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An Examination of Multidimensionality in the  
Locus of Control Construct: Its Relationship  
To Need Achievement

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Thesis  
Presented to  
The Graduate Faculty  
Appalachian State University

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In Partial Fulfillment  
of the Requirements for the Degree  
Master of Arts

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by  
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December 1975

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THE HECKMAN BINDERY, INC. N. MANCHESTER, IND.

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## Abstract

This study examined the relationship between locus of control (LOC) and need for achievement ( $n$  Ach) in view of evidence that LOC is a multidimensional construct. An attempt was made to determine if correlations between one or more of the specific factors of LOC and  $n$  Ach existed. An effort was also made to evaluate the validity of the Rotter scale as an adequate assessment of LOC. A third line of inquiry was concerned with the possible effects of sex differences upon responses along the dimensions of LOC. Seventy-eight subjects completed five assessment inventories including the Rotter scale, the Levenson I,P,C scales, the Reid-Ware Questionnaire, the TAT, and the Edwards Personal Preference Schedule. Three conclusions were drawn: (1) There was a relationship, though moderate, between the locus of control construct and need for achievement. (2) Males differed from females in terms of the specific LOC factors which influenced this relationship. (3) The use of LOC as a multidimensional construct was a feasible means for research and comparison with various other concepts related to the study of LOC.

## CHAPTER I INTRODUCTION

Over the past decade, few areas in the study of human personality and behavior have sparked as much interest and controversy as locus of control. More than 300 articles alone have appeared since Rotter (1966) published his monograph on internal vs. external control of reinforcement (Throop & MacDonald, 1971). Locus of control has been related to many different concepts, such as information-seeking (Davis & Phares, 1967), belief in government reports (Hamsher, Geller, & Rotter, 1968), and the Protestant Ethic (MacDonald, 1972), to list only a very few. Attempts to relate this construct to other criteria, such as political activism (Strickland, 1965), anxiety (Joe, 1971), and achievement motivation (Wolk & DuCette, 1973), have also been numerous. However, many of these efforts have led to inconclusive and frequently contradictory results.

The research seeking to link and define the relationship between locus of control and need for achievement provides an ample demonstration of this point. A number of investigators, Feather (1967), Lefcourt (1966), and Rotter (1966), have proposed that theoretically these two constructs should be related. Their reasoning is apparent from a brief review of the developmental background and theoretical implications of both constructs.

Originally developed by Rotter (1954) as an integral part of his social learning theory, locus of control (LOC) is a measure of extent of generalized expectancy for the control or non-control of reinforcement. Rotter (1966, p. 1) briefly defined this concept in the following manner:

When a reinforcement is perceived by the subject as following some action of his own but not being entirely contingent upon his action, then in our culture, it is typically perceived as the result of luck, chance, fate, as under the control of powerful others, or as unpredictable because of the great complexity of the forces surrounding him. When the event is interpreted in this way by an individual we have labeled this a belief in external control. If the person perceives that the event is contingent upon his own behavior or his own relatively permanent characteristics, we have termed this a belief in internal control.

Thus, LOC reflects the degree to which one believes that rewards are due to one's own behavior (internal control) or to external forces (external control).

The theoretical foundations for LOC are thus based on the type and effects of reinforcement upon learning. In social learning theory, reinforcement tends to strengthen the probability that a response will reoccur by strengthening the "expectancy that a particular behavior or event will be followed by that reinforcement in the future" (Rotter, 1966, p. 2). As a logical extension of this line of reasoning, LOC would predict that, when reinforcement is perceived as not being the result of one's own efforts, then expectancy for reinforcement upon repetition of the behavior will not

tend to be strengthened. LOC would therefore hypothesize the following as support for this viewpoint: (1) Individuals will differ in the degree to which they perceive their actions and abilities as controlling reinforcement, depending upon their general and specific experiences of reinforcement in the past. Persons believing in external control of reinforcement will tend to have a negative expectancy for success when attempting to exert personal control, while belief in internal control will tend to result in more positive expectancies. (2) Likewise reflecting these individual differences in behavior, the person with strong belief in his control of his own destiny will tend to "(a) be more alert to those aspects of the environment which provide useful information for his future behavior; (b) take steps to improve his environmental condition; (c) place greater value on skill or achievement reinforcements and be generally more concerned with his ability, particularly his failures" (Rotter, 1966, p. 25).

