AN INVESTIGATION OF A COLLEGE OCCUPATIONAL ENVIRONMENT: A UTILIZATION OF HOLLAND'S THEORY

BY

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AN INVESTIGATION OF A COLLEGE OCCUPATIONAL ENVIRONMENT: A UTILIZATION OF HOLLAND'S THEORY

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In Partial Fulfillment

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Master of Arts

in Education

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by

Robert Richard Stoker

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TABLE OF CONTENTS

	Page
LIST OF TABLES	v
LIST OF FIGURES	iv
Chapter	
1. INTRODUCTION TO THE PROBLEM	1
HYPOTHESES OF THE STUDY	2
REVIEW OF THE SIX PERSONALITY TYPES	2
2. REVIEW OF RELATED LITERATURE	7
3. METHOD	15
Subjects	15
DESCRIPTION OF THE INSTRUMENT	18
PROCEDURES FOR ADMINISTERING THE INSTRUMENT.	21
4. RESULTS OF THE STUDY	23
OBJECTIVE RESULTS	24
SUBJECTIVE OBSERVATIONS AND EVALUATION	30
5. SUMMARY AND CONCLUSIONS	33
NEED FOR FURTHER RESEARCH	34
REFERENCES	36
APPENDIX A	40

To the Graduate Council:

I am submitting herewith a Research Paper written by Robert Richard Stoker entitled "An Investigation Of A College Occupational Environment: A Utilization of Holland's Theory." I recommend that it be accepted in partial fulfillment of the requirements for the degree of Master of Arts, with a major in Education.

Harland E. Blair
Major Professor

Accepted for the Council:

Wayne L. Stoner
Dean of the Graduate School

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LIST OF TABLES

Table		Page
1.	Composition of Austin Peay Military Science Program by Age, Class, Sex.....	17
2.	Norms for College Men in ROTC at Austin Peay...	24
3.	Norms for College Women in ROTC at Austin Peay.	26
4.	Percentages of Questionnaire Background Data For Men.....	28
5.	Percentages of Questionnaire Background Data For Women.....	29

LIST OF FIGURES

Figure Page

1. Comparisons on Holland's Hexagon Concerning Differences Between Pairs of Points..... 12

Chapter 1

INTRODUCTION TO THE PROBLEM

Holland's theory of vocational choice suggests that individuals tend to choose actual occupational environments consistent with their personal orientations. Existing evidence does in fact indicate that individuals tend to choose college major enviornments consistent with their personal orientations (Holland, 1962, 1968: Osipon, Ashby, and Wall, 1966). However, few studies have explored Holland's assertions in investigating what environments harbor specific characteristics within a portion of college. Since very few college environments guarantee an occupation upon graduation, the Military Service Programs (R.O.T.C.) offer the unique opportunity to study a college environment that encourages a vocational decision in terms of a complete career. Investigation of this college environment, utilizing Holland's Vocational Preference Inventory, will assess some of the characteristics of the Military Service Programs at Austin Peay State University. Comparisons with past normative college VPI scales will indicate any significant changes within the particular environment being investigated that set it aside from other environments.

HYPOTHESES OF THE STUDY

Supported by the findings in the research of students in the Military Science Program at Austin Peay a null hypothesis was formulated and tested by statistical analysis. Findings that there is no difference between the national distributions of college students taking the Vocational Preference Inventory and students tested within the Military Science Program at Austin Peay State University.

One limitation of the study was that no mean of the American College Testing scores for the tested population was computed and it was assumed that a complete sample of the majority of students within the Military Science Program would eliminate this bias.

REVIEW OF THE SIX PERSONALITY TYPES

Holland (1966b) presented six personality types and six vocational environments which corresponded to these same categories. In addition, Holland (1966a) related these six types to college majors. In order to better understand the interaction between a personality type and the corresponding environments a theoretical review of the differences among the six types is helpful. Further, since five other scales associated with the Vocational Preference Inventory (VPI) are concerned with various degrees of interpersonal relationships and skills these categories were reviewed also in terms of the six environments.

Some of the occupations associated with the Realistic personality type were: forest ranger, carpenter, tool designer, machinist, aviator, and army officer. Compared with an intellectual type, a Realistic person is "more practical (the effect of facts within an environment), stable, masculine, and conventional (more concerned about success, status, and leadership) than the Intellectual person" (p.21). The Realistic person is also "less scholarly, original, sociable, insightful about interpersonal relations" than the Intellectual person (p.22). The Realistic person is more "independent and self-confident than the Intellectual person (p.22)." The Realistic person compared to the Social and Enterprising person differed in terms of "social skills and interests (p.22)." In comparison with the Conventional person, the Realistic person was "less responsible and social and more impulsive, stable, masculine, submissive, and self-deprecatory (p.22)." Interpersonal relationships in a Realistic environment show "minimal social skills are demanded, and these are usually limited to receiving or giving explicit information and playing a masculine role (p.55)." Furthermore, this environment predominates in people who are "conventional, materialistic, and masculine (p.55)."

