The STAI measures (Spielberger,Gorsuch,& Lushene,1970) consist of 20 items designed to assess A-State or state anxiety intensity at specific points in time, and 20 items designed to assess A-Trait or individual differences in anxiety proneness. Subjects respond to each item by rating themselves on a four-point scale. The STAI test manual (Spielberger et al.,1970) gives extensive reliability and validity data. Since this study is interested solely in the relationship between state anxiety, locus of control and self-disclosure only the A- State measure will be used.

Greene's (1964) Self-Disclosure Sentence-Completion Blank- The SDSB questionnaire consists of 20 sentence stems to be completed by the subject with statements about his personal world. These stems have been designed to have "high pull" for self- disclosure. To score the subject's responses, each response is assigned a scale value from 1 to 5 depending on it's

judged degree of revealingness as indicated in the scoring manual. Level One disclosures are very revealing while those at Level Five are evasive. Therefore a high score on the SDSB is indicative of a low level of self-disclosure. Responses are scored solely on the basis of their content and not the richness or breadth of vocabulary used. This particular measure of self-disclosure is being used because of its open-ended format. The advantage of this type of format is that the subject is not limited in the responses he can make to each item thus making it a more valid measure of what the subject will willingly disclose. Reliability and validity data are included in the scoring manual.

PROCEDURE

Non-stress(Pre-test) condition- All subjects(experimental and control) were given a pamphlet containing the Rotter I-E Scale, State Trait Anxiety Inventory A-State Scale(STAI), and Greene's Self-Disclosure Sentence-Completion Blank(SDSB). Subjects were asked to fill out the questionnaires contained in the pamphlet under the pretense that an attempt was being made to find out some general characteristics of undergraduate students. Upon completion, subjects were reminded that their attendance would be required in one week's time in order to obtain further information to complete the survey.

Stress(Post-test) Condition- After a one week interval, all subjects in the experimental condition were given a pamphlet consisting of a Porteus Maze Test(PMT) problem and portions of the General Aptitude Test Battery(GATB) tests 3 and 4, as well as the State Trait Anxiety A-STATE Scale(STAI A-STATE) and Greene's Self-Disclosure Sentence-Completion Blank(SDSB). Instructions for completing the pamphlet were then presented by the examiner according to the following script: "The first two pages contain problems which are designed to measure intellectual ability. Read the instructions at the beginning of each exercise carefully and then do the problems. You will have 6 minutes in which to complete the problems at which time I will signal you to stop. These problems should not be difficult for university students to complete. Most people finish all the problems within the 6 minute time limit." Upon completion of the problems subjects were asked to fill out the final two pages of the pamphlet containing the State Trait Anxiety A-STATE Scale(STAI A-STATE) and Greene's Self-Disclosure Sentence-Completion Blank(SDSB). The subjects were then thanked for their participation in the study.

Subjects in the control group did not receive the stress manipulation during the post-test session. These subjects were simply asked to fill out the pamphlet before them which contained the State Trait Anxiety A-STATE Scale(STAI A- STATE) and Greene's Self-Disclosure Sentence-Completion Blank(SDSB).

DESIGN AND ANALYSIS

The two dependent variables in this study were state anxiety and self-disclosure. A 3(Group)X2(Sex) analysis of variance was performed on pre-test measures of state anxiety to test for initial differences and a 3(Group)X2(Sex)X2(Time) repeated measures analysis of variance was performed on pre-test and post-test measures of state anxiety to test for anxiety reactivity. Neuman-Keuls subsequent tests were employed for significant main effects, with alpha set at the .05 level. Post hoc analysis of significant interactions was done using simple effects analyses. Similar analyses were done for the self-disclosure dependent measure. Oneway repeated measures analyses of variance were performed on pre-test and post-test measures of state anxiety and self-disclosure for the control group in order to test for the effects of repeated testing.

RESULTS

The Effects of Repeated Testing

A oneway repeated measures analysis of variance was performed on pre-test and post-test state anxiety scores for the control group. This was found to be not significant($F(1,26)=.22$, $p<.64$).

A similar analysis of the self-disclosure scores for the control group revealed no significant difference between the pre and post-test conditions($F(1,26)=.03$, $p<.86$). Results of the oneway ANOVA's are summarized in Table 1.

INSERT TABLE 1.

The Effects of Locus of Control, Sex, and Stress on State Anxiety

A 3X2 analysis of variance(Group,Sex) performed on the pre-test measures of state anxiety yielded a significant main effect for Group ($F(2,111)=6.21$, $p<.001$) , indicating that the three locus

of control groups differed in initial level of state anxiety. Subsequent Neuman-Keuls analysis indicated that the extreme internal(I) group and internal-external(I-E) groups were significantly less anxious than the extreme external(E) group, but did not differ significantly from each other ($p < .05$). Table 2 indicates the group mean state anxiety scores and standard deviations under the two treatment conditions.

Table 2.
Mean State Anxiety Scores and Standard
Deviations As A Function of Group.

Group	Pre-test		Post-test	
	Mean	SD	Mean	SD
Internal(I)	34.19	6.98	38.29	9.24
Internal-external(I-E)	35.78	7.54	42.24	8.70
External(E)	40.74	9.14	44.55	7.10
Control(C)	36.56	5.86	36.93	5.76

Results of the 3X2(Group,Sex) Anova are summarized in Table 3.

INSERT TABLE 3.

A 3X2X2(Group,Sex,Time) repeated measures analysis of variance performed on the state anxiety scores yielded a significant main effect for Time ($F(1,111)=39.20, p<.000$). The main effect for the Group variable was not significant, indicating that the three locus of control groups did not differ from one another in their response to the stress manipulation. All groups had significantly higher post-test anxiety scores compared to their pre-test scores. There was however a significant three-way(GroupXSexXTime) interaction ($F(2,111)=3.19, p<.045$). Table 4 indicates mean state anxiety scores and standard deviations for all groups under the two treatment conditions, considering males and females separately.

Table 4.

Group Mean State Anxiety Scores and Standard Deviations As A Function of Sex

Group	Pre-test		Post-test	
	Mean	SD	Mean	SD
Internal(I)	M 35.50	7.28	36.38	7.52
	F 32.80	6.60	40.33	10.67
Internal-External(I-E)	M 33.90	5.76	41.40	9.12
	F 36.24	7.90	42.44	8.69
External(E)	M 40.50	6.99	47.88	6.90
	F 40.81	9.81	43.56	6.97
Control(C)	M 35.77	6.03	36.54	4.72
	F 37.29	5.82	37.29	6.75

Results of the 3X2X2(Group,Sex,Time) repeated measures Anova are summarized in Table 5.

