ACT RESEARCH REPORT

No. 79
79
May 1979

ALTERNATIVES TO SEX-RESTRICTIVE VOCATIONAL INTEREST ASSESSMENT

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PUBLISHED BY THE RESEARCH AND DEVELOPMENT DIVISION

THE AMERICAN COLLEGE TESTING PROGRAM

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Prepared by the Research and Development Division
The American College Testing Program

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ABSTRACT

According to a recent survey, approximately 3,500,000 interest inventories are administered each year by vocational counselors and others in the helping professions. Many of the interest inventories in common use are sex restrictive in that the scores obtained by males typically suggest "man's work" while those obtained by females typically suggest "woman's work." The primary purpose of this report is to summarize recent research on interest assessment procedures as it bears on the issue of sex restrictiveness. Studies documenting sex restrictiveness in widely used interest inventories are cited, and various alternatives to sex-restrictive interest assessment are suggested. Separate consideration is given to basic (homogeneous) interest scales and occupational scales. For basic interest scales, results are summarized for 15 recent validation studies which support the use of interest scores that are *not* sex restrictive. Such scores can easily be obtained for traditional scales that assess basic interests. Various alternatives to traditional, sex-restrictive occupational scales are reviewed, including the use of cross-sex scales, combined-sex scales, cluster scales, and sex-balanced scales. Normative and correlational data are presented as aids in mitigating sex restrictiveness in existing occupational scales, and the value of placing greater emphasis on basic interest scales is illustrated. For both basic interest scales and occupational scales, primary attention is given to the possibility that, contrary to current practice, interest inventories can consist entirely of items that elicit similar responses from males and females. The scores for such "unisex" inventories would provide males and females with similar vocational suggestions. Reliability and validity data for one such inventory are summarized.

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ALTERNATIVES TO SEX-RESTRICTIVE VOCATIONAL INTEREST ASSESSMENT

Dale J. Prediger

Richard W. Johnson

Vocational interest inventories have been popular counseling tools for nearly 40 years. According to a recent survey (Tittle & Zytowski, 1978), approximately 3,500,000 interest inventories are administered each year by vocational counselors and others in the helping professions. One of the main applications of interest inventories in vocational counseling is in helping counselees identify vocational options they otherwise might not have considered. Yet, as this report shows, many of the interest inventories in common use are *sex restrictive* in that the scores obtained by males typically suggest "man's work" while those obtained by females typically suggest "woman's work." Perhaps this should not be surprising, considering that current interest assessment procedures were developed over 40 years ago. However, the continued use of sex-restrictive interest scores, particularly with females, is problematic. The occupations that such scores suggest to females tend to have lower pay, less responsibility, less status, and fewer opportunities for advancement. Two sets of guidelines on this matter, one by the National Institute of Education (Tittle & Zytowski, 1978) and the other by the Association for Measurement and Evaluation in Guidance (AMEG, 1973), stress that the occupational options suggested to individuals through the use of an interest inventory should not be limited solely on the basis of gender.

Purpose and Scope of the Report

The primary purpose of this report is to summarize recent research on interest assessment procedures as it bears on the issue of sex restrictiveness, or conversely, sex fairness. Studies documenting sex restrictiveness in current assessment and reporting procedures are cited, and various alternatives to sex-restrictive interest assessment are considered. Recent research, much of which is reported for the first time, is summarized. Major attention is focused on the possibility that, contrary to current practice, interest scales can consist entirely of items that elicit similar responses from males and females. Such scales provide males and females with similar vocational suggestions. Research on the psychometric characteristics of sex-balanced interest scales is summarized.

This report is divided into two sections that correspond to the two main types of interest scales: basic interest scales and occupational scales (Anastasi, 1976). Occupational scales report scores for specific occupations; a separate scale is required for each occupation covered by the interest inventory. The Strong Vocational Interest Blank (SVIB) is a frequently cited example of an interest inventory using occupational scales. Recent revisions of the SVIB, now called the Strong-Campbell Interest Inventory (SCII), have increased the number of occupations for which scales are provided.

Basic interest scales report scores for general types or categories of interests (e.g., social, mechanical, artistic), each of which is relevant to a number of occupations. Occupational relevance is verified by

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analyzing the scores of persons pursuing various occupations. Perhaps the classic example of an interest inventory with basic interest scales is the Kuder Preference Record—Vocational. But even the SVIB, which is traditionally identified with occupational scales, reports scores for 23 "Basic Interest Scales" and 6 "General Occupational Theme Scales."

Typically, basic interest scales are used to enhance self-knowledge and to suggest career (educational and vocational) options compatible with a person's pattern of interests. They may also reinforce a current choice. The same basic interest scales can serve all three purposes, as can occupational scales. However, it may be difficult to use occupational scales for enhancement of self-knowledge.

This report is based on two symposium papers presented at the 1978 National Convention of the American Psychological Association. The sections on basic interest scales and occupational scales were prepared by Prediger and Johnson, respectively; the report reflects the informal styles of the original convention papers.

Basic Vocational Interest Scales

In this section, problems related to sex restrictiveness in basic interest scales are discussed, and possible alternatives are considered in the context of recent research. Readers who have followed the literature on sex bias in interest assessment will find that some old problems are addressed once again. Since the "old problems" and "old data" aren't really that old or that widely known, a brief review is provided in conjunction with the results of some recent studies.

The Problem of Sex Restrictiveness

Current problems of sex restrictiveness in vocational interest assessment appear to rest on the belief that sex-restrictive interest inventories simply report facts of life. They are Mother Nature's way of reminding vocational counselors that boys and girls are different. However, many counselors may not be aware of what the term "sex restrictive" really means or the degree to which sex restrictiveness exists in widely used interest inventories.

A definition of sex restrictiveness. One way to define sex restrictiveness is through some actual data. According to Gottfredson, Holland, and Gottfredson (1975), for example, the distributions of Self-Directed Search (SDS) high-point codes (highest scores) for "diverse samples of 2,169 high school boys [and] 2,447 high school girls" (p. 139) are as follows:

SDS scale	Girls	Boys	Occupational categories associated with SDS scale
S	67%	20%	Education and social welfare occupations
A	13	8	Artistic, musical, and literary occupations
C	11	3	Office and clerical occupations
R	1	40	Skilled trades, technical, and some service occupations
I	8	23	Scientific and some technical occupations
E	1	6	Managerial and sales occupations

Over 90% of the high school girls receive their highest SDS raw scores for S, A, or C (social, artistic, office, clerical, etc.) occupations. Only about 10% score highest on I, R, or E (scientific, trades/technical, managerial, etc.) occupations. In contrast, 70% of the boys receive their highest scores for these latter occupations.

The above distributions of scores for males and females and the associated career options help define the practical aspects and implications of sex restrictiveness. The more formal definition adopted here reads as follows: "An interest inventory is sex restrictive to the degree that the distribution of career options suggested to males and females is disproportionate. Conversely, an interest inventory is not sex restrictive if each career option covered by the inventory is suggested to similar proportions of males and females" (Prediger & Hanson, 1974, p. 97).

I hasten to emphasize, however, that a sex-restrictive inventory is not necessarily sex biased. The distinction between sex restrictiveness and sex bias is crucial, for, as Holland and others have pointed out (e.g., see Gottfredson, et al., 1975; Holland, 1975b), interest inventories may need to be sex restrictive in order to be valid. This reasoning is the basis for the following definition of sex fairness: "In order for a sex-restrictive inventory to be called sex fair, the publisher must demonstrate that sex restrictiveness is a necessary concomitant of validity as commonly defined" (Prediger & Hanson, 1974, p. 101). Stated another way, if sex restrictiveness cannot be justified on the basis of validity evidence, then it is synonymous with sex bias. Thus, the definition follows principles underlying Equal Employment Opportunity Commission Guidelines (1970). The burden of proof, however, is on the test publisher, not the test user.

Because alternatives would be of little use if sex restrictiveness is a necessary concomitant of validity, research bearing on this issue is the major focus of this paper. However, to further illustrate the extent of the problem posed by sex restrictiveness, it will be useful to look at the degree to which sex restrictiveness is present in various interest inventories.

Incidence of sex restrictiveness. Although the male-female distributions provided by Holland are seldom available for interest inventories, one can frequently find score means and standard deviations for males and for females. Given these data and the procedure developed by Tilton (1937), it is a simple matter to determine the degree to which the scores of males and females overlap. Table 1 provides illustrative data for scales assessing common dimensions of interests as described by Holland (1973).

Dunnette (1966) has suggested that two distributions differ in meaningful ways if overlap is less than 75 percent. Strong (1955) proposed that "two groups that overlap less than 80 percent are different enough to be considered practically different." (p. 22). Whether or not these criteria are applied, it is readily evident from Table 1 that male-female score differences on certain scales are substantial. Furthermore, the male-female score differences illustrated in Table 1 are not limited to scales assessing Holland types. For example, male-female score overlap ranges from 46% to 99% (median of 80%) for the 23 SCII Basic Interest Scales, according to data for the General Reference Sample (Campbell, 1977, p. 38). Male-female overlap for 5 scales falls below 75%. Readers are reminded that these data are not necessarily indicative of sex bias.

It is clear from Table 1 and the previous SDS distributions that substantial discrepancies in the scores of males and females are common to traditional interest inventories reporting raw scores or scores based on combined-sex norms. Raw scores, of course, reflect any differences in the responses of males and females to specific items. Since combined-sex norms merely anchor raw score scales to parameters based on the total group of males and females, any sex differences on a raw score scale will be reflected in a scale based on combined-sex norms. Thus, as shown by Cole and Hanson (1975), standard scores based on combined-sex norms produce sex differences similar to those observed for raw scores.

When score reports are based on same-sex norms, however, males and females receive highly similar (sex-balanced) interest profiles and distributions of career suggestions (Cole and Hanson, 1975; Gottfredson, et al., 1975; Prediger and Hanson, 1974). This occurs because of the very nature of the norming procedure, regardless of sex differences in raw score distributions. The Kuder Preference Record—Vocational is a classic example of an inventory using same-sex norms.

TABLE 1

Overlap of Scores for Males and Females on Various Interest Scales Assessing Holland Types

	Scales based on traditional items						
Scale	SDS[a]	VPI[b]	SCII[c]	CAI[d]	CDM[e]	ACT-IV[f]	Brand X[g]
Investigative	77%	85%	88%	90%	91%	84%	93%
Artistic	78	77	75	77	77	76	87
Social	50	62	90	82	56	60	85
Enterprising	87	90	85	97	86	98	99
Conventional	75	94	99	74	98	95	97
Realistic	32	62	65	63	54	57	89

Note. Percent overlap is based on Dunnette's (1966) table for Tilton's (1937) measure of overlap.

[a]Data are based on Self-Directed Search (SDS) summary scores for 2,152 male and 2,431 female high school students (Gottfredson & Holland, 1975a).

[b]Data are based on Vocational Preference Inventory (VPI) raw scores for 6,290 male and 6,143 female entering college students (Holland, 1975a, p. 29).

[c]Data are based on Strong-Campbell Interest Inventory (SCII) Theme Scales standard scores for 300 males and 300 females in the men- and women-in-general samples (Campbell, 1977, p. 33).

[d]Data are based on Career Assessment Inventory (CAI) Theme Scale standard scores for a "composite reference sample" of 750 males and 750 females (Johansson, 1976, p. 23). This sample was used to select a subset of CAI items that minimized theme scale sex differences (Johansson, 1976, p. 20).

[e]Data are based on Harrington/O'Shea System for Career Decision Making (CDM) raw scores for 435 male and 380 female high school and college students (Harrington & O'Shea, 1976, p. 9).

[f]Data are based on ACT Interest Inventory (ACT-IV) raw scores for the 1,233 males and 1,738 females in the ACT-IV national norm group for college-bound persons (Hanson, 1974, p. 14). These data are for purposes of comparison only. Standard scores based on same-sex norms are used in ACT-IV score reports (Hanson, 1974).

[g]Data for 1,247 males and 1,693 females are for a new unisex interest inventory based on sex-balanced items. Brand X data are provided for perspective only.

Overview of alternatives. One alternative to sex-restrictive interest reports, then, involves the use of same-sex norms. Another alternative involves the elimination of sex differences at the item level, as suggested by Harmon (1975). Although the fact is not well known, interest inventory authors have written substantial numbers of sex-balanced items in the past. Responses to about half of the items in current inventories are approximately sex-balanced (Campbell, 1977; Harmon, 1975; Johansson, 1976). The implication is that it may be possible to develop interest inventory scales consisting entirely of sex-balanced items. In that case, both raw scores and standard scores based on combined-sex norms would be sex balanced.

As noted previously, *the crucial question with respect to both alternatives to sex-restrictive reports (i.e., use of same-sex norms or sex-balanced items) is whether interest scores must be sex restrictive in order to be valid; or conversely, whether sex-balanced reports have less validity.* This question needs to be addressed in order to evaluate alternatives to current practice. First, however, careful attention must be given to the procedures used to determine "validity."

Validation Models

Because I believe it is crucial to distinguish among various validation models if we are to make progress in eliminating sex bias from interest assessment, and because I don't know how to explain it any better, the passages that follow were taken more or less intact from a recent article in *Applied Psychological Measurement* (Prediger, 1977).

As Kuder (1970) noted, "the problem of establishing validity for counseling purposes becomes one of classification; [hence] one of the fundamental questions in judging a vocational interest inventory is how well it differentiates among the specific occupational groups for which it is scored" (p. 209). Strong (1943), although primarily concerned with the differentiation of occupational groups from men or women in general, also recognized the need to differentiate among the occupational groups themselves. Though other, perhaps better, approaches to validation are possible (e.g., determination of correlations with satisfaction or success), interest inventory construction and validation studies have typically focused on criterion group differentiation/classification. . . .

It is well known that the validity of a measuring instrument depends on the purposes for which it is used. Hence, before studying validity, one must ask, "Validity for what?" Interest inventories are commonly used to suggest possible occupational options to counselees. Yet, the validity of inventories is often reported in terms of their ability to predict future occupational preferences or occupational entry [e.g., see Gottfredson and Holland, 1975b]. As Berdie (1970) has noted, few counselors are interested in predicting whether a counselee will enter (or prefer) occupation A or occupation B. Hence, validity data for this use of interest inventories may provide a distorted view of validity for more common uses. Some of the reasons are discussed below.

The "Will-Prefer-or-Enter" Criterion

When predicting the occupations persons will prefer or enter, the nature of employment distributions as well as the nature of occupational preferences must be taken into account. Stated another way, if an interest inventory is to provide accurate predictions of eventual employment, the predictions must accurately reflect the size of each occupational criterion group. To the degree that group membership predictions depart from group base rates, the inventory's predictive accuracy will be lowered.

Interest inventories predicting that persons will enter or prefer occupations in the same proportions as in the past should do well under this approach to validation. For a multitude of reasons (e.g., social expectations, local labor market needs, the contingencies of life), people will continue to state preferences for and enter traditional occupations. Unfortunately, the number of persons in various occupations and occupational preference groups differs widely from group to group (Gottfredson, Holland, & Gottfredson, 1975; Prediger, Roth, & Noeth, 1974). Since the predictions used in validation studies are based on the same scores counselees receive, the occupational options suggested to counselees will reflect the same differences in base rates as the predictions. Under this approach to validation, a "valid" interest inventory in the 1850s would have suggested farming to nearly everyone. The employment status quo will be reflected and reinforced by interest inventories validated in this way.

