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CPI ACHIEVEMENT MOTIVATION SCALES IN DIFFERENTIAL
PREDICTION OF ACADEMIC ACHIEVEMENT

by

Dwight J. Petersen

A thesis submitted in partial fulfillment
of the requirements for the degree

of

MASTER OF SCIENCE

in

Psychology

Approved:

UTAH STATE UNIVERSITY
Logan, Utah

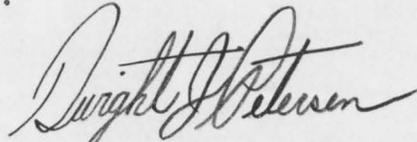
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I would like to express my deepest appreciation to those who have contributed notably to the completion of this study.

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Dwight J. Petersen

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ABSTRACT

CPI Achievement Motivation Scales in Differential
Prediction of Academic Achievement

by

Dwight J. Petersen, Master of Science

Utah State University, 1969

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Department: Psychology

The grade-point average (GPA) of 4 groups of college sophomores, representing high and low scores on the CPI Ac and Ai scales, was analyzed to test the hypothesis that conforming and independent achievement motivation (as measured by the CPI) is related to scholastic achievement reflective of conforming or independent behavior. Specific hypotheses regarding differential achievement as a function of Ac and Ai scores were tested and, in general, supported. From this study, it was found that the CPI Ac and Ai scales do provide a basis for differentially predicting the scholastic achievement of students in settings rewarding dependent and/or independent behavior.

(33 pages)

INTRODUCTION

Presently there are important curricular and attitudinal changes occurring on most college campuses. Up to this time, the typical curriculum may have demanded and rewarded conforming behavior. Today wider use of honors' programs, undergraduate seminars, interdepartmental majors, three-year baccalaureate programs, flexible course assignments, independent study, unstructured classroom behavior, and other curricular reforms seem to emphasize independent behavior. Educators are now beginning to realize that not every student can achieve his best in a conforming, or in a dependence-demanding, situation. Domino (1968, p. 259) has suggested that "rather than fitting the student to the curriculum, as is presently done, it might be extremely worthwhile to fit the curriculum to the student by providing each student with the type of setting which most effectively utilizes his achievement potential."

A student's academic performance is a function of a variety of factors, including personality aspects that can enhance or interfere with optimal functioning in settings where conformity or independence are differentially rewarded. Gough (1957), in developing the California Psychological Inventory (CPI), has noted this by including two scales of achievement motivation. The first scale, Achievement via Conformance (Ac), identifies those aspects of moti-

vation that facilitate achievement in settings where conforming behavior, such as adherence to regulations, a high degree of self-discipline, convergent thinking, efficiency, and responsibility are rewarded. The second scale, Achievement via Independence (Ai), identifies those motivational aspects that facilitate achievement in settings rewarding independence, individuality, self-reliance, autonomy, divergent thinking, and creative innovation.

George Domino (1968) has conducted a study which indicated that differential prediction of academic achievement in conforming and independent settings as a function of Ac and Ai scores on the CPI is possible. However, both Holland (1959) and Thistlethwaite (1959) had earlier presented evidence that institutional environments vary, and that different variables predict academic achievement in the different environments. Holland (1959, p. 140) states that "the patterning of predictors within and between colleges may also be due to variation in institutional environments." These findings cast doubts upon the generality of Domino's study. Domino seemed to be aware of this weakness in his study's external validity. In commenting on the results of his study, Domino noted that his results were obtained from a particular college setting and may not be generalizable to other educational settings.

A review of the literature reveals that no cross-validation or comparable studies have been done in connection with Domino's findings. Therefore, the problem with which this research is concerned is the further validation of Domino's original study, specifically at Utah State University.