INSERT TABLE 5.

The three-way interaction is graphically presented in Figure 1.

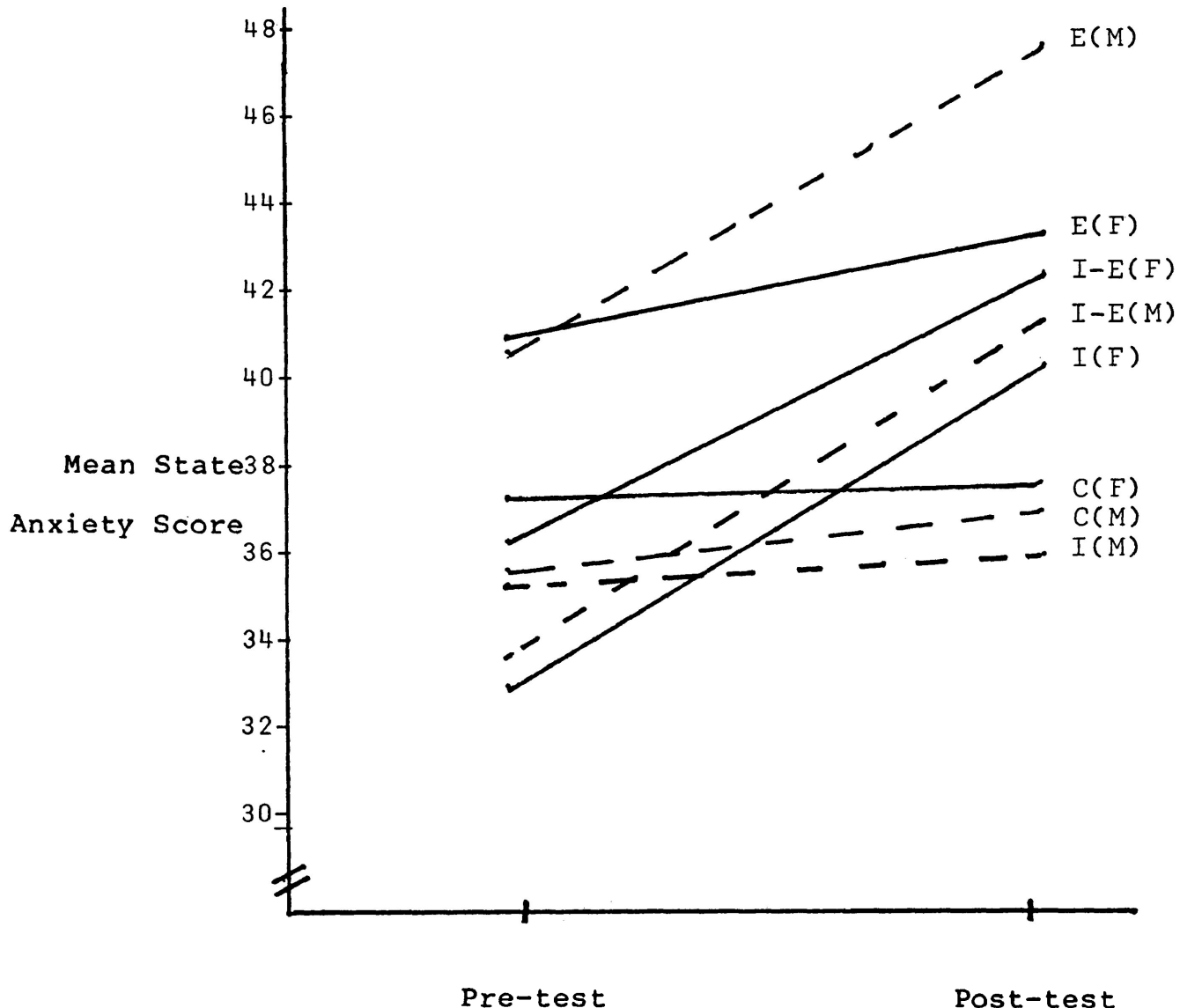


Figure 1. Mean State anxiety scores for I, I-E and E oriented males and females in each treatment condition.

In order to clarify the meaning of the GroupXSexXTime interaction, further analyses (simple effects) were carried out. Beginning description of this interaction with the anxiety reactivity of extreme internal (I) subjects, females reported significantly elevated levels of state anxiety from pre-test to post-test ($F(1,14)=9.75, p<.01$) whereas male internal subjects did not show a significant change in anxiety level ($F(1,15)=.29, p<.60$). This pattern was reversed for the extreme external (E) group. Male subjects reported significantly elevated state anxiety ($F(1,19)=7.90, p<.02$) whereas females did not change significantly in their level of anxiety. For the internal-external (I-E) group, both males and females experienced significantly greater anxiety as a result of the stress manipulation ($F(1,15)=9.96, p<.016$) and ($F(1,40)=21.85, p<.001$) respectively. No other main effects or interactions were significant.

The Effects of Locus of Control, Sex, Stress on Self-Disclosure

A 3X2 analysis of variance (Group, Sex) was performed on the pre-test measures of self-disclosure. A significant main effect for the Group variable was obtained ($F(2,111)=3.11, p<.048$). Subsequent Neuman-Keuls analysis indicated that the extreme internal (I) group disclosed significantly less than both the internal-external (I-E) and extreme external (E) groups which did not differ from each other in their pre-test measures of

self-disclosure($p < .05$). Table 6 indicates mean self-disclosure scores and standard deviations for all groups under each treatment condition. Results of the 3X2(Group,Sex) Anova are summarized in Table 7.

Table 6.
Mean Self-Disclosure Scores and Standard Deviations For Each Group Under Each Condition.

Group	Pre-test		Post-test	
	Mean	SD	Mean	SD
Internal(I)	65.68	11.06	65.39	9.66
Internal-External(I-E)	59.65	9.78	56.80	10.76
External(E)	60.11	11.26	57.89	9.85
Control(C)	60.96	8.58	61.15	7.25

Note: Higher scores indicate less disclosure.

INSERT TABLE 7.

Table 7 also shows that there was a significant two-way(GroupXSex) interaction ($F(2,111)=4.49, p<.013$) which indicates caution in interpreting the significant main effect for the Group variable. Table 8 indicates group mean pre-test self-disclosure scores and standard deviations as a function of sex.