The "Should-Consider" Criterion

The alternative approach to the use of occupational preference and membership as criteria in validating interest inventories assumes that the purpose of interest inventories is to identify career options for counselees to consider rather than to predict the occupations counselees will prefer or enter. To achieve the former objective, an interest inventory must assess the correspondence between a counselee's interests and the interests associated with various occupational groups—regardless of the group base rates. If a counselee's interests are similar to the interests of persons in a given occupation, one would suggest that the counselee consider the occupation, even though relatively few persons are employed in the occupation. The emphasis is on "should consider," not "will enter or prefer." The underlying assumption is that employment data may play an important role in career counseling, but they should not influence interest score reports.

Studies following this approach to interest inventory validation will treat occupational criterion groups (or preference groups) as if they were of equal size. One would expect an interest inventory to suggest engineering to a large proportion of criterion

group members in engineering, nursing to a large proportion of nurses, retail sales to retail sales clerks, horseshoeing to horseshoers, and so on for each of the criterion groups available. The fact that there are relatively few horseshoers in comparison to retail sales clerks is irrelevant. The question asked in this validation analysis is "What proportion of the members of *each* criterion group would have been asked to look into their occupation by this interest inventory?" Stated differently, the question is "What is the hit rate for each criterion group?" A high hit rate depends on an inventory's ability to differentiate the criterion groups and, thus, minimize the misassignment of members of each of the groups.

In this approach to validation, an interest inventory does not have to suggest retail sales to more counselees than horseshoeing because there are more retail sales clerks than horseshoers. "Predictions" are simply based on whichever criterion group a person resembles most. There is no premium placed on providing interest-score distributions that parallel preference or employment distributions. This proposed validation strategy recognizes that, for a number of very practical reasons, many persons may not enter the occupations suggested ("predicted") by an interest inventory.

How Choice of Criterion Affects Career Guidance

Perhaps the following example will bring differences between the two approaches to validation into sharper focus. Suppose that in a society built on the caste system, an interest inventory was designed to have high validity in predicting occupational entry. The inventory would suggest few, if any, occupations that were not traditional for a person's caste. To do otherwise would lower its validity. On the other hand, suppose the inventory was designed to identify occupational options compatible with a person's interests—regardless of the *proscriptions of the* society. Such an inventory may suggest many occupations not traditional for members of the caste. As a result, it would be a poor predictor of occupational entry. Yet, it may do an excellent job of determining occupational compatibility. Even in a time of social change, the score reports might be unsettling, but they could provide beneficial information, both to the individual and to the society (pp. 275-277).

Although useful in some types of research, interest inventories designed to predict which persons will prefer or enter a given occupation present special problems for vocational counseling. In effect, the rationale underlying such inventories says "Cindy may have interests like an engineer and Mike may have interests like a nurse. But few females or males are likely to enter those nontraditional occupations. So let the predictions (score profiles) take into account the relative numbers of males and females who have entered various occupations in the past. In the long run, a higher hit rate will be obtained and the inventory will appear to be more valid." When used in vocational counseling, inventories based on this rationale will reinforce society's occupational sex-role stereotypes and thus further institutionalize the channeling. At first glance, such inventories may appear to have higher validity than inventories designed to report occupational options compatible with a person's interests. But this may be true *only if one's purpose in assessing interests is to predict the occupations counselees will enter (or prefer).*

Prediger and Cole (1975) provide an extended discussion of this topic as it applies to career counseling and nontraditional occupations for males and females. Prediger (1977) discusses specific implications for validation procedures.

The Comparative Validity of Sex-restrictive and Sex-balanced Reporting Procedures

Now, I would like to return to the key question posed earlier—"Must vocational interest reports be sex restrictive in order to be valid?" Table 2 summarizes the results of 10 studies comparing the criterion-related and construct validity of sex-restrictive and sex-balanced reporting procedures. In each of the studies, sex-balanced reporting procedures were based on same-sex norms. The results cited for sex-restrictive reporting procedures were obtained with raw scores. (As previously noted, combined-sex norms reflect essentially the same male-female differences as raw scores.) All studies used measures of Holland types; and for a given study, both sex-restrictive and sex-balanced reports were obtained from the same interest inventory. Thus, any differences in validity reflect differences in the presence or absence of sex restrictiveness in the reporting procedures.

Six of the studies have appeared in the professional literature and citations appear in the left hand column of Table 2. The other four studies, which were completed during the past year, are described below.

Study 1: procedures. Study 1 involved 11,395 college seniors (5,846 males and 5,549 females) enrolled in 16 major universities located primarily in the midwestern, southern, and southwestern regions of the country. Fifteen states were represented. A high percentage of the 1974-75 incoming freshmen at each of the institutions had completed the ACT Assessment Program (AAP) battery as college-bound students in 1973-74, the first year the ACT Interest Inventory (ACT-IV) was included in the AAP. A roster of 1977-78 seniors was

TABLE 2

Summary of Validity Data for Sex-restrictive and Sex-balanced Score Reports of Holland Types

Study	Type of validity	Time interval	Sample; No. of males (M) & females (F)	Criterion; No. of criterion groups	Relative performance of sex-balanced reports (SBR) & sex-restrictive reports (SRR)
Prediger & Hanson (1976)	Construct	Concurrent & longitudinal (5 years)	Young adults & adults in 3 samples; M=20,000, F=19,000	Occ. status (2 samples) & preference; M=104, F=104	SBR more in agreement with congruency principle and occupational typology in Holland's theory of careers
Prediger (1976)	Construct	Concurrent	High school & college students & adults in 7 samples; M=18,000, F=20,000	NA	SBR more in agreement with consistency principle in Holland's theory of careers
Prediger & Hanson (1977)	Criterion-related	Concurrent	College seniors; M=5,500, F=5,000	College major; M=5, F=5 (by Holland type)	SBR and SRR hit rate similar[a] for males; SBR better for females
Hanson, Noeth, & Prediger (1977)	Criterion-related	Longitudinal (5 years)	Young adults; M=648, F=425	Occ. status; M=6, F=5 (by Holland type)	SBR hit rates better for males and females
Hanson, Noeth, & Prediger (1977)	Criterion-related	Longitudinal (2 years)	College sophomores; M=549, F=894	College major; M=5, F=5 (by Holland type)	SBR and SRR hit rates similar for males; SBR better for females
Prediger (1977)	Criterion-related	Longitudinal (1-3 years)	College students; F=989	Occ. preference; F=5 (by Holland type)	SBR and SRR hit rates similar for females; SBR data not available for males
1[b]	Criterion-related	Longitudinal (4 years)	College seniors; M=5,846, F=5,549	College major; M=6, F=6 (by Holland type)	SBR and SRR hit rates similar for males and for females; differences favored SBR
2[b]	Criterion-related	Concurrent	College seniors; M=929, F=1,033	College major; M=6, F=6 (by Holland type)	SBR and SRR hit rates similar for males and for females; differences favored SBR
3[b]	Criterion-related	Concurrent	College-bound students: M=737, F=852	Occ. preference; M=6, F=6 (by Holland type)	SBR and SRR hit rates similar for males and for females
4[b]	Criterion-related	Concurrent	Adults; M=289, F=428	Occ. status; M=14, F=20 (by Holland type)	SBR and SRR match between Holland type of criterion group and highest interest scale mean for group members was similar for males; for females, differences favored SBR

Note. Sex-balanced reports (SBR) based on same-sex norms are compared with sex-restrictive reports (SRR) based on raw scores for the *same interest inventory*. All studies involved traditional interest items assessing Holland's six types.

[a]When SBR and SRR criterion group hit rates differed by less than 5% (e.g., 46% vs. 42%), they were considered to be similar.

[b]See descriptions of Studies 1, 2, 3, and 4 in this paper.

obtained from each of the institutions and matched against a roster including the ACT-IV scores of 1974-75 enrollees. Since the college majors of the seniors were known, it was possible to determine how seniors majoring in various areas had scored on the ACT-IV four years earlier.

Because all students had achieved senior status in college less than four years after entry, very little time could have been lost due to dissatisfaction with major or unsatisfactory academic performance. Thus, the study design included an indirect criterion group screen for success and satisfaction. The percentage of ACT-tested enrollees at each of the institutions ranged from 64% to 100% (median of 88%). Hence, a high proportion of all seniors meeting the four-year screen had taken the ACT-IV.

College majors were allocated to Holland types on the basis of the classification system and associated alphabetical index provided by Holland (1972). Interest profiles were allocated to Holland types on the basis of the student's highest score (high-point code) for each of the two types of reporting procedure. All score ties were broken randomly. Thus, each college senior in the sample was allocated to a Holland type by two methods: (a) on the basis of academic major, and (b) on the basis of ACT-IV scores. The former method established the student's criterion group membership. Correspondence between a student's criterion group and high-point code was then determined separately for the sex-restrictive and sex-balanced reporting procedures. "Hit rates" were tallied separately for males and females in each criterion group.

Study 2: procedures. Study 2 involved a subset of 2,096 college seniors in Study 1 plus an additional sample of 903 seniors who had *not* taken the ACT-IV four years earlier. (Prior ACT-IV data were not needed in Study 2 because the design was cross-sectional rather than longitudinal.) Altogether, there were 2,999 students in the study. The sampling plan involved the random selection of approximately equal numbers of males and females majoring in each of ten fields (e.g., engineering, art, physical sciences). The fields were selected to span Holland's six types. The additional sample of students not in Study 1 was needed to assure sufficient numbers in each type to support separate hit rate analyses for males and females.

The 2,999 students in Study 2 were randomly allocated to two subsamples. The first was asked by mail to complete the ACT-IV and the recently developed Unisex Edition of the ACT Interest Inventory (UNIACT), with items sequenced in that order. The second sample was asked to complete UNIACT and then the ACT-IV. Thus, the administration design was counterbalanced. Both local and home addresses were obtained from the universities. Home addresses were used when local addresses proved to be invalid.

After two follow-up mailings, the last about ten weeks after the initial mailing, usable replies were received from 1,988 of the 2,905 students for whom there was no evidence of bad addresses (68% response rate). The response rate for the total sample was 66%. All students received a four-page report of vocational interests, including reference material, in return for their participation in the study.

A number of students in various engineering and agricultural specialities who had been assigned to Holland's realistic type when the sample was initially selected were subsequently shifted to the investigative type upon final assignment. These and a few other changes, including the elimination of 26 cases with very general majors, were made, to achieve close correspondence with Holland's classification system. As in Study 1, students were also assigned to Holland types on the basis of high-point interest codes. Correspondence between college major type (i.e., criterion group) and interest type was then determined for the sex-restrictive and sex-balanced scores.

Study 3: procedures. Study 3 involved 2,013 of the approximately 127,000 college-bound students who registered for the October 1977 AAP national test date. Only those students who were high school seniors planning to enroll in college the following fall and who were "fairly sure" or "very sure" of their first occupational choice were eligible for the study. The Study 3 sample was selected from this pool on the basis of the general correspondence of expressed vocational choice, as recorded on the AAP registration sheet, to the six Holland types. The sampling plan involved the random selection of approximately equal numbers of males and females of each Holland type (i.e., criterion group), with some oversampling in the artistic and realistic categories.

As in Study 2, students in Study 3 were asked by mail to complete the ACT-IV and UNIACT. A counterbalanced design was used. After two follow-up mailings, the last about three weeks after the initial mailing, usable replies were received from 1,589 of the initial sample of 2,013, a 79% response rate. All students received a one-page computer-printed report of vocational interests, supplemented by reference materials.

As in Study 2, there were some changes made in the initial criterion group allocations in order to achieve close correspondence with Holland's classification system. Criterion group hit rates were determined using procedures described for Studies 1 and 2.

Studies 1, 2, and 3: summary of results. The unweighted average hit rates shown in Table 3 provide a general index of the criterion-related validity of the sex-restrictive and sex-balanced reporting procedures used in Studies 1, 2 and 3. This hit rate index treats the criterion groups as being of equal importance in vocational counseling and is appropriate to the "should consider" validation model (Prediger, 1977) described earlier in this paper.

In all three studies, overall hit rates for the sex-balanced and sex-restrictive score reports were similar, with small differences generally favoring sex-balanced reports. Overall hit rates for males and females differed somewhat; however, the male and female criterion groups were not comparable because of differences in the mix of majors (Studies 1 and 2) and occupational preferences (Study 3). Across the three studies, sex-balanced reports produced higher hit rates than sex-restrictive reports for 13 of the 18 female groups and 9 of the 18 male groups.

Study 4: procedures and results. Walsh and his students at Ohio State have conducted a series of six studies in which the SDS was administered to predefined criterion groups (Bingham & Walsh, 1978; Fishburne & Walsh, 1976; Horton & Walsh, 1976; Matthews & Walsh, 1978; O'Brien & Walsh, 1976; Spokane & Walsh, 1978). Across the six studies, there were 717 persons in 34 occupational groups—20 groups composed of females (N=428) and 14 groups composed of males (N=289). With one exception, each study followed the same model. Adults in six occupations representing Holland's (1973) six types completed the SDS. Raw score means on each of the six SDS summary scales were then calculated for members of each occupation. The one exception (Spokane and Walsh, 1978) involved four groups of adults in two occupations representing Holland's enterprising type.

In their six reports, Walsh et al. place major emphasis on a comparison of the means obtained by all six occupational groups *on a given SDS summary scale.* However, results are also reported for an "intraoccupational analysis" which follows Holland's (1973) proposal for determining, empirically, high-point codes (Holland types) for occupations. Raw score means for all six SDS summary scales were ranked for a given occupation, and the scale with the highest mean was determined. This scale, which constitutes the occupation's empirically derived high-point code, is expected to correspond to the Holland type assigned to the occupation by Holland (1973).

In order to determine the effectiveness of sex-balanced interest reports using the same correspondence criterion of validity, I sought same-sex norms that could be used to convert the SDS summary scale raw scores to standard scores. Of the normative data provided by Gottfredson and Holland (1975a) for adults (N=140), college students (N=3,355), and high school students (N=4,675), the high school data appear to be the most comprehensive. Gottfredson and Holland note that the norms "usually represented large and diverse samples from any sources, but the high school and college samples are believed to be reasonably representative of groups commonly taking the SDS" (1975a, p. 2). Raw score means for the SDS were transformed to standard score means using the high school norms.

Appropriate high-point codes (Holland types) were obtained for 9 of the 20 female occupational groups (45%) when raw scores were used, and for 13 of 20 groups (65%) when standard scores were used. Of the 11 occupational groups with inappropriate raw score codes, 9 scored highest on the SDS Social Scale. Results for males were less discrepant. Raw scores and standard scores produced 7 and 8 appropriate codes, respectively, for the 14 occupational groups. Across all 34 groups, raw scores produced 16 appropriate codes (47%) and standard scores produced 21 appropriate codes (62%).

TABLE 3

Criterion Group Hit Rates for Sex-restrictive and Sex-balanced Score Reports of Holland Types

Criterion group by Holland type	Sample size		Hit rates (in %)			
			Sex-restrictive reports[a]		Sex-balanced reports[b]	
	M	F	M	F	M	F
			Study 1			
Investigative	2,008	999	66	42	51	54
Artistic	778	1,353	28	36	47	42
Social	621	2,343	46	76	26	22
Enterprising	1,147	414	25	11	32	29
Conventional	457	297	28	32	48	41
Realistic	835	143	31	2	38	27
Unweighted average hit rate			37	33	40	36
			Study 2			
Investigative	323	348	59	49	46	50
Artistic	148	188	62	60	79	57
Social	151	182	41	56	30	24
Enterprising	121	121	57	36	62	43
Conventional	105	118	31	51	47	55
Realistic	81	76	37	9	33	47
Unweighted average hit rate			48	44	50	46
			Study 3			
Investigative	187	181	50	28	40	32
Artistic	142	187	40	46	55	41
Social	76	132	54	62	41	26
Enterprising	124	145	44	22	37	34
Conventional	101	132	50	42	69	62
Realistic	107	75	42	9	36	35
Unweighted average hit rate			47	35	46	38

Note. All studies involved traditional interest items assessing Holland's (1973) six types. The same interest inventory was used in each comparison of reporting procedures.

