THE RELATIONSHIP OF PERSONALITY TO THE SELECTION
OF A REQUIRED PHYSICAL EDUCATION ACTIVITY
BY COLLEGE WOMEN

THESIS

Presented to the Graduate Council of the
North Texas State University in Partial
Fulfillment of the Requirements

For the Degree of

MASTER OF SCIENCE

By

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Pulliam, Janet M., *The Relationship of Personality to the Selection of a Required Physical Education Activity by College Women*. Master of Science (Physical Education), December, 1975, 50 pp., 4 tables, bibliography, 41 titles.

This investigation was designed to determine whether or not a significant relationship existed between personality and the selection of a required physical education activity and whether or not personality traits exhibited by freshman women were related to specific type activities.

Sources of data were 107 freshman women enrolled in activity classes at North Texas State University, 1974-75. The *Cattell 16 Personality Factor Inventory, Form A* and an information sheet were the instruments utilized in the study.

An analysis of variance was calculated to ascertain whether or not differences existed among the four groups in personality scores. This study concluded that no significant relationship appeared to exist between personality and the selection of specific physical activities.
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CHAPTER I

INTRODUCTION

One trend that has been evidenced in curriculum innovations in recent years is that the individual is of utmost importance in educational endeavors. It has become common to say that "no two individuals are alike" and the school programs should be "student oriented."

In an attempt to study the individual, his needs and interests, one must eventually come to grips with an important component of individuality, personality. Allport (1) indicated that there are at least fifty acceptable definitions of personality, and in addition, Sarason stated in his writings "the existing definitions of personality could fill a volume" (13, p. 13).

Cattell defined personality "as that which tells what a man will do when placed in a given situation" (3, p. 25). Hilgard described personality in such a manner that stressed the need for the study of individual differences. "Personality is used to mean the configuration of individual characteristics and ways of behaving which determine an individual's unique adjustment to his environment" (8, p. 447).

Psychologists generally agree that personality is formed through a series of rewards, punishments, heredity, and the environment including the family, school, and the peer group,
and further that "certain patterns of personality responses, traits, are . . . built up fitted to the social culture" (3, p. 30). The great number of definitions would seem to have confused and limited the investigations of personality, and yet, its complexities have served to stimulate its study.

Within this century, physical educators have studied the complexities involved in the physiological, psychological, and social factors that interrelate with physical education activities. The areas of physiology and kinesiology, for example, have contributed a greater knowledge and understanding of their relationship and function with physical activities and athletics. According to Martens, "psychology and sociology of sport have emerged as sub-disciplines of considerable importance" in physical education (11, p. 9). Very few physical educators would dispute the importance of an activity for both physical and psychological development; however, in relation to an individual's personality and other psychological factors, it is not clear just how the activity is crucial (4, p. 17).

Although a great deal has been said about personality development in relation to certain type activities, there is little information which determines whether the activities develop certain personality patterns in the participants, or whether they already possessed the necessary personality traits when they chose the activity. Cratty (5) purports that personality traits are predictors of activities which
some individuals select. Cattell suggested that recreation, sports, and hobbies were better indicators of personality than developers, and that their main influence on personality appeared to be in providing outlets through which an individual could make adjustments and stabilization of his personality where the life situation might not allow for it (2, p. 198).

A new approach to physical education which incorporates this idea is the humanistic movement described by Donald Hellison. It is based on the premise that "the self is not only unique to man; it also plays a central role in man's needs and goals" (7, p. 8). According to Podeschi the farther reaches, the future, of physical activity will be perceived through the eyes of individuals (12, p. 13). With the emphasis that has been placed upon meeting the needs of the individuals, character development, and the importance of sports for social interaction, it would appear that there is a definite need to investigate the relationship between personality traits and physical education activities.

To a physical educator it would then seem to be of utmost importance to develop an awareness of reasons for some individuals preferring certain activities while others are more responsive to totally different types of activities. Therefore, two questions that could be posed are: Does choice have any effect upon the structure and development of personality? Do certain activities attract specific kinds of
personalities? If Jewett's (9) predictions are valid that physical education in the future will focus on each person, it is imperative that physical educators be aware of information concerning personality traits in order to plan and implement programs designed for the individual differences of their students.

Statement of the Problem

This study was designed to determine the relationship of personality to the selection of required physical education activities by freshman women at North Texas State University. Further, whether or not specific personality traits exhibited by college women are related to specific type activities such as team sports, individual/dual sports, dance, and conditioning activities was investigated.

Purpose of the Study

The purpose of this study was twofold:

1. To determine the personality traits of freshman college women enrolled in physical education courses of their preference.

2. To determine whether or not there are personality differences in freshman women who chose team sports, individual/dual sports, dance, or conditioning activities in the required physical education program.
Definition of Terms

The following definitions were used in this study:

1. Personality
   a. Theoretically--"Personality denotes the dynamic organization within the individual which specifies his potentialities for action" (6, p. 12).
   b. Operationally--Personality, as utilized in this study, was represented by the scores obtained on the Cattell 16 Personality Factor Questionnaire, Form A.

2. Preferred Activity--the subjects' indication that the activity selected was their first choice.

3. Physical education activity program--those physical education courses which are included in the curriculum to meet the requirements of the university for the bachelor's degree.