Table 8.
Group Mean Self-Disclosure Scores and Standard Deviations As A Function of Sex

Group	Pre-test		Post-test	
	Mean	SD	Mean	SD
Internal (I)	M 61.69	8.99	62.63	6.40
	F 69.93	11.73	68.33	11.76
Internal-External (I-E)	M 64.40	11.52	59.00	6.94
	F 58.49	9.09	56.27	11.51
External (E)	M 64.00	12.25	58.38	13.45
	F 58.96	10.92	57.74	8.84
Control (C)	M 58.85	7.71	59.38	6.59
	F 62.93	9.14	62.79	7.69

Note: Higher scores indicate less disclosure.

The two-way(GroupXSex) interaction of pre-test measures of self-disclosure is presented graphically in Figure 2.

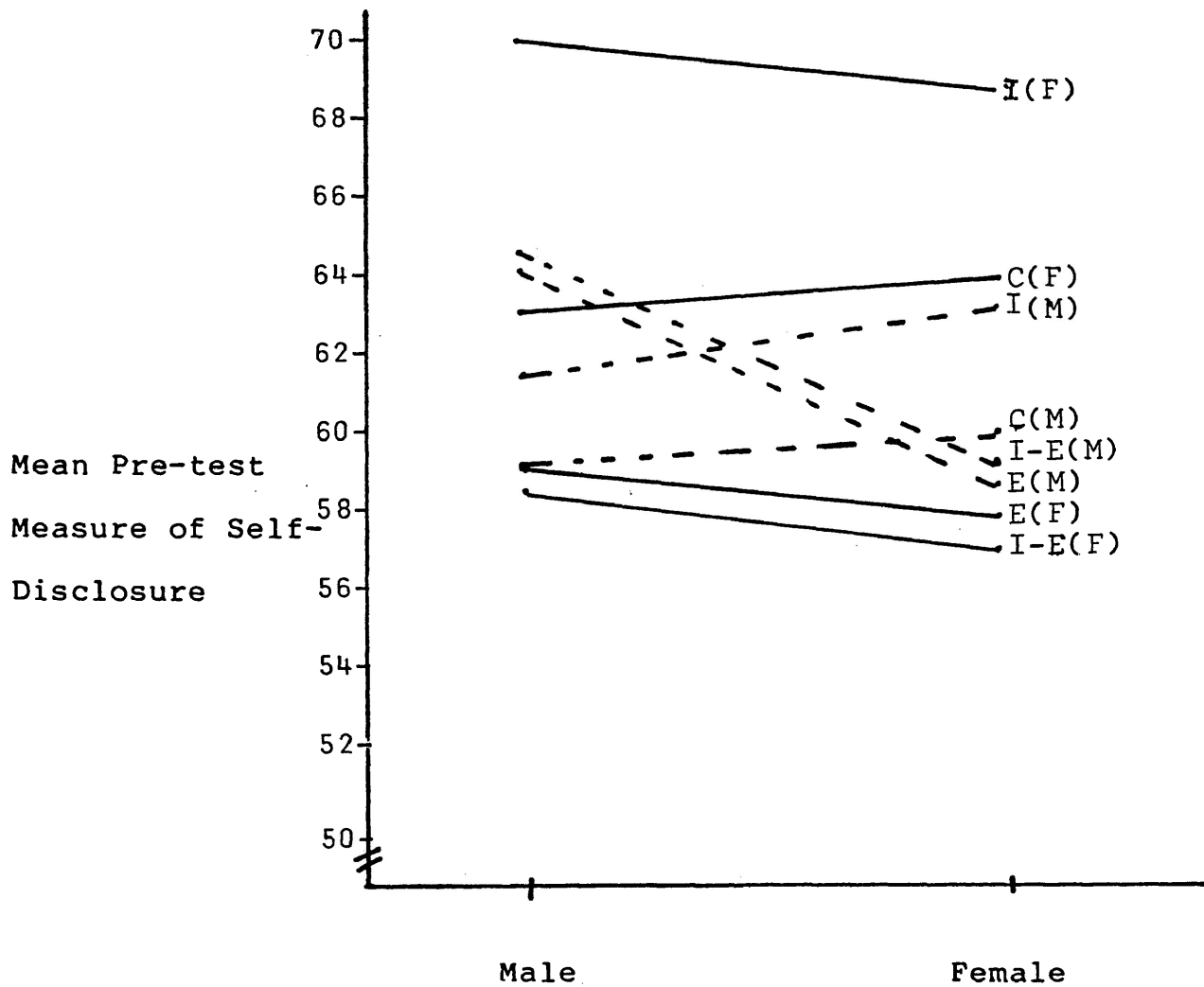


Figure 2. Mean pre-test scores for I, I-E and E oriented males and females. NOTE: Higher scores indicate less disclosure.

In order to clarify the meaning of the GroupXSex interaction further analyses (simple effects) were carried out. The results indicate the following. For extreme internal (I) subjects, males disclosed significantly more than females ($F(1,29)=4.76, p<.037$). A look at Figure 2 shows that female internal subjects had the lowest level of self-disclosure of all the groups. Both the internal-external (I-E) and extreme external (E) groups showed a tendency for females to disclose more than males, however these trends were not significant. The finding that extreme internal subjects disclosed significantly less than the internal-external (I-E) and external (E) groups can therefore be attributed largely to the significantly lower level of self-disclosure of female internal subjects.

A $3 \times 2 \times 2$ (Group, Sex, Time) repeated measures analysis of variance performed on self-disclosure scores revealed a significant main effect for Time ($F(1,111)=5.28, p<.023$), indicating that overall, subjects disclosed significantly more information after the stress manipulation than before. No other main effects or interactions were significant. Table 9 provides a summary of the results of the $3 \times 2 \times 2$ (Group, Sex, Time) repeated measures Anova.

INSERT TABLE 9.

DISCUSSION

Significant differences in anxiety were found among introductory psychology students identified as external(E), internal- external(I-E), or internal(I). Students who were external in locus of control had a significantly higher level of pre-test state anxiety. In response to an experimental stress manipulation, it was found that all groups but male internals and female externals reported significantly greater post-test state anxiety levels. Significant differences in pre-test level of self-disclosure were found between the experimental groups such that students who were identified as internal locus of control had a significantly lower level of self-disclosure, this due largely to the significantly lower level of self-disclosure of female internals. The stress manipulation resulted in a significantly higher level of self-disclosure for all subjects. Male internals were the only group to show a trend towards less disclosure, however this trend was not statistically significant.