Purpose of the present study

This study will be an attempt to relate the personality measures of conforming and independent motivation to scholastic achievement attained in settings rewarding conforming behavior and in settings rewarding independent behavior, in order to test the hypothesis that the Ac and Ai scales on the CPI show differential predictive patterns. As such, the study will be a systematic replication of Domino's original study. The word "systematic" is meant to imply that there will be variations in the procedures, methodology, and sample. Sidman gives a justification for this approach:

Where direct replication helps to establish the generality of a phenomenon among members of a species, systematic replication can accomplish this and, at the same time, extend its generality over a wide range of different situations. Systematic replication will buy reliability, generality, and additional information. (Sidman, 1960, p. 111)

REVIEW OF LITERATURE

A large number of studies with the CPI have clearly demonstrated its usefulness in predicting academic achievement in various educational settings with differing samples. Keimowitz and Ansbacher (1960) found significant correlations between CPI scales and achievement in mathematics. Gough (1964b) realized significant correlations between achievement in a first course in psychology and the CPI scales. Gough and Hall (1964) found that the CPI predicted scholastic success in medical school. Gough (1964a), Gough (1966), Pierce (1961), and Snider (1966) successfully used the CPI scales to predict academic achievement in high school. Lessinger and Martinson (1961) found that the CPI can differentiate significantly between gifted and average junior high school students in terms of their academic achievement. Both Fink (1962) and Gough and Fink (1964) found the CPI to predict scholastic achievement among students of average ability. Rosenberg, McHenry, Rosenberg and Nichols (1962) showed that the CPI scales can predict academic success in military enlisted personnel programs. Holland (1959) found, in his study of National Merit Scholarship Corporation finalists, that the CPI yielded predictive validities significantly superior to those derived from aptitude test scores. Maxwell (1960) and Swisdak and Flaherty (1964) found that the CPI showed significant differentiation between college graduates and dropouts. Gough (1953) and Jackson and Pacine (1961) found that the

CPI scales can predict over-all academic success in college. Gough (1968) found that the CPI scales have strong discriminatory power in predicting college attendance among high-aptitude students. Griffin and Flaherty (1964) observed significant correlations between academic achievement and CPI scales in a women's college. The references cited cover a wide span of educational levels (junior high school to medical school), courses of study, and intellectual ability, and offer useful evidence against the prevailing skepticism concerning the predictive value of the CPI. It is also interesting to note that all the studies cited made extensive use of the Ac and Ai scales in making these predictions.

Since this study will be a systematic replication of Domino's work, the following discussion of Domino's methodology and results is intended to give the reader a reference point from which to evaluate this study.

Domino used 348 full-time liberal arts juniors in his study. To this sample he administered a test battery, including the Ac and Ai scales of the CPI, and the D 48, a nonverbal test of intelligence. He then tallied the distribution of scores on the Ac and Ai scales in order to select four groups: (a) students scoring high on both scales (HiAc-HiAi); (b) students scoring high on Ac but low on Ai (HiAc-LoAi); (c) students scoring low on Ac but high on Ai (LoAc-HiAi); and (d) students scoring low on both scales (LoAc-LoAi). Domino did not say what percentage he defined as high or low scores (e.g., top 25%, bottom 25%, etc.).

Domino then consulted registrar's records to determine courses taken and grades received by these subjects (Ss) during their first two years of college. For every course taken by any student, Domino interviewed the instructor in an attempt to determine whether the particular course rewarded conforming or independent behavior on the part of the student.

According to Domino, a course was deemed as rewarding conforming behavior if it was characterized by emphasis on:

(a) memorizing of technical terms, definitions, poems, etc.; (b) presentation of material through lectures; (c) objective type examinations; (d) keeping of attendance records; (e) discipline and adherence to regulations (e.g., no smoking, absences justified by written medical reasons); (f) clearly defined and frequent homework assignments, emphasizing convergent thinking; (g) rare use of visual aids, outside speakers, little variation in class routine; (h) close correspondence between lecture material and textbook; (i) identical assigned readings for all class members; and (j) course grade determined by proportional weighting of various course requirements. (Domino, 1968, p. 257)

Domino deemed a course as rewarding independent behavior if it was characterized by emphasize on:

(a) ideas rather than facts; (b) seminar discussions, student presentations, or question and answer format; (c) no examinations, or examinations involving essay questions; (d) little concern for attendance; (e) little explicit emphasis on discipline and adherence to school regulations; (f) no homework assignments, or assignments demanding divergent thinking; (g) variety of presentations, as indicated by use of visual aids, tape recordings, outside speakers, or other material; (h) little direct overlap between class discussions and textbook content; (i) suggested readings, or assigned readings individually tailored to a student's interests; and (j) course grade determined by consultation with the student, or by global evaluation of the student's performance. (Domino, 1968, p. 257)

By using these criteria, Domino labeled 73 courses as conforming and 32 as independent.