Jobs which are consistent with the Intellectual model were: physicist, astronomer, veterinarian, biologist, inventor and meteorologist. In relation to the hexagonal figure the Intellectual person was less "feminine, impulsive,

irresponsible, and unstable (p.24)." that the Artistic person. In relation to feelings and interactions in problem solving the Artistic person relied more heavily on these variables than did the Intellectual person. In comparison with the Social, Conventional, and Enterprising persons, the Intellectual person was "less sociable and conventional (p.25)." In regard to interpersonal relationships, the Intellectual environment demanded minimal social skills despite needed abilities to give and receive complicated written and oral instructions. Indications were that in processing information there is a smaller emphasis on the sensitivity of the needs and problems of others.

The Social model cites compatible occupations as: personnel counselor, judge, juvenile delinquent worker, public relations man, school principal and vocational counselor. The personality of the Social person was predisposed to well-defined social roles in which there was a movement toward other persons to attain goals. The Social person was characterized as "more feminine, introverted, helpful, intellectual, insightful, cooperative, friendly, responsible and less energetic, aggressive, dominant, sociable, adventurous, cynical and enthusiastic" in comparison with the Enterprising person (p.27). Additionally, the Social person when compared with the Conventional person was less "self-controlled, hard-headed, masculine, and submissive (p.27)" but more "dominant and nurturant (p.30)." Compared with the Artistic person, a Social person was more "sociable, dependent, and conventional

(p.27)." The Social environment required a "high degree of social responsibility and skill (p.57)."

Jobs which are consistent with the Conventional model were: bookkeeper, banker, statistician, tax expert, budget reviewer, and insurance clerk. The Conventional person identified with and conformed to cultural norms and values. Holland theorized that the Conventional person was most closely related to the Enterprising and the Social person. In comparison with the Enterprising person, the Conventional person was "less sociable, aggressive, dominant, original, enthusiastic, impulsive, self-confident, and adventurous (p.30)" and more "responsible, dependent, and conservative (p.30)." In regard to interpersonal relationships there was a minimal need for "interpersonal skills, because the majority of time was spent working with things and materials (p.58)." This resulted in a superficial orientation toward other people with minimum personal involvement and feeling. A person competing in this environment had to cope with other Conventional types "characterized by their economic values, self-control, and passivity (p.58)."

The Enterprising person placed high regard for verbal, aggressive, persuasive methods in which he could display extroverted, self-confident attributes. Preferred occupations in this environment were: sales engineer, car salesman, real-estate salesman, politician, radio program director, and sports promoter. The Enterprising person competing in this environmental model would need well-developed interpersonal

skills. By perceiving the motives of others he could exert the control to lead and persuade them. This differs from the motive of forming relationships in the Social environment where persons were oriented toward close, emotional relationships. In comparison with the Artistic person, the Enterprising person was less "introverted, feminine, self-deprecating, creative, unstable, independent, unconventional, and unsociable (p.33)." Competition with other Enterprising persons provided a basic orientation for interplay within the environment.

The adjustment within the Artistic environment requires the use of "feelings, emotions, intuitions, and imagination to create art forms or products (p.33)." The Artistic person preferred the following occupations: dramatic coach, composer, newspaper reporter, sculptor, poet, humorist, and furniture designer. The Artistic person utilized a median of words, rhythm, color, and size to express the emotion within him. These skills were stimulated by the world around him. In regard to the degree of interpersonal skills required, the Artistic environment covered a wide variety of settings. These settings included those occupations which required a large degree of interpersonal skills such as drama to those necessitating less interpersonal skill such as painting.

Chapter 2

REVIEW OF RELATED LITERATURE

Behavior is often considered a function of the interaction between an individual and his environment. Because of this belief Lewin (1936) proposed that behavior resulted when two interdependent vectors - person and environment - operated in a dynamic field of "life space." Again Murry (1938) proposed a dual concept of personal needs and environmental press. Here a learning environment was seen as a complex of environmental press which, in turn, related to a corresponding complex of personal needs. Thistlewaite (1959) supported this idea when he noted that variables are present in college environments that act as a college press which encourages the members to select some environments and reject others. This leads to specialization of function in American colleges. Empirical descriptions of this approach have culminated in viewing the environment as a set of potential stimuli to students (Astin, 1968). Still another study in which the need-press theory was assumed was formulated by Pace (1963). Research from this study evolved into the College and University Environmental Scales which used five scales to assess perceived college atmospheres.