Previous research concerning the correlates of the locus of control dimension has demonstrated that belief in external control tends to be associated with greater maladjustment and anxiety than does belief in internal control of reinforcements. These findings have been explained in terms of the external person's less effective coping style in response to stressful

situations (Kish, Solberg & Uecker, 1971; Palmer, 1971) and has fostered the attitude of viewing internals as "good guys" and externals as "bad guys" (Rotter, 1975). However, an alternative explanation of these findings which suggests that internal subjects may use defensiveness and denial when responding to self-report measures of adjustment, could be entertained as a logical alternative. This possibility was investigated in the present study by placing subjects first in a non-stressful situation and then in a stressful, ego-threatening situation and observing whether or not there was a discrepancy between subject's anxiety reactivity and their behaviour (in the form of self-disclosure).

The first question to be answered by the present set of investigations was whether or not the locus of control groups showed differential anxiety reactivity to the stress manipulation. With regard to the pre-test measures of state anxiety, in agreement with previous research, it was found that external subjects were significantly more anxious than internals. Supplementary correlational analysis found a significant positive correlation between locus of control score and pre-test measure of state anxiety ($r=.315, n=117, p<.001$) which is in the same range as those reported by previous studies (Watson, 1966; Butterfield, 1964). The significantly lower level of anxiety of internals however cannot be accepted at face value. This finding may be due to internals actually being less

anxious or it may result from their use of denial and defensiveness. The latter possibility must be entertained in light of Gilbert's(1973) finding that internals lied more and had higher scores on a measure of social desirability.

Concerning this possibility, the prediction that internals would show no significant change in state anxiety level across conditions, whereas external subjects would report heightened anxiety was partially supported. The anxiety level of male internals did not change in agreement with the proposed hypothesis, whereas female internal subjects did report significantly higher levels of state anxiety after the stress manipulation. This pattern was reversed for the external locus of control group where males reported greater anxiety and females showed no significant change. For the internal-external(I-E) comparison group, both males and females became more anxious as a result of the stress manipulation. With respect to the female external subjects, their failure to become significantly more anxious is understandable when one considers that they reported the highest level of pre-test state anxiety of all the groups(see Table 4 and Figure 1). It is not surprising then to find that this already highly anxious group did not become significantly more anxious. It should be pointed out that although the change in anxiety level of this group was not statistically significant the levels did change in the expected direction(pre-test=40.81 vs. post-test=43.56).

The increased anxiety of internal females was an unexpected finding. It was hypothesized that the internal group as a whole would not report significant anxiety reactivity to the stress manipulation. Research by Boor and Schill(1968) which supported the notion of two types of low-anxious responders on the Taylor Manifest Anxiety Scale may offer some explanation of the present findings. They found that while high-anxious subjects tended to be primarily non-defensive, about half of the low-anxious subjects tended to be defensive. This finding is further supported by research which has shown that low-anxiety subjects are more likely than high-anxiety subjects to give socially acceptable responses(Heineman,1953; Levitt,1967). Concerning the present study, it will be remembered that the internal (I) group was initially significantly less anxious than the external(E) group. It may be that the low-anxious male internals who showed no change in reported anxiety level as a result of the stress manipulation are assuming the low-anxious defensive style described by Boor & Schill(1968); Heineman(1953); and Levitt(1967) when responding to the self-report anxiety measures, whereas the low-anxious female internals, who did report significant anxiety reactivity, are responding in a straightforward manner.

Consideration of Rotter's(1975) distinction between "true" internals and "social desirability" internals may also be of some help in explaining the differential anxiety reactivity of internal males and females. While "true" internals resist

attempts to sway them, "social desirability" internals respond to the I-E Scale in what they believe to be a socially acceptable manner. It may be that the male internal subjects in the present study correspond to what Rotter would call "true" internals and their female counterparts may be "social desirability" internals. If this were the case, internal males would be expected to behave in ways characteristic of internal persons (ie. report low levels of anxiety), whereas similar expectations would not apply to internal females. Such a hypothesis would explain the behaviour of internal female subjects which was found to resemble that of the internal-external and external locus of control groups. It is also consistent with research by Hoyenga & Hoyenga (1979) which found a sex difference in locus of control such that females are more external than males and that women typically report more anxiety than men (Ekehammar, 1974; Hoyenga & Hoyenga, 1979; Maccoby & Jacklin, 1974).

Further support for such an explanation of the significant anxiety reactivity of internal females comes from the research of Brun & Prociuk (1977). They found that college students who scored in the internal end of Rotter's I-E Scale reported a significantly greater degree of hostility guilt than externals and that females expressed greater hostility guilt than males. Thus, it may be that compared to male internals, the female internal subjects experienced greater guilt after having done

poorly on the tasks which were presumably measuring intellectual ability and that this guilt may have caused them to consequently become highly anxious.

The above explanations for the differential anxiety reactivity of male and female internal subjects are however only speculative. Their validity awaits further experimental research aimed specifically at identifying whether or not there are gender differences in the response to stress of internal locus of control subjects. Current research which has consisted largely of correlational studies, based on data gathered from only one testing, is inadequate for this task.

The second hypothesis to be investigated in the present study dealt with the pattern of self-disclosure of subjects across the experimental conditions. It was hypothesized that all subjects would show significantly lower levels of self-disclosure after the stress manipulation, since research has found an inverse relation between anxiety and level of self-disclosure(Post & Wittmaier,1978; Gilbert,1972). Concerning the pre-test measures of self-disclosure, it was found that the internal group disclosed significantly less than did the internal-external(I-E) and external(E) groups. This was contradictory to previous research which has found that internals disclose more than externals(Ryckman,Sherman & Burgess,1973). Of particular interest is the finding that even

though the internal and internal-external groups did not differ in pre-test measures of state anxiety and would hence not be expected to differ in level of self-disclosure, internals disclosed significantly less. Analysis of the significant GroupXSex interaction offers some help in understanding these findings. Simple effects analysis of the interaction showed that the self-disclosure of males and females in the I-E and E groups, although not statistically significant, was consistent with previous research, in that females tended to disclose more than males (LeVine & Franco, 1981; Lieberman & Begley, 1972). This pattern was reversed for the internal (I) group where females unexpectedly disclosed significantly less than males. Indeed, female internals disclosed the least of all the groups. Although the reason for the low disclosure of internal females is not clear, it does account for the surprising finding that the internal (I) group disclosed significantly less than the I-E and E groups. This finding of significantly different self-disclosure levels of male and female internal subjects is important in suggesting that locus of control be considered as an independent variable in future research investigating gender differences in self-disclosure.