Limitations of the Study

This study was limited to beginning college freshman women enrolled in required physical education activity courses at North Texas State University during the academic year, 1974-75. It was further limited to freshman women who indicated that the activity in which they enrolled was their first preference. This limitation was included in the study in order to rule out the possibility of teacher preference, registration difficulty, or peer advice which might influence the subjects' selection of an activity.
This chapter included an introduction to the study, the statement of the problem, purpose(s) of the study, definition of terms, and limitations of the study.
CHAPTER BIBLIOGRAPHY


CHAPTER II

REVIEW OF RELATED LITERATURE

The literature reviewed in this chapter was chosen primarily because of its relationship to the personality structure of participants in various physical activities. This investigation is concerned with the personality structure of women who choose specific activities from the college physical education curriculum. A review of the literature revealed that the number of studies investigating the personality of the non-athlete and their sport preference were rather limited. Research in the area of a sport personality appeared to fall into two broad categories: the relationship of personality and adjustment, and a description of the personality traits of participants and competitors in certain sports. The results are difficult to interpret because of varied sampling procedures, test instruments, and statistical analysis used. These studies appeared to be related only in terms of a mutual concern with personality.

In the 1940's, Sperling (14) challenged physical educators to further investigate the psychological variables of sport, and as a result, over the last two decades sport researchers have endeavored to identify personality types, to evaluate the personalities of the successful athletes, and to
understand the relationship between personality and physical variables. The precedent for such research has been set by several agencies interested in the personality of their particular participant. The space administration, various governmental agencies, education, and certain businesses make personnel selection on certain personality characteristics and personal adjustments.

Dennis Harvilk (12) investigated the early identification of potential leaders through personality assessment. Using the Cattell 16 Personality Factor Inventory, Harvilk tested students designated as leaders of the University of South Carolina campus and those termed "non-leaders." He discovered that leaders possessed traits different than those of the non-leader group. Henjum (15) examined the relationship between certain personality characteristics of secondary-level academic student teachers and their success during the student teaching period. Test instruments used were the Cattell 16 Personality Factor Inventory and the Hoyt-Grim Pupil Reaction Inventory. The latter was administered to the pupils at the end of the student teaching experience. Results indicated that certain personality traits were very important for success in student teaching at the junior high level but had no significant effect, at the .01 level, upon senior high students. Intelligence was the most important character trait for student teachers at the senior high school level. Pierre Roubertoux (25) used several tests
including the Cattell 16 PFI Anxiety Scale to determine personality relationship to an interest in art. He found that a central set of variables directed an individual toward art in general, but that a greater number of personality variables determined interest in one form of art rather than another.

Within the last few years many of the older, more clinical testing procedures have been augmented with the personality inventory such as the California Psychological Inventory, the Cattell 16 Personality Factor Inventory, and the Mauldsley Personality Inventory which are more easily administered and scored. These inventories have stimulated the examination of personality as a variable in sport (14, p. 64). According to Berlin, et al. (11, p. 310), the developments and improvements made in the multivariate research designs and the availability of computer services has greatly aided the quest for insight into sport personalities, particularly the woman in sport, be she athlete or non-athlete, and only recently has the research begun to be fruitful.

In the category of personality research which deals with the relationship of physical activity and personality development, Peycha (24) investigated the effects of male participation in judo, handball, badminton, basketball, and volleyball on certain personality traits. The subjects were randomly assigned to courses and pre-tested during the eighth week using the Cattell 16 Personality Factor Inventory, Form A, and post-tested following the sixteenth week. He
concluded that the judo experimental group became more warm-hearted, easy going, and out going than did the control group. Peycha indicated that his results were significant at the .05 level. Bennington (1) studied the personality of high school gymnasts and compared their personality traits to high school football players and a non-athlete group. He discovered that the gymnasts and football players were significantly more intelligent than were the non-athlete group, and that there was no personality difference between gymnasts and the football players.

Merriman (22) investigated the relationship of personality to motor ability using the California Psychological Inventory and the Phillips JCR and found that motor ability was related to certain personality traits. Brunner (4) studied personality and other interest factors which motivated adults to participate in vigorous physical activity. The Adjective Check List and a questionnaire measured two equal groups divided into participants and non-participants in vigorous activity(s). On the questionnaire, the participants indicated that they chose to participate in vigorous activity for the improvement of fitness while the non-participants indicated that they did not participate because other activities took up their time. The results showed that the participants were higher on the traits of achievement, intraception, dominance, and self-confidence and the number of adjectives checked.
Walterscheid (28) investigated the effects of competition upon personality adjustment of high school girls competing in basketball, debate, drill team, and band. Using the California Psychological Inventory to assess the personality of the five groups, an analysis of the scores compared with the test norms indicated that the basketball group differentiated from the norm in ten of the eighteen scales, each of which fell below the mean. The band group varied from the norm in six of the scales, and the drill team group deviated below the mean on five of the eighteen scales. The debate group differed significantly in only two of the eighteen scales, one trait above the mean and one below the mean. The control group differed significantly in twelve of the eighteen scales, all falling below the mean. She concluded that competition did have an effect upon the personality of high school girls, and that competition of different kinds had different effects upon the personality adjustment of the girls. Competition associated with basketball, debate, drill team, and band appeared to have a detrimental effect upon certain phases of personality adjustment of high school girls. Interscholastic league debate activities were found to be detrimental on one phase of personality adjustment and desirable on one phase of personality adjustment.

A major part of research related to the effects of athletic participation on personality, or the role of personality, centered around the identification of specific
traits which were characteristic of all participants in a given activity. Physical educators and coaches claim to know from overt observations that there are general differences among athletes of certain sports and activity groups. For example, studies have indicated that swimmers are more "out-going" than are non-swimmers, fencers are more ascendant and feminine, while volleyball participants are more emotionally stable, and badminton players tend to be extroverts. The extent to which these opinions are factual and what is supposition is unknown, but it would be advisable to substantiate the assumptions of educators and coaches through qualified research.