In another approach to the study of environments (Linton, 1945) supplied the notion that a major portion of

environmental forces are transmitted through other people. Perhaps a more realistic approach to the interaction of the individual and his environment has been proposed by Holland's theory of vocational choice. (Holland, 1966) hypothesized that one can characterize people by their resemblance to six personality types: realistic, investigative, artistic, social, enterprising, and conventional. According to the theory, the six styles represented the ways in our society which people solved problems and interacted with their environment. Typically, environments are dominated by a "given type of personality (Holland, 1973)." This assumption is founded on the corollary that like environments induce the congregation of like personality types. In other words, people have a tendency to surround themselves with people who are more like themselves rather than less like themselves. This degree of similarity is based upon congruence with respect to interests, competencies, and outlook on the world. People search for environments where they can thrive by exercising their particular skills, abilities, attitudes, and values in an agreeable role. Furthermore, as Holland's theory explicitly states predictions can be forecasted when certain personality types are paired with certain environments.

The Environmental Assessment Technique (EAT) was an outgrowth of Holland's (1966) theory and combined research with (Astin, Holland, 1961). Here the college environment or "press" can be investigated by assessing the population

of any department or group. This technique required the taking of a census of vocational preferences of a particular population, categorization of the population as belonging to one of the six environments in a six variable profile and then conversion of the absolute number of each type to a percentage profile. Research in this study characterized complete colleges or universities as one of the environmental types. Later, Astin (1965) concluded that a person's career plans appeared to be more stabilized when one "attended a college where there was a relatively high proportion of other students planning similar careers. Those environments dominated by Realistic types would reinforce realistic interests and career plans. The suggestion was that "each environment bred its own kind of personality".

Richards, Seligman, and Jones (1970) enlarged this viewpoint by suggesting that although quality of the student body is an important factor in the climate at a given college related profile scores of faculty and curriculum were significant in determining the number and type of degrees awarded in an institution. The implication was that the knowledge of a college environment profiled in terms of faculty and curriculum was an important factor for promoting change within the institution. Just changing entrance requirements to obtain a specific type of student did not change the college environment.

Another significant technique in assessing different environments was suggested by Cole, Whitney, and Holland

(1971). Evidence was generated that vocational environments could be pictorally understood in terms of consistency, differentiation, and congruence by utilizing Holland's hexagonal model. In this study an analysis of spatial configuration in a "best-fitting" plane was introduced. The spatial configuration demonstrated the technique of comparing the six personality types and environments in terms of similarity or dissimilarity. Each personality type was presented by one point on the hexagonal figure. (See fig. 1) The assumption was that the distance along a straight line between any two points on the hexagon indicated the relative similarity or dissimilarity of those types or environments. Briefly, the smaller the distance between any two types, the greater their similarity or psychological resemblance. The greater the distance between two types the greater the dissimilarity. Realistic and Investigative types being close together resemble one another while Investigating and Enterprising types being farther away become very different. The points of the hexagon were listed in the following order: Conventional, Realistic, Intellectual, Artistic, Social, Enterprising and back to Conventional.

The advent of the hexagon figure has provided the theory with an abstract model for providing data in three areas. First, personality patterns as scored on the VPI determined personality consistency. Second, the model provided a prediction of the consistency of an environment. Lastly, the figure provided a pictorial view of the degree

of congruence between a person and his environment. Adjacent types (Realistic-Investigative, Investigative-Artistic, Artistic-Social, Social-Enterprising, and Enterprising-Conventional) were most consistent. Opposite types (Conventional-Artistic, Realistic-Social, and Investigative-Enterprising) were least consistent. Combinations of every other type indicated an intermediate level of consistency. (See fig. 1).