The hypothesis that self-disclosure for all groups would decrease as a result of the stress manipulation was not supported. Indeed, the only effect to reach statistical

significance showed that overall, level of self-disclosure increased rather than decreased such that as subjects became more anxious they tended to disclose more about themselves. The only group to differ from this pattern of increased self-disclosure after the stress manipulation was the male internal group. This group, which it will be remembered did not show any significant anxiety reactivity in response to the stress manipulation, showed a tendency(although not significant) towards less self-disclosure from pre-test to post-test. Thus the predicted pattern of no significant change in reported anxiety combined with a decreased level of self-disclosure finds partial support in the current study. The behaviour of the male internal subjects suggests the possibility that male internal locus of control persons may employ defensiveness and denial when responding to self-report measures of adjustment. Such behaviour by male internals makes sense for two reasons. First of all, the pattern of relationships between locus of control, anxiety and self-disclosure shows sex differences consistent with the differing values carried in sex-role stereotypes. Such stereotypes depict females as emotionally expressive and concerned with affiliation while men are portrayed as being less open and achievement oriented(Buck,Savin,Miller & Caul,1972; Hoyenga & Hoyenga,1979). Secondly, internal locus of control individuals have been shown to hold themselves responsible for reinforcements and would hence be expected to be more negatively affected by failure than externals since they are more apt than

externals to accept blame for it(Phares & Lamiell,1974; Stebbing & Stone,1977). This combination of acceptance of personal responsibility for failure and the effects of sex-role stereotyping make the possibility that male internal subjects employ denial and defensiveness a distinct possibility.

The present findings while offering some support for such a hypothesis point to the need for further research. For future research to be fruitful however, the relationship between anxiety and self-disclosure must be more clearly established if self-disclosure is to be used as a dependent variable. The present findings indicate a trend for self-disclosure to increase with increased anxiety, the only exception being the male internal group, while previous studies have found that self-disclosure decreased with increased anxiety(Post & Wittmaier,1978). This discrepancy points to the need to consider the locus of control variable in future self-disclosure research. It may be, as the present findings suggest, that level of disclosure is a function of both gender and generalized expectancies of reinforcement.

In support of the findings pertaining to self-disclosure, the majority of previous studies have used paper-and-pencil measures of self-disclosure such as Jourard's(1971) original 60-item questionnaire. The ability of such measures to predict actual behaviour has been questioned by a number of

researchers(Daher & Banikiotes,1976; Ehrlich & Graeven,1971; Vondracek,1969; Himmelstein & Kimbrough,1963). For this reason, the present study employed an item format in which actual disclosure was made to item stems with high pull for self-disclosure, with responses being scored for revealingness according to an objective scoring standard. Evidence for the reliability of this self-disclosure measure was provided by a separate study which yielded an alpha value of .80 (N=272, $p<.001$). Further item analysis found that the individual items of the SDSB correlated significantly with total self-disclosure scores. All 20 items reached a significance level of $p<.001$. See the Appendix for Greene's Self-Disclosure Sentence-Completion Blank(SDSB). The use of such a different measure of self-disclosure may in part account for the unexpected findings of the present study. To ensure the validity of future research in the area of self- disclosure and to permit the comparison of findings, it is recommended that future studies employ similar measures where subjects are given the chance to freely self-disclose or not. It is also suggested that behaviour other than self-disclosure which has been shown to have a proven relationship to anxiety be employed in conjunction with measures of state anxiety in order to test for possible defensiveness on the part of internal subjects.

APPENDIX

FIG. 1

GREENE'S SELF-DISCLOSURE SENTENCE-COMPLETION BLANK(SDSB)

Instructions

This sentence completion blank is designed to help gain an understanding of your basic feelings concerning yourself and your personal world. Please complete these sentences to express your real feelings, trying to be as frank as possible about matters which are personally important to you.

Try to do each sentence. Be sure to make a complete sentence.

1. Sometimes I _____.
2. I can't _____.
3. Sexual thoughts _____.
4. I often wish _____.
5. There have been times when _____.
6. My biggest problem is _____.
7. I secretly _____.
8. I feel _____.
9. Loneliness _____.
10. I feel guilty _____.
11. I have an emotional need to _____.
12. I regret _____.
13. I hate _____.
14. I am afraid _____.
15. I _____.
16. I am best when _____.
17. I am worst when _____.
18. I need _____.
19. I punish myself _____.
20. I am hurt when _____.

FIG. 2.1

RAW DATA
INTERNAL(I) GROUP

MALE

S	LOC	STAI		SDSB	
		PRE	POST	PRE	POST
1	08	32	48	64	67
2	05	32	24	64	59
3	07	34	34	83	68
4	06	35	37	62	69
5	00	32	39	69	67
6	07	40	35	50	50
7	05	32	32	53	66
8	07	29	31	59	56
9	07	59	53	49	61
10	07	41	36	53	64
11	02	36	31	65	56
12	06	37	46	51	55
13	04	31	27	56	69
14	07	38	39	66	72
15	06	28	35	56	57
16	04	32	35	71	66

FEMALE

17	07	29	34	70	78
18	03	29	30	66	80
19	02	36	32	75	54
20	02	30	36	55	62
21	06	31	27	67	68
22	05	34	53	57	63
23	05	29	41	73	69
24	08	39	48	54	58
25	06	29	37	82	79
26	03	26	26	88	84
27	07	40	40	62	60
28	08	50	63	74	55
29	06	37	37	64	60
30	07	26	48	95	93
31	08	27	53	67	62

FIG. 2.2

RAW DATA
INTERNAL-EXTERNAL(I-E) GROUP

MALE

S	LOC	STAI		SDSB	
		PRE	POST	PRE	POST
32	11	32	37	61	58
33	13	42	52	50	48
34	12	26	26	57	58
35	13	31	50	63	54
36	09	31	38	59	63
37	11	44	44	76	69
38	12	30	33	87	71
39	09	32	55	63	80
40	11	32	43	75	56

FEMALE

41	09	39	36	53	55
42	13	32	29	72	56
43	11	39	50	47	87
44	09	31	28	50	60
45	13	26	34	56	56
46	11	36	43	70	50
47	12	26	32	54	56
48	10	32	33	67	61
49	11	38	40	75	53
50	10	36	36	48	61
51	12	43	55	38	30
52	12	48	61	41	37
53	13	28	46	57	55
54	10	28	36	59	59
55	12	36	57	59	51
56	11	41	38	58	66
57	11	39	49	58	68
58	12	31	50	64	62
59	09	29	41	56	54
60	09	28	38	64	41
61	11	43	43	40	47
62	09	27	34	66	67
63	09	39	48	49	44
64	13	30	33	48	48
65	12	34	38	68	53
66	10	28	35	63	53
67	09	37	42	62	53
68	09	47	48	58	46
69	12	53	46	52	46