[a]Reports are based on raw scores.

[b]Reports are based on standard scores derived from same-sex norms.

These results imply that sex-balanced SDS standard scores are more accurate than the sex-restrictive raw scores in describing the Holland types characterizing various occupational groups and, hence, individuals in those groups.

Must Interest Scores Be Sex Restrictive in Order to Be Valid?

The previous section summarizes results for ten studies comparing the construct and criterion-related validity of sex-restrictive and sex-balanced procedures for reporting interest scores. Included were concurrent and longitudinal studies involving a variety of criterion groups and instruments (e.g., the SDS, VPI, SVIB, and ACT-IV). Results from each of the studies indicate that the validity of interest inventories is not lowered through the use of sex-balanced score reports. In several instances, it is increased. A recent study by Lamb (1975) also indicates that sex-balanced score reports are appropriate for use with males and females in various minority groups, and several studies show that persons in a wide range of criterion groups obtain sensible score profiles when sex-balanced reports are used. Hanson, Prediger, and Schussel (1977) use high-point codes based on same-sex norms to summarize longitudinal and cross-sectional data on the vocational interests of 103 educational criterion groups (N=18,435), 10 occupational criterion groups (N=1,073) and 39 vocational choice groups (N=7,148). The three-letter codes for males and females are generally congruent with expectations based on Holland's theory of careers.

In six of the ten studies summarized in Table 2, sex-restrictive reports based on combined-sex norms were included in the comparisons. (Results were not summarized to avoid complicating the table.) The validity of these reports was sometimes higher than the validity of the sex-restrictive raw scores summarized in Table 2, but it in no case exceeded that of the sex-balanced reports. One other study relevant to this issue (Gottfredson & Holland, 1975b) is sometimes cited as showing that sex-balanced reports are "less valid." In that study, sex-restrictive reports did produce more accurate predictions of *future vocational preference* for college women. As already noted, however, this approach to validation (i.e., prediction of future preference) is not applicable to counseling uses of interest inventories. In any case, the predictions failed to improve upon the base rates or predictions based on current preference—alternative procedures for predicting future preference that ignore interest scores.

Considered as a whole, the validity data summarized in Table 2 indicate that vocational interest inventories do not have to be sex restrictive in order to be valid. Thus, sex-restrictive interest score reports may well be sex biased. Interest inventory publishers and other researchers might consider conducting additional studies to compare the validity of sex-restrictive and sex-balanced reporting procedures.

Sex-balanced (Unisex) Scales

Rationale. The data thus far indicate that sex-balanced interest reports based on same-sex norms provide a viable alternative to sex-restrictive reports. As noted previously, another alternative is to eliminate sex differences at the item level and, thus, produce "unisex scales" (Rayman, 1976) based on sex-balanced items. Since males and females will obtain similar scores on these scales, combined-sex norms could be used without being sex restrictive. Same-sex norms which, according to some, "treat males and females differently" would no longer be needed.

Studies by Boyd (1976), Gottfredson (1976), and Holland and Gottfredson (1976) show that simply desexing existing items has little effect on scale scores. However, no attempt was made in those studies to write and pretest new items endorsed in equal proportions by males and females. Rayman (1976), working with Hanson and Cole at ACT, recently demonstrated the viability of this latter approach to interest scale construction. Subsequently, Hanson and Rayman (1976) showed that Rayman's "unisex scales" had criterion-related validity equivalent to that of sex-restrictive scales administered to the same sample.

Encouraged by these results and the related work of Lunneborg (1977), staff members at ACT conducted a series of studies leading to the development of the Unisex Edition of the ACT-IV (UNIACT). Starting with a substantial pool of sex-balanced items already used in various forms of the ACT-IV, we attempted to write additional items that captured the essence of a work-related activity preference while minimizing sex-role connotations. As noted by Prediger and Hanson (1978),

"this approach to interest scale construction recognizes that sex differences in the responses to many interest items may reflect the differential effects of sex-role socialization on males and females without necessarily reflecting differences in basic interests. Thus, groups of males and females may respond quite differently to interest inventory items with sex-role connotations. . .even though the groups may have similar patterns of interests."

Consider, for example, the following interest items which are typical of those included on some "mechanical" or "realistic" interest scales. "Would you like to be—

- a car mechanic?
- a bulldozer operator?
- a train engineer?
- a power shovel controller?"

Should one take sex differences on a scale containing such items at face value—as indicators of fundamental differences in the mechanical (realistic) interests of males and females? Certainly, the items appear to fit the "mechanical" category; they are gender neutral; and they may correlate with other items in the appropriate manner (similar items have). But do they register the interests of males and females in equal measure? Would the scores of males and females differ by the same amount if items free from sex-role connotations were used? The work of Rayman (1976) clearly suggested that the answer is "no." We proceeded on that basis.

The construction of UNIACT primarily involved the development and repeated tryout of potentially sex-balanced items. As described by Hanson, et al. (1977), more than 200 items were used in a series of studies involving six samples (N=10,388) of 9th graders, 11th graders, college-bound students, college sophomores, and adults. Initial data on the psychometric characteristics of UNIACT were reported by Hanson, et al. (1977) and summarized by Prediger and Hanson (1978). Beginning in the fall of 1977, UNIACT replaced the ACT-IV as a core component of the ACT Assessment Program (the "ACT"). A 60-item version of UNIACT is also used in the Vocational Interest, Experience, and Skill Assessment (ACT, 1976). In both assessment programs, UNIACT score reports are based on combined-sex norms.

Psychometric characteristics of sex-balanced scales. Internal consistency reliabilities for the six 15-item UNIACT scales range from .85 to .92, with a median of .87 for a holdout sample of 914 males and 937 females (Hanson, et al., 1977). Test-retest stability coefficients for about a six-week interval range from .79 to .87 (median .82) for the students in Study 3. Male-female score overlap is shown in Table 4 for four samples. For the UNIACT norm group, the range is 85% to 99% with a median of 91%. Across the four samples, overlap for the Social Service Scale was generally the lowest, yet it ranged from .84 to .85, well above Dunnette's (1966) 75% criterion cited earlier.

As previously noted, UNIACT and earlier editions of the ACT-IV were constructed to assess Holland types. (ACT-IV profiles generally in accord with Holland's theory of careers are provided by Hanson, et al., 1977, for a wide variety of criterion groups.) As reported by Hanson, et al. (1977), the correlations between parallel UNIACT and ACT-IV scales range from .76 to .86, with a median of .80 for a grade 11 sample. In Study 2, correlations for males ranged from .71 to .92 (median of .88). For females the correlations ranged from .75 to .91 (median of .87). Correlations based on Study 3 data for males ranged from .84 to .95 (median of .91). The correlations for females ranged from .80 to .94 (median of .91). As indirect indicators of UNIACT construct validity, these correlations compare quite favorably to the median VPI-SDS correlations of .55 for males and .43 for females reported by Holland (1972), especially since the VPI is a major component of the SDS and both were constructed to assess Holland types (Holland, 1973).

Additional data bearing on the construct validity of UNIACT scales are provided by their factor structure. As shown by the factor loadings in Figure 1, the hexagonal configuration basic to Holland's theory is present for both males and females. (Hanson, et al, 1977, provide further data on this point.)

Both the hexagonal configuration of factor loadings and the correlations between parallel UNIACT and ACT-IV scales suggest that the sex-balanced scales have good construct validity as measures of Holland types.

The Comparative Validity of Sex-balanced (Unisex) Scales and Traditional Scales

As previously noted, sex-balanced vocational interest scales provide an alternative to traditional sex-restrictive scales. However, some have claimed that

TABLE 4

Male-Female Score Overlap for UNIACT Scales

Scales (Holland types in parentheses)	UNIACT national norm group					Percent overlap for other samples		
	Males		Females					
	$\bar{X}$	SD	$\bar{X}$	SD	Percent overlap	1[a]	2[b]	3[c]
Science (I)	2.20	.58	2.10	.60	93	90	95	92
Creative Arts (A)	2.09	.51	2.26	.52	87	94	85	86
Social Service (S)	2.34	.42	2.48	.37	85	84	85	84
Business Contact (E)	2.16	.43	2.17	.44	99	96	98	100
Business Detail (C)	2.01	.49	2.05	.54	97	97	97	98
Technical (R)	1.89	.42	1.77	.44	89	82	91	87

Note. The national norm group consists of a systematic random sample of 1,247 males and 1,693 females drawn from the 198,000 persons registering for the November 1977 ACT Assessment Program (AAP) national test date. Percent overlap is based on Dunnette's (1966) table for Tilton's (1937) measure of overlap.

[a]Data based on cross-sectional sample of 1,851 11th graders (914 males and 937 females) attending 16 high schools in 15 states (Hanson, et al., 1977).

[b]Data based on systematic random sample of 737 males and 852 females drawn from the 118,000 high school *seniors* registering for the October 1977 AAP national test date. Before sample selection, the population was stratified by Holland type on the basis of vocational plans.

[c]Data based on systematic random sample of 1,297 males and 1,788 females drawn from the 127,000 persons registering for the October 1977 AAP national test date. This sample provided UNIACT norms during the 1977-78 AAP test year.

they must be "less valid." Research summarized in a previous section showed that sex-balanced reporting procedures based on traditional scales were at least as valid as, and sometimes more valid than, sex-restrictive reporting procedures. Hence, sex-balanced reporting procedures provide the best comparison basis for sex-balanced (unisex) scales.

Table 5 summarizes the results of studies comparing the validity of sex-balanced score reports and sex-balanced (unisex) scales. As before, citations are provided for studies that have already appeared in the professional literature.

Studies 2 and 3 listed in Table 5 are the same as those described previously. Hit rates for the two studies are summarized in Table 6. The unweighted average hit rates in Table 6 indicate that results for sex-balanced scales are similar to those for sex-balanced reports. (As before, hit rates that differ by less than 5% were considered to be similar.) However, trends favor the sex-balanced reports in three of the four comparisons.

The data from Studies 2 and 3, together with the previous data summarized in Table 5, suggest a similar level of validity for unisex scales and sex-balanced score reports. As we have noted in a

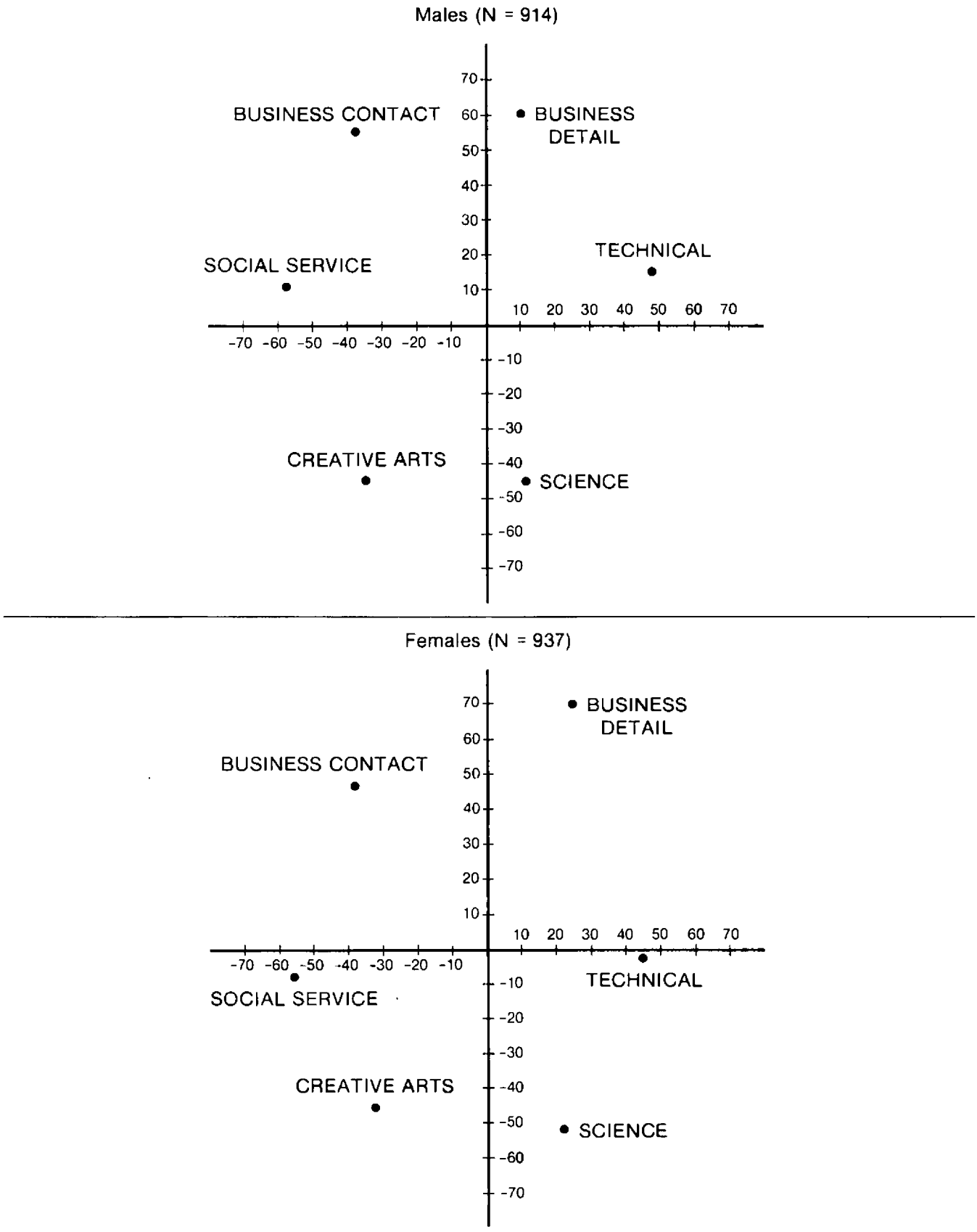

Figure 1. Plot of UNIACT theory-based factor loadings. (Source: Hanson, et al., 1977, p. 21)

TABLE 5

Summary of Validity Data for Sex-balanced Score Reports and Sex-balanced (Unisex) Scales

Study	Type of validity	Time interval	Sample; No. of males (M) & females (F)	Criterion; No. of criterion groups	Relative performance of sex-balanced reports (SBR) & sex-balanced scales (SBS)
Rayman (1976)	Construct	Concurrent	College-bound students; M=729, F=1,173	NA	SBR and SBS demonstrate similar construct validity as measures of Holland types
Hanson & Rayman (1976)	Criterion-related	Concurrent	College-bound students; M=582, F=878	Occ. preference; M=6, F=5 (by Holland type)	SBR and SBS discriminate among criterion groups in similar manner; hit rates similar[a] for males and for females
Hanson, et al. (1977); Prediger & Hanson (1978)	Construct	Concurrent	High school juniors; M=914, F=937	NA	SBR and SBS demonstrate similar construct validity as measures of Holland types
2[b]	Criterion-related	Concurrent	College seniors; M=929, F=1,033	College major; M=6, F=6 (by Holland type)	SBR and SBS hit rates similar for males and for females
3[b]	Criterion-related	Concurrent	College-bound students; M=737, F=852	Occ. preference; M=6, F=6 (by Holland type)	SBR and SBS hit rates similar for males and for females; differences favored SBR

Note. Sex-balanced reports (SBR) based on the application of same-sex norms to *traditional interest scales* are compared with scores obtained from *sex-balanced (i.e., unisex) scales*. All comparisons involve *two* interest inventories, each designed to assess Holland's six types.