Lowe and Sani (20) examined the "athletic personality" and found that athletes and non-athletes did not differ on such traits as aggression and achievement tendencies as measured by the Adjective Check List. La Place (19) used the Minnesota Multi-Phasic Inventory to examine the personality of professional athletes and its relationship to success. In comparing major league players to minor league players, he found that the major league players were significantly better able to apply drive toward a goal, exercise initiative, and to adjust to situations in which they must get along with others. Booth (2) investigated the personality traits of athletes as measured by the Minnesota Multi-Phasic Personality Inventory and concluded that significant differences did exist between athletes and non-athletes and between participants in individual sports, team sports, and individual/
dual sports. Malumphy (21) also investigated the personality of an athletic group, however, her study was limited to the female athlete. The study sought to determine the personality of women athletes in competitive sports identified as team sports, individual sports, and individual/team sports. She included several sociometric variables that were measured by a personal questionnaire as well as the Cattell 16 Inventory, Form A which measured personality. She concluded that the personality of team and individual/team groups tended to be alike on the traits measured by the inventory.

Flanagan (10) studied the relationship of personality to different activity groups and found that personality was a factor in the selection of activities in which individuals chose to engage. College male subjects included in the experiment took physical education in a voluntary type of program. Personality was measured by a variety of test instruments: the Allport Ascendance-Submission Scale, Guilford Introversion-Extroversion Scale, and the Guilford-Martin Inventory, Factor M. The activities used in the study included fencing, basketball, boxing, swimming, volleyball, and badminton.

Hein's (13) study was similar to Flanagan's except she included female subjects in her investigation of the relationship of certain personality traits to specific types of physical education activities. Questionnaires were sent to college women in residence halls to determine their
preference of physical education activities for instruction and to determine whether or not women choosing similar types of activities tended to possess certain similarities in personality traits. The Bernreuter Personality Inventory was used to measure the personality traits. Hein studied five groups, four of which were differentiated on the basis of their interest in a specific activity area, and the fifth group consisted of physical education majors. The four groups were dance, individual sports, team sports, and no activity. The group preferring no activity was significantly more self-sufficient than the four other groups but less sociable than the physical education majors or the team group. The dance group was more introverted, neurotic, and less sociable than the other groups in the study. Her conclusions reported that women who selected for instruction a certain type of activity displayed certain personality similarities which differentiated them from students selecting other activity types, no activity, or from physical education majors at the .02, .05, and .01 levels of confidence respectively.

Peterson, Weber, and Trousdale (23) conducted a study to determine the personality of women athletes involved in team sports and those involved in individual sports. Personality measurement was obtained by the Cattell 16 Inventory, Form A. The findings revealed that women athletes who participated in individual type sports tended
to be more dominant, aggressive, adventurous, sensitive, imaginative, radical, and resourceful than women who participated in team sports.

In a similar study, Johnson (16) sought to determine the personality differences of highly skilled women athletes participating in the sports of basketball, field hockey, golf, and bowling. Results showed that there was a significant difference among the four groups on twelve variables as measured by the California Psychological Inventory. The basketball group scored lower than the three other groups on the traits of dominance, self-acceptance, and self-control. It also indicated that the golfers, bowlers, and field hockey participants were generally alike on the traits measured.

In reviewing the available research, it can be concluded that personality may indeed be a factor in the type of activity an individual selects for participation, and that although the findings do not give a clear-cut picture of a sport personality, they should aid the coach or teacher working with individuals in various sports.

This chapter presented a review of literature related to investigations in the areas of personality and adjustment and competitors in certain sports. Brief summaries of findings were presented in each area.
CHAPTER BIBLIOGRAPHY


CHAPTER III

PROCEDURES IN THE DEVELOPMENT
OF THE STUDY

The purpose of this study was to determine the relationship of personality traits to the selection of a required physical education activity by college freshman women. Two instruments were administered: the Cattell 16 Personality Factor Inventory and a personal information sheet.

Preliminary Procedures

As a preliminary procedure of this study, literature in the areas of personality, personality traits, and their relationship to physical education activities was reviewed. Studies which were pertinent to the present study were reviewed and relevant information from the studies was utilized in this study.

Selection of Subjects

The subjects in the study were 107 college freshman women enrolled in required physical education activity courses at North Texas State University during the academic year, 1974-75. The subjects were selected from females enrolled in a variety of physical education activity classes. Only those women indicating that they were classified as freshmen, non-physical education majors, and who were willing to participate in the study were included.
Selection of the Test

The selection of the test for this study was governed by the objectives of the study, review of literature, and the availability of the instrument. The criteria used for selection of the test were: validity, reliability, objectivity, and ease of administration. The Cattell 16 Personality Factor Inventory was chosen as the test instrument. The test measures sixteen dimensions of personality as well as four second order factors of personality. Based upon the careful theoretical and statistical work in the evolution of the test, the Cattell 16 Personality Factor Inventory seemed to be the most comprehensive test of personality. Secondly, the fact that the test was designed for use with the normal population enhanced its use in this study.

A personal information sheet (Appendix A) was also administered to each subject. This information sheet was administered for the purpose of obtaining information pertinent to the subjects' registration in the selected activity.

Description of the Test

The Cattell 16 Personality Factor Inventory was selected and administered to measure personality. Form A of the inventory was chosen out of a possible six forms of the questionnaire for administration in this study. It consists of 187 items designed for administration to "ordinary newspaper literate adults" and is recommended for university and high school students. The ordinary reader can complete the
test in an average of fifty minutes. Permission to utilize
the test was secured from the Institute of Personality and
Ability Testing. The sixteen traits covered by the inven-
tory with a description of each are as follows:

Factor A -- **Sizothymia versus Affectothymia:** the dimension
of personality which deals with behavior ranging
from reserved to outgoing.

Factor B -- **Less Intelligent versus More Intelligent:** the
dimension of personality which deals with be-
havior ranging from concrete thinking to abstract
thinking.