Need for achievement ( $n$  Ach), on the other hand, represents a construct derived from the motivational research of McClelland, Atkinson, Clark, and Lowell (1953) and refers to a desire to attain "success in competition with some standard of excellence" (p. 110). Motivation, as conceived by McClelland et al., organizes and directs response sequences in order to approach anticipated pleasure or avoid anticipated pain. Thus, affect (emotional arousal) is considered the basis for the development of motivation: (1) A given situation produces

affect, (2) The organism undergoes a mediating effect-- anticipation based on previous learning or experience with a similar situation, and (3) This mediation results in a learned response occurring, either approach (continuance) to anticipated pleasure or avoidance (discontinuance) of anticipated pain. Approach or avoidance is referred to in the sense of global end results. Individual intermediate acts may not bring about the overall desired goal. It is the total sequence of responses which accomplish this purpose. The feelings of pleasure or pain are based on the degree of discrepancy between our perceptions of reality and our expectations. If the two disagree, we experience pain. If they moderately agree, we feel pleasure. If, however, they totally agree, boredom results.

The achievement motive develops in turn out of the child's growing expectations. If parents and society encourage the child to manipulate the environment, striving for mastery, certain expectations of how this can be accomplished will be formulated. Experiences and perceptions of reality will tend to either confirm or disconfirm these expectations. As long as there is only a moderate degree of discrepancy between perceptions and expectations, strivings for mastery will continue. If too little agreement exists, the resulting painful experiences will cause avoidance behavior and cessation of achievement strivings. If total agreement takes place, boredom will also cease strivings for mastery in a particular

area. Avoidance takes place in this case as there is no novelty when reality equals expectations. Therefore, there are no stimulating events taking place to create emotional arousal.

Achievement theory would thus predict that individuals will differ in their needs for achievement as a function of learned motives. Those families or cultures emphasizing "success in competition with some standard of excellence" will tend to instill high achievement motivation during childhood. Persons with high  $n$  Ach will tend to express strivings for mastery of the environment in one or more of the following ways: (1) Competitiveness-- a desire to outperform others, (2) Meeting or bettering self-imposed standards of excellence, (3) Doing something unique, or (4) "being involved over a long term in doing something well" (McClelland & Steele, 1972, p. 34).

Such evidence of striving will not be present under all circumstances, however. Persons with high  $n$  Ach will demonstrate these qualities only when performance is defined as one which will be considered a personal accomplishment if well done and not due to chance factors. Tasks involving the exertion of personal control and skill will be preferred over ones involving luck.

Sex differences may also be present depending on the type and degree of role differentiation fostered by a given culture. Many western societies tend to emphasize getting ahead and achievement for males while stressing social acceptance and affiliation for females. In such societies, males will thus

generally tend to have higher n Ach scores than females unless social acceptance in a given subculture also requires achievement strivings.

Thus, the similarities between the two constructs are evident. Many of the characteristics attributed to persons with a high internal sense of control are also ascribed to individuals possessing a high achievement need. More specifically, both are actively involved in mastering and controlling the environment, leading Lefcourt (1966) to conclude that the internally controlled person is displaying "the search for mastery that need achievement defines" (p. 216). Secondly, both types of individuals will attempt such activities only in those situations in which there is a reasonable expectancy of success. Confirming this theoretical proposition, Feather (1967) found that persons with strong n Ach prefer moderately difficult tasks where success is perceived as being due to their own efforts rather than chance. As individuals with a high internal sense of control also believe that their reinforcing experiences are due to their own efforts rather than chance, it follows that perceived LOC would appear to be a necessary component in the development of n Ach. Finally, not only do achievement-motivated individuals and internals behave similarly, but also their opposite numbers, failure-avoidance subjects and externals, "perform very similarly over a wide range of situations" (Wolk & DuCette, 1973, p. 61).

Rotter (1966) noted that the relationship between LOC and n Ach is probably not linear. Some persons may feel that reinforcement is a product of their own behavior and yet possess low n Ach. Such persons would tend to be oriented toward self-competency but not necessarily competitiveness. Further confounding this relationship is the fact that some individuals with high n Ach have low expectations for success resulting in their verbally giving "defensively external beliefs" (Phares, 1973, p. 12). These individuals appear to prefer and value achievement goals but do not feel they can obtain them. Davis (1970, Cited in Phares, 1973) pointed out that defensive externals behave as do internals in that both seek to master the environment. However, they tend to avoid accepting personal responsibility for their actions, due to a fear of failure, and rationalize this by assuming that external forces beyond their personal control are the cause for their lack of success. Even with these qualifications in mind, however, Wolk and DuCette concluded that "achievement-related behavior, in achievement-motivated subjects, is elicited only when these subjects possess an internal orientation" (1973, p. 67).

Although attempts to empirically delineate the relationship between LOC and n Ach have been numerous, the results have usually been contradictory and inconclusive. For the purposes of this study only those findings reaching at least the .05 level of significance were considered reliable data. Thus, significant correlations between the two constructs

were reported by Mehrabian (1968, 1969), Odell (1959), Pedhazur and Wheeler (1971), and Powell and Vega (1972). In a typical study, Powell and Vega (1972) administered a large battery of tests to 44 teachers and teacher-aides. These tests included the Adult Locus of Control (ALOC) and the achievement scale of the Edwards Personal Preference Schedule (EPPS). A correlation of .28 ( $p < .05$ ) was obtained for these two measures. Powell and Vega therefore concluded that internal control is associated with higher achievement motivation.