[a]When SBR and SBS hit rates differed by less than 5% (e.g., 46% vs. 42%), they were considered to be similar.

[b]See descriptions of Studies 2 and 3 in this paper.

recent article (Prediger and Hanson, 1978), "perfect sex balance has not been achieved with [UNIACT scales]. Indeed, there is no evidence that the vocational interests of males and females are exactly alike." But we believe that, taken as a whole, the validity data suggest "that similar interest patterns for males and females come closer to reality than the highly divergent interest patterns produced by many interest inventories." In summary, sex-balanced scales appear to provide a promising alternative for assessing basic interests, Holland types in particular.

Concluding Comments

The field of vocational interest assessment has had 50 years of practice in constructing inventories on which males and females score differently. Given that perspective, we feel pretty good about what has been accomplished over the past four years. Fifty years of tradition in interest assessment are not easy to overcome, however.

In order to provide perspective on the reasons sex-restrictive interest assessment will be with us for a

TABLE 6

Criterion Group Hit Rates for Sex-balanced (Unisex) Scales and Sex-balanced Score Reports for Holland Types

Criterion group by Holland type	Sample size		Hit rates (in %)			
			Sex-balanced (unisex) scales[a]		Sex-balanced reports[b]	
	M	F	M	F	M	F
			Study 2			
Investigative	323	348	53	55	46	50
Artistic	148	188	63	61	79	57
Social	151	182	27	32	30	24
Enterprising	121	121	56	46	62	43
Conventional	105	118	42	61	47	55
Realistic	81	76	33	22	33	47
Unweighted average hit rate			46	46	50	46
			Study 3			
Investigative	187	181	43	22	40	32
Artistic	142	187	45	48	55	41
Social	76	132	29	29	41	26
Enterprising	124	145	41	31	37	34
Conventional	101	132	64	51	69	62
Realistic	107	75	41	23	36	35
Unweighted average hit rate			44	34	46	38

Note. All comparisons involve *two* interest inventories, each designed to assess Holland's six types.

[a]Scales consist of items for which males and females give similar responses. Reports are based on standard scores derived from combined-sex norms.

[b]Reports are based on standard scores derived from same-sex norms.

long time, I have assembled a list of 11 propositions that have been made in the professional literature—though in a more seductive manner. The propositions are uncontaminated by the results of research. Nevertheless, we believe they deserve serious (but not too serious) attention.

1. Once sex-role socialization has taken hold, a counselee's vocational options are restricted for life. Corollary: Because sex-restrictive interest scores simply reflect the effects of socialization, the only valid way to eliminate sex-restrictive scores is to revise society. Revising society is easier than revising interest inventories. But, for all of your counselees, it's already too late.

2. Vocational interest inventories must reflect sex-role stereotypes so that we can know when those stereotypes change. Corollary: Vocational counseling must also reflect sex-role stereotypes. Counselees can come back several years later to see if their stereotypes have changed.

3. The items used on vocational interest inventories (e.g., would you like to operate a power shovel? Repair a hot rod? Drill soldiers? Tend babies?) are "gender neutral." Hence, any *differences* in the interest scores of males and females simply reflect a FACT OF LIFE. Corollary: Interest inventories on which males and females receive *similar* scores are not just invalid, they mess with Mother Nature.

4. Interest inventories that suggest similar vocational options to males and females are difficult to reconcile with current theories of vocational development. (Current theories leave no doubt that males and females are destined for different occupations. Mother Nature approves.)

5. If one develops an interest inventory on which males and females receive similar scores, one must do the same for Bohemians, Unitarians, Middle Americans, and card-carrying Democrats—regardless of whether bias exists for any of these groups. The result will be an inventory with no more than two or three items. It will make everyone appear equal.

6. The correct way to validate an interest inventory is to see how well it predicts which occupations counselees will eventually enter or prefer. Counselors make heavy use of such predictions and counselees find them simply amazing.

7. Sex-restrictive inventories are "more valid" than non-sex-restrictive inventories. (In predicting future occupational entry or preference, they are almost as valid as predictions based on a counselee's stated occupational preference.)

8. Interest inventories should suggest occupations that parallel the traditional employment distributions and stated preferences of males and females. Corollary: An interest inventory that suggests nontraditional occupations to a counselee not only messes with Mother Nature, it prevents quick closure of the case.

9. If the "effects" of an interest inventory on males and females are "similar" (e.g., if *both* males *and* females explore the occupations suggested by their scores), then the inventory is SEX FAIR—even if the suggested occupations are highly sex stereotypic. Corollary: *Counselors* who produce "similar effects" on male and female counselees are also SEX FAIR. However, claims regarding male chauvinist counselors are ambiguous.

10. There are numerous purposes for using interest inventories in vocational counseling—for example, to enhance self-knowledge and identify career alternatives; to enhance self-knowledge and identify career alternatives for exploration; to (etc.) and compare career alternatives with current expressed choices; to (etc.) for college sophomores, disco dancers, clone donors, and near-sighted left fielders. The number of purposes is SO GREAT that issues of sex bias can never be resolved by empirical research or scientific reason.

11. There are numerous definitions of sex bias in interest inventories. Until everyone agrees on a single definition, sex bias can't even be identified, much less eliminated. Corollary: Efforts to eliminate racism will also be useless until everyone agrees on a single definition.

For all of the above reasons, sex-restrictive interest inventories will be with us for a long time. Yet, millions of vocational interest inventories are used, year in and year out, by vocational counselors and others in the helping professions. Research has shown that both sex-restrictive and sex-balanced

interest reports produce increased exploration of the vocational options that are suggested (Prediger & Hanson, 1976; Prediger & Noeth, in press). Each year, many persons make vocational plans grounded, at least in part, on sex-restrictive reports of basic vocational interests. It is difficult to imagine a clearer example of a problem that needs to be and can be addressed.

Occupational Interest Scales

Books on measurement typically cite the Strong Vocational Interest Blank (SVIB), or its successor, the Strong-Campbell Interest Inventory (SCII) (Campbell, 1977), as a model for occupational interest scale development. In a recent survey of testing practices at university and college counseling centers, 94% of the respondents (269 of 284 centers) stated that they used the SCII in counseling students (Sell & Torres, Note 1). One-half of the respondents (142 of 284) indicated that the majority of their clients completed the SCII. No other psychological test approached this degree of use.

In this section of the report, sex restrictiveness in occupational interest scales is examined, and strategies for reducing sex restrictiveness are discussed. Because of its widespread recognition and use, major attention is given to the SCII. The discussion extends to occupational interest scales on other instruments, however, and the use of basic interest scales to clarify the interpretation of occupational scales is considered.

The Problem of Sex Restrictiveness

Different sets of occupational scales. The SCII and two alternative interest inventories, the Career Assessment Inventory (CAI) (Johansson, 1976) and the Kuder Occupational Interest Survey (KOIS), Form DD, (Kuder, 1975), contain separate sets of occupational scales for men and women. Of the 124 occupational scales on the SCII, there are 30 scales for men and 20 scales for women that are not matched by scales for the opposite sex. Scales such as Highway Patrol Officer, Skilled Crafts, and Investment Fund Manager have been developed only for males; scales such as Dental Hygienist, Secretary, and Beautician exist only for females. Similarly, 22 of the 42 scales on the CAI have been constructed for just one sex (14 for men and 8 for women), and 80 of the 114 scales on the KOIS pertain to only one sex (60 for men and 20 for women).

The predominant types of interests represented by the female and male occupational scales on each of the three inventories are shown in Table 7. For women, there are proportionately fewer scales representing Holland's (1973) realistic or enterprising types of occupations; for men, there are proportionately fewer scales representing conventional types of occupations. These differences are pronounced for all three inventories. In addition, for the CAI and KOIS, there is a much larger percentage of scales indicating social types of occupations for women than for men.

The differences in the types of interests represented by the occupational scales for men and women reflect the differences in the employment patterns of men and women. The use of these scales in their present form serves to perpetuate the status quo. As an extreme example, there are *no* female occupational scales on the KOIS in Holland's realistic category, while more than one-quarter of the male scales fall in this category. It would be difficult for a female to show interests compatible with occupations in the realistic category on the present form of this instrument.

Prediger (1977) has argued that interest inventories should be used to suggest possible occupations for exploratory purposes rather than to predict future occupational membership. If the emphasis is removed from predictive accuracy to career exploration, the rationale for establishing different types of scales for men and women is less valid. To encourage career exploration, the full range of career possibilities should be adequately represented for both men and women. As described in a previous section entitled "Validation Models," new types of studies to determine the validity of interest inventories for enhancing career exploration would be required.

Differences in mean scores. Sex restrictiveness in the interest inventories is also shown in the high scores obtained by men and by women. When only

TABLE 7

Types of Interests Represented by Female and Male Occupational Scales on Three Interest Inventories

Type of interest[a]	Strong-Campbell Interest Inventory				Career Assessment Inventory				Kuder Occupational Interest Survey, Form DD			
	Female scales		Male scales		Female scales		Male scales		Female scales		Male scales	
	N	%	N	%	N	%	N	%	N	%	N	%
Realistic	5	8.8	14	20.9	1	5.6	9	37.5	0	0	20	26.0
Investigative	19	33.3	14	20.9	1	5.6	1	4.2	8	21.6	20	26.0
Artistic	10	17.5	9	13.4	3	16.7	3	12.5	2	5.4	5	6.5
Social	8	14.0	12	17.9	3	16.7	2	8.3	18	48.6	13	16.9
Enterprising	5	8.8	15	22.4	3	16.7	6	25.0	3	8.1	15	19.5
Conventional	10	17.5	3	4.5	7	38.9	3	12.5	6	16.2	4	5.2
Total	57	99.9	67	100.0	18	100.2	24	100.0	37	99.9	77	100.1

[a]The Occupational scales have been classified according to predominant type of interest by Campbell (1977, p. 16), Johansson (1976, p. 65), and Diamond (1975, pp. 4-5). Two scales on the Kuder Occupational Interest Survey not classified by Diamond—i.e., the Forester (male) and Home Demonstration Agent (female) Scales—were placed in the realistic and enterprising categories, respectively.

parallel scales on the SCII are considered, men score high (≥ 35) on realistic and investigative occupational scales (Engineer, Computer Programmer, and College Professor), while women score high on artistic and social occupational scales (Musician, Physical Therapist, Elementary Teacher, and Recreation Leader) (Campbell, 1977, p. 74).

Among the ten like-named male and female scales on the CAI, females score highest (≥ 30) on three female occupational scales classified as conventional (Accountant, Executive Housekeeper, and Food Service Manager), while men score highest on two male scales in the enterprising category (Buyer/Merchandiser and Food Service Manager) (Johansson, 1976, p. 68). Comparable data for the KOIS could not be located, but there appears to be a tendency for men to score highest on realistic, investigative, and enterprising occupational scales and for women to score highest on social, conventional, and artistic scales (Kuder, 1975). These data indicate that different career options will be suggested to men and women even when identical sets of scales are presented to both sexes.

Alternative Methods of Scale Construction

It might be possible to reduce sex restrictiveness by introducing new occupational scales that would offer a more balanced list of career options to men and women. Researchers have considered at least four different types of new scales: (a) cross-sex scales, (b) combined-sex scales, (c) cluster scales, and (d) sex-balanced scales.

Cross-sex scales. One way of exposing men and women to a broader variety of occupational possibilities is to use *both* the female and male scales with the same client, regardless of sex (Schlossberg & Goodman, 1972). This procedure has been adopted recently for all three inventories cited above.

Ironically, the use of the cross-sex scales may limit career exploration rather than expand it. In general, individuals taking the SCII obtain elevated scores on the cross-sex scales that represent occupations traditional for their sex and depressed scores on the cross-sex scales that represent nontraditional occupations (Johnson, 1977; Lunneborg, 1975). For example, women score relatively high on "artistic" male occupational scales and relatively low on "realistic" male occupational scales. Men obtain the opposite results on the female scales. The use of the cross-sex scales tends to reinforce sexual stereotypes and to hinder the consideration of nontraditional occupations. Johansson (1976) notes that similar results occur when the cross-sex scales on the CAI are used.

A somewhat different result occurs when the cross-sex scales on the KOIS are employed. Because of the scale construction procedures, most individuals will receive lower scores on the cross-sex scales than on the same-sex scales (Diamond, 1974). If the scores are interpreted without reference to the sex group, use of the cross-sex scales will suggest relatively few new occupations. (An alternative approach to KOIS interpretation is described later.)

Combined-sex scales. Several attempts have been made to construct occupational scales based upon combined samples of men and women. Years ago, Strong (1943, pp. 568-576) noted that men's and women's scales could be "combined in some cases" (e.g., Artist), but not in others (e.g., Lawyer).

More recently, Webber and Harmon (Note 2) found that scales based upon combined-sex samples of veterinarians and life insurance agents were more effective in identifying female veterinarians and female life insurance agents than were scales based upon female samples. In contrast, the male Veterinarian and Life Insurance Agent Scales were more successful in identifying the male members of these occupations than were the combined-sex scales.

Hanson (1976) obtained similar results in experimenting with different versions of a scale for sociologists. The combined-sex scale was slightly more effective than the female scale in differentiating female sociologists from other groups of females. The male scale proved to be more accurate in identifying male sociologists than did the combined-sex scales.

In a study with the CAI, Johansson (1976) found that single-sex scales more clearly differentiated between male or female interior decorators and the general reference samples than did a combined-sex scale. He concluded that separate-sex scales "produce the best validity" (p. 67).

No simple conclusion can be drawn from these studies. The possibility of creating combined-sex scales deserves further study. However, different

types of scales may be needed for men and women or for different occupations.

Cluster scales. Cluster scales have been developed for the version of the KOIS that is included in the Career Development Inventory (CDI) (Borgen, 1978; Diamond, 1975). With the cluster scales, the scores on the male and female scales first are "equated for sex differences" so that the same norms may be used for both sexes. Scores are then averaged for scales within each of the six Holland categories. A further distinction is made in terms of the level of the occupation (early entry, delayed entry, or late entry) so that 18 occupational cells or categories are created. The authors maintain that the clusters smooth out small sex differences that may appear in the specific male and female occupational scales.

This type of scale is reminiscent of the occupational group scales previously used with the SVIB, except that the same scales are used with males and females. It should be noted that, when the cluster scales are used, large differences still exist in the percentages of high scores obtained by men and women in the various categories. For example, 64% of the males in a study conducted with the CDI obtained high scores in the realistic (technical/mechanical/skilled), delayed-entry category, while only 13% of the females obtained a high score in this category (Diamond, 1975).

Sex-balanced scales. Finally, it may be possible to eliminate sex restrictiveness in the occupational scales by using only those interest items that are preferred equally by men and women. As noted in the discussion of unisex scales in the first part of this report, scales based on such items are "sex balanced" in that males and females obtain approximately equal scores. In contrast to the traditional scales, combined-sex norms may be used with sex-balanced scales; males and females will still obtain approximately equal scores.