Factor C -- **Affected by Feelings versus Emotionally Stable:** the dimension of personality which deals with be-
havior ranging from a low ego strength to a
higher ego strength.

Factor E -- **Submissiveness versus Dominance:** the dimension
of personality which deals with behavior ranging
from humble and accommodating to assertive and
competitive.

Factor F -- **Desurgency versus Surgency:** the dimension of
personality which deals with behavior ranging from sober to happy-go-lucky.

Factor G -- **Weak Super Ego Strength versus Strong Super Ego:** the dimension of personality which deals with
behavior ranging from expedient to conscientious.

Factor H -- **Threctia versus Parmia:** the dimension of person-
ality which deals with behavior ranging from shy
and timid to venturesome and uninhibited.

Factor I -- **Harria versus Premsia:** the dimension of person-
ality which deals with behavior ranging from realistic and tough-mindedness to tender-
mindedness and sensitiveness.

Factor L -- **Alaxia versus Protension:** the dimension of per-
sonality which deals with behavior ranging from trusting to suspicious and hard to fool.

Factor M -- **Praxemia versus Autia:** the dimension of person-
ality which deals with behavior ranging from
practical to imaginative.
Factor N -- **Artlessness versus Shrewdness:** the dimension of personality which deals with behavior ranging from forthrightness to astuteness.

Factor O -- **Untroubled Adequacy versus Guilt Proneness:** the dimension of personality which deals with behavior ranging from self-assured and secure to apprehensive and insecure.

Factor Q₁ -- **Conservatism of Temperament versus Radicalism:** The dimension of personality which deals with behavior ranging from conservative to experimenting.

Factor Q₂ -- **Group Adherence versus Self-sufficiency:** the dimension of personality which deals with behavior ranging from group dependent to self-sufficient.

Factor Q₃ -- **Low Integration versus High Strength of Self-sentiment:** the dimension of personality which deals with behavior ranging from undisciplined to controlled.

Factor Q₄ -- **Low Ergic Tension versus High Ergic Tension:** the dimension of personality which deals with behavior ranging from relaxed to tense.

The personal information sheet concerned areas pertinent to the subject's registration and general background which included the following:

1. The subject's classification at North Texas State University.

2. A designation of first, second, or third preference for the activity in which the subject was enrolled.

3. An indication as to whether or not the activity was voluntarily selected by the subject.

4. The subject's major study emphasis at North Texas State University.

5. General information concerning competitive background, size of high school attended, and various experiences in sport and dance prior to enrollment in the university. (An example of the personal information sheet may be found in the Appendix.)
General Procedures in Test Administration

The subjects selected for the study during initial contact by the test administrator or by the course instructor were issued the Cattell 16 Personality Factor Inventory, Form A test booklet which included directions, an answer sheet, and a personal information sheet. Each subject who agreed to participate in the study was given a brief explanation concerning the purpose of the study as well as general instructions for taking the test.

Those subjects taking part in the study were then requested to complete the test and return it to the test administrator or the course instructor. Each subject also completed at the same time the personal information that provided further information for determining her participation in the study. Those persons whose data sheet indicated they did not meet the criteria developed for the study were not included in the study.

Treatment of the Data

The Cattell 16 Personality Factor Inventory provided a score for each individual on each of the sixteen traits measured. The scores were then converted to standard ten scores (stens) as provided for by Cattell (1). The conversion of the raw scores to the standard scores for each of the sixteen traits was computed using the hand scoring stencil as recommended by Cattell for less than a thousand
subjects. Each individual test was scored twice in an attempt to avoid errors by the grader.

An Analysis of Variance was computed to determine whether or not differences occurred in personality scores of the four activity groups at the .05 level of confidence. Duncan's Multiple Range Test was used to ascertain among which groups statistically significant differences existed in standard scores on the Cattell 16 Personality Factor Inventory.

This chapter presented the procedures followed in this study. It included (1) preliminary procedures, (2) selection of the test, (3) description of the test, (4) selection of the subjects, (5) general procedures in test administration, and (6) treatment of the data.
CHAPTER BIBLIOGRAPHY


CHAPTER IV

FINDINGS

This chapter presents an analysis of data and an interpretation of the findings of the study. The findings of the study were derived from statistical treatment of the data as measured by an IBM 1620 computer. Cattell's 16 Personality Factor Inventory was administered to 107 college freshman women at North Texas State University who were enrolled in classes in dance, individual/dual sports, conditioning exercises, and team sports in order to determine whether or not significant differences occurred in the personality scores among the four activity groups and to determine whether or not a significant relationship existed between personality and the selection of a specific type of physical education activity from the required physical activity program.

Table I presents the means and standard deviations of the personality scores of the four activity groups. The mean standard scores for each of the four groups ranged from 3.86 to 6.61, indicating that the participants fell within the average range on a majority of the factors as established by Cattell (1).
### TABLE I