Domino then divided every student's grades into those received in conforming courses and those received in independent courses. This gave him independence grade-point average (GPA) and conforming GPA on each subject.

Four groups of 22 Ss each were finally retained, and the groups were matched for sex and intelligence (D 48 scores).

Domino tested the following hypotheses:

1. Concerning total GPA (GPAT): a. The HiAc-HiAi group should have a higher mean GPAT than any of the other groups; b. The LoAc-LoAi group should have a lower mean GPAT than any of the other groups. 2. Concerning conforming GPA (GPAC): a. The HiAc-HiAi group should have a higher mean GPAC than the LoAc-LoAi group; b. The HiAc-LoAi group should have a higher mean GPAC than the LoAc-LoAi group. 3. Concerning independent GPA (GPAi): a. The HiAc-HiAi group should have a higher mean GPAi than the HiAc-LoAi group; b. The LoAc-HiAi group should have a higher mean GPAi than the LoAc-LoAi group. (Domino, 1968, p. 257)

Domino tested these hypotheses by means of F-ratios across the four mean differences for each of the three GPAs. He then made specific intergroup comparisons (t-tests) to evaluate the indicated comparisons. All four F-ratios achieved statistical significance at the .01 level. Of the nine t-tests that Domino made, seven reached significance and the other two were in the hypothesized direction, although not significant.

From these results, Domino concluded that conforming and independence achievement motivation, as measured by the CPI, is

strongly related to scholastic achievement reflective of conforming or independent behavior. As such, Domino was successful in predicting academic achievement from a knowledge of a student's achievement motivation.

HYPOTHESES

The following specific hypotheses concerning the prediction of academic achievement in conforming and independent settings from scores on the CPI Ac and Ai scales are posed:

1. Concerning total GPA (GPAT):
 - a. The Hc-Hi group will have a higher mean GPAT than any of the other achievement groups.
 - b. The Lc-Li group will have a lower mean GPAT than any of the other achievement groups.
2. Concerning conforming GPA (GPAC):
 - a. The Hc-Hi group will have a higher mean GPAC than the Lc-Hi group.
 - b. The Hc-Li group will have a higher mean GPAC than the Lc-Li group.
 - c. The Hc-Li group will have a higher mean GPAC than the Lc-Hi group.
3. Concerning independent GPA (GPAi):
 - a. The Hc-Hi group will have a higher mean GPAi than the Hc-Li group.
 - b. The Lc-Hi group will have a higher mean GPAi than the Lc-Li group.
 - c. The Lc-Hi group will have a higher mean GPAi than the Hc-Li group.

4. Concerning intragroup comparisons, GPAC vs. GPAi:
 - a. In the Hc-Li group, the GPAC will be higher than the GPAi.
 - b. In the Lc-Hi group, the GPAi will be higher than the GPAC.

Basically, there are two types of hypotheses presented here. The first type involves intergroup, or between group, comparisons involving one of the three types of GPA in each comparison. The second type involves intragroup, or within group, comparisons involving GPAC and GPAi.

From acceptance or rejection of these hypotheses, information regarding the differential predictive validity of the CPI will be obtained.

PROCEDURE

Population and sample

Sophomores enrolled in physical education activity courses at Utah State University Fall Quarter of 1968 participated in this research. This consisted of a sample of 204 out of a population of 1,753 sophomores at U.S.U. Participation was a requirement of the various activity courses from which the sample was drawn. However, lack of attendance on the days that the research was conducted did lower the size of the sample to 204 from the anticipated 350.

Since physical education activity courses are a basic requirement of all students at U.S.U., this sample was somewhat heterogenous in respect to diversification of student majors. This should yield a somewhat random sample of sophomores.