The greatest problem in constructing sex-balanced interest scales for the SCII, CAI, or KOIS is the lack of sex-balanced items. Large differences in the item preferences of men and women exist for approximately one-half of the items on the SCII and CAI (Campbell, 1977; Johansson, 1976). Thus, unless new interest items are constructed, scale lengths must be reduced substantially or items with less validity must be used if sex-balanced interest scales are to be developed.

Several studies have investigated the relative validity of sex-balanced and traditional occupational scales (Hansen, 1976; Webber & Harmon, Note 2; Johnson, 1978). In each of the studies, items that were not sex balanced were eliminated from the traditional scales in order to form sex-balanced scales. As a result, the number of items on each of the sex-balanced scales either was reduced substantially or was maintained by adding items that were less effective than the original items in differentiating between occupational groups. In most cases, the traditional scales were more valid than the sex-balanced scales; however, the differences were fairly small. None of the differences in the amount of overlap between men or women in the occupation and men- or women-in-general exceeded five percentage points. Comparisons between sex-balanced and traditional occupational scales with an equal number of items of comparable validity have yet to be reported. Whether it is more difficult to write sex-balanced items for occupational scales than for basic interest scales remains to be seen. As noted above, approximately one-half of the current items written for the SCII and CAI are sex balanced.

In any case, research with the MMPI shows that shortened scales may serve many of the purposes of the original scales with relatively little loss in reliability and validity (Kincannon, 1968; Freeman, O'Leary, & Calsyn, 1977). This line of research suggests that an abbreviated version of the occupational scales based only on sex-balanced items may be a possibility. Because of their reduced length, these scales would not be as reliable over long time periods (Johnson, 1978). In addition, these scales would probably not be as accurate in predicting occupational membership some years in the future (should that be a counselor's goal), but they should prove to be helpful in expanding the career options of men and women.

Alternative Methods of Interpreting Scores on Existing Scales

Despite attempts to construct new scales, the existing occupational scales will probably continue to be used for some years. Most of the new scales developed for the SCII have followed the traditional design (Aburto, Note 3; Hansen, Notes 4 & 5; Larkin, Note 6; Stocco, Note 7). For this reason, it is important for counselors to consider how the existing scales can be interpreted in a way that will reduce sex restrictiveness.

Using separate sex norms. Increased normative data are needed in interpreting the scores of men and women on the occupational scales. If possible, this information should be provided on the interest profile for easy reference. The range of scores for the middle third of men- or women-in-general, depending on the type of scale, is shown on the CAI profile for the occupational scales. This type of information should be portrayed for *both* sexes on each scale. Normative data for either sex is lacking on the SCII and the KOIS profiles. Although it will require some ingenuity to design a profile to permit addition of these data, the introduction of this type of information on the computer printout forms should be relatively easy.

Additional data to help in interpreting the scores of males and females on the cross-sex scales are shown in Table 8. This table, which shows the first, second, and third quartiles separately for men and women on each scale, is derived from the scores of 1,134 male and 1,044 female freshmen at the University of Wisconsin-Madison. This sample, tested with a prepublication version of the SCII in 1973, represented 50.1% of the entering freshmen males and 51.7% of the entering freshmen females. These students closely resembled the other students in academic achievement as measured by the College Qualifications Tests. Few SCII norms based on college students have been published.

The data in Table 8 show that the scores on the occupational scales may vary considerably for men and women. For example, a score of 24 on the male Farmer Scale is average (50%ile) for men but above average (75%ile) for women. A score of 36 on the male Dietitian Scale is average for women but above average for men. If the sex norms are not taken into account, "farmer" would more often be suggested to males as a career option, while "dietitian" would more often be suggested to females. These suggestions would reinforce sexual stereotypes.

Because of sex-role conditioning, the scores obtained on interest scales convey different meanings for men and women. For example, successful female science majors do not express as many mechanical interests as do successful males in this major (Goldman, Kaplan, & Platt, 1973). Separate sex norms are needed to take into account discrepancies in social conditioning that may be inhibiting the endorsement of certain types of interests.

Separate sex norms are needed on the SCII and CAI where the scores are relatively high on some cross-sex scales and relatively low on others. For the KOIS, the scores on the cross-sex scales apparently are lower in almost all cases. In this situation, interpreting the rank order of each set of scales for each counselee may suffice (Tittle & Denker, 1977). Zytowski and Laing (1978) found that cross-sex scales on the KOIS were as valid as same-sex scales in predicting occupational membership when the rank-order of the occupational scores was considered separately for the male and female scales.

Using relationships between occupational and basic interest scales. In addition to knowing the *relative magnitude* of their scores on the cross-sex scales, clients should be given information on the *nature* of these scores. As one step in this direction, correlation coefficients between occupational scales and basic interest scales should be helpful in identifying underlying interest patterns. Correlations for the SCII, based on data from the Wisconsin sample described above, are reported in the appendix.

The correlations show, for example, that high scores on the Farmer Scale are most closely associated with low scores on the Writing (r = -.81), Music (r = -.66), and Art (r = -.60) Basic Interest Scales and, to a lesser degree, with high scores on the Mechanical (r = .28), Athletics (r = .24), and Agriculture (r = .22) Scales. These results suggest that a woman who states a preference for the SCII artistic activities, as most women do, would probably obtain a low score on the Farmer Scale even if she liked agricultural and mechanical activities. This low score may be more accurately evaluated by using female norms and by noting the Basic Interest Scales that may be contributing most to the score. If the Basic Interest Scales are not relevant for the expression of that occupation, they should be given less consideration (Johnson & Johansson, 1972).

High scores on the male Dietitian Scale, on the other hand, were most closely related to high scores on the Domestic Arts (r = .67), Office Practices (r = .66), and Medical Service (r = .63) Basic Interest Scales. These scales measure activities usually preferred by women. To the extent that individuals respond to interest items in a stereotypic fashion, the scores for females will be artifically inflated on the male Dietitian Scale. The

TABLE 8

Quartile Scores of Male and Female Freshmen at the University of Wisconsin-Madison on the SCII Occupational Scales

Occupational scale		Males			Females		
Title	Sex[a]	25%ile	50%ile	75%ile	25%ile	50%ile	75%ile
Farmer	m	15	24	33	11	17	24
Instrument Assembler	f	23	32	40	17	25	34
Vocational Agriculture Teacher	m	6	16	25	-1	6	15
Dietitian	m	23	29	36	29	36	42
Police Officer	m	19	29	39	11	19	28
Highway Patrol Officer	m	16	26	36	5	12	21
Army Officer	f	36	43	49	22	28	37
Physical Education Teacher	f	23	32	42	19	29	39
Skilled Crafts	m	17	27	37	9	16	23
Forester	m	20	29	37	15	23	31
Radiologic Tech.	f	26	36	43	24	34	45
Merchant Marine Officer	m	33	39	46	27	32	37
Navy Officer	m	18	28	38	6	15	25
Nurse, R.N.	m	19	28	36	28	36	45
Veterinarian	m	15	23	33	18	28	36
Cartographer	m	31	40	49	21	27	37
Army Officer	m	18	26	46	10	17	24
Air Force Officer	m	18	27	37	11	17	25
Occupational Therapist	f	21	30	38	27	35	43
Engineer	f	25	36	46	13	21	31
Engineer	m	23	33	42	16	22	31
Chemist	f	13	25	38	-1	9	22
Physical Scientist	m	16	26	36	17	26	34
Medical Technologist	f	26	36	47	16	26	37
Pharmacist	f	24	33	44	17	27	40
Dentist	f	25	35	42	17	26	35
Dentist	m	23	30	39	23	32	41
Dental Hygienist	f	21	28	37	24	34	43
Physical Therapist	f	28	37	47	26	36	47
Physician	m	18	28	39	18	27	37
Math-Science Teacher	m	24	34	45	19	28	38
Math-Science Teacher	f	31	39	46	22	29	36
Dietitian	f	19	27	35	23	31	39
Medical Technologist	m	13	24	36	9	20	33
Optometrist	m	20	30	39	15	26	35

(Continued)

TABLE 8—*Continued*

Occupational scale		Males			Females		
Title	Sex[a]	25%ile	50%ile	75%ile	25%ile	50%ile	75%ile
Computer Programmer	f	28	37	47	15	26	35
Computer Programmer	m	23	34	45	17	25	33
Mathematician	f	23	31	39	12	20	29
Mathematician	m	17	25	35	21	29	36
Physicist	f	15	25	38	-3	7	19
Biologist	m	17	26	35	26	34	41
Veterinarian	f	28	36	43	20	29	38
Optometrist	f	29	38	45	18	25	34
Physician	f	28	37	45	18	27	37
Social Scientist	m	22	31	40	31	38	46
Speech Pathologist	f	25	33	41	24	31	40
Speech Pathologist	m	19	30	40	32	40	48
College Professor	f	35	42	48	29	36	42
College Professor	m	30	39	46	37	43	50
Psychologist	f	20	28	35	14	24	33
Psychologist	m	19	28	38	26	34	43
Language Interpreter	f	25	31	40	22	31	41
Architect	m	10	19	28	12	23	31
Advertiser	f	30	36	42	24	31	39
Artist	f	20	29	39	19	29	40
Artist	m	18	28	39	30	38	48
Art Teacher	f	0	9	21	8	21	31
Photographer	m	17	26	37	26	36	46
Musician	f	15	25	35	29	37	45
Musician	m	29	39	48	40	48	56
Entertainer	f	19	26	34	28	36	43
Interior Decorator	f	2	10	19	4	15	25
Interior Decorator	m	17	23	30	31	38	43
Advertiser	m	19	28	37	26	35	44
Language Teacher	f	7	16	28	23	32	40
Librarian	f	19	27	36	17	29	39
Librarian	m	13	22	32	27	34	43
Reporter	f	22	31	39	22	32	41
Reporter	m	20	29	39	31	39	47
English Teacher	f	10	20	32	20	31	41
English Teacher	m	18	27	39	30	39	47
Nurse, R.N.	f	17	25	32	23	32	43
Physical Therapist	m	21	29	37	19	27	36
Nurse, Licensed Practical	m	24	29	35	35	41	47
Social Worker	f	11	21	33	16	26	37

TABLE 8—*Continued*

Occupational scale		Males			Females		
Title	Sex[a]	25%ile	50%ile	75%ile	25%ile	50%ile	75%ile
Social Worker	m	9	20	31	19	28	37
Priest	m	14	24	34	26	34	42
Director, Christian Ed.	f	2	9	20	11	21	31
YWCA Staff	f	21	29	38	24	33	41
Minister	m	12	20	30	20	28	36
Elementary Teacher	m	17	27	36	27	35	42
Elementary Teacher	f	12	19	26	20	29	36
School Superintendent	m	13	21	30	15	23	31
Public Administrator	m	21	29	39	21	27	34
Guidance Counselor	m	15	22	30	18	26	34
Recreation Leader	m	13	23	33	15	23	33
Guidance Counselor	f	9	19	30	17	26	36
Social Science Teacher	f	19	30	40	22	30	38
Social Science Teacher	m	19	28	36	22	30	37
Personnel Director	m	20	27	36	21	27	33
Department Store Manager	m	14	21	29	12	18	27
Home Economics Teacher	f	-5	2	9	9	20	32
Stewardess	f	16	23	31	22	31	40
Chamber of Commerce Executive	m	21	28	37	21	27	35
Sales Manager	m	12	19	27	10	16	23
Life Insurance Agent	m	10	17	25	9	16	23
Life Insurance Agent	f	17	24	33	15	21	28
Lawyer	f	29	36	44	18	28	37
Lawyer	m	18	28	38	23	31	39
Computer Sales	m	9	17	25	5	12	20
Investment Fund Manager	m	22	29	37	22	28	34
Pharmacist	m	17	26	36	15	25	34
Buyer	f	16	23	30	16	20	27
Buyer	m	9	16	27	7	16	26
Credit Manager	m	15	25	34	12	21	29
Funeral Director	m	18	26	35	18	26	34
Realtor	m	19	26	35	14	19	26
Agribusiness Manager	m	7	17	27	2	10	19
Purchasing Agent	m	19	28	37	14	20	28
Chiropractor	m	25	32	40	26	33	38

(Continued)

TABLE 8—*Continued*

Occupational scale		Males			Females		
Title	Sex[a]	25%ile	50%ile	75%ile	25%ile	50%ile	75%ile
Accountant	m	6	15	25	-4	4	14
Banker	f	22	30	36	17	22	30
Banker	m	15	23	32	10	16	23
Credit Manager	f	20	28	37	13	21	29
Department Store Sales	f	9	16	23	12	19	27
Business Education Teacher	f	9	14	21	8	14	21
Business Education Teacher	m	15	24	32	14	22	30
Executive Housekeeper	f	11	18	25	13	22	29
Accountant	f	20	29	37	9	17	24
Secretary	f	19	25	32	21	28	36
Dental Assistant	f	18	25	31	17	27	38
Nurse, Licensed Practical	f	13	18	25	14	23	32
Beautician	f	23	29	36	24	31	37

Note. The data are based on 1,134 male and 1,044 female first-year students at the University of Wisconsin-Madison.

[a] f = female scale; m = male scale.

elevated scores for females may be taken into account by the use of separate sex norms and by a better understanding of the types of responses that are producing these scores.

Several authorities have urged counselors to place greater emphasis in career planning on homogeneous interest scales such as the SCII General Occupational Theme Scales or the SCII Basic Interest Scales (Cole & Hanson, 1971; Harmon, 1975). Scores on these scales are often much more revealing than scores on the occupational scales. For example, female and male radiologic technologists have similar interest patterns on the SCII Basic Interest Scales when the appropriate sex norms are used (Stocco, Note 7). Both sexes score above average on the Medical Service and Medical Science Scales and within the average range on the other scales. In contrast, female and male farmers produce somewhat different interest patterns (Hansen, Note 4). Although both sexes obtain high scores on the Agriculture and Nature Scales, male farmers also score relatively high on the Mechanical Activities Scale while female farmers score relatively high on the Office Practices, Sales, Domestic Arts, and Religious Activities Scales. These differences reflect differences in the work roles of many farm husbands and wives. Knowledge of the basic interest patterns helps clarify the differences between men and women within the occupation at the present time without necessarily suggesting that there is a preferred interest pattern for each sex.

As a further example of how basic interest scales aid an interpretation, consider the scores on the SCII Basic Interest Scales and the Psychologist Occupational Scales shown in Table 9. The female counselee who obtained these scores had a 33 on

TABLE 9

Scores on the SCII Basic Interest Scales and Psychologist Scales for a Female Counselee

SCII Scale	Score	Interpretation[a]
Basic Interest Scale		
Agriculture	46	Below average
Nature	54	Average
Adventure	34	Below average
Military Activities	41	Below average
Mechanical Activities	47	Below average
Science	62	Above average
Mathematics	65	Above average
Medical Science	63	Above average
Medical Service	65	Above average
Music/Drama	64	Above average
Art	52	Average
Writing	56	Average
Teaching	55	Average
Social Service	57	Average
Athletics	39	Below average
Domestic Arts	58	Average
Religious Activities	56	Average
Public Speaking	45	Below average
Law/Politics	40	Below average
Merchandising	54	Average
Sales	52	Average
Business Management	55	Average
Office Practices	62	Above average
Occupational Scale		
Psychologist (male)	52	Above average
Psychologist (female)	33	Average

[a]Based on female norms (Above average = >75%ile; Average = 25%ile-75%ile; Below average = <25%ile).

the female Psychologist Scale and a 52 on the male Psychologist Scale. Even when the female norms for the male scale are used, her score still is considerably higher on the male scale than it is on the female scale.