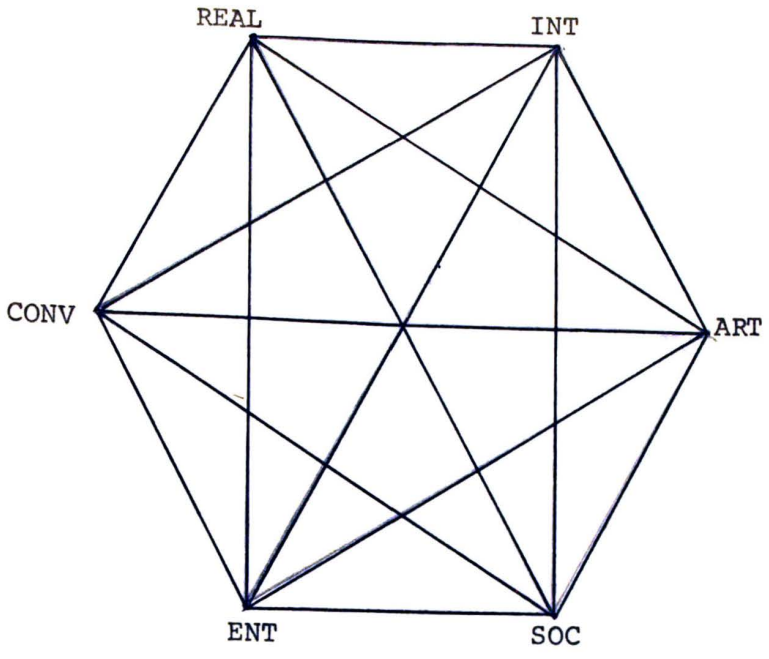

Figure 1

Comparisons on Holland's Hexagon Concerning Differences Between Pairs of Points

	Most Consistent 6 Adjacent Pairs	Intermediate Consist. 6 Alternate Pairs	6 Alternate Pairs	Least Consistent 3 Opposite Pairs
*	CR	CI	CI	CA
	RI	RA	RA	RS
	IA	IS	IS	IE
	AS	AE	AE	
	SE	SC	SC	
	EC	ER	ER	

*CR- Distance between Conventional and Realistic; etc.

Other studies have investigated and extended the application of Holland's theory to women. Harvey and Winfield (1973) were concerned with test validity in assessing women in terms of the six personality types. Findings confirmed Holland's Intellectual, Conventional, and Enterprising types as "valid and meaningful descriptions of women's personality and vocational interests". However, questions were raised as to the conceptual meaning of the Realistic, Social, and Artistic types. It was suggested that in comparison of the Edward's Personal Preference Scales (EPPS) there were no statistically significant correlations with Holland's Realistic type but a combination of Holland's Realistic and Investigative type might prove more fruitful. Insignificant correlations between the personality types of Holland and four other criterion tests suggested there were at least two "Social" types. "Social in the sense of social science research or teaching and Social in the sense of service to others." Additionally, women in this study "did not view the Strong Vocational Interest Blank (SVIB) scales of ARTIST, AUTHOR, and MUSIC TEACHER as individually expressive in Holland's terms." and seemed to cloud this personality orientation. Hanson and Lamb (1974) confirmed the six interest dimensions as applicable to women whose personality type was consistent to their environments while Frank and Kirk (1974) suggested the need for further investigation on the study of women's interests to discover if there had been significant change with Holland schema. The mixed findings

indicated the role of women was changing.

In more recent studies Grandy and Stahmann (1974) had indicated that personality types are shaped by the environmental atmosphere created by the relationship between parents and their offspring. In regard to recent criticisms concerning biased population samples Crabtree and Hales (1974) extended Holland's theory to working rural populations.

The validity of utilizing the EAT measures has been supported by the linking of a great range of objective, environmental, and personal characteristics to groups of occupations by the model environments. Significant and consistent relationships have been found through investigation of these specific environments. In an interesting study that extended Holland's theory of occupational environments Viernstein (1972) applied Bayesian statistics to convert the Dictionary of Occupational Titles (DOT) into related environmental orientations. This study was instrumental in the development of the Self-Directed Search (SDS). This instrument was developed to give the individual an opportunity to study and search for occupational environments which were consistent with his interests and personal characteristics.

Chapter 3

METHOD

Subjects

The VPI and questionnaire were administered to the students enrolled in the Military Science I, II, III, and IV, R.O.T.C., at Austin Peay State University, who were present during the period April 7-10, 1975. The inventory and questionnaire were administered prior to scheduled classes at the student lounge in the National Guard Armory. It was felt that the VPI, which was composed of occupational titles, and the scale scores, which were interpreted in terms of occupational interests, would prove interesting for all the students and provide an indication of the environment of the military science program. The questionnaire would provide descriptive data of the environment from student self-ratings.

Of the 108 students enrolled in the four classes of the program, 89 persons completed the VPI while 96 completed the questionnaire during the above time period. The data generated accounts for 85% of the student population in the program. Typically, the students enrolled in the program were freshmen (53.70%), male (65.74%), and 19 years old (33.33%). The range of ages for the students was from 17 to 28 years, with 90% of the students below 22 years of age

and 98% below 27. The Military Science Program (R.O.T.C.) was designed to provide the Army with a continual source of commissioned officers. Advancement to the MS III and MS IV classes was determined by evaluation of the faculty and student qualifications. Students in this category accounted for 28.71% of the sample. A more complete listing of the age, classification, and sex of the students is given in table 1.