Design

All students in the above described courses were given the entire CPI along with the course description inventory found in the appendix. This inventory was constructed by the author in an attempt to identify courses that the respondents had taken which rewarded conforming or independent behavior. This latter inventory is divided into two parts. The first part is designed to stimulate the respondent to list those classes which he has taken at U.S.U. that reinforced conforming behavior. The second part is designed

to stimulate the respondent to list those classes which he has taken at U.S.U. that reinforced independent behavior. This inventory assumes that the respondent can recall how these classes were conducted, and this recall will provide a valid measure of whether the class rewarded dependent or independent behavior.

The subjects were given the following specific instructions: "The study you are about to participate in is designed to give us (researchers) information regarding courses at U.S.U. which are characterized by the criteria listed in the inventory you will take. You will also take a personality inventory on which we hope to give you individual feedback (report on the personality scales contained therein)." From this point on, the standard administration was performed as stated in the manual of the CPI.

Data and instrumentation

Following the administration and scoring of the CPI, the distribution of the scores on Ac and Ai scales were tallied in order to select four achievement groups: (1) students scoring in the top 25% on both scales (Hc-Hi); (2) students scoring in the top 25% on the Ac scale but in the bottom 25% on the Ai scale (Hc-Li); (3) students scoring in the bottom 25% on the Ac scale but in the top 25% on the Ai scale (Lc-Hi); and (4) students scoring in the bottom 25% on both scales (Lc-Li). This was accomplished by making a distribution of the Ss' scores and selecting the top 25% and the bottom 25% in terms of their scores on the Ac and Ai scales. From this procedure, four groups, two of which contained

24 Ss and two of which contained 13 Ss, were retained.

Registrar's records were then consulted to determine the grades that the Ss received in the courses they listed on the course description inventory and also their total GPAs. This procedure provided the mean GPAs of the achievement groups in settings seen by students as having characteristics assumed by the author to indicate demands for independent behavior, and the mean GPAs of the achievement groups in settings seen by students as having characteristics assumed by the author to indicate demands for conforming behavior.

ACT composite scores on the achievement group students were obtained from the U.S.U. Counseling Services. From these data, mean composite scores for each of the achievement groups were computed. This composite information was used in a covariance analysis to adjust for differences in academic aptitude between the achievement groups.

Justification for using ACT composite scores to measure academic aptitude comes from Buros Mental Measurement Yearbook. Buros (1965, p. 2) reports that: "In sum, the test content is excellent and the composite score is predictive of scholarship aptitude." Buros reports that the test has excellent reliability (.95) and a low standard error of 1.03 on the composite scores.

Analysis

From the data obtained, four tables were constructed. Table 1 yields summary statistics for the four groups on the following

variables: CPI Ac ranges; CPI Ai ranges; final group Ns; ACT composite scores, \bar{X}_s , SDs; total GPAs, \bar{X}_s , SDs; unadjusted GPAC, \bar{X}_s , SDs; and unadjusted GPAi, \bar{X}_s , SDs. Table 2 presents the results of adjusted GPAC, \bar{X}_s , SDs; adjusted GPAi, \bar{X}_s , SDs; and adjusted GPAC, \bar{X}_s , SDs. Table 3 reports specific intergroup and intragroup comparisons, \bar{X}_s , SDs, t-tests. Table 4 reports the correlations between ACT composite scores and the three types of GPA: GPAT, GPAC, and GPAi.

The hypotheses were tested by one-way analysis of variance (F-ratio) across the four mean differences for each of the three GPAs, as shown in Table 2. Analysis of covariance using the ACT composite scores yielded the adjusted group means in Table 2. Specific intergroup and intragroup comparisons (t-tests) were then carried out to evaluate the indicated comparisons, as shown in Table 3. Pearson product-moment correlation coefficients were then computed between ACT composite scores and the three types of GPA, as shown in Table 4.

RESULTS

The results of this study, in general, coincide with those found by Domino. The CPI Ac and Ai scales do provide a basis for differentially determining scholastic achievement of students in settings rewarding dependent and/or independent behavior.