The counselee, a 26-year-old college graduate with honors in a health-related field, wished to consider various academic or career options, including psychology. Should her enthusiasm for psychology be dampened because of her relatively low score on the female Psychologist Scale? Inspection of the Basic Interest Scales indicated that she shared many of the interests of psychologists (e.g., see scores for the Medical Science, Science, Mathematics, and Medical Service Scales). She differed from female psychologists in that she also scored relatively high on the Office Practices, Religious Activities, and Domestic Arts Scales. These latter interests, which are not scored as frequently on the male scale as on the female scale, are weighted negatively on the female scale (Johnson, 1974; Johnson & Campbell, 1974). Her score on the male Psychologist Scale was also higher than her score on the female scale because the male scale gives more weight to her interests in music and writing. The latter activities differentiate male psychologists from other males more effectively than they differentiate female psychologists from other females.

Because of the complex nature of the scores on the male and female Psychologist Scales, it is more helpful to discuss the actual interest patterns of psychologists than to emphasize a single score. In this case, the client decided that the incongruence between her interest pattern and that of female psychologists was not critical. She felt that she could consider psychology as a major or a career and still express her interests in office practices, religious activities, and domestic arts within the life style she established.

Concluding Comments

The male and female occupational interest scales on the SCII, CAI, and KOIS are sex restrictive inasmuch as they suggest different career options for males and females. Different types of unisex scales have been constructed in an attempt to reduce the sex restrictiveness of these three interest inventories. The use of sex-balanced interest items in constructing unisex scales appears promising. However, approximately one-half of the items on the interest inventories cannot be used for this purpose. Whether these items can be replaced with new sex-balanced items remains to be seen.

The possibility of developing a short form of the occupational scales based only on sex-balanced interest items is worth consideration. Although such a short form may provide less accurate predictions of future choice than the regular form, its construct validity may be sufficient for use in stimulating career exploration. As previously noted, prediction of future vocational choice is seldom a goal in counseling.

From a practical standpoint, it may be more helpful to improve the methods of interpreting the existing occupational scales than to attempt to create a large number of unisex scales within the near future. There is a need for appropriate sex norms and for additional data to clarify the nature of the interest patterns inherent in the occupational scores. Some of these data are provided in this report. Interpretive aids of this sort should help clients take into account the influence of sex-role conditioning on occupational interest scores.

Sex restrictiveness in interpretations of the SCII Occupational Scales may also be reduced by placing increased emphasis on the Basic Interest Scales or the General Occupational Theme Scales. When separate-sex norms are used, the same types of career options are suggested to males and females by means of these scales.

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APPENDIX

This table is reproduced exactly from the supporting materials distributed as part of the presentation by Richard Johnson at the 1978 National Convention of the American Psychological Association.

CORRELATION MATRIX FOR TOTAL SAMPLE

VARIABLE		R-THEME	I-THEME	A-THEME	S-THEME	E-THEME	C-THEME	AGRICULTURE	NATURE	ADVENTURE
R-THEME		1.000								
I-THEME		.516	1.000							
A-THEME		.057	.220	1.000						
S-THEME		.131	.226	.331	1.000					
E-THEME		.361	.205	.050	.401	1.000				
C-THEME		.397	.349	-.131	.348	.658	1.000			
AGRICULTURE		.496	.134	.157	.169	.027	-.049	1.000		
NATURE		.374	.381	.436	.296	-.002	-.025	.644	1.000	
ADVENTURE		.560	.328	.020	.065	.319	.159	.277	.086	1.000
MILITARY ACTIV.		.389	.235	-.128	.201	.295	.374	.081	.027	.305
MECHANICAL ACTIV.		.906	.526	-.016	.021	.318	.408	.258	.201	.444
SCIENCE		.522	.902	.093	.072	.096	.317	.117	.317	.280
MATHEMATICS		.407	.596	-.230	.029	.251	.598	-.017	-.007	.211
MEDICAL SCIENCE		.345	.726	.149	.294	.223	.270	.170	.405	.263
MEDICAL SERVICE		.212	.476	.138	.461	.201	.309	.159	.369	.129
MUSIC/DRAMATICS		-.015	.199	.876	.342	.042	-.129	.111	.345	-.026
ART		.031	.163	.892	.305	.037	-.129	.157	.497	-.072
WRITING		-.012	.172	.810	.343	.104	-.059	.061	.292	-.004
TEACHING		.035	.224	.381	.720	.134	.190	.096	.273	-.064
SOCIAL SERVICE		-.029	.098	.423	.825	.258	.141	.109	.259	-.039
ATHLETICS		.332	.159	-.236	.373	.391	.417	.249	.019	.432
DOMESTIC ARTS		.021	.083	.375	.527	.198	.202	.179	.408	-.148
RELIGIOUS ACTIV.		.100	.168	.256	.633	.168	.241	.141	.261	-.041
PUBLIC SPEAKING		.184	.247	.339	.477	.465	.293	-.015	.033	.246
LAW/POLITICS		.209	.278	.206	.399	.442	.329	-.077	-.056	.282
MERCHANDISING		.228	.081	.133	.416	.872	.609	-.038	.005	.163
SALES		.283	.027	-.127	.221	.854	.548	-.028	-.160	.235
BUSINESS MGMT.		.337	.148	-.016	.443	.844	.722	-.035	-.040	.235
OFFICE PRACTICES		.144	.131	-.030	.389	.516	.783	-.056	.017	-.069
FARMER	m	.251	-.202	-.749	-.420	-.114	.049	.220	-.124	.079
INSTRUM.ASSEMBL.	f	.241	-.082	-.725	-.249	.132	.392	-.008	-.238	.096
VOC.AGRIC.TCHR.	m	.665	.240	-.463	.213	.424	.521	.431	.212	.335
DIETITIAN	m	.176	.279	.179	.613	.540	.589	.049	.255	.025
POLICE OFFICER	m	.767	.363	-.096	.330	.573	.524	.353	.152	.671
HWY.PATROL OFF.	m	.688	.240	-.511	.039	.413	.474	.244	-.022	.576
ARMY OFFICER	f	.383	.294	-.023	.085	.497	.379	-.073	-.184	.458
PHYS.ED.TEACHER	f	.287	.195	-.393	.355	.222	.293	.764	.050	.404
SKILLED CRAFTS	m	.553	.109	-.541	-.363	.010	.208	.189	-.049	.223
FORESTER	m	.767	.375	-.151	.029	.150	.224	.646	.554	.340
RAD.TECH.(X-RAY)	f	.434	.680	-.064	.189	.219	.388	.164	.296	.301
MERCH.MAR.OFF.	m	.680	.205	-.346	-.355	.009	.113	.322	.118	.378
NAVY OFFICER	m	.707	.402	-.099	.166	.502	.606	.057	-.003	.537
NURSE,REGISTERED	m	.162	.481	.243	.454	.073	.179	.208	.493	.069
VETERINARIAN	m	.202	.294	-.113	-.152	-.326	-.185	.464	.510	.055
CARTOGRAPHER	m	.755	.497	-.164	.016	.359	.612	.164	.120	.365
ARMY OFFICER	m	.502	.404	-.209	.289	.453	.695	.026	-.040	.499
AIR FORCE OFF.	m	.771	.665	-.092	.153	.478	.630	.185	.123	.469
OCCUP.THERAPIST	f	.447	.620	.603	.569	.252	.212	.296	.581	.221
ENGINEER	f	.460	.717	-.162	-.118	.237	.487	.049	.060	.389
ENGINEER	m	.773	.730	-.078	-.009	.238	.445	.141	.175	.406
CHEMIST	f	.515	.730	-.056	-.206	-.085	.138	.070	.138	.277
PHYSICAL SCIENT.	m	.004	.416	.058	-.341	-.629	-.301	-.071	.128	-.159
MEDICAL TECH.	f	.570	.758	-.249	-.085	.105	.375	.107	.207	.296
PHARMACIST	f	.441	.753	-.201	-.079	.147	.384	.046	.190	.295
DENTIST	f	.555	.753	-.092	-.139	.046	.215	.170	.301	.326
DENTIST	m	.260	.604	.119	.064	-.040	.049	.184	.415	.162
DENTAL HYGIENIST	f	.153	.465	-.037	.238	.056	.132	.148	.342	.097
PHYS.THERAPIST	f	.451	.784	.033	.407	.279	.442	.273	.371	.317
PHYSICIAN	m	.369	.791	.241	.127	-.044	.049	.201	.468	.223
MATH-SCI.TEACHER	m	.604	.835	-.001	.153	.106	.378	.182	.334	.279
MATH-SCI.TEACHER	f	.491	.801	-.548	-.059	.205	.604	.015	-.069	.203
DIETITIAN	f	.294	.611	.199	.422	.369	.460	.089	.357	.133
MEDICAL TECH.	m	.505	.820	-.005	.205	.168	.427	.081	.310	.211
OPTOMETRIST	m	.450	.778	-.069	.213	.314	.489	-.008	.181	.239
COMPUTER PROGR.	f	.634	.705	-.181	-.104	.251	.523	.015	.047	.361
COMPUTER PROGR.	m	.632	.785	-.046	.018	.246	.519	-.007	.110	.313
MATHEMATICIAN	f	.185	.394	-.218	-.501	-.420	-.162	-.043	-.073	.039
MATHEMATICIAN	m	-.196	.231	.104	-.423	-.674	-.494	-.135	.063	-.270
PHYSICIST	f	.490	.573	-.211	-.410	-.154	.074	.039	-.003	.304
BIOLOGIST	m	-.160	.272	.248	-.234	-.489	-.460	.046	.387	-.291
VETERINARIAN	f	.387	.446	-.091	-.519	-.288	-.209	.303	.308	.295
OPTOMETRIST	f	.406	.495	-.442	-.384	.127	.322	-.056	-.085	.227
PHYSICIAN	f	.381	.710	-.082	-.247	-.183	-.036	.111	.207	.293
SOCIAL SCIENT.	m	-.384	.098	.439	-.164	-.591	-.592	-.161	.111	-.299
COLLEGE PROF.	f	-.134	.232	.410	.009	-.212	-.405	-.168	.009	.049
COLLEGE PROF.	m	-.154	.164	.759	.575	.039	-.150	.038	.319	-.097
SPEECH PATHOL.	f	.112	.367	.024	-.484	-.459	-.330	-.068	-.004	.070
SPEECH PATHOL.	m	-.242	.169	.393	-.245	-.731	-.596	-.007	.295	-.291
PSYCHOLOGIST	f	.149	.499	.306	-.201	-.173	-.237	-.052	.104	.178
PSYCHOLOGIST	m	-.128	.311	.467	.115	-.215	-.343	-.059	.289	-.113
LANGUAGE INTER.	f	-.108	.190	.399	-.419	-.426	-.481	-.102	.060	-.075
ARCHITECT	m	.287	.287	.603	-.173	-.191	-.227	.154	.395	.045
ADVERTISING EXEC.	f	-.162	-.242	.047	-.471	-.065	-.332	-.198	-.284	.122
ARTIST	f	-.297	-.299	.145	-.545	-.641	-.777	-.046	-.041	-.152
ARTIST	m	-.410	-.218	.444	-.260	-.699	-.774	.029	.175	-.295
ART TEACHER	f	.136	.154	.782	.275	.009	-.221	.184	.430	.023
PHOTOGRAPHER	m	-.299	-.112	.582	-.197	-.522	-.726	.041	.223	-.167
MUSICIAN	f	-.169	.017	.727	.194	-.222	-.335	.074	.292	-.090
MUSICIAN	m	-.247	-.043	.688	-.034	-.264	-.389	-.054	.226	-.257
ENTERTAINER	f	-.252	-.146	.677	.001	-.209	-.555	.049	.195	.008