Contrary findings have been just as numerous (Feather, 1967; Gold, 1968; Lichtman and Julian, 1964, and Wolk and DuCette, 1971). The research of Wolk and DuCette (1971) is demonstrative of these negative results and of the inconsistent findings overall. Wolk and DuCette sought to confirm the results reported by Mehrabian (1968, 1969). Mehrabian, using his newly developed non-projective assessment of  $\bar{n}$  Ach, had obtained a ( $p < .01$ ) correlation between his scale and LOC. In two separate studies, involving 60 and 260 subjects respectively, Wolk and DuCette compared two alternate measures of  $\bar{n}$  Ach, the Mehrabian scale and the Thematic Apperception Test (TAT), with the Rotter Internal-External Locus of Control. Nonsignificant relationships were established in all cases with the exception of a .56 ( $p < .01$ ) correlation between the TAT and the Rotter for college females. Female scores also differed from male scores ( $p < .05$ ).

Even with allowances for the qualifications suggested by Phares (1973) and Rotter (1966), the lack of consistent findings has led some researchers to feel that there is little, if any, actual overlap between population distributions for the two concepts. Thus, Wolk and DuCette, noting these failures, stated that perhaps "in reality the two constructs are not the same" (1971, p. 757). Conflicting results in other areas of LOC investigation have led to similar conclusions experimenters (Evans & Alexander, 1970; Gold, 1968, and Thomas, 1970).

Recent research, however, possibly explains much of the widely varying results found in previous studies. In studies by Abramowitz (1973), Crandall, Katkovsky, and Crandall (1965), Gurin, Gurin, Lao, and Beattie (1969), Hersch and Scheibe (1967), Mirels (1970), and Reid and Ware (1973, 1974), there have been indications that LOC is not highly generalizable unidimensional measure, but a complex multidimensional one. This would appear to be particularly true of one of the more frequently used measures of LOC, the Rotter Internal-External Locus of Control (I-E) scale. By the use of factor analysis, two specific dimensions, Fatalism and Social Systems Control, have been shown to exist in the Rotter I-E scale (Gurin, et al, 1969; Mirels, 1970; Reid and Ware, 1973). Levenson (1972), in a factor analytic study, concluded that there were three factors in Rotter's I-E scale and developed a new measurement of LOC which she termed the I,P,C scales

(Internal, Powerful Others, and Chance). Reid and Ware (1974) likewise discovered in a second study using a supplemental version of the Rotter scale a third factor: self-control. Fatalism was defined as the extent to which one believes that luck, fate, or fortune determines outcomes of events rather than ability, hard work, or responsibility. Social systems control (SSC) refers to the degree of belief that people are influenced and controlled by government, social institutions, and social forces. The third dimension, self-control, was construed as referring to belief in personal control of one's impulses, desires, and emotions. These three dimensions were found to be homogeneous units and independent of each other.

In order to amplify and more clearly examine the nature of the fatalism and SSC dimensions, it was necessary to modify the existing Rotter I-E scale. Reid and Ware (1973) obtained a .75 correlation, between these two factors and the Rotter I-E scale, indication that they were measuring substantially the same responses. It should be pointed out that the Rotter scale does not have a single item which measures self-control directly. Reid and Ware (1974) found it necessary to devise additional items as a supplement to the Rotter in order to examine this third dimension of LOC. If self-control is a valid component of LOC and the Rotter scale does not measure this, then it follows that the validity of the Rotter scale as a measurement of LOC is questionable.

## CHAPTER II

### PROBLEM

Based on the mounting evidence that LOC is a multidimensional construct, it is possible that significant correlations indicating joint population distributions may be obtained between one or more of the specific factors involved and  $\bar{n}$  Ach. In the present study, three issues were examined: (1) The relationship of the Rotter scale, as modified into two dimensions, fate and SSC, to  $\bar{n}$  Ach; (2) The relationship of Levenson, I, P, C scale and the Reid-Ware three-factor approach to  $\bar{n}$  Ach, and (3) The effects of sex differences, as reflected in the multidimensional approaches, upon responses.



CHAPTER III

METHOD

Subjects

Seventy-eight subjects (41 males and 37 females) were randomly selected from a pool of volunteers enrolled in undergraduate courses at Appalachian State University. Differences in age ranged from 18 to 44, and all subjects were tested during 1½-hour sessions attended by no more than 20 persons. At the conclusion of the experiment, subjects were debriefed and given receipts for course credit.