Table I presents the \bar{X} s (unadjusted), SDs and F-ratios for the intergroup comparisons on GPAC, GPAi, and GPAT. The unadjusted means are those means that have not undergone covariance analysis to control for differences in academic aptitude between the achievement groups.

From inspection of Table I, it is obvious that there is good differentiation between the achievement groups in terms of their scholastic achievement in the different achievement settings. The hypotheses posed in this study were successful in making predictions concerning academic achievement. From Table I, the hypotheses in this study are related to the results as follows: (1) Concerning total GPA: a. The Hc-Hi group mean of 2.89 is higher than any of the other achievement group means; and b. The Lc-Li group mean of 2.37 is lower than any of the other achievement group means. (2) Concerning conforming GPA: a. The Hc-Hi group mean of 2.88 is higher than the Lc-Hi group mean of 2.41; b. The Hc-Li group mean of 2.53 is higher than the Lc-Li group mean of 2.26; and c. The Hc-Li group mean of 2.53 is higher than the Lc-Hi group mean of 2.41. (3) Con-

cerning independent GPA: a. The Hc-Hi group mean of 3.01 is much higher than the Hc-Li group mean of 2.14; b. The Lc-Hi group mean of 3.06 is higher than the Lc-Li group mean of 2.40; and c. The Lc-Hi group mean of 3.06 is much higher than the Hc-Li group mean of 2.18. (4) Concerning intragroup comparisons: a. The Hc-Li group GPAC mean of 2.53 is higher than its GPAi mean of 2.18; and b. The Lc-Hi group GPAC mean of 2.41 is lower than its GPAi mean of 3.06. Thus, one would be led to accept all the hypotheses. However, statistical analysis, specifically tests of significance in Table 3, yields a somewhat modified, although agreeable interpretation.

All four F-ratios in Table 1 achieved statistical significance at the .05 level or better; t-tests for individual comparisons are, therefore, permissible according to Ferguson (1959). These significant F-ratios show that there are significant differences between the groups and that t-tests should bring out some significant differences.

The ACT composite score column in Table 1 shows significant differences between the group \bar{X} s on the ACT composite scores. For this reason, covariance analysis was carried out in an attempt to control for differential aptitude. The results of this analysis are presented in Table 2, which contains the adjusted means for the intergroup comparisons of GPAC, GPAi, and GPAT.

Covariance analysis did not significantly change the group means. The adjusted means in Table 2 differ very little from the

Table 1. Summary statistics for four achievement groups, and group comparisons on three types of grade-point averages (unadjusted means)

Achievement Groups	Variables										
	Unadjusted Group Means						ACT Composite Scores	CPI		Group Ns	
	Conforming GPA		Independent GPA		Total GPA			Ac Range	Ai Range		
	\bar{X}	SD	\bar{X}	SD	\bar{X}	SD	\bar{X}	SD			
Hc-Hi	2.88	.67	3.01	.80	2.89	.57	22.12	1.56	29-35	22-29	24
Hc-Li	2.53	.58	2.18	.63	2.64	.65	17.66	1.97	29-35	4-16	13
Lc-Hi	2.41	.75	3.06	.68	2.64	.53	22.75	1.16	11-21	22-29	13
Lc-Li	2.26	.64	2.40	.73	2.37	.51	19.60	2.37	11-21	4-16	24
	3.38*		6.12**		2.80*						

p < .05*
p < .01**

Table 2. Group comparisons on three types of grade-point averages (adjusted means)

Achievement Groups	Variables					
	Conforming GPA		Independent GPA		Total GPA	
	\bar{X}	SD	\bar{X}	SD	\bar{X}	SD
Hc-Hi	2.84	.67	2.97	.80	2.85	.57
Hc-Li	2.63	.58	2.27	.63	2.55	.65
Lc-Hi	2.35	.75	3.01	.68	2.59	.53
Lc-Li	2.30	.64	2.43	.73	2.40	.51

unadjusted means in Table 1. All of the patterns and directions found in Table 1 are present in Table 2. Slight decreases in differences between GPAc \bar{X} s and GPAi \bar{X} s were realized.