Table 1

Composition of Military Science Program by Age, Class, and Sex

Age	Number of Students	Percent	Cumulative Percent
17	3	2.77	2.77
18	15	13.89	16.66
19	36	33.33	49.99
20	26	24.07	74.06
21	13	12.04	86.10
22	5	4.63	90.73
23	5	4.63	95.36
24	1	.93	96.29
25	1	.93	97.22
26	0	0.00	97.22
27	2	1.85	99.07
28	1	.93	100.00
Total	108		

Class	Number of Students	Percent	Cumulative Percent
MS I Fresh.	58	53.70	53.70
MS II Soph.	19	17.59	71.29
MS III Jr.	19	17.59	88.88
MS IV Sr.	12	11.12	100.00
Total	108		
Male	71	65.74	
Female	37	34.26	

DESCRIPTION OF THE INSTRUMENTS

VPI

The Vocational Preference Inventory (VPI) (Holland, 1970) was an interest inventory which doubled for a personality inventory. A list of 160 occupational titles were given which the person responded by marking either "Yes" or "No", indicating his interest or lack of interest for each occupation. The person tested was also allowed not to respond to an occupation if he was undecided about his interest in it. The items were scored to produce eleven scales. These scales included the six personality types and five additional factors of Self-Control, Masculinity, Status, Infrequency, and Acquiescence. The first nine scalse had 14 items each; Infrequency had 20; and Acquiescence, 30.

Interpretations of the Scales consisted of appropriate adjectives describing high scores on a particular variable. Low scores were assumed to be described by an opposite adjective. High scorers on the Realistic scale indicated high mechanical interests and low social interests. They were predisposed to traits of "realism, practicality, masculinity, and conventionality".

High scorers on the Social scale were oriented toward social roles such as teaching and therapy. Traits predominant in this orientation were "sociability, feminity, passivity, problem solving by means of feeling instead of thinking, and dependency". A low score on this scale was

intimated as related to depression.

High scores on the Conventional scale had clerical interests and an anti-artistic, practical orientation with a preference for structured verbal and numbeical activities. Predominant characteristics were subordination, inflexibility in the face of new situations, and persistence. Values and attitudes implicit in this scale were strongly identified with "power, externals, money, and status".

High scores of the Enterprising scale indicated a preference for social interaction but disliked well-defined language or work situations. The scale suggested that while high scores indicated enthusiasm a low score on the first six variables denoted depression for that scale. The suggestion was that the Enterprising scale was also a activity scale. This scale was concerned with strong needs to achieve and to secure high status despite the risk involved. Enterprising types saw themselves as strong, masculine leaders with good verbal and persuasive skills. The composite of traits included "dominance, risk taking, sociability, and enthusiasm".

High scorers on the Artistic scale were predisposed to creative interests. They were characterized as immature, anxious, sensitive, feminine, original, imaginative, complex, unconventional, and introverted.

Scores on the Self-Control scale interpreted from a high reference point indicated over-control while low scores suggested impulsive behavior characterized by "acting out."

High scores also suggested hypochondriatic anxiety characterized by "fear of physically dangerous activities, repression, denial, and passivity".

High scorers on the Masculinity scale picked masculine occupational roles and were described as shrewd, unsociable, and competitive.

High scores on the Status scale were related to a high interest for prestige occupations. Trait composites stressed the following characteristics: sociable, dependent, enthusiastic, and expressive. This mode suggested a concern with prestige and power as well as self-esteem.

While high prestige associated with high scores on the Status scale a high score on the Infrequency scale was associated with a preference for unpopular, low-status occupations. For this reason Infrequency doubled as a social desirability scale. High scores indicated "atypical vocational preferences" implying a lack of abilities or talents, low aspiration levels, self-deprecating attitudes and periods of unemployment.

High scores on the Acquiescence scale indicated interest in many occupations which were associated with self-confidence. Very high scores were also associated with "poor judgment and lack of personal integration". Since the scoring key required only "Yes" responses to the first thirty occupations this scale could be related to acceptance or rejection of the overall culture by detection of extreme response bias.

Questionnaire

In addition to the VPI a questionnaire was also given to provide some background data on the subjects within the Military Science Program. (See appendix A) Included in the instrument were questions concerning career plans relating to vocational stability, self-ratings on consistency of the environment, characteristic orientations for enrollment in the program, adjustment, and self-concept. This descriptive data was generated in conjunction with the VPI to provide some supporting material for the study. This data will give an insight of the student's perception of the Military Science Program environment.

PROCEDURES FOR ADMINISTRATION

The data produced from the VPI and the questionnaire were assembled in the following manner. Information from the questionnaire was utilized in describing the particular environment as it appeared to the student. The information from the VPI was presented in a norm table for men and women from the Military Science Program. The results were recorded on Table 2 and Table 3. The 11 factors of the VPI were tested for statistical significance using the Kolmogrov-Smirnov (K-S) one-sample test. The procedure becomes a criterion of goodness of fit. In short, the procedure is concerned with the degree of agreement between the distribution of a set of sample scores and some specified theoretical distribution. By comparison of these scores a determination is made

whether two samples of observations arose by random sampling from the same population.