Instruments

Three measures of perceived locus of control were given to the subjects: (1) Rotter's (1966) 29-item forced-choice inventory, (2) the Levenson (1972) I, P, C scale, and the (3) belief questionnaire devised by Reid and Ware (1973). The I, P, C scale is composed of 24 items set in a likert format while the Reid-Ware questionnaire consists of 32 forced-choice LOC items and 13 buffers. Kuder-Richardson reliabilities (alpha coefficients) for the three instruments include the following range: (1) Rotter (.70), (2) I, P, C scale (.64, .77, and .78 for the I, P, and C scales respectively), and (3) Reid-Ware (.71, .76, and .76 for the SC, SSC, and F scales respectively).

The two scales used to measure n Ach were McClelland's (1953) modification of the Thematic Apperception Test (TAT) and the achievement scales of the Edwards (1959) Personal Preference Schedule. The TAT is a projective technique in which the subject is asked to tell a story suggested by each of a series of pictures which are relatively unstructured and into which the subjects can thus project their own needs, emotions, conflicts, etc. McClelland's variation of the TAT is the classic technique used to assess achievement motivation. It consists of six pictures, with scoring based on the total number of responses reflecting achievement themes, such as long-term involvement in doing something well or a stated desire to do something unique. The Edwards Personal Preference Schedule (EPPS) is a 210-item forced-choice inventory, consisting of 15 subscales, among them need achievement. The EPPS is an objective rather than projective instrument and was selected for the sake of varying sample characteristics as well as for rapid scoring and analysis.

Procedure

Each subject completed the TAT. In addition, each subject completed a 176-item questionnaire which was entitled Belief Survey. This booklet contained the Rotter scale, Levenson I, P, C scales, Reid-Ware Questionnaire, and the achievement, affiliation, and nurturance scales of the EPPS. Seeking to counteract the results of possible practice effect

and prior knowledge, the order in which the set of tests were given to each group of students was counter-balanced.

The decision to use only two additional scales in the capacity of buffers rather than the EPPS in its entirety was based on the results of a pilot study conducted previously. Subjects in the study were randomly divided into two equal groups of ten. One group completed the test booklet described above. The other group completed a slightly different version containing the entire EPPS. There were no significant differences at the .05 level between EPPS achievement scores for the two groups ( $t=1.74$ ,  $df=9$ ). The use of three scales reduced the amount of time needed to finish the testing by an average of 40 minutes and was consequently adopted for the present study.

All subjects received identical instructions. These instructions were written and repeated orally (for full details, see Appendix).

## CHAPTER IV

### RESULTS

The data were analyzed in terms of the relationships existent between the full and subscales of the Rotter, Reid-Ware, and Levenson locus of control measures with two measures of  $\bar{n}$  Ach, the TAT and EPPS. For purposes of comparison, the Rotter was divided into three subscales, Fatalism (F), Social Systems Control (SSC), and Other (O). The 16 items in the first two dimensions corresponded to those found in Reid and Ware's (1973) factor analysis of the Rotter. The third category, Other, was composed of the remaining 7 items of the Rotter which were not included in either the F or SSC dimensions.

The F and SSC subscales of the Rotter are comparable to similar scales on the Reid-Ware. Likewise, the three subscales of the Levenson, Internal (I), Powerful Others (P), and Chance (C), closely corresponded to the SC, SSC, and F dimensions, respectively of the Reid-Ware. As shown in Table 1 (p. 16) Pearson  $r$  correlations between scales and across sex ranged from  $-.42$  to  $.14$ . All LOC responses were scored in an external direction. Thus, negative correlations between external LOC beliefs and  $\bar{n}$  Ach indicated positive relationships between internal LOC and  $\bar{n}$  Ach.

Table 1  
Pearson r Correlations Between  
Scales and Across Sex

	TAT	EPPS	F	SSC	Other	Total F	SSC	Total I	P	C	Total			
<u>TAT</u>														
M	--	.27	-.29	-.16	-.31	-.33*	-.42***	-.11	-.15	-.32*	-.17	-.22	-.22	-.35
F	--	.37*	-.19	-.35*	-.16	-.30	-.05	-.22	-.41**	-.13	-.01	-.11	-.01	-.05
Total	--	.32***	-.23*	-.26**	-.22	-.30***	-.21	-.16	-.29**	-.20	-.05	-.03	-.13	-.17
<u>EPPS</u>														
M	.27	--	-.32*	-.23	.07	-.22	-.11	-.01	-.10	-.03	-.01	.14	.04	.13
F	.37*	--	-.18	-.19	-.11	-.20	-.17	-.31	-.32	-.25	-.10	-.13	-.05	-.18
Total	.32***	--	-.24*	-.21	-.05	-.21	-.16	-.18	-.18	-.18	-.09	-.01	-.05	-.03

\* $p < .05$   
 \*\* $p < .02$   
 \*\*\* $p < .01$

Analysis of the data in terms of single undifferentiated scales revealed low to moderate relationships between LOC and  $\bar{n}$  Ach, ranging from  $-.03$  to  $-.30$ . Of these six measures, only one, the Rotter and the TAT, was statistically significant ( $r = -.30, p < .01$ ). However, examination of the scales in their component parts showed definite degrees of differentiation between the various factors and achievement need. The most notable example occurring at this level was in the Reid-Ware scale. Here, SC had a correlation of  $-.29$  ( $p < .02$ ) to <sup>with</sup> the TAT as compared with  $-.21$  and  $-.16$  for the F and SSC dimensions respectively.