**MEANS AND STANDARD DEVIATIONS FOR THE FOUR GROUPS ON THE SIXTEEN PERSONALITY FACTORS**

<table>
<thead>
<tr>
<th>Factor</th>
<th>Group I Dance $N = 28$</th>
<th>Group II Indiv/Dual $N = 17$</th>
<th>Group III Cond. Ex. $N = 28$</th>
<th>Group IV Team $N = 34$</th>
<th>Total $N = 107$</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Mean 4.82 1.95</td>
<td>Mean 4.77 2.02</td>
<td>Mean 5.29 1.96</td>
<td>Mean 5.03 2.07</td>
<td>Mean 5.00 1.98</td>
</tr>
<tr>
<td>B</td>
<td>Mean 5.07 2.21</td>
<td>Mean 5.18 1.85</td>
<td>Mean 4.57 2.17</td>
<td>Mean 5.26 2.03</td>
<td>Mean 5.02 2.08</td>
</tr>
<tr>
<td>C</td>
<td>Mean 5.29 1.70</td>
<td>Mean 5.53 1.77</td>
<td>Mean 4.96 1.88</td>
<td>Mean 5.91 1.40</td>
<td>Mean 5.44 1.69</td>
</tr>
<tr>
<td>D</td>
<td>Mean 5.39 1.64</td>
<td>Mean 5.47 1.91</td>
<td>Mean 5.43 1.73</td>
<td>Mean 5.71 1.70</td>
<td>Mean 5.51 1.71</td>
</tr>
<tr>
<td>E</td>
<td>Mean 4.57 1.40</td>
<td>Mean 5.12 1.45</td>
<td>Mean 5.39 2.12</td>
<td>Mean 5.68 2.07</td>
<td>Mean 5.22 1.96</td>
</tr>
<tr>
<td>F</td>
<td>Mean 5.86 1.58</td>
<td>Mean 5.82 1.51</td>
<td>Mean 6.16 1.43</td>
<td>Mean 6.35 1.55</td>
<td>Mean 6.17 1.53</td>
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<tr>
<td>G</td>
<td>Mean 4.68 1.36</td>
<td>Mean 5.76 1.60</td>
<td>Mean 5.78 1.87</td>
<td>Mean 6.00 1.91</td>
<td>Mean 5.56 1.78</td>
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<tr>
<td>H</td>
<td>Mean 5.71 2.16</td>
<td>Mean 4.65 1.87</td>
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<td>I</td>
<td>Mean 5.71 2.12</td>
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<td>K</td>
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<td>Mean 6.25 1.74</td>
<td>Mean 5.21 1.55</td>
<td>Mean 5.99 1.74</td>
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<td>O</td>
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<td>Mean 5.82 1.63</td>
<td>Mean 6.29 1.90</td>
<td>Mean 6.24 1.42</td>
<td>Mean 6.09 1.66</td>
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<td>Q1</td>
<td>Mean 5.96 2.08</td>
<td>Mean 4.94 1.68</td>
<td>Mean 4.96 2.37</td>
<td>Mean 5.35 1.25</td>
<td>Mean 5.35 1.90</td>
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</table>

An analysis of variance was computed to determine whether or not significant differences occurred among the four activity groups on standard scores of the Cattell 16 Personality Factor Inventory. An $F$ ratio of 1.39 was required for significance at the .05 level of confidence (2, p. 613). The source of variation, degrees of freedom, sum of squares, and $F$ ratio for the groups on the sixteen scales are presented in Table II.
Significant differences occurred on four of the sixteen factors measured. A significant $F$ ratio existed on the following factors: Factor C (affected by feelings vs. emotionally stable), Factor F (sober vs. happy-go-lucky), Factor H (shy vs. venturesome), and Factor Q$_2$ (group-dependent vs. self-sufficient).

**TABLE II**

**SUMMARY OF ANALYSIS OF VARIANCE AMONG THE FOUR GROUPS ON THE SIXTEEN PERSONALITY FACTORS**

<table>
<thead>
<tr>
<th>Factors</th>
<th>Degrees of Freedom</th>
<th>Sum of Squares</th>
<th>$F$ ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>N = 107</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>Between 103 Within 106 Total 106</td>
<td>4.15 411.85 412.00</td>
<td>0.35</td>
</tr>
<tr>
<td>B</td>
<td>8.16 449.80 457.96 0.62</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>14.71 287.65 302.36 1.76*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>D</td>
<td>1.90 306.83 308.73 0.21</td>
<td></td>
<td></td>
</tr>
<tr>
<td>E</td>
<td>19.88 386.74 406.62 1.76*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>F</td>
<td>8.34 238.63 246.97 1.20</td>
<td></td>
<td></td>
</tr>
<tr>
<td>G</td>
<td>30.48 305.88 336.36 3.42*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>H</td>
<td>12.97 400.75 413.72 1.11</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I</td>
<td>6.62 350.07 356.69 0.65</td>
<td></td>
<td></td>
</tr>
<tr>
<td>J</td>
<td>16.57 420.18 436.75 1.35</td>
<td></td>
<td></td>
</tr>
<tr>
<td>K</td>
<td>14.26 373.33 387.59 1.31</td>
<td></td>
<td></td>
</tr>
<tr>
<td>L</td>
<td>12.09 369.63 381.72 1.12</td>
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<td></td>
</tr>
<tr>
<td>M</td>
<td>14.89 327.07 341.96 1.56</td>
<td></td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>34.81 286.18 320.99 4.18*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>O</td>
<td>4.08 288.98 293.06 0.49</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q$_1$</td>
<td>17.57 364.63 382.20 1.65</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q$_2$</td>
<td>*Significant at the .05 level of confidence.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Duncan's Multiple Range Test was used to ascertain among which activity groups statistically significant differences existed in standard scores of the Cattell 16 Personality.
Factor Inventory. Four factors revealed statistically significant differences indicated by the mean difference exceeding the range product value. Table III presents this data.