Chapter 4

RESULTS OF THE STUDY

OBJECTIVE RESULTS

TABLE 2

NORMS FOR COLLEGE MEN IN ROTC AT AUSTIN PEAY

(N=58)

Raw Score	REAL[c]	INT[c]	SOC[c]	CONV[c]	ENT[c]	ART[c]	CO[c]	MF[c]	ST[c]	INF[b]	ACT[a]	Raw Score
	.177	.177	.177	.177	.177	.177	.177	.177	.177	.177	.177	
D =	.083	.210*	.079	.129	.087	.198*	.118	.116	.054	.050	.041	
24											1.000	24
23											.966	23
22											.966	22
21											.931	21
20											.914	20
19											.897	19
18											.880	18
17											.862	17
16											.810	16
15											.776	15
14	1.000	1.000		1.000	1.000	1.000	1.000				.741	14
13	.948	.982	1.000	.982	.966	.931	.966	1.000	1.000		.620	13
12	.931	.914	.966	.931	.948	.931	.948	.948	.931		.569	12
11	.914	.862	.931	.897	.914	.931	.862	.793	.844	1.000	.500	11

TABLE 2 (continued)

Raw Score	REAL[c]	INT[c]	SOC[c]	CONV[c]	ENT[c]	ART[c]	CO[c]	MF[c]	ST[c]	INF[b]	ACT[a]	Raw Score
10	.844	.810	.897	.862	.914	.931	.759	.672	.724	.983	.414	10
9	.827	.776	.862	.810	.879	.931	.689	.517	.620	.931	.328	9
8	.827	.759	.776	.776	.793	.914	.551	.224	.534	.880	.224	8
7	.793	.690	.672	.741	.741	.845	.517	.103	.362	.776	.138	7
6	.707	.672	.655	.690	.621	.828	.466	.034	.259	.638	.103	6
5	.672	.638	.603	.621	.517	.810	.362	.017	.138	.500	.068	5
4	.586	.586	.517	.569	.413	.793	.258	.000	.052	.397	.051	4
3	.517	.569	.379	.517	.362	.724	.172	.000	.052	.276	.051	3
2	.413	.500	.241	.400	.224	.621	.121	.000	.052	.138	.000	2
1	.276	.328	.190	.328	.190	.517	.069	.000	.017	.068	.000	1
0	.051	.207	.121	.016	.121	.328	.017	.000	.000	.017	.000	0
Mean	4.69	4.71	5.19	4.72	5.40	2.97	7.24	9.70	8.41	5.40	12.18	
SD	4.03	4.57	3.70	4.22	3.70	3.88	3.66	1.73	2.83	2.59	5.01	

[a]Maximum Possible Score = 30 [b]Maximum Score = 20 [c]Maximum Score = 14

TABLE 3

NORMS FOR COLLEGE WOMEN IN ROTC AT AUSTIN PEAY

(N=31)

Raw Score	REAL[c]	INT[c]	SOC[c]	CONV[c]	ENT[c]	ART[c]	CO[c]	MF[c]	ST[c]	INF[b]	ACT[a]	Raw Score
	.244	.244	.244	.244	.244	.244	.244	.244	.244	.244	.244	
	D = .601*	.138	.194	.197	.101	.179	.123	.285*	.144	.150	.115	
24											1.00	24
23											.968	23
22											.968	22
21											.968	21
20											.968	20
19											.968	19
18											.968	18
17											.935	17
16											.871	16
15											.871	15
14		1.000	1.000		1.000	1.000	1.000			1.000	.742	14
13		.966	.935	1.000	.968	.935	.774		1.000	.968	.710	13
12		.966	.871	.968	.968	.935	.708		.903	.903	.645	12
11		.966	.806	.968	.935	.903	.613		.806	.903	.452	11

TABLE 3 (continued)