The correlations of male LOC scores <sup>with</sup> to the TAT were moderate, ( $p < .05$ ), and fairly uniform, being  $-.33$ ,  $-.32$ , and  $-.35$  for the Rotter, Reid-Ware, and IPC scales respectively. Female LOC correlations to the TAT were somewhat lower than males, and the correlations to the TAT were somewhat lower than males, and the correlations for both sexes with the EPPS were consistently low. In general, there were few significant differences at the  $.05$  level between the various subscales, or dimensions, of the LOC measures. Certain individual dimensions, however, consistently displayed relatively higher correlations with  $\bar{n}$  Ach than did the LOC measures as wholes. Table 1 shows that Fate, or Chance, was generally the dominate or predominate factor related to  $\bar{n}$  Ach for males on both the TAT and EPPS measures. This was true in every case with the single exception of the correlation between the males'

n Ach scores on the EPPS and their performance on the I, P, C scale. For females, two factors Social Systems Control (Powerful Others) and/or Self Control (Internal), were the chief factors in most instances. The only exception to this pattern was found in the correlations for females between the Rotter and the EPPS (where SSC and F were relatively equal in influence).

In order to determine if other factors or combinations of factors were effective in strengthening the relationship between LOC and n Ach, a series of partial correlations were made (see Table 2, pp. 19-20). As shown in Table 3, (pp. 21-22), the percentage of variance accounted for by the various factors ranges from .04 to 17.6. The partialing process indicated that, although responsible for less of the variance than F dimension, a second factor, SSC, or its equivalent, P, was also exerting an important influence in several cases for males. With O partialled out, the combination of F and SSC raised the correlation between the TAT and the Rotter from -.33 to -.34 ( $p < .05$ ) and from -.22 to -.33 ( $p < .05$ ) for the EPPS and the Rotter. For the Reid-Ware, the F scale remained the primary factor accounting for the large correlation between LOC and both measures of n Ach (-.42 and -.11 for the TAT and EPPS respectively). The F Scale accounted for the greatest amount of variance for males in most cases: 8.41 and 17.6 percent in the correlation between the Rotter and Reid-Ware scales respectively and the TAT; 10.24 and 1.2 for these scales and the EPPS.

Table 2  
Partial Correlations Between LOC  
Factors and n Ach

TAT Males (Modified Rotter)	Reid-Ware	IPC
-.34* F & SSC	-.42*** F	-.35* I & P & C
-.33* F & SSC & Other	-.32* F & SSC & SC	-.32 P & C
-.30 F & Other	-.32 F & SC	-.30 I & C
-.29 F	-.29 F & SSC	-.30 I & P
-.22 Other	-.15 SC	-.22 P
-.20 SSC & Other	-.11 SSC	-.22 C
-.16 SSC	.06 SSC & SC	-.17 I
<u>EPPS</u>		
-.33* F & SSC	-.11 F	-.01 I
-.32 F	-.10 SC	.03 I & C
-.23 SSC	-.03 F & SC	.04 C
-.22 F & SSC & Other	-.03 F & SSC & SC	.13 I & P & C
-.20 F & Other	-.01 SC	.14 P & C
-.12 SSC & Other	.04 F & SSC	.14 P
.07 Other	.14 SSC & SC	.21 I & P

\* $p < .05$

\*\* $p < .01$

Table 2  
Partial Correlations Between LOC  
Factors and  $\bar{n}$  Ach

TAT Females (Modified Rotter)	Reid-Ware	IPC
-.35* SSC	-.41** SC	-.25 I & C
-.31 F & SSC	-.30 SC & SSC	-.06 I & P
-.30 F & SSC & Other	-.22 SSC	-.06 P & C
-.28 F & Other	-.13 F & SSC & SC	-.05 I & P & C
-.22 SSC & Other	-.05 F	-.01 I
-.19 F	.09 F & SC	.01 C
-.16 Other	.39 F & SSC	.11 P
<u>EPPS</u>		
.21 F & SSC	-.32* SSC & SC	-.28 I & P
.20 F & SSC & SC	-.32 SC	-.18 I & P & C
.19 SSC	-.31 SSC	-.15 P & C
.18 F	-.25 F & SSC & SC	-.13 P
.16 SSC & Other	-.17 F	-.10 I
.15 F & Other	-.003 F & SSC	-.07 I & C
.11 Other	.02 F & SSC	-.05 C