FEMALE INTERNAL-EXTERNAL

cont'd

S	LOC	STAI		SDSB	
		PRE	POST	PRE	POST
70	12	43	45	60	55
71	11	27	52	59	64
72	13	27	41	66	64
73	11	46	65	55	60
74	13	37	31	69	62
75	09	33	52	65	66
76	09	43	35	67	81
77	10	44	49	69	64
78	11	32	39	67	71
79	09	36	36	47	36
80	09	58	44	51	44
81	13	29	39	67	71
82	12	46	49	57	49

FIG. 2.3

RAW DATA
EXTERNAL(E) GROUP

MALE

S	LOC	STAI		SDSB	
		PRE	POST	PRE	POST
83	14	42	48	54	64
84	14	43	53	67	53
85	14	34	53	77	82
86	16	45	53	42	38
87	15	52	53	60	48
88	17	38	35	68	58
89	14	29	40	80	69
90	16	41	48	64	55

FEMALES

91	14	35	33	56	63
92	14	41	41	67	57
93	14	33	42	78	65
94	15	26	28	67	66
95	16	67	47	69	79
96	19	36	36	76	72
97	16	41	44	56	64
98	18	57	34	60	64
99	17	46	43	36	42
100	14	37	50	46	49
101	15	44	49	54	57
102	16	43	45	53	53
103	15	55	56	63	37
104	14	34	57	53	48
105	14	33	34	70	55
106	14	34	36	74	66
107	15	31	49	59	53
108	15	48	49	61	50
109	14	54	43	64	59
110	14	38	44	61	58
111	16	36	44	64	66
112	17	28	43	69	54
113	14	30	46	60	57
114	18	46	42	50	55
115	16	43	41	51	58
116	16	35	45	40	49
117	16	51	54	59	61

FIG. 2.4

RAW DATA
CONTROL GROUP

MALE

S	STAI		SDSB	
	PRE	POST	PRE	POST
118	28	35	58	67
119	47	35	46	50
120	30	36	74	65
121	30	31	54	64
122	41	34	65	61
123	29	32	53	58
124	39	36	53	55
125	32	37	61	58
126	41	43	53	48
127	38	35	68	72
128	42	46	54	57
129	36	31	65	59
130	32	36	61	58

FEMALES

131	36	31	69	62
132	32	38	46	46
133	33	32	64	67
134	35	35	76	72
135	40	38	71	71
136	35	40	66	58
137	37	43	74	76
138	37	37	64	62
139	31	27	67	68
140	32	33	67	61
141	51	54	59	61
142	43	41	51	58
143	46	42	50	55
144	34	31	57	62

TABLE 1 A.
Summary Table For Oneway Repeated Measures
Anova On State Anxiety Scores For Control
Group.

Source	MS	df	F	Sig. of F
Between	1.852	1	.2177	.6447
Error	8.506	26		

TABLE 1 B.

Summary Table For Oneway Repeated Measures
Anova On Self-Disclosure Scores For Control
Group.

Source	MS	df	F	Sig. of F
Between	.4630	1	.0338	.8555
Error	13.6937	26		

TABLE 3.

Summary Table For 3X2(Group,Sex) Anova On
Pre-test State Anxiety Scores.

Source	MS	df	F	Sig. of F
Group	393.72	2	6.21	0.003 *
Sex	.001	1	.99	0.997
GroupXSex	50.610	2	.80	0.453

TABLE 5.

Summary Table For 3X2X2(Group,Sex,Time) Anova
On State Anxiety Scores.

Source	MS	df	F	Sig. of F
Time	1482.57	1	39.20	0.000 *
Group XTime	45.73	2	1.21	0.302
SexXTime	3.54	1	0.09	0.760
Group XSexXTime	120.60	2	3.19	0.045 *

TABLE 7.

Summary Table For 3X2(Group,Sex) Anova On
Pre-test Measures of Self-Disclosure.

Source	MS	df	F	Sig. of F
Group	331.01	2	3.12	0.048 *
Sex	9.95	1	0.94	0.760
GroupXSex	477.02	2	4.49	0.013 *
Error	106.22	111		

TABLE 9.
Summary Table For The 3X2X2(Group,Sex,Time)
Anova on Self-Disclosure Scores.

Source	MS	df	F	Sig. of F
Time	230.02	1	5.28	0.023 *
Group XTime	32.17	2	0.74	0.480
SexXTime	24.95	1	0.57	0.451
Group XSexXTime	50.23	2	1.15	0.320
Error	43.46	111		

REFERENCES

- Abramowitz, S.I. (1969) Locus of control and self-reported depression among college students. Psychological Reports,25, 149-150.
- Abramson, L.Y. & Sackheim, M.A. (1977) A paradox in depression: Uncontrollability and self-blame. Psychological Bulletin,84(5), 838-851.
- Altrocchi, J., Palmer, J., Hellman, R., & Davis, H. (1968) The Marlowe-Crowne repressor-sensitizer, and internal-external scales and attribution of unconscious intent. Psychological Reports,23, 1220-1230.
- Anchor, K., Vojtisek, J., & Berger, S. (1972) Social desirability as a predictor of self-disclosure in groups. Psychotherapy: Theory, Research, and Practice,9, 262-264.
- Baldwin, B.A. & Cabianca, W.A. (1972) Defensive strategies of repressors and sensitizers in counselling. Journal of Counselling Psychology,19(1), 16-20.
- Becker, C.W. & Lesiak, W.J. (1977) Feelings of hostility and personal control as related to depression. Journal of Clinical Psychology,33, 654-657.
- Bell, P. & Byrne, D. (1976) Repression-sensitization: In H. London & J. Exner(Eds.), Dimensions of personality, New York: Wiley, 449-486.
- Boor, M. & Schill, T. (1967) Digit symbol performance of subjects varying in anxiety and defensiveness. Journal of Consulting Psychology,31(6), 600-603.
- Breen, L.J. & Prociuk, T.J. (1977) Internal-external locus of control and guilt. Journal of Social Psychology,Apr., 101(2), 309-310.
- Buck, R., Savin, V., Miller, R., & Caul, C. (1972) Communication of affect through facial expressions in humans. Journal of Personality and Social Psychology,23, 362-371.
- Burch, M.R. & Greiner, T.M. (1960) A bioelectric scale of human alertness: Concurrent recordings of EEG and G.S.R. In Explorations in physiology of emotions. Psychiat. Res. Rep., No. 12, 183-193.