**TABLE III**

DUNCAN'S RANGE PRODUCT AMONG THE FOUR ACTIVITY GROUPS ON FACTORS C AND F

<table>
<thead>
<tr>
<th>Factor</th>
<th>Dance Cond. Ex. Team</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N = 28</td>
<td>N = 28</td>
<td>N = 28</td>
<td>N = 34</td>
<td></td>
</tr>
<tr>
<td>C</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Indiv/Dual</td>
<td>Cond. Ex.</td>
<td>Team</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>N = 17</td>
<td>N = 28</td>
<td>N = 34</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>III</td>
<td>IV</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Group Means</td>
<td>Mean Difference</td>
<td>Duncan's Range Product</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dance Cond. Ex. Team</td>
<td>Mean Difference</td>
<td>Duncan's Range Product</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>F</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Group Means</th>
<th>Mean Difference</th>
<th>Duncan's Range Product</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dance</td>
<td>5.29</td>
<td>0.62</td>
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<tr>
<td>Cond. Ex.</td>
<td>4.96</td>
<td>0.90</td>
</tr>
<tr>
<td>Team</td>
<td>5.91</td>
<td>1.03</td>
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<td></td>
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<td>1.03</td>
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<td>1.08</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.89</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.99</td>
</tr>
<tr>
<td></td>
<td>0.93*</td>
<td></td>
</tr>
</tbody>
</table>

*Significant at the .05 level of confidence.
On factor C (affected by feelings vs. emotionally stable), Group IV (team sports) scored significantly higher than Group III (conditioning exercise). The higher score for Group IV (team sports) indicated the team participants were more emotionally stable than conditioning participants. Group IV (team sports) and Group I (dance) differed significantly at the .05 level on factor F (sober vs. happy-go-lucky). Group I (dance) scored significantly lower than Group IV (team sports), indicating Group I (dance) to be more sober than Group IV (team sports).

Group IV (team sports) scored significantly higher than Group I (dance) on factor H (shy vs. venturesome). Duncan's Multiple Range Test revealed the difference to be significant at the .01 level of confidence. This established that Group IV (team sports) was significantly more venturesome than Group I (dance). Group III (conditioning exercise) and Group II (individual/dual sports) also scored significantly higher than the dance group on factor H. It is important to note that even though statistically significant differences were indicated between Group II (individual/dual sports) and Group I (dance) and between Group III (conditioning exercise) and Group I (dance) that the scores for both Group II and Group III were within the average range established by Cattell (1). Table IV presents the results of Duncan's Range Test on factors H and Q₂.
<table>
<thead>
<tr>
<th>Factor</th>
<th>Dance N = 28</th>
<th>Indiv/Dual N = 17</th>
<th>Cond. Ex. N = 28</th>
<th>Team N = 34</th>
<th>Mean Difference</th>
<th>Duncan's Range Product</th>
</tr>
</thead>
<tbody>
<tr>
<td>H</td>
<td>4.68</td>
<td>5.76</td>
<td>5.78</td>
<td>6.00</td>
<td>1.32</td>
<td>0.96**</td>
</tr>
<tr>
<td></td>
<td>4.68</td>
<td>5.76</td>
<td>5.78</td>
<td>6.00</td>
<td>1.08</td>
<td>1.06*</td>
</tr>
<tr>
<td></td>
<td>5.76</td>
<td>5.78</td>
<td>6.00</td>
<td>0.22</td>
<td>0.02</td>
<td>0.88</td>
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<tr>
<td></td>
<td>5.76</td>
<td>5.78</td>
<td>6.00</td>
<td>0.24</td>
<td>0.22</td>
<td>1.08</td>
</tr>
<tr>
<td>Q2</td>
<td>6.64</td>
<td>6.06</td>
<td>6.25</td>
<td>5.21</td>
<td>1.43</td>
<td>0.92**</td>
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<tr>
<td></td>
<td>6.64</td>
<td>6.06</td>
<td>6.25</td>
<td>5.21</td>
<td>0.58</td>
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<td>6.64</td>
<td>6.06</td>
<td>6.25</td>
<td>5.21</td>
<td>0.39</td>
<td>0.89</td>
</tr>
<tr>
<td></td>
<td>6.06</td>
<td>6.25</td>
<td>5.21</td>
<td>1.04</td>
<td>0.19</td>
<td>0.90*</td>
</tr>
<tr>
<td></td>
<td>6.06</td>
<td>6.25</td>
<td>5.21</td>
<td>0.85</td>
<td>1.03</td>
<td>0.99</td>
</tr>
</tbody>
</table>

*Significant at the .05 level of confidence.

**Significant at the .01 level of confidence.

As indicated in Table IV, Group I (dance) was significantly more self-sufficient and resourceful than Group IV (team sports) on factor \( Q_2 \) (group-dependent vs. self-sufficient). Duncan's Range Test revealed statistically significant differences between the two groups at the .01 level of confidence. Group III (conditioning exercise) scored significantly above Group IV (team sports) at the .05 level of confidence. Group II (individual/dual sports) also scored higher than Group IV.
on factor $Q_2$, but the difference was not statistically significant.

The differences among the groups on the remaining twelve factors are discussed below:

Factor A.--Group IV (team sports) and Group III (conditioning) averaged higher than Group I (dance) and Group II (individual/dual sports), but the mean differences failed to reach the level of significance. The data indicated that Group II and Group I were more reserved as opposed to Group IV and Group III which scored within Cattell's average range.

Factor B.--Group I (dance), Group II (individual/dual sports), and Group IV (team sports) scored higher than Group III (conditioning exercise), but the mean differences were not statistically significant. The data indicated that Group III was more concrete thinking as opposed to bright.

Factor E.--Group IV (team sports) had a higher mean score than the other three groups, but the mean differences were not statistically significant. The data indicated that all four groups fell within the average score range with the team group (IV) more assertive as opposed to humble.

Factor G.--Group III (conditioning exercise) and Group IV (team sports) averaged higher than Group I (dance) and Group II (individual/dual sports), but the mean differences were not statistically significant. The data indicated that Group III (conditioning exercise) and Group IV (team
sports) were more conscientious as opposed to expedient.

**Factor I**--Group II (individual/dual sports) averaged below the other three groups, but the mean differences were not statistically significant. The data indicated that Group II (individual/dual sports) was more tough-minded and realistic as opposed to tender-minded.

**Factor L**.--Group IV (team sports) averaged slightly higher than the other three groups, but the mean differences were not statistically significant. The data indicated all four groups to be more trusting as opposed to suspicious.