\*p < .05  
\*\*p < .01

Table 3  
Percentage of Variance Accounted For  
By Each LOC Factor for Males

TAT (Modified Rotter)	Reid-Ware	IPC
11.56 F & SSC	17.6 F	11.85 I & P & C
10.89 F & SSC & Other	10.2 F & SSC & SC	9.93 P & C
9.00 F & Other	10.2 F & SC	8.68 I & C
8.41 F	8.4 F & SSC	8.68 I & P
4.84 Other	2.3 SC	4.84 P
4.00 SSC & Other	1.2 SSC	4.84 C
2.56 SSC	.4 SSC & SC	2.89 I
<u>EPPS</u>		
10.89 F & SSC	1.2 F	.01 I
10.24 F	1.0 SC	.09 I & C
5.29 SSC	.09 F & SC	.16 C
4.84 F & SSC & Other	.07 F & SSC & SC	1.69 I & P & C
4.00 F & Other	.01 SC	1.96 P & C
1.44 SSC & Other	.16 F & SSC	1.96 P
.49 Other	1.96 SSC & SC	4.41 I & P

Table 3  
Percentage of Variance Accounted For  
By Each LOC Factor for Females

TAT (Modified Rotter)	Reid-Ware	IPC
12.25 SSC	16.81 SC	6.25 I & C
9.61 F & SSC	9.00 SC & SSC	.35 I & P
9.00 F & SSC & Other	4.84 SSC	.30 P & C
7.84 F & Other	1.69 F & SSC & SC	.25 I & P & C
4.84 SSC & Other	.25 F	.01 I
3.61 F	.81 F & SC	.01 C
2.56 Other	15.21 F & SSC	1.21 F
<u>EPPS</u>		
.41 F & SSC	10.4 SSC & SC	7.84 I & P
.00 F & SSC & Other	10.2 SC	3.24 I & P & C
.61 SSC	9.52 SSC	2.25 P & C
.24 F	6.25 F & SSC & SC	1.69 P
.56 SSC & Other	2.89 F	1.00 I
.25 F & Other	.00 F & SC	.49 I & C
.21 Other	.04 F & SSC	.25 C

The results for the I, P, C scale and the TAT were somewhat different from these general findings. The P and C dimensions (equivalent to SSC and F respectively) were equal in influence ( $r = -.22$ ) and together accounted for 9.93 percent of the variance. However, the third factor, I, although responsible for only 2.89 percent of the variance, was nevertheless also influential in maintaining the highest possible correlation between LOC and  $\bar{n}$  Ach. With I partialled out, the overall correlation fell from  $-.35$  ( $p < .05$ ) to  $-.32$ .

Results for the I, P, C scale and the EPPS were also in disagreement with the previous findings. The I dimension was the only factor found in the expected direction ( $r = -.01$ ). Although scored in an external direction, P and C were positively correlated with the EPPS ( $r = .14$  and  $.04$  respectively).

Partialing the correlations for females did not alter the pattern previously established. Rather, there were further indications that two factors, SSC (P) and/or SC (I), were influential in the relationship between LOC and  $\bar{n}$  Ach. This was evident, with a few exceptions, for both measures of  $\bar{n}$  Ach. Thus, for the TAT and LOC scales, SSC as a single factor raised the correlation of the Rotter to  $\bar{n}$  Ach from  $-.30$  to  $-.35$  ( $p < .05$ ), and SC as a single factor strengthened the relationship of the Reid-Ware to  $\bar{n}$  Ach from  $-.30$  to  $-.42$  ( $p < .02$ ). The combination of I (SC) and C (F) raised the overall I, P, C Correlation from  $-.05$  to  $-.25$ . For LOC measures and the EPPS, the effectiveness of the SSC (P) - SC (I) combination was even

more evident. F and SSC raised the overall correlation of the Rotter to  $\bar{n}$  Ach from  $-.20$  to  $-.21$ ; SSC and SC strengthened the Reid-Ware's level from  $-.25$  to  $-.32$  ( $p < .05$ ), and I (SC) and P (SSC) increased the correlation of the I, P, C to  $\bar{n}$  Ach from  $-.18$  to  $-.28$ .

Table 4, (p. 25), summarizes the overall results of the study. This table indicates those factors or combination of factors found to be most effective in strengthening the relationship of the various LOC scales to  $\bar{n}$  Ach. It was found that with the division of LOC into separate dimensions six of the LOC measures (three male and three female) correlated significantly with  $\bar{n}$  Ach ( $p < .05$ ).