Table 3 yields the most significant findings of this study. Of the thirteen t-test comparisons in Table 3 involving the ten specified hypotheses, eight reached statistical significance and the other five were in the hypothesized direction, although not significant.

For over-all GPA, the Hc-Hi group was significantly higher than the Lc-Li group, but not significantly higher than the Hc-Li or the Lc-Hi groups. For conforming GPA, the Hc-Hi group was significantly higher than the Lc-Hi group; the Hc-Li group was not significantly higher than the Lc-Li group; and the Hc-Li

Table 3. Intergroup and intragroup comparisons

Grade-Point Averages	All Courses		
	\bar{X}	SD	t
Total			
Hc-Hi vs.	2.85	.57	
Hc-Li	2.55	.65	1.35
Lc-Hi	2.59	.53	1.26
Lc-Li	2.40	.51	3.34**
Lc-Li vs.	2.40	.51	
Hc-Li	2.55	.65	.93
Lc-Hi	2.59	.53	2.41*
Conforming			
Hc-Hi vs.	2.84	.67	
Lc-Hi	2.35	.75	2.61*
Hc-Li vs.	2.63	.58	
Lc-Li	2.30	.64	1.83
Hc-Li vs.	2.63	.58	
Lc-Hi	2.35	.75	1.59
Independent			
Hc-Hi vs.	2.97	.80	
Hc-Li	2.27	.63	3.48**
Lc-Hi vs.	3.01	.68	
Lc-Li	2.43	.73	2.74**
Lc-Hi vs.	3.01	.68	
Hc-Li	2.27	.63	3.01**
Intragroup			
in Hc-Li			
GPAC vs.	2.63	.58	
GPAI	2.27	.63	2.21*
in Lc-Hi			
GPAC vs.	2.35	.75	
GPAI	3.01	.68	4.07**

p < .05*

p < .01**

group was not significantly higher than the Lc-Hi group. For independent GPA, the Hc-Hi group was significantly higher than the Hc-Li group; the Lc-Hi group was significantly higher than the Lc-Li group; and the Lc-Hi group was significantly higher than the Hc-Li group.

Concerning the intragroup comparisons in Table 3, the Hc-Li group had a significantly higher mean GPAC than mean GPAi, and the Lc-Hi group had a significantly higher mean GPAi than mean GPAC.

Table 4 gives information ancillary to the purpose of this study but, none the less, somewhat interesting in and of itself. Pearson product-moment correlations revealed that the covariate used in this study, ACT composite scores, is moderately related to achievement in the three achievement situations. The correlation between GPAT and ACT composite scores was .48. The correlation between GPAC and ACT composite scores was .38. The correlation between GPAi and ACT composite scores was .31.

Table 4. Pearson product-moment correlations between the ACT and the three types of grade-point averages

	Correlations with ACT composite scores
Total GPA	.48
GPAC	.38
GPAi	.31

DISCUSSION

This study found that students who are relatively higher in conformance motivation, as measured by the CPI Ac scale, do better in courses rewarding conforming behavior; and, conversely, students who score relatively higher in independence motivation, as measured by the CPI Ai scale, do better in courses rewarding independent behavior. It was also found that students who score high on both achievement scales do better as a whole than students who score high on one scale and low on the other or low on both scales. The student high in conformance and independence motivation will, other factors being favorable, most probably do well in any academic environment. However, for the student high in conformance and low in independence motivation and the student low in conformance and high in independence motivation, there is a distinct and understandable interaction between achievement and the demands of the academic environment.

Of the ten hypotheses posed in this study, six were statistically confirmed and the other four, although not statistically confirmed, were not disconfirmed. Both the hypotheses concerning total GPA were not statistically confirmed, although the differences between GPAs were in the hypothesized direction. Of the three hypotheses concerning conforming GPA, only one hypothesis was confirmed statistically; however, both the other hypotheses had differences between

GPA's that were in their respective hypothesized directions. All three hypotheses concerning independent GPA were confirmed statistically, and also both hypotheses concerning the intergroup comparisons were confirmed statistically.