- Burhenne, D. & Mirels, H. (1970) Self-disclosure in self-descriptive essays. Journal of Consulting and Clinical Psychology, 35, 409-413.
- Byrne, D., Barry, J., & Nelson, D. (1963) Relation of the revised Repression-Sensitization Scale to measures of self-description. Psychological Reports, 13, 323-334.
- Byrne, D. (1964) Repression-sensitization as a dimension of personality. In R.A. Maher (Ed.), Progress in experimental personality research. Vol.1. New York: Academic Press.
- Cameron, N. (1963) Personality development and psychopathology. Boston: Houghton Mifflin.
- Crowne, D.P. & Marlowe, D.E. (1964) The approval motive: Studies in evaluative dependence. New York: Wiley.
- Daher, D.M. & Banikiotes, P.G. (1976) Measurement of self-ogical Reports, Jun., 38(3,pt.2), 1255-1256.
ogical Reports, Jun., 38(3,pt.2), 1255-1256.
- Davis, W.L. & Davis, D.E. (1972) Internal-external control and attribution of responsibility for success and failure. Journal of Personality, 40, 123-136.
- relates. Psychological Reports, Apr., 30(2), 563-571.
relates. Psychological Reports, Apr., 30(2), 563-571.
- Ehrlich, H.J. & Graeven, D.B. (1971) Reciprocal self-disclosure in a dyad. Journal of Experimental and Social Psychology, July, 7(4), 389-400.
- Ekehamar, B. (1974) Sex differences in self-reported anxiety for different situations and modes of response. Scandinavian Journal of Psychology, 1(5), 154-160.
- Epstein, S. (1967) Toward a unified theory of anxiety. In B. Maher (Ed.), Progress in experimental personality research. New York: Academic Press.
- Fontana, A.F., Klein, E.B., Lewis, E., & Levine, L. (1968) Presentation of self in mental illness. Journal of Counseling and Clinical Psychology, 32, 110-119.

- Gilbert, C.J. (1973) The relationship of locus of control, experimenter disclosure, and repeated encounters to 'actual' disclosure, subject-perceived disclosure, anxiety, neuroticism and social desirability. Dissertation Abstracts International, Mar., Vol. 33(9-B), 4487.
- Gilbert, L.A. (1976) Situational factors and the relationship between locus of control and psychological adjustment. Journal of Counselling Psychology, 23(4), 302-309.
- Gilbert, L.A. & Mangelsdorff, D. (1979) Influence of perceptions of personal control on reactions to stressful events. Journal of Consulting and Clinical Psychology, 34, 473-480.
- Goss, A. & Moroska, T.E. (1970) Relation between a dimension of internal-external control and the MMPI with an alcoholic population. Journal of Consulting and Clinical Psychology, 34, 189-192.
- Golin, S. & Terrell, F. (1977) Motivational and associative aspects of mild depression in skill and chance tasks. Journal of Abnormal Psychology, 86, 389-401.
- Gough, H.G. & Heilbrun, A.B. (1965) The Adjective Check List manual. Palo Alto: Consulting Psychologists Press.
- disclosure. Unpublished master's thesis, Ohio State University.
disclosure. Unpublished master's thesis, Ohio State University.
- Harrell, J.P. (1980) Relationship among locus of control, heart rate and ratings of stress. Psychological Reports, 46, 472-474.
- Harrow, M. & Ferrante, A. (1969) Locus of control in psychiatric patients. Journal of Consulting and Clinical Psychology, 33, 582-589.
- Heineman, C.E. (1953) A forced-choice form of the MAS. Journal of Consulting Psychology, 17, 447-454.
- Hersch, P.D. & Shiebe, K.E. (1967) On the reliability and validity of internal-external control as a personality dimension. Journal of Consulting and Clinical Psychology, 31, 609-613.
- Highlen, P.S. & Gillis, S.F. (1978) Effect of situational factors, sex, and attitudes on affective self-disclosure and anxiety. Journal of Counselling Psychology, 25(4), 270-276.
- Himelstein, P. & Kimbrough Jr., W.W. (1963) A study of self-disclosure in the classroom. The Journal of Psychology, 55, 437-440.

- Houston, B.K. (1972) Control over stress, locus of control, and response to stress. Journal of Personality and Social Psychology, 21, 249-255.
- Hoyenga, B.K. (1972) The question of sex differences: psychological, cultural, and biological issues. Boston: Little-Brown.
- James, W. (1957) Internal versus external control of reinforcements as a basic variable in learning theory. Unpublished doctoral dissertation, Ohio State University.
- Joe, V.C. (1971) A review of the internal control construct as a personality variable. Psychological Reports, 28, 619-640.
- Johnson, J. & Sarason, I. (1978) Life stress, depression and anxiety: Internal-external control as a moderator variable. Journal of Psychosomatic Research, 22, 205-208.
- Jourard, S.M. (1971) Self-disclosure: An experimental analysis of the transparent self. New York: Wiley-Interscience.
- Kilmann, P.R., Laval, R., & Wanlass, R.I. (1978) Locus of control and perceived adjustment to life events. Journal of Clinical Psychology, Apr., 34(2), 512-513.
- Kish, G.B., Solbert, K.B., & Uecker, A.E. (1971) Locus of control as a factor in influencing patient's perceptions of ward atmosphere. Journal of Clinical Psychology, 10, 287-289.
- Klein, D.C., Morse, E., & Seligman, M.E.P. (1976) Learned helplessness, depression and the attribution of failure. Journal of Personality and Social Psychology, 33, 508-516.
- Kuperman, S.K. & Golden, C.J. (1978) Personality correlates of attitudes toward death. Journal of Clinical Psychology, July, 34(3), 661-662.
- Lefcourt, H.M. (1966) Internal-external control of reinforcement: A review. Psychological Bulletin, 65, 206-220.
- Lefcourt, H.M. (1976) Locus of control: Current trends in theory and research. Hillsdale, N.J.: Lawrence Erlbaum Assoc.
- Levine, F. & Franco, J.N. (1981) A reassessment of self-disclosure patterns among Anglo-Americans and Hispanics. Journal of Counselling Psychology, 3, 522-524.
- Levitt, E.E. (1967) The psychology of anxiety. New York: Bobbs-Merrill.