Table 4  
Those Factors Producing the Highest  
Correlations Between LOC and  $\bar{n}$  Ach

	Modified Rotter	Reid-Ware	IPC
<u>Males</u>			
<u>EAT</u>	$-.34^*$ F & SSC	$-.42^{***}$ F	$-.35$ I & P & C
<u>EPPS</u>	$-.33^*$ F & SSC	$-.11$ F	$-.01$ I
<u>Females</u>			
<u>EAT</u>	$-.35^*$ SSC	$-.41^{**}$ SC	$-.25$ I & C
<u>EPPS</u>	$-.21$ F & SSC	$-.32^*$ SSC & SC	$-.28$ I & P

\* $p < .05$   
\*\* $p < .02$   
\*\*\* $p < .01$

CHAPTER V  
DISCUSSION

In general, these results could be summarized by saying that consideration of LOC as a multidimensional construct would appear to be useful for purposes of comparison with other concepts. This was demonstrably true in the case of n Ach. Stronger relationships were found between certain LOC factors and combinations of factors and n Ach than for LOC as a single scale. Differences between male and female patterns of response were also apparent. For males, the extent of belief in control by fate and social systems, or institutions, were the crucial factors in determining how strong was need for achievement. To a moderate extent, the lower the expressed belief in such control, the higher that person's n Ach score and vice versa. For females, in general, the dimensions of social systems control was also important, as was self-control. Again, to a moderate extent, the lower the belief in control by others or powerful forces in society and the higher the belief in one's own personal control of their impulses and emotions, the higher, in general, was that person's n Ach score. This was also true for the converse situation.

Reasons for the differentiation in responses between sexes are uncertain at this point, particularly with the relative smallness of the sample size. Further research along these

these lines is certainly indicated. One tentative suggestion, based on the original research on motivation by McClelland, et al. (1953), can be offered. McClelland noted that the degree of n Ach a person has depends on the degree to which it is emphasized by one's family or culture. McClelland also pointed out that many western societies emphasize social acceptance and affiliation for females rather than achievement. Considerable evidence for the varied effects of sex stereotyping is present in the current literature (cf. Veroff, 1969; Vogel, et al, 1970; Tulkin, 1968). Such stereotyping could possibly account for the variance in response patterns discovered in this study. From the data, it would appear that if acceptance of need affiliation is made at the expense of n Ach, it is possibly expressed in terms of higher belief in control by social system forces and lessened control of one's own impulses and emotions.

If the results obtained in this study are correct, then the differentiation in responses between sexes raises another issue: the validity of the Rotter scale as a measure of LOC. For males, the two existing dimensions of the Rotter (F and SSC) adequately accounted for their responses in general. However, a third dimension, SC, appeared to be a necessary and vital factor in order to sufficiently assess female responses while relating LOC to n Ach. As the Rotter, in its presently defined two dimensions, did not include SC, some doubts as to its ability to adequately measure LOC in its entirety were created. In this capacity, the Reid-Ware and



Levenson three-factor approaches appeared more suitable than the existing Rotter. However, more research is necessary to verify this conclusion, as well as further investigation into the differences found between the three-factor scales.

A final point noted in connection with the results obtained in this investigation pertains to the magnitude of the correlations between LOC and n Ach. Given the qualifications set forth by Phares (1973) concerning the presence of "defensive externals" and Rotter's (1966) statements regarding the possible curvilinearity of the relationship between LOC and n Ach, a moderate correlation is possibly the best that can be expected. Thus, although discovering a consistency of pattern responses was the desired goal in this study rather than interest in magnitude per se, the moderate nature of those relationships found deserves comment as they would appear to be in agreement with the expected trend.

Three conclusions may be drawn from the present investigation: (1) There was a relationship, though moderate, between the locus of control construct and need for achievement. (2) Males differed from females in terms of the specific LOC factors which influenced this relationship. (3) The use of LOC as a multidimensional construct was a feasible means for research and comparison with various other concepts related to the study of LOC.

## CHAPTER VI

### SUMMARY

Pearson product-moment correlations were employed in a study of the relationship between LOC and n Ach. Three measurements of LOC, the Rotter, Reid-Ware, and Levenson I, P, C scales, were used in conjunction with two assessments of n Ach, the McClelland TAT and the EPPS. The major hypothesis tested was that, if LOC were assumed to be a multidimensional construct, it followed that a more consistent relationship between one or more dimensions or factors of LOC and n Ach should be shown.

Seventy-eight voluntary subjects participated in this study. All were undergraduates of Appalachian State University. The subjects were supplied with the six pictures of the McClelland TAT and a 176-item test booklet, containing LOC items and three scales of the EPPS. Instructions were identical for all subjects. Thirty minutes were allowed to complete the TAT, with a maximum of five minutes per picture.

LOC items were scored in an external direction and correlated with n Ach scores. Partial correlations revealed that certain factors within the LOC scales were more highly correlated with n Ach than were the scales in their entirety. Following the division of the unidimensional LOC scales into their separate factors, there were twice as many significant corre-

lations on at least the .05 level between LOC and  $\bar{n}$  Ach. On this basis, the major hypothesis of this study was supported. The pattern of factors most related to  $\bar{n}$  Ach also differed according to the sex of the subjects: F and/or SSC for males, SSC and SC for females. Possible reasons for this differentiation were discussed and the validity of the Rotter as a sufficient measure of LOC consequently questioned. Further investigation was recommended in order to verify these results.