The relative confirmations of these hypotheses seem to indicate a hierarchy of predictive strengths. The intragroup predictive hypotheses seemed to have the most predictive power in terms of predicting academic achievement. The independent GPA hypotheses are a close second with relatively strong predictive validity. The conforming GPA hypotheses are much weaker, and the total GPA hypotheses are the weakest predictions, although still better than chance.

The results of this study parallel Domino's findings. The three types of achievement group means are very similar to those found in Domino's study. Domino realized a larger spread of GPA's across his achievement groups, as shown by his larger F-ratios of 6.77, 16.40, and 9.98 as compared to the respective F-ratios in this study of 3.38, 6.12, and 2.80. However, this study realized better intragroup differential predictions, as shown by the larger differences between GPAC and GPAi for the Hc-Li group and the Lc-Hi group. Domino obtained stronger intergroup differences than were found in this study, as shown by the larger t-test comparisons. In sum, even though some of the t-tests in this study were not as significant as Domino's, all the comparisons were in the predicted directions. Therefore, this study adds considerably to the validity and generality of Domino's original findings.

It is important to note that the Ss in this study were average college sophomores, as indicated by a mean GPAT of 2.59 across all four groups and a mean ACT composite score of 20.60 across all four groups. This mean ACT composite score is slightly above the average mean ACT composite score of 19.80 for all students at U.S.U., as reported by the ACT Standard Research Service Report (1968).

Several notable weaknesses are present in this study. The process of selecting four achievement groups and the restrictions imposed therein negate any possibility of a perfectly random sample. Also, use of sophomores restricted the range of possible grades obtained in the first year of college, since failing and/or marginal students would have been suspended. The lack of validity data on the course description inventory constitutes a third weakness. However, none of these weaknesses appreciably reduce the significance of these findings.

It should be acknowledged that the Ss in the study were very cooperative and showed a great deal of interest in the results of the personality inventory (CPI).

The standard deviations on the achievement groups in this study were somewhat larger than those obtained by Domino in his study. This finding is reflective of the heterogeneous sample used in this study.

In commenting on the results of this study, these findings substantiate earlier findings by Domino in such a way as to extend the validity of the phenomenon in general. Differential prediction of academic success in specific behavioral settings seems possible

with both college sophomores and juniors. However, these predictions may not be possible with younger students. Wessell and Flaherty (1964) report that scores on the Ac and Ai scales change significantly after one year of college. Therefore, caution is advised in applying these findings to younger students, specifically high school students.

SUMMARY

The present study was an attempt to relate the personality measures of conforming and independence motivation to scholastic achievement in settings rewarding conforming behavior and in settings rewarding independent behavior, in order to test the general hypothesis that the Ac and Ai scales of the CPI show differential predictive patterns. This study was successful in meeting this avowed purpose. It was found that the CPI Ac and Ai scales do provide a basis for differentially predicting the scholastic achievement of students in settings rewarding dependent and/or independent behavior. As such, this study was a successful systematic replication of Domino's original study.

From this study of 204 college sophomores, it was shown that students who score relatively higher in independence motivation achieve better in courses demanding independent behavior, and that students scoring relatively higher in conformance motivation achieve better in courses demanding conformity. It was found that students who score high in conformity and independence motivation do better academically than students scoring high on one scale and low on the other or low on both scales. Independence motivation was found to have the strongest effect upon scholastic achievement.

By confirming the differential predictive validity of the CPI Ac and Ai scales, this study adds considerable strength to

Domino's findings. Thus, the validity, reliability, and generality of Domino's findings have been increased.