CORRELATION MATRIX FOR TOTAL SAMPLE

VARIABLE		R-THEME	I-THEME	A-THEME	S-THEME	E-THEME	C-THEME	AGRICULTURE NATURE	ADVENTURE
INT.DECORATOR	f	-.146	-.210	.499	-.255	-.118	-.416	-.054	.075	-.129
INT.DECORATOR	m	-.559	-.402	.538	.035	-.223	-.447	-.098	.154	-.532
ADVERTISING EXEC.	m	-.216	-.157	.709	.279	.135	-.245	.004	.150	.003
LANGUAGE TEACHER	f	-.422	-.195	.633	.396	-.088	-.252	-.089	.114	-.271
LIBRARIAN	f	-.047	.198	.545	.001	-.010	-.088	-.152	.087	-.197
LIBRARIAN	m	-.375	.002	.661	.128	-.240	-.232	-.258	.144	-.469
REPORTER	f	-.343	-.273	.380	-.298	-.350	-.462	-.102	-.067	-.375
REPORTER	m	-.587	-.314	.490	.042	-.371	-.594	-.134	.009	-.218
ENGLISH TEACHER	f	-.277	-.049	.717	.374	.055	-.154	-.073	.138	-.146
ENGLISH TEACHER	m	-.184	-.044	.771	.478	.027	-.210	.074	.279	-.084
NURSE,REGISTERED	f	.128	.478	.265	.588	.183	.179	.196	.432	.125
PHYS.THERAPIST	m	.562	.685	.099	.529	.347	.452	.303	.411	.346
NURSE,LIC.PRACT.	m	-.239	.007	.218	.529	.084	.161	.035	.269	-.277
SOCIAL WORKER	f	-.026	.216	.451	.605	.328	.179	-.103	.120	.015
SOCIAL WORKER	m	-.126	.132	.570	.653	.287	.129	-.104	.157	-.103
PRIEST	m	-.209	.068	.687	.614	.064	-.081	-.026	.290	-.133
DIR,CHRIST.ED.	f	-.107	.098	.560	.784	.147	.068	.077	.266	-.146
YWCA STAFF	f	.043	.108	.931	.750	.457	.201	.039	.132	.137
MINISTER	m	.027	.283	.699	.754	.317	.182	.045	.278	.051
ELEM.TEACHER	m	.181	.360	.489	.788	.400	.341	.110	.358	.073
ELEM.TEACHER	f	.000	.131	.346	.797	.266	.390	.101	.288	-.227
SCH.SUPERINTEND.	m	.123	.187	.200	.756	.591	.524	-.039	.035	.113
PUBLIC ADMINISTR.	m	.152	.225	.232	.511	.620	.500	-.155	-.052	.170
GUIDANCE COUNSEL.	m	.081	.151	.161	.785	.549	.497	-.019	.055	.098
RECREATION LEAD.	f	.131	.155	.908	.831	.560	.387	.090	.180	.175
RECREATION LEAD.	m	.207	.165	.225	.787	.660	.497	.125	.110	.265
GUIDANCE COUNSEL.	f	-.075	.228	.967	.725	.311	.195	-.071	.148	-.013
SOC.SCI.TEACHER	f	-.059	.128	.356	.532	.333	.219	-.119	.002	.021
SOC.SCI.TEACHER	m	.001	-.129	.234	.705	.525	.298	.065	.007	.142
PERSONNEL DIR.	m	.145	.155	.206	.523	.708	.492	-.107	-.060	.240
DEPT.STORE MGR.	m	.220	.104	-.063	.401	.751	.570	-.069	-.127	.359
HOME ECON.TCHR.	f	-.036	.051	.337	.636	.306	.269	.103	.339	-.159
FLIGHT ATTENDANT	f	.127	.106	.339	.586	.630	.402	.069	.160	.288
CH.OF COMM.EXEC.	m	.057	.064	.266	.502	.678	.439	-.157	-.129	.176
SALES MANAGER	m	.136	-.011	.053	.395	.797	.450	-.079	-.146	.285
LIFE INS. AGENT	m	.146	.067	.059	.545	.726	.497	.000	-.073	.302
LIFE INS. AGENT	f	.148	.103	.127	.432	.752	.474	-.109	-.198	.293
LAWYER	f	-.022	.072	.122	-.177	.094	-.044	-.236	-.241	.139
LAWYER	m	-.196	.025	.498	.393	.261	.042	-.151	.010	.019
COMPUTER SALES	m	.327	.350	.102	.429	.747	.572	-.063	-.064	.107
INVESTM.FUND MGR.	m	-.337	-.262	-.036	-.419	-.019	-.184	-.322	-.353	.011
PHARMACIST	m	.388	.488	-.158	.371	.645	.670	.064	.163	.226
BUYER	f	.020	-.159	-.394	.094	.587	.522	-.220	-.348	.091
BUYER	m	.045	-.166	-.036	.341	.907	.559	-.194	-.237	.128
CREDIT MANAGER	m	.281	.213	-.057	.495	.843	.798	-.129	-.110	.166
FUNERAL DIRECTOR	m	.164	-.055	-.210	.391	.770	.605	-.028	-.109	.146
REALTOR	m	.177	-.178	-.487	.082	.720	.526	-.101	-.343	.239
AGRIBUSINESS MGR.	m	.252	-.123	-.693	-.023	.934	.530	.083	-.184	.083
PURCHASING AGENT	m	.486	.184	-.267	.220	.830	.735	.042	-.078	.339
CHIROPRACTOR	m	.305	.484	.306	.537	.564	.387	.142	.293	.312
ACCOUNTANT	m	.213	.161	-.405	.124	.613	.742	-.301	-.422	.206
BANKER	f	.187	-.015	-.484	.001	.524	.762	-.215	-.377	.068
BANKER	m	.031	-.139	-.436	.000	.537	.580	-.251	-.431	.066
CREDIT MANAGER	f	.167	-.027	-.473	.100	.664	.740	-.265	-.405	.136
DEPT.STORE SALES	f	.109	-.044	-.139	.385	.574	.695	-.035	-.035	-.060
BUSINESS ED.TCHR.	f	-.038	-.248	-.280	.332	.481	.638	-.183	-.320	-.105
BUSINESS ED.TCHR.	m	.263	.125	-.038	.527	.837	.758	-.054	-.061	.101
EXEC.HOUSEKEEPER	f	.219	.186	.062	.607	.599	.722	.006	.131	-.005
ACCOUNTANT	f	.324	.213	-.341	-.148	.419	.666	-.226	-.369	.207
SECRETARY	f	-.140	-.492	-.102	.198	.402	.416	-.125	-.294	-.141
DENTAL ASSISTANT	f	.167	.193	-.326	.315	.369	.620	.013	.053	.039
NURSE,LIC.PRAC.	f	.252	.513	.061	.532	.269	.473	.144	.340	.065
BEAUTICIAN	f	-.202	-.607	-.561	-.173	.023	.047	-.039	-.326	-.105
AOR		.220	.764	.570	.329	-.019	.119	.105	.491	.057
IE		-.112	-.232	-.488	-.692	-.538	-.302	-.036	-.146	-.275
TOTAL RESPONSES		-.022	.003	-.021	.005	-.011	.015	-.039	-.023	.008
OCCUPATIONS	LP	.415	.471	.476	.545	.485	.418	.177	.329	.302
	IP	.307	.219	.045	.253	.435	.425	.104	.097	.138
	DP	-.529	-.483	-.338	-.559	-.678	-.624	-.200	-.287	-.308
SCHOOL	LP	.319	.606	.432	.414	.209	.331	.169	.440	.141
SUBJECTS	IP	.153	.096	-.089	.091	.249	.259	.069	-.012	.038
	DP	-.436	-.599	-.319	-.469	-.419	-.540	-.219	-.395	-.199
	LP	.292	.338	.389	.599	.404	.320	.140	.396	.247
ACTIVITIES	IP	.199	.085	-.085	.025	.219	.243	.036	-.004	.043
	DP	-.475	-.400	-.269	-.578	-.598	-.599	-.168	-.315	-.293
	LP	.258	.356	.511	.476	.326	.240	.116	.325	.233
AMUSEMENTS	IP	.184	.095	-.058	.096	.218	.252	.075	.018	.052
	DP	-.394	-.394	-.384	-.499	-.485	-.443	-.170	-.295	-.248
TYPES	LP	.105	.257	.408	.417	.280	.167	.048	.228	.198
OF PEOPLE	IP	.006	-.111	-.217	-.097	-.039	.019	-.002	-.099	-.073
	DP	-.190	-.183	-.229	-.403	-.302	-.236	-.088	-.169	-.138
	LP	.048	.093	.154	-.013	-.068	-.115	.195	.155	.142
PREFERENCES	MP	-.004	-.046	-.060	-.045	-.004	.027	-.097	-.119	-.061
	RP	-.040	-.019	-.072	.120	.084	.087	-.051	.019	-.072
CHAR-	YP	.151	.197	.224	.269	.179	.081	.022	.106	.171
ACTER- ISTICS	IP	.044	-.046	-.129	-.084	.002	.028	.038	-.033	-.004
	NP	-.230	-.176	-.123	-.212	-.202	-.115	-.078	-.095	-.200

CORRELATION MATRIX FOR TOTAL SAMPLE

VARIABLE		MILITARY ACTIV.	MECHANICAL ACTIV.	SCIENCE	MATHEMATICS	MEDICAL SCIENCE	MEDICAL SERVICE	MUSIC DRAMATICS	ART	WRITING
MILITARY ACTIV.		1.000								
MECHANICAL ACTIV.		.301	1.000							
SCIENCE		.252	.577	1.000						
MATHEMATICS		.278	.474	.603	1.000					
MEDICAL SCIENCE		.217	.283	.640	.325	1.000				
MEDICAL SERVICE		.224	.150	.443	.211	.721	1.000			
MUSIC/DRAMATICS		-.089	-.083	-.002	-.227	.127	.179	1.000		
ART		-.164	-.035	.005	-.234	.117	.169	.757	1.000	
WRITING		-.124	-.087	-.009	-.213	.109	.059	.696	.639	1.000
TEACHING		.050	-.023	.041	-.025	.175	.250	.350	.351	.421
SOCIAL SERVICE		.020	-.129	-.069	-.174	.187	.358	.410	.404	.440
ATHLETICS		.324	.249	.143	.288	.238	.234	-.247	-.264	-.243
DOMESTIC ARTS		.062	-.057	-.020	-.039	.164	.418	.398	.462	.286
RELIGIOUS ACTIV.		.222	.021	.107	.085	.173	.326	.346	.229	.197
PUBLIC SPEAKING		.169	.116	.087	.059	.183	.080	.309	.175	.470
LAW/POLITICS		.149	.156	.130	.100	.209	.042	.141	.056	.385
MERCHANDISING		.215	.148	-.058	.142	.131	.171	.128	.161	.171
SALES		.250	.249	-.045	.200	.061	.050	-.113	-.126	-.042
BUSINESS MGMT.		.318	.286	.052	.293	.158	.149	-.022	-.039	.079
OFFICE PRACTICES		.263	.126	.109	.313	.177	.373	.029	.019	.019
FARMER	m	.131	.277	.017	.213	-.154	-.103	-.455	-.409	-.809
INSTRUM.ASSEMBL.	f	.266	.319	.107	.342	-.047	.068	-.430	-.583	-.739
VOCATIONAL TCHR.	m	.354	.590	.319	.378	.265	.262	-.431	-.377	-.442
DIETITIAN	m	.428	.077	.167	.209	.457	.429	.238	.229	.132
POLICE OFFICER	m	.600	.652	.339	.359	.354	.296	-.129	-.141	-.094
HWY.PATROL OFF.	m	.557	.643	.321	.491	.235	.182	-.495	-.479	-.507
ARMY OFFICER	f	.248	.366	.218	.226	.149	-.117	-.119	-.182	.179
PHYS.ED.TEACHER	f	.340	.208	.173	.261	.321	.406	-.312	-.351	-.473
SKILLED CRAFTS	m	.221	.459	.310	.389	.025	.010	-.526	-.446	-.676
FORESTER	m	.255	.665	.440	.319	.319	.205	-.203	-.095	-.230
RAD.TECH.(X-RAY)	f	.310	.426	.726	.475	.801	.782	-.044	-.048	-.140
MERCH.MAR.OFF.	m	.217	.702	.335	.312	.081	-.021	-.384	-.280	-.426
NAVY OFFICER	m	.553	.729	.581	.679	.372	.209	-.122	-.164	-.067
NURSE,RECISTERED	m	.343	.059	.427	.131	.751	.848	.282	.251	.150
VETERINARIAN	m	.049	.131	.382	.135	.469	.442	-.085	-.015	-.306
CARTOGRAPHER	m	.366	.891	.736	.686	.911	.299	-.200	-.158	-.212
ARMY OFFICER	m	.600	.460	.350	.565	.300	.172	-.226	-.269	-.108
AIR FORCE OFF.	m	.502	.813	.695	.707	.913	.276	-.143	-.104	-.106
OCCUP.THERAPIST	f	.126	.399	.456	.191	.612	.589	.502	.647	.439
ENGINEER	f	.312	.755	.778	.772	.382	.144	-.215	-.193	-.171
ENGINEER	m	.331	.861	.793	.698	.417	.258	-.126	-.099	-.131
CHEMIST	f	.156	.628	.810	.592	.397	.100	-.117	-.139	-.069
PHYSICAL SCIENT.	m	-.238	.148	.512	.270	.123	-.006	.037	.038	.002
MEDICAL TECH.	f	.295	.650	.860	.688	.628	.442	-.263	-.220	-.321
PHARMACIST	f	.287	.471	.811	.644	.700	.499	-.205	-.191	-.236
DENTIST	f	.207	.619	.819	.499	.650	.390	-.141	-.107	-.147
DENTIST	m	.098	.254	.583	.263	.710	.527	.102	.129	-.008
DENTAL HYGIENIST	f	.179	.097	.452	.196	.755	.778	.000	.050	-.167
PHYS.THERAPIST	f	.336	.415	.765	.544	.847	.775	.038	.025	-.051
PHYSICAN	m	.114	.381	.785	.338	.715	.529	.211	.193	.141
MATH-SCI.TEACHER	m	.264	.654	.899	.698	.579	.432	-.034	-.005	-.093
MATH-SCI.TEACHER	f	.338	.591	.619	.777	.366	.230	-.531	-.510	-.537
DIETITIAN	f	.251	.260	.558	.413	.577	.550	.202	.220	.149
MEDICAL TECH.	m	.301	.541	.871	.574	.739	.474	-.011	-.015	-.079
OPTOMETRIST	m	.282	.502	.757	.657	.733	.584	-.070	-.079	-.086
COMPUTER PROGR.	f	.303	.724	.757	.771	.390	.190	-.240	-.181	-.198
COMPUTER PROGR.	m	.307	.791	.821	.783	.435	.264	-.091	-.077	-.071
MATHEMATICIAN	f	-.076	.320	.479	.371	.026	-.259	-.247	-.293	-.185
MATHEMATICIAN	m	-.398	-.075	.299	.108	-.009	-.111	.085	.101	.058
PHYSICIST	f	.120	.619	.697	.560	.229	-.080	-.281	-.280	-.209
BIOLOGIST	m	-.225	-.112	.327	-.058	.179	.127	.227	.282	.129
VETERINARIAN	f	.031	.399	.579	.252	.372	.087	-.153	-.117	-.173
OPTOMETRIST	f	.258	.507	.622	.575	.414	.143	-.444	-.457	-.451
PHYSICIAN	f	.099	.446	.779	.490	.531	.200	-.139	-.152	-.106
SOCIAL SCIENT.	m	-.448	-.342	-.004	-.311	-.054	-.130	.383	.362	.465
COLLEGE PROF.	f	-.206	-.105	.108	-.188	.111	-.144	.339	.249	.471
COLLEGE PROF.	m	-.119	-.234	-.040	-.344	.289	.329	.736	.696	.715
SPEECH PATHOL.	f	-.126	.218	.441	.182	.053	-.259	-.046	-.083	.051
SPEECH PATHOL.	m	-.387	-.187	.184	-.185	.029	-.057	.349	.345	.302
PSYCHOLOGIST	f	-.175	.209	.449	.122	.230	-.117	.158	.196	.351
PSYCHOLOGIST	m	-.401	-.115	.184	-.219	.191	.057	.554	.582	.669
LANGUAGE INTER.	f	-.331	-.059	.111	-.170	-.057	-.309	.241	.256	.426
ARCHITECT	m	-.151	.312	.230	-.020	.065	-.056	.460	.454	.367
ADVERTISING EXEC.	f	-.193	-.134	-.311	-.269	-.371	-.441	-.010	-.043	.198
ARTIST	f	-.400	-.293	-.229	-.403	-.329	-.481	.072	.129	.083
ARTIST	m	-.529	-.394	-.233	-.521	-.212	-.206	.381	.493	.322
ART TEACHER	f	-.133	.098	-.009	-.259	.022	.006	.662	.626	.592
PHOTOGRAPHER	m	-.419	-.298	-.183	-.441	-.154	-.200	.509	.569	.473
MUSICIAN	f	-.173	-.217	-.102	-.348	-.010	.046	.805	.658	.613
MUSICIAN	m	-.574	-.214	-.123	-.390	-.073	-.028	.682	.694	.453
ENTERTAINER	f	-.287	-.308	-.241	-.544	-.100	-.092	.698	.616	.513
INT.DECORATOR	f	-.340	-.131	-.321	-.357	-.360	-.439	.389	.549	.389
INT.DECORATOR	m	-.373	-.600	-.518	-.588	-.279	-.128	.528	.623	.400
ADVERTISING EXEC.	m	-.209	-.310	-.351	-.535	-.091	-.120	.611	.608	.722
LANGUAGE TEACHER	f	-.217	-.520	-.384	-.438	-.173	-.094	.584	.534	.727
LIBRARIAN	f	-.138	-.045	.084	-.103	-.054	-.243	.418	.383	.733
LIBRARIAN	m	-.289	-.332	-.098	-.332	-.053	.001	.603	.593	.695
REPORTER	f	-.359	-.367	-.369	-.535	-.331	-.382	.275	.261	.502
REPORTER	m	-.334	-.449	-.429	-.653	-.200	-.197	.432	.388	.587
ENGLISH TEACHER	f	-.190	-.372	-.257	-.375	-.053	-.059	.428	.569	.668