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## APPENDIX

## Instructions for Test Administration

The following written instructions were presented and repeated orally for the Rotter and the Reid-Ware questions: "This questionnaire is a measure of personal belief and obviously there are no right or wrong answers. Each item in Section I consists of a pair of alternatives lettered as (A) or (B). Please select the one statement of each pair (and only one) which you more strongly believe as far as you are concerned. Be sure to select the one you actually believe to be more true rather than the one you think you should choose or the one you would like to be true.

Please answer these items carefully, but do not spend too much time on any one item. Be sure to find an answer for every choice. Record your answers on the separate answer sheet which is loosely inserted in the booklet. Find the letter corresponding to the statement which you have chosen as most true.

In some cases you may discover that you believe both statements or neither one. In such instances be sure to select the one you more strongly believe to be the case as far as you are concerned. Also try to respond to each item independently when making your choice; do not be influenced by your prior selection."

Instructions for the I, P, C scales were simply "Please choose the answer that best applies to you in the space pro-

vided on the answer sheet." On the other hand, directions for the EPPS were somewhat more complicated and included several examples to help clarification. "This schedule consists of a number of pairs of statements about things that you may or may not like, about ways in which you may or may not feel. Look at the example below.

- (A) I like to talk about myself to others.
- (B) I like to work toward some goal that I have set for myself.

Which of these two statements is more characteristic of what you like? If you like talking about yourself to others more than you like working toward some goal that you have set for yourself, then you should choose A over B. If you like the reverse, then you should choose B over A.

You may like both A and B. In this case, you would have to choose between the two and you should choose the one you like better. If you dislike both A and B, you should pick the one you dislike less.

Some of the pairs of statements in the schedule have to do with your likes, such as A and B above. Other pairs have to do with how you feel. Look at the example below.

- (A) I feel depressed when I fail at something.
- (B) I feel nervous when giving a talk before a group.

Which of these two statements is more characteristic of how you feel? If being depressed when you fail is more characteristic of you than being nervous when giving a talk, then

you should choose A over B. If B is more characteristic, then you should select B over A.

If both statements describe how you feel, then you should choose the one which you think is more characteristic. If NEITHER statement accurately describes how you feel, then you should choose the one which you consider to be less inaccurate.

Your choice, in each instance, should be in terms of what you like and how you feel at the present time, and not in terms of what you think you should feel or think you should like. This is not a test. There are no right or wrong answers. Your choices should be a description of your own personal likes and feelings. Make a choice for every pair of statements; do not skip any.

The pairs of statements on the following pages are similar to the examples given above. Read each pair of statements and pick out the one statement that better describes what you like or how you feel. Make no marks on the booklet."

For the TAT, each group of subjects was asked "On the following pages are a series of pictures that you are to look at and then make up imaginative stories about. When you have finished reading these instructions, you should turn the page and look at the first picture for about 20 seconds, then turn the page again and write an imaginative story that is suggested to you by the picture. You will have 5 minutes to write a story for each of the six pictures. Do not spend any longer

than 5 minutes on any one picture. If you finish writing a story before the 5 minutes is up, go on to the next picture.

To help you think about possible elements of a story in the time allowed, you will find four questions following each picture:

1. What is happening? Who are the people?
2. What has led up to this situation? That is, what has happened in the past?
3. What is being thought? What is wanted? By whom?
4. What will happen? What will be done?

These questions are only guides for your thinking and need not be answered specifically. That is, your story to each picture should be continuous and not just specific answers to these questions.

Do not worry about whether there are right or wrong kinds of stories to write. The most important thing is to make up vivid, imaginative stories suggested to you by the pictures. The pictures are designed to give you an idea of what to write about, but don't be concerned about describing the picture perfectly. Use each picture and set of questions as a guide to telling creative, dramatic stories. The group leader will tell you when the 5 minutes is up for each story."

After each set of instructions, the subjects were asked if there were any questions. Several types of inquiries were generally made and responded to as follows:

- Q. "How long do we have to complete the belief survey?"
- A. "There is no time limit."

- Q. "Is this an IQ test?"
- A. "No."

- Q. "Do we have to sign our names to the answer sheets?"
- A. "No, the only identification needed is your age, sex and the number which you have selected from the list passed around the class."

- Q. "What do we do if we have not finished answering all of the four questions before the five minutes is up?"
- A. "Go on to the next story."

- Q. "Does it matter what kind of stories we write, even funny ones?"
- A. "That is entirely up to you. There are no right or wrong types of stories."

- Q. "But what if we can't write?"
- A. "Simply do the best you can, bearing in mind the ideas suggested to you by the four questions listed."