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APPENDIX

COURSE DESCRIPTION INVENTORY

NAME _____
 SEX _____
 CLASS RANK _____
 MAJOR _____

Part I

Please list 3 courses you have taken at USU which were characterized by a majority (4 or more) of the following:

- (a) identical assigned readings for all class members
- (b) students given clearly defined assignments
- (c) grade depended upon attendance and/or checks on homework assignments along with exams
- (d) what you studied was clearly defined by the instructor and was the same for all students
- (e) single correct solutions to problems
- (f) objective tests
- (g) much class structure or clearly defined objectives and goals
- (h) strict adherence to school regulations

	<u>Course Title</u>	<u>Dept. & No.</u>
1.	_____	_____
2.	_____	_____
3.	_____	_____

Part II

Please list 3 courses you have taken at USU which were characterized by a majority (4 or more) of the following:

- (a) suggested readings or assigned readings selected according to student interests in subject area
- (b) extent of student work depended on own initiative
- (c) little concern for attendance
- (d) planned and carried out own project
- (e) no single correct solution to problems and students were encouraged to propose as many alternative solutions as possible
- (f) essay tests
- (g) required self-expression or creative endeavor
- (h) little class structure

	<u>Course Title</u>	<u>Dept. & No.</u>
1.	_____	_____
2.	_____	_____
3.	_____	_____

INDIVIDUAL DATA

Group A (Hc-Hi)

Subject	GPAc	GPAi	GPA+	ACT Composite
1	3.61	3.61	3.39	22
2	2.69	3.00	2.36	27
3	3.00	3.00	3.04	20
4	3.00	3.75	3.30	23
5	3.38	4.00	3.80	24
6	3.00	3.30	2.60	17
7	2.00	1.62	2.19	18
8	3.50	4.00	3.74	24
9	2.00	3.62	2.55	24
10	2.00	2.00	2.13	23
11	1.66	2.36	2.42	12
12	2.35	2.66	2.47	17
13	2.38	1.50	2.06	24
14	3.00	3.66	3.15	23
15	3.11	4.00	2.91	20
16	3.23	3.25	3.23	26
17	4.00	3.72	3.45	28
18	4.00	3.72	3.41	27
19	3.66	3.42	2.03	23
20	2.50	1.50	3.11	21
21	3.61	3.00	3.32	21
22	3.00	2.90	2.80	22
23	2.00	2.50	3.10	21
24	3.64	3.00	2.89	23

Group B (Hi-Li)

1	2.23	2.13	3.17	22
2	1.81	2.33	2.31	20
3	2.07	2.54	2.42	19
4	3.33	3.00	3.66	16
5	3.33	2.50	3.10	18
6	2.87	2.25	2.13	20
7	3.00	2.00	2.61	18
8	2.91	2.27	3.62	16
9	2.00	2.50	2.37	15
10	2.50	3.00	3.01	21
11	1.50	1.50	2.00	13
12	2.75	.66	1.67	17
13	2.61	1.66	2.31	12

Group C (Lc-Hi)

Subject	GPAc	GPAi	GPA+	ACT Composite
1	2.25	3.00	2.74	19
2	2.83	2.40	2.42	22
3	3.66	4.00	2.60	23
4	2.23	3.00	3.02	22
5	1.61	3.66	2.19	24
6	2.00	2.72	2.56	25
7	3.07	4.00	3.31	26
8	2.15	3.14	2.50	16
9	1.66	2.66	2.47	28
10	2.33	2.73	2.50	21
11	1.66	2.00	1.97	18
12	1.81	2.54	3.06	27
13	4.00	4.00	2.08	25

Group D (Lc-Li)

1	2.00	2.00	2.43	26
2	1.33	1.55	1.37	18
3	2.33	3.00	2.24	13
4	1.84	1.66	1.86	19
5	2.07	2.00	2.30	18
6	1.55	3.00	2.48	26
7	2.00	2.72	2.12	17
8	2.33	2.46	2.52	14
9	2.38	3.00	2.61	20
10	3.00	2.00	2.33	19
11	3.00	2.00	2.86	25
12	2.41	2.55	2.69	20
13	1.23	1.00	2.02	18
14	4.00	4.00	4.00	22
15	2.33	3.53	3.13	18
16	3.11	2.15	2.24	23
17	2.61	3.50	2.92	21
18	2.33	3.50	2.42	20
19	2.26	2.50	2.18	17
20	2.71	2.45	2.35	16
21	1.66	1.53	2.07	16
22	2.00	1.61	1.98	22
23	2.00	2.00	1.84	16
24	2.00	2.00	1.91	21