**Factor M**.--Group III (conditioning exercise) averaged slightly lower than the other three groups, but the mean differences were not statistically significant. All groups averaged below the mean score established by Cattell (1). The data indicated all four activity groups to be more practical as opposed to imaginative.

**Factor N**.--Group III (conditioning exercise) averaged slightly lower than the other three groups, but the mean differences were not statistically significant. The data indicated that Group III (conditioning exercise) was more forthright as opposed to astute.

**Factor O**.--Group I (dance) averaged slightly higher than the other three groups, but the mean differences were not statistically significant. The data indicated that Group I (dance) was more apprehensive as opposed to self-assured.
Factor Q₁.-- Group IV (team sports) and Group II (individual/dual sports) averaged higher than Group I (dance) and Group III (conditioning exercise), but the mean differences were not statistically significant. The data indicated that Group IV (team sports) and Group II (individual/dual sports) were more experimenting as opposed to conservative.

Factor Q₂.-- Group IV (team sports) and Group III (conditioning exercise) averaged higher than Group I (dance) and Group II (individual/dual sports), but the mean differences were not statistically significant. The data indicated that Group IV (team sports) and Group II (conditioning exercise) were more controlled as opposed to undisciplined.

Factor Q₃.-- Group II (individual/dual sports) and Group III (conditioning exercise) averaged slightly lower than Groups I and IV (dance and team sports), but the mean differences were not statistically significant. The data indicated that all four activity groups were more reserved as opposed to tense. Groups II and III (individual/dual sports and conditioning exercise) had a mean score below the average range established by Cattell (1).

Discussion of the Findings

The analysis of variance of the standard scores on the Cattell 16 Personality Factor Inventory resulted in a significant $F$ ratio on four of the sixteen factors measured. Twelve factors reported insignificant $F$ ratios. This indicated that on a majority of factors, personality may not be considered
influential in selecting specific physical education activities.

The findings derived from this study with regard to the personality traits of specific activity groups were inconclusive on twelve factors but significant on factors C (affected by feelings vs. emotionally stable), F (sober vs. happy-go-lucky), H (shy vs. venturesome), and Q2 (group-dependent vs. self-sufficient). Group IV (team sports) had the highest incidence of factors significantly different from the other groups. The following personality characteristics significantly differentiated the team sport group:

1. Significantly more emotionally stable than the conditioning group.
2. Significantly more happy-go-lucky than the dance group.
3. Significantly more venturesome than the dance group.
4. Significantly less self-sufficient than the dance group.

The findings from this study were analogous to the results of Hein (3) regarding the sociability of team sport participants as cited in Chapter II. Non-competitive team sport participants appeared to possess trait characteristics which presumably motivated their selection of group activities. Such trait qualities are indicative of individuals who are mature, emotionally stable, enthusiastic, venturesome, socially bold, and group-dependent; thus providing such individuals the capacities for involvement in group situations.
rather than individualistic endeavors. This, however, is an assumption.

The following personality characteristics significantly differentiated the dance group:

1. More self-sufficient and resourceful than the team sport group.

2. Less venturesome than the team sport group, conditioning group, and the individual/dual sport group.

3. More sober than the team sport group.

The only similarity between Hein's results and the results of the present study was in relation to the sociability of the dance group. Hein found the dance group to be introverted, neurotic, and less sociable than the other four groups; however, it should be recognized in making this comparison that the Cattell 16 Personality Factor Inventory did not specifically measure neuroticism and introversion on this particular form while the Bernreuter Inventory did. Dance participants appeared to be more serious, self-sufficient, and less sociable than the other three groups. Dance is generally believed to present an environment in which creativity and individualistic expression are actively sought. Therefore, the tendency for dance participants to exhibit significant differences in self-sufficiency (Factor Q2) and sociability (Factor H) might be attributed to the peculiar requirements of the activity. This, again, is an assumption.
Group III (conditioning exercise) was significantly different on two factors. The specific factors were $H$ (shy vs. venturesome) and $Q_2$ (group-dependent vs. self-sufficient). This could be interpreted as freshman women who chose conditioning from the required curriculum being significantly more self-sufficient than team sport participants. The difference between the two groups on this factor cannot be considered unexpected since conditioning exercises are of a more individual nature and do not reflect a need for group dependency. The ultimate goal for conditioning exercises would be the fitness of each individual rather than the more structured group-oriented goals associated with team sports. Group III (conditioning exercise) was also significantly more sociable than Group I (dance) but within the average range specified by the test.

Group II (individual/dual sports) differed significantly on only one factor. Results indicated the group to be more venturesome (Factor $H$) than the dance group. In comparing Group II (individual/dual sports) to Group IV (team sports), similarities existed on eleven factors. The two groups differentiated on the following: Group II (individual/dual sports) appeared to be more reserved, tough-minded, self-sufficient, and relaxed than the team group. The fact that participants in individual/dual activities rely on their own efforts or the efforts of a partner might substantiate the differences, but the mean differences between the two groups
on those factors did not approach statistical significance, and therefore, can only be speculative information.

Findings of the Personal Information Sheet

A personal information sheet was administered in addition to the Cattell 16 Personality Factor Inventory. An example of the information sheet may be found in the Appendix. The descriptive data derived from the information is presented here.