Raw Score	REAL[c]	INT[c]	SOC[c]	CONV[c]	ENT[c]	ART[c]	CO[c]	MF[c]	ST[c]	INF[b]	ACT[a]	Raw Score
10	1.000	.935	.645	.935	.903	.806	.484		.774	.839	.387	10
9	.967	.935	.613	.903	.870	.677	.419	1.000	.580	.774	.355	9
8	.935	.903	.548	.870	.870	.677	.355	.903	.387	.645	.258	8
7	.806	.903	.516	.806	.838	.677	.290	.806	.290	.484	.129	7
6	.612	.774	.484	.774	.741	.645	.225	.742	.097	.290	.129	6
5	.612	.742	.387	.613	.645	.581	.193	.452	.065	.226	.129	5
4	.548	.710	.290	.581	.580	.516	.193	.258	.032	.161	.065	4
3	.258	.548	.194	.548	.516	.452	.129	.065	.000	.129	.065	3
2	.129	.452	.065	.516	.419	.419	.096	.000	.000	.065	.065	2
1	.064	.355	.032	.451	.290	.258	.065	.000	.000	.000	.032	1
0	.032	.258	.032	.161	.161	.161	.000	.000	.000	.000	.000	0
Mean	5.03	3.71	7.58	3.90	4.29	5.35	9.45	5.77	9.06	7.61	11.35	
SD	6.11	3.69	8.10	3.70	3.76	4.57	4.13	1.69	2.30	3.02	4.68	

[a]Maximum Possible Score = 30 [b]Maximum Score = 20 [c]Maximum Score = 14

TABLE 4

QUESTIONNAIRE RESULTS FOR COLLEGE MEN IN ROTC AT AUSTIN PEAY

Raw Score	Career Choice	Comparisons With Others	Perceived Characteristic Orientation	Adjustment	Self-Concept
6	High	High	R 39.34%	High	High
5	A 37.70%	B 14.75%	C 3.28%	D 6.56%	E 32.79%
4	A 32.78%	B 50.82%	E 21.31%	D 34.43%	E 34.43%
3	24.59%	9.84%	S 16.39%	18.02%	26.23%
2	4.93%	21.31%	A 4.93%	34.43%	6.56%
1		3.28%	I 14.75%	6.56%	
	Low	Low		Low	Low

A. Viable Career Choice 70.48%

B. Consistency 65.57%

C. Perceived Environment RES

D. Perceived Adjustment Equally Balanced

E. Self-Concept 67.22% Rate Themselves Higher

TABLE 5

QUESTIONNAIRE RESULTS FOR COLLEGE WOMEN IN ROTC AT AUSTIN PEAY

Raw Score	Career Choice	Comparisons With Others	Perceived Characteristic Orientation	Adjustment	Self-Concept
6	High	High	C R 31.43%	High	High
5	A 34.29%	B 34.29%	C 5.71%	D 8.59%	E 8.57%
4	A 25.71%	B 31.43%	C E 25.71%	D 45.71%	E 42.86%
3	37.14%	14.29%	S 11.43%	17.14%	45.71%
2	2.86%	14.29%	A 5.71%	22.86%	2.86%
1	Low	5.70% Low	C I 20%	5.70%	Low

A. Viable Career Choice 60%

B. Consistency 65%

C. Perceived Environment REI

D. Perceived Adjustment 54.28%

E. Self-Concept 51.43% rate Themselves Higher

SUBJECTIVE OBSERVATIONS AND EVALUATION

The scores on the VPI were broken down by sex and entered on each of the eleven scales presented in Table 2 and Table 3. These presented the norms of the men and women tested during the course of the study. Mean and standard deviations were computed and a cumulative percentage distribution was assessed for each raw score. A level of significance at the .05 level was proposed by applying the formula

$$1.36\sqrt{\frac{N_1 + N_2}{N_1 N_2}}$$

(Guilford, Frutchter, 1973. Ch. 12). If the table value exceeded this figure that particular variable was significantly different from past national normative samples. The level for significance for the men was .177 and .244 for the women. Two variables, Investigative and Artistic, achieved significance on the low side of the scale for the men tested. It appeared there was a large cluster of scores (20.7% and 32.8%) relating to a raw score of 0 on both scales. This indicated that for a large portion taking the inventory rejected characteristics associated with those environments. These findings were significantly below those past National Normative Samples. Other variables, although not achieving statistical significance, clustered above the national distributions. These included Masculinity, Status, and

Conventional factors.

The norms associated with the women tested showed significance on two variables Realistic and Masculinity. One variable, Realistic, achieved significance at the .001 level. Other variables not achieving statistical significance, but clustered toward the low side of the scale included Social and Investigative factors. Variables clustered toward the high side of the scale included Conventional, Enterprising and Infrequency.

Data generated by the questionnaire administered to the men and women of the Military Science Program is presented in Table 4 and Table 5. Again, the purpose of this instrument was to provide an insight of the existing environment the members of this group perceived and to provide descriptive data for the VPI. When the results were tabulated 70.48% of the men and 60% of the women tested perceived the Military Science Program as a viable career choice. The perceived environment within the program appeared to indicate general consistency. 65% of the men and women saw themselves as more alike others rather than less alike others. This supports the assumption that students thought the program was comprised of similar types. Additionally, one interesting factor which emerged from the questionnaire data indicated the influence of the military family on the school environment. 42.64% of the tested men had a father or mother presently in, or retired from, the military. Of the women tested, 34.28% indicated that their

father or mother were presently in, or retired from, the military service. How great a force this factor exerted could not be measured during the study.