- Lipp, L., Kolstoe, R., James, W., & Randall, H. (1968) Denial of disability and internal control of reinforcement: A study using a perceptual defense paradigm. Journal of Consulting and Clinical Psychology, 32(1), 72-75.
- Maccoby, E. & Jacklin, C. (1974) The psychology of sex differences. Stanford, CA: Stanford Univer. Press.
- MacDonald, A.P. (1971) Internal-external locus of control: A promising rehabilitation variable. Journal of Counselling Psychology, Mar., 18(2), 111-116.
- Maher, B.A. (Ed.) (1964) Progress in experimental personality research: 1. NYC: Academic Press.
- Molinari, V. & Khanna, P. (1980) Locus of control and the denial of anxiety. Psychological Reports, 47, 131-140.
- Moxness, P. (1974) Verbal communication level and anxiety in psychotherapeutic groups. Journal of Counselling Psychology, 21(5), 399-403.
- Naditch, M.P., Gargan, M.A., & Michael, L.B. (1975) Denial, anxiety, locus of control and the discrepancy between aspirations and achievements as components of depression. Journal of Abnormal Psychology, 84, 1-9.
- Neufeld, R.W. (1975) Effect of cognitive appraisal on d' and response bias to experimental stress. Journal of Personality and Social Psychology, Apr., 31(4), 735-743.
- Palmer, R.D. (1971) Parental perception and perceived locus of control in psychopathology. Journal of Personality, 3, 420-431.
- Phares, E.J. (1973) Locus of control: A personality determinant of behavior. Morristown, New Jersey: General Learning Press.
- Phares, E.J. & Lamiell, J.T. (1974) Relationship of internal-external control to defensive preferences. Journal of Consulting and Clinical Psychology, 42, 872-878.
- Phares, E.J., Ritchie, D.E., & Davis, W.L. (1968) Internal-external control and reaction to threat. Journal of Personality and Social Psychology, 10, 402-405.
- Phares, E.J., Wilson, K.G., & Klyver, N.W. (1971) Internal-external control and the attribution of blame under neutral and distractive conditions. Journal of Personality and Social Psychology, 18, 285-288.

- Pittman, N.L. & Pittman, T.S. (1979) Effects of amount of helplessness training and internal-external locus of control on mood and performance. Journal of Personality and Social Psychology, 37(1), 39-47.
- Porteus, S.d. (1965) The Porteus Maze Test. Psychological Corporation.
- Post, A.L., Wittmaier, B.C., & Radin, M.C. (1978) Self-disclosure as a function of state and trait anxiety. Journal of Consulting and Clinical Psychology, Feb., 46(1), 12-19.
- Prociuk, T.J., Breen, L.J., & Lassier, R.J. (1976) Hopefulness, internal-external locus of control and depression. Journal of Clinical Psychology, 32, 299-300.
- Rappaport, M. & Katkin, E.S. (1972) Relationships among manifest anxiety, response to stress, and the perception of autonomic activity. Journal of Consulting and Clinical Psychology, Apr., 38(2), 219-224.
- Rotter, J.B. (1954) Social learning and clinical psychology. Englewood Cliffs, New Jersey: Prentice-Hall.
- Rotter, J.B. (1960) Generalized expectancies for internal versus external control of reinforcement. Psychological Monographs, 80, No.1(Whole No. 609).
- Rotter, J.B. (1960) Some implications of a social learning theory for the prediction of goal-directed behavior from testing procedures. Psychological Review, 67, 301-316.
- Rotter, J.B. (1975) Some problems and misconceptions related to the construct of internal-external control of reinforcement. Journal of Consulting and Clinical Psychology, 48, 56-67.
- Rotter, J.B. & Mulry, R.C. (1965) Internal versus external control of reinforcement and decision time. Journal of Personality and Social Psychology, 2, 598-604.
- Rozensky, R.H., Rehm, L.P., Pry, G., & Roth, G. (1977) Depression and self-reinforcement behavior in hospitalized patients. Journal of Behavior Therapy and Experimental Psychiatry, 8, 35-38.
- Ryckman, R.M., Sherman, M.F., & Burgess, G.D. (1973) Locus of control and self-disclosure of public and private information by college men and women: A brief note. The Journal of Psychology, 84, 317-318.
- Sarnoff, I. & Zimbardo, P. (1961) Anxiety, fear, and social affiliation. Journal of Abnormal and Social Psychology, 62, 356-363.

- Schill, T., Ramanaiah, N., & Toves, C. (1982) Defensive externality and vulnerability to life stress. Psychological Reports, 51, 878.
- Schill, T., Toves, C., & Ramanaiah, N.R. (1980) Coping with loneliness and locus of control. Psychological Reports, 47, 1054.
- Schwartz, D.A. (1964) The paranoid-depressive existential continuum. Psychiatric Quarterly, 38, 690-706.
- Shribers, L.D. (1972) Intercorrelations among repression-sensitization, extroversion, neuroticism, social desirability, and locus of control. Psychological Reports, 31, 925-926.
- Spielberger, C.D., Gorsuch, R.L., & Lushene, R.E. (1970) Manual for the State-Trait Anxiety Inventory. Palo Alto, California: Consulting Psychologists Press.
- Stebbins, P. & Stone, G.L. (1977) Internal-external control and the attribution of responsibility under questionnaire and interview conditions. Journal of Counselling Psychology, 24(2), 165-168.
- Stein, S.H. (1971) Arousal level in repressors and sensitizers as a function of response context. Journal of Consulting and Clinical Psychology, 36(3), 386-394.
- Storms, M.D. & McCaul, K.P. (1976) Attribution processes and emotional exacerbation of dysfunctional behavior. In J.H. Harvey, W.J. Ickes, & R.F. Kidd (Eds.), New directions in attribution research: 1. Hillsdale, N.J.: Lawrence Erlbaum.
- Tolor, A. & Reznikoff, M. (1976) Relation between insight, repression-sensitization, internal-external control, and death anxiety. Journal of Abnormal Psychology, 72, 416-430.
- United States Employment Service. (1965) General Aptitude Test Battery (GATB). Washington, D.C.: U.S. Government Printing Office.
- Vondracek, F.W. (1969) Behavioral measurement of self-disclosure. Psychological Reports, 25(3), 914.
- Watson, D. & Baumel, E. (1976) Effects of locus of control and expectation of future control upon present performance. Journal of Personality and Social Psychology, 6, 212-215.
- Williams, C.B. & Nickels, J.B. (1969) Internal control dimension as related to accident and suicide proneness. Journal of Consulting and Clinical Psychology, 33, 485-494.

Wolk, S. & Bloom, D. (1978) The interactive effects of locus of control and situational stress upon performance accuracy and time. Journal of Personality, Jun., 46(2), 279-298.

Wortman, C.B. (1976) Causal attribution and personal control. In J.H. Harvey, W.J. Ickes, & R.F. Kidd(Eds.), *New directions in attribution research*. Hillsdale, New Jersey: Erlbaum.

Wortman, C.B. & Brehm, J.W. (1975) Responses to uncontrollable outcomes: An integration of reactance theory and the learned helplessness models. In L. Berkowitz(Ed.), *Advances in experimental social psychology*. Vol(8). New York: Academic Press.