Major at North Texas.--Group IV (team sports) ($N = 34$) was equally divided between majors in the College of Arts and Sciences (10) and the School of Education (10) and had the highest undecided group (9). Group I (dance) ($N = 28$) was also divided between the Arts and Sciences and Education. In addition, Group I (dance) had the largest number of participants indicating a major in Music than the other three groups. Group II (individual/dual sports) ($N = 17$) was similar to both Group IV (team sports) and Group I (dance) with the greater number of participants majoring in the Arts and Sciences and Education. Group III (conditioning exercise) ($N = 28$) had the greatest number of Business majors (5). The total number of all majors indicated that the College of Arts and Sciences had the largest representation among the four groups (47) followed by the School of Education (23). This may be attributed to the fact that these two areas confer the greatest number of degrees.
Race.--A majority of the subjects included in this study was Anglo-American. Blacks comprised the second ethnic group followed by Mexican-Americans. This trend is not totally unexpected because the student population at North Texas State University is predominantly Anglo-American.

School Size and Physical Education Experience.--As is indicative of the majority of schools within this state, the largest number of subjects indicated a school size of 4AAAA. The next largest number of subjects indicated a school size of 3AAA. This trend was followed among each of the four groups with no differentiation. Physical education experience for each of the groups fell between grades seven through ten. This can be attributed to the Texas Education Guidelines regarding the required physical education program in grades K-12. In the majority of high schools, physical education in the eleventh and twelfth grades is elective. Therefore, the relatively small number of subjects enrolling in physical education in these two grades can be attributed to this curricular factor.

Activity Experience.--All four groups indicated a varied activity background with the majority of their experiences coming from physical education instruction and private instruction. Group I (dance) indicated a greater number of participants with no previous experience in the various dances. Square and Folk were the two most common dances experienced in physical education.
Competitive Sport Experience.--Group II (individual/dual sports) ranked first with regard to competitive sport experience with seven sports. The sports included: basketball, volleyball, softball, tennis, track, swimming, and bowling. Group IV (team sports) reported competitive experiences in six sports. Participants in this group did not indicate experience in bowling. Both Group I (dance) and Group II (conditioning exercise) indicated no competitive experience in any sport. The fact that the competitive sport experiences of the two groups were non-existent, and in light of the significant differences observed on several traits, personality's role in the selection of dance and conditioning would seem to be substantiated.

This chapter presented an analysis of the data and a discussion of the findings of the study.
CHAPTER BIBLIOGRAPHY


CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

This chapter presents a summary of the problem, an analysis of results, conclusions based on the results, and recommendations for additional studies.

This study was designed to determine the relationship of personality traits to the selection of specific physical education activities by 107 college freshman women at North Texas State University, Denton, Texas. The study further sought to investigate whether or not specific personality traits exhibited by freshman women were related to specific type activities.

Standard scores derived from the Cattell 16 Personality Factor Inventory, Form A were the data utilized in this study. The data were analyzed statistically using the IBM 1620 computer computations. The one way analysis of variance and the resulting F ratio indicated significant differences on four of the sixteen traits measured. The specific traits were C (affected by feelings vs. emotionally stable), F (sober vs. happy-go-lucky), H (shy vs. venturesome), and Q2 (group-dependent vs. self-sufficient).

The results based on this study appeared to justify the following conclusions:

1. There is little relationship between personality
and the selection of a required physical education activity by college freshman women.

2. Team sport participants (Group IV) are significantly more emotionally stable than conditioning participants (Group III).

3. Team sport participants (Group IV) are significantly more happy-go-lucky and venturesome than dance participants (Group I).

4. Conditioning participants (Group III) and individual/dual sport participants (Group II) are more venturesome than dance participants (Group I).

5. Dance participants (Group I) and conditioning participants (Group III) are more self-sufficient than team sport participants (Group IV). As a result of this study the following recommendations are presented:

1. A similar study be conducted using college freshman men as subjects.

2. Investigation be continued in an attempt to ascertain what personality variables do effect a relationship with the selection of physical education activities for instruction.

3. A similar study be conducted comparing dance majors with non-majors enrolled in dance activities.
APPENDIX A

INFORMATION SHEET

Name________________________________________ Classification__________

Major at North Texas State__________________________________________________

Senior High School attended________________________________________________

Class size of your high school B A AA AAA AAAA (circle one)

Please indicate the grades in which you were enrolled in physical education classes, by placing a check ( ) in the blank(s).

7  8  9  10  11  12

Name of the activity in which you are now enrolled:

________________________________________

Preference for the activity (circle one): 1  2nd.  3rd.

Did you personally select the activity in which you subsequently enrolled? YES NO

If NO, why not?________________________________________

Did you compete on an interscholastic league team while in high school? If so, please place an "X" in the space next to the sport(s) and indicate the number of years that you participated in the sport(s).

Basketball _______ yrs.    Swimming _______ yrs.

Golf _______ yrs.    Tennis _______ yrs.

Softball _______ yrs.    Track _______ yrs.

Volleyball _______ yrs.

List below any awards that you received through the Interscholastic league competition such as "All-District", "All-Star", etc.

45
Directions for the background information: Please place an "X" in the appropriate columns to signify the situation in which you have received instruction or have participated in the activity(s). Place an "X" in the column "no experience" if you have not ever participated in the activity(s).

<table>
<thead>
<tr>
<th>Activities</th>
<th>No Experience</th>
<th>P.E. Class</th>
<th>Intramurals</th>
<th>Camp</th>
<th>Private Instruction</th>
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</thead>
<tbody>
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<td>1. Archery</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Badminton</td>
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</tr>
<tr>
<td>3. Bowling</td>
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<td>4. Field Hockey</td>
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<td>5. Fencing</td>
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<td>6. Golf</td>
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<td>7. Gymnastics</td>
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<td>8. Table Tennis</td>
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<tr>
<td>9. Tennis</td>
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<tr>
<td>10. Swimming</td>
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<tr>
<td>11. Basketball</td>
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<td>12. Soccer</td>
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<td>16. Tumbling</td>
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<td>18. Folk</td>
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<td>19. Modern</td>
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<td>20. Square</td>
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