In terms of adjustment within the Military Science Program the results were fairly balanced for the men tested. 40.99% indicated they needed adjustment and an equal amount perceived that no adjustment was needed. 54.28% of the women tested demonstrated by their responses that they did need adjustment.

Both men and women tested demonstrated by their responses that their perceived self-concept was strong. 67.22% of the men tested agreed that they were doing better than an average job within the program. 51.43% of the women rated themselves as doing a better than average job.

Chapter 5

SUMMARY AND CONCLUSIONS

The investigation of the study appeared to confirm that there were significant differences between students tested from the Austin Peay Military Science Program and previous national distributions computed by John Holland. In the case of the men tested the statistical significance below the mean indicated a rejection of the characteristic traits of the Investigative and Artistic environments. This data gives support to rejection of a typical trait of the Investigative environment - a lack of leadership ability. This appears logical when one realizes that leadership ability is one of the most rewarded traits within the program. In terms of the Artistic environment the distributions indicated that the tested population of men tended to be less susceptible to personal, emotional, and imaginative influences while tending to be more susceptible to traits of practicality, masculinity, orderliness and conformance. The results of the table validate this position.

The significant differences of the women tested lead to more profound conclusions. Here the high significance level indicated that the women within the program were characterized by a dominance of viewing the world in simple, tangible, and traditional terms. Secondarily, their

environmental experiences would encourage more susceptibility to pragmatic, masculine and conventional influences. Again, the results of the table data seem to support this statement. Another related question centers on the changing role of women in different occupational environments. Statistical significance on the masculinity factor indicates that the traditional role of women toward entering fields of occupations which had traditionally attracted males is rapidly changing. The table results of the women's distributions gave evidence of this fact. While lower than the mean on Investigative, Social and Artistic factors they were higher than the mean on Conventional, Enterprising, and Infrequency scales. The results of this study require additional investigation of other environments to measure the extent to which traditional roles are changing. Within the Military Science Program the traditional role of women, in comparison to national distribution, has changed. This is not to indicate that women who have selected a new occupational orientation are less feminine but to suggest that women are exploring newer vocational roles that in the past were not considered.

NEED FOR FURTHER RESEARCH

1. Additional research is needed on predictive validity of Holland's constructs in regard to the changing role of women in occupational choices.

2. Related study is needed on the relationship of

family orientation to specific fields of work for men and women.

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APPENDIX A

QUESTIONNAIRE

NAME_____ MAJOR_____ STUDENT ID_____

FATHER'S OCCUPATION_____ AGE____ CLASS_____ SEX___

MOTHER'S OCCUPATION_____

IN CONSIDERING THE NEXT FIVE QUESTIONS SELECT THE ONE ANSWER WHICH BEST CHARACTERIZES YOUR FEELING. TRY TO BE AS HONEST AS YOUR PRESENT FEELING DICTATES.

1. WHAT IS YOUR PRIMARY EXPECTATION IN ATTENDING THE MILITARY SCIENCE PROGRAM AT AUSTIN PEAY STATE UNIVERSITY IN TERMS OF CAREER AND RETIREMENT?

( )	( )	( )	( )	( )
Definitely not	Probably not	Undecided	Probably yes	Definitely yes

2. WITHIN THE MILITARY SCIENCE PROGRAM AT AUSTIN PEAY HOW DO YOU SEE YOURSELF IN COMPARISON WITH OTHERS OF YOUR OWN SEX?

( )	( )	( )	( )	( )
Definitely not alike	Probably not alike	Undecided	Probably are alike	Most Alike

3. WITHIN THE MILITARY SCIENCE PROGRAM AT AUSTIN PEAY DO YOU SEE YOURSELF AS:

( )	( )	( )	( )	( )	( )
Curious	Imaginative	Helpful	Adventurous	Orderly	Practical

4. WITHIN THE MILITARY SCIENCE PROGRAM AT AUSTIN PEAY DO YOU CHARACTERIZE YOURSELF AS NEEDING ADJUSTMENT?

( )	( )	( )	( )	( )
Definitely not	Probably not	Undecided	Probably yes	Definitely yes

5. WITHIN THE MILITARY SCIENCE PROGRAM AT AUSTIN PEAY DO YOU RATE YOURSELF AS:

( )	( )	( )	( )	( )
Poor	Fair	Average	Good	Excellent

I HAVE NO OBJECTION IN ALLOWING THE ABOVE SURVEY MATERIAL TO BE USED FOR A RESEARCH PAPER.