CORRELATION MATRIX FOR TOTAL SAMPLE

VARIABLE		MILITARY ACTIV.	MECHANICAL ACTIV.	SCIENCE	MATHEMATICS	MEDICAL SCIENCE	MEDICAL SERVICE	MUSIC DRAMATICS	ART	WRITING
ENGLISH TEACHER	m	-.151	-.293	-.229	-.509	.012	.064	.496	.632	.834
NURSE, REGISTERED	f	.197	.015	.375	.078	.773	.839	.285	.268	.200
PHYS. THERAPIST	m	.388	.519	.696	.389	.747	.681	.077	.079	.030
NURSE, LIC. PRACT.	m	.060	-.335	-.058	-.157	.365	.681	.305	.286	.179
SOCIAL WORKER	f	.002	-.092	.008	-.135	.240	.226	.412	.345	.549
SOCIAL WORKER	m	-.047	-.194	-.077	-.229	.176	.215	.520	.468	.691
PRIEST	m	-.095	-.294	-.122	-.331	.110	.199	.690	.569	.689
DIR, CHRIST. ED.	f	-.009	-.206	-.087	-.191	.121	.276	.577	.484	.577
YWCA STAFF	f	.064	-.060	-.102	-.191	.154	.192	.409	.345	.495
MINISTER	m	.045	-.065	.063	-.095	.300	.346	.633	.528	.659
ELEM. TEACHER	m	.121	.075	.168	.066	.405	.436	.449	.469	.458
ELEM. TEACHER	f	.146	-.078	.032	.030	.208	.456	.384	.378	.338
SCH. SUPERINTEND.	m	.206	.046	.026	.102	.219	.255	.212	.132	.298
PUBLIC ADMINISTR.	m	.194	.098	.054	.112	.192	.108	.196	.115	.211
GUIDANCE COUNSEL.	m	.170	-.005	-.019	.073	.226	.308	.196	.137	.241
RECREATION LEAD.	f	.197	.015	-.041	-.016	.221	.311	.406	.340	.447
RECREATION LEAD.	m	.247	.091	.003	.077	.256	.307	.215	.158	.283
GUIDANCE COUNSEL.	f	.000	-.156	.006	-.071	.210	.232	.429	.382	.561
SOC. SCI. TEACHER	f	.008	-.140	-.078	-.077	.101	.036	.290	.229	.551
SOC. SCI. TEACHER	m	.114	-.195	-.305	-.253	.045	.121	.220	.170	.342
PERSONNEL DIR.	m	.182	.079	-.033	.061	.172	.119	.187	.129	.308
DEPT. STORE MGR.	m	.299	.153	-.012	.174	.189	.161	-.051	-.082	-.019
HOME ECON. TCHR.	f	.075	-.118	-.061	-.039	.166	.437	.377	.470	.222
FLIGHT ATTENDANT	f	.192	.002	-.079	-.000	.225	.350	.370	.367	.295
CH. OF COMM. EXEC.	m	.147	-.006	-.117	-.005	.086	.058	.238	.154	.444
SALES MANAGER	m	.186	.073	-.167	.052	.064	.027	.058	.000	.143
LIFE INS. AGENT	m	.327	.034	-.094	.100	.176	.179	.074	-.010	.151
LIFE INS. AGENT	f	.189	.082	-.069	.087	.107	.016	.119	.029	.257
LAWYER	f	-.090	-.001	-.005	-.046	-.109	-.115	.025	-.070	.377
LAWYER	m	-.077	-.206	-.192	-.228	.042	-.030	.035	.337	.695
COMPUTER SALES	m	.289	.300	.211	.345	.276	.172	.099	.009	.179
INVESTM. FUND MGR.	m	-.223	-.297	-.325	-.176	-.312	-.495	-.057	-.091	.079
PHARMACIST	m	.363	.352	.461	.444	.628	.605	-.110	-.163	-.188
BUYER	f	.208	.037	-.156	.175	-.069	.021	-.301	-.373	-.299
BUYER	m	.197	.017	-.287	.063	-.059	.018	-.008	-.022	.033
CREDIT MANAGER	m	.348	.245	.314	.349	.220	.236	-.037	-.085	.060
FUNERAL DIRECTOR	m	.273	.097	-.130	.144	.162	.246	-.120	-.149	-.192
REALTOR	m	.255	.163	-.190	.200	-.077	-.057	-.426	-.469	-.351
AGRIBUSINESS MGR.	m	.349	.228	-.002	.332	.000	.104	-.577	-.576	-.665
PURCHASING AGENT	m	.357	.456	.159	.389	.201	.153	-.240	-.242	-.217
CHIROPRACTOR	m	.196	.228	.308	.149	.581	.489	.272	.238	.309
ACCOUNTANT	m	.310	.269	.139	.574	.051	.009	-.352	-.440	-.235
BANKER	f	.293	.230	.020	.464	-.091	-.047	-.426	-.481	-.310
BANKER	m	.222	.040	-.161	.243	-.072	-.111	-.400	-.442	-.261
CREDIT MANAGER	f	.337	.203	-.012	.380	-.003	.039	-.385	-.478	-.329
DEPT. STORE SALES	f	.329	.068	-.059	.226	.098	.369	-.044	-.063	-.109
BUSINESS ED. TCHR.	f	.192	-.051	-.297	.142	-.221	-.016	-.199	-.240	-.107
BUSINESS ED. TCHR.	m	.299	.208	.025	.240	.178	.239	-.017	-.032	.047
EXEC. HOUSEKEEPER	f	.319	.171	.111	.300	.258	.475	.118	.109	.063
ACCOUNTANT	f	.262	.415	.245	.665	-.058	-.165	-.340	-.399	-.212
SECRETARY	f	.095	-.179	-.569	-.097	-.335	-.025	-.028	-.023	-.041
DENTAL ASSISTANT	f	.347	.144	.237	.362	.434	.670	-.203	-.229	-.383
NURSE, LIC. PRACT.	f	.337	.205	.506	.343	.675	.830	.135	.083	-.017
BEAUTICIAN	f	.047	-.199	-.501	-.098	-.377	-.101	-.411	-.393	-.658
AOR		.067	.197	.643	.344	.572	.415	.488	.461	.565
IE		-.135	-.010	-.023	.028	-.261	-.265	-.445	-.348	-.575
TOTAL RESPONSES		-.025	-.024	-.002	.011	.009	-.006	-.029	-.019	-.005
OCCUPATIONS	LP	.224	.305	.313	.167	.436	.403	.412	.432	.452
	IP	.220	.281	.201	.246	.215	.255	.051	.059	.092
	DP	-.331	-.433	-.369	-.315	-.457	-.472	-.303	-.318	-.327
SCHOOL	LP	.157	.258	.461	.395	.456	.345	.363	.364	.436
SUBJECTS	IP	.176	.150	.060	.145	.063	.109	-.075	-.075	-.110
	DP	-.310	-.377	-.477	-.499	-.478	-.422	-.266	-.265	-.300
	LP	.168	.218	.195	.098	.331	.389	.356	.346	.379
ACTIVITIES	IP	.184	.227	.118	.177	.064	.059	-.092	-.078	-.090
	DP	-.343	-.434	-.301	-.271	-.372	-.421	-.236	-.241	-.259
	LP	.149	.208	.214	.075	.301	.311	.495	.449	.515
AMUSEMENTS	IP	.179	.197	.118	.183	.066	.071	-.063	-.070	-.056
	DP	-.297	-.364	-.294	-.236	-.320	-.333	-.366	-.315	-.309
TYPES	LP	.106	.092	.142	-.012	.231	.280	.420	.364	.341
OF	IP	.064	.029	-.049	.047	-.048	-.026	-.201	-.230	-.195
PEOPLE	DP	-.220	-.093	-.119	-.050	-.198	-.122	-.267	-.199	-.168
	LP	-.093	.015	.053	-.030	.048	.026	.130	.154	.091
PREFERENCES	MP	.054	.033	-.013	.049	-.088	-.045	-.032	-.070	-.065
	RP	.013	-.067	-.030	-.040	.079	.081	-.091	-.054	.004
CHAR-	YP	.042	.182	.122	.005	.123	.079	.182	.163	.252
ACTER-	TP	.031	.052	-.018	.054	-.038	-.033	-.123	-.095	-.157
ISTICS	NP	-.109	-.271	-.121	-.058	-.103	-.050	-.080	-.087	-.127

CORRELATION MATRIX FOR TOTAL SAMPLE

VARIABLE		TEACHING	SOCIAL SERVICE	ATHLETICS	DOMESTIC ARTS	RELIGIOUS ACTIVITIES	PUBLIC SPEAKING	LAW POLITICS	MERCHAN-DISING	SALES	BUSINESS MANAGEMENT	OFFICE PRACTICES
TEACHING		1.000										
SOCIAL SERVICE		.574	1.000									
ATHLETICS		.110	.167	1.000								
DOMESTIC ARTS		.391	.521	.056	1.000							
RELIGIOUS ACTIV.		.329	.459	.179	.376	1.000						
PUBLIC SPEAKING		.324	.413	.177	.091	.261	1.000					
LAW/POLITICS		.252	.332	.166	-.027	.083	.819	1.000				
MERCHAN DISING		.163	.325	.296	.312	.168	.416	.389	1.000			
SALES		-.047	.102	.336	.049	.076	.306	.309	.742	1.000		
BUSINESS MGMT.		.188	.260	.373	.152	.169	.469	.479	.811	.739	1.000	
OFFICE PRACTICES		.220	.255	.258	.402	.299	.149	.121	.549	.460	.590	1.000
FARMER	m	-.485	-.512	.234	-.266	-.183	-.553	-.458	-.189	.059	-.112	-.016
INSTRUM.ASSEMBL.	f	-.368	-.378	.329	-.100	-.100	-.426	-.332	.073	.264	.151	.375
VOC.AGRIC.TCHR.	m	.029	-.015	.560	.043	.125	.018	.047	.282	.407	.407	.343
DIETITIAN	m	.349	.479	.296	.668	.429	.286	.208	.595	.373	.552	.463
POLICE OFFICER	m	.058	.124	.456	.052	.175	.321	.361	.499	.473	.536	.293
H.W.PATROL OFF.	m	-.173	-.182	.623	-.196	.005	.021	.116	.242	.420	.389	.222
ARMY OFFICER	f	.051	-.022	.257	-.384	-.117	.599	.735	.351	.431	.563	.088
PHYS.ED.TEACHER	f	.120	.139	.768	.105	.146	-.049	-.052	.147	.186	.216	.222
SKILLED CRAFTS	m	-.419	-.479	.244	-.290	-.163	-.493	-.353	-.102	.109	-.011	.035
FORESTER	m	-.063	-.199	.337	.037	.066	-.088	-.082	.011	.080	.102	.094
RAD.TECH.(X-RAY)	f	-.031	.059	.346	.142	.176	.001	.027	.108	.092	.135	.287
MERCH.MARCOFF.	m	-.324	-.438	.126	-.243	-.218	-.346	-.200	-.101	.061	-.014	-.069
NAVY OFFICER	m	.081	-.070	.372	-.047	.082	.332	.393	.359	.389	.526	.288
NURSE,REGISTERED	m	.291	.382	.197	.446	.372	.047	-.011	.050	-.091	.020	.284
VETERINARIAN	m	-.132	-.226	.045	.086	.037	-.497	-.535	-.385	-.322	-.407	-.107
CARTOGRAPHER	m	-.109	-.154	.315	-.045	.059	.088	.159	.206	.265	.329	.292
ARMY OFFICER	m	.082	.044	.559	-.033	.138	.436	.493	.519	.526	.700	.397
AIR FORCE OFF.	m	.017	-.079	.362	.000	.112	.283	.258	.342	.368	.454	.305
OCCUP.THERAPIST	f	.519	.507	.129	.490	.331	.291	.208	.250	.020	.176	.195
ENGINEER	f	-.099	-.315	.211	-.225	-.059	.076	.172	.070	.172	.220	.140
ENGINEER	m	-.025	-.178	.228	-.049	.039	.076	.133	.081	.144	.208	.142
CHEMIST	f	-.053	-.328	-.035	-.316	-.103	.026	.108	-.282	-.138	-.086	-.171
PHYSICAL SCIENT.	m	-.069	-.297	-.450	-.196	-.127	-.285	-.227	-.671	-.620	-.601	-.341
MEDICAL TECH.	f	-.134	.248	.223	-.107	.005	-.129	-.019	-.058	.042	.074	.130
PHARMACIST	f	-.180	-.226	.211	-.069	.028	-.067	.025	.041	.095	.111	.180
DENTIST	f	-.144	-.295	.131	-.150	-.110	-.039	.047	-.104	-.023	-.002	-.024
DENTIST	m	.029	-.007	.073	.088	.090	-.040	-.045	-.105	-.125	-.128	-.028
DENTAL HYGIENIST	f	.071	.155	.253	.318	.133	-.099	-.096	.059	-.040	-.000	.190
PHYS.THERAPIST	f	.207	.205	.471	.232	.310	.153	.194	.165	.119	.217	.305
PHYSICAN	m	.143	.043	.031	.090	.129	.068	.066	-.146	-.187	-.119	-.042
MATH-SCI.TEACHER	m	.202	-.025	.225	.050	.134	.001	.053	-.030	-.021	.058	.169
MATH-SCI.TEACHER	f	-.097	-.289	.369	-.153	.003	-.137	-.026	.061	.205	.235	.359
DIETITIAN	f	.274	.284	.226	.583	.288	.219	.179	.350	.178	.329	.395
MEDICAL TECH.	m	.106	.033	.212	.093	.235	.059	.107	.049	.030	.136	.292
OPTOMETRIST	m	.091	.052	.296	.101	.195	.135	.183	.207	.196	.243	.257
COMPUTER PROGR.	f	-.083	-.271	.228	-.157	-.085	.043	.171	.128	.195	.247	.216
COMPUTER PROGR.	m	.021	-.150	.172	-.061	.059	.125	.191	.116	.195	.229	.219
MATHEMATICIAN	f	-.195	-.599	-.243	-.540	-.287	-.189	-.082	-.577	-.363	-.369	-.395
MATHEMATICIAN	m	-.064	-.295	-.541	-.185	-.222	-.315	-.275	-.675	-.655	-.691	-.432
PHYSICIST	f	-.218	-.507	-.006	-.483	-.285	-.091	.046	-.353	-.158	-.143	-.263
BIOLOGIST	m	.040	-.137	-.532	.053	-.031	-.357	-.373	-.614	-.732	-.677	-.353
VETERINARIAN	f	-.376	-.558	-.096	-.368	-.318	-.241	-.189	-.438	-.268	-.309	-.397
OPTOMETRIST	f	-.435	-.594	.149	-.376	-.168	-.125	.007	-.079	.179	.125	.039
PHYSICIAN	f	-.134	-.345	-.001	-.333	-.147	-.037	.049	-.384	-.231	-.215	-.321
SOCIAL SCIENT.	m	.149	.099	-.431	-.035	-.149	-.032	-.023	-.509	-.644	-.558	-.445
COLLEGE PROF.	f	.249	.107	-.369	-.260	-.129	.383	.349	-.239	-.303	-.198	-.538
COLLEGE PROF.	m	.611	.666	-.178	.419	.309	.458	.318	.107	-.161	.026	.010
SPEECH PATHOL.	f	-.164	-.444	-.340	-.518	-.296	-.078	.015	-.588	-.439	-.433	-.553
SPEECH PATHOL.	m	.078	-.078	-.581	-.059	-.113	-.199	-.203	-.700	-.772	-.721	-.516
PSYCHOLOGIST	f	.099	-.140	-.262	-.306	-.348	.181	.282	-.255	-.278	-.184	-.452
PSYCHOLOGIST	m	.313	.276	-.443	.109	-.046	.229	.209	-.177	-.364	-.293	-.305
LANGUAGE INTER.	f	-.072	-.233	-.617	-.309	-.367	.019	.078	-.425	-.436	-.410	-.520
ARCHITECT	m	-.006	-.099	-.341	.077	-.043	-.015	-.069	-.135	-.269	-.252	-.254
ADVERTISING EXEC.	f	-.397	-.356	-.287	-.486	-.400	.187	.216	-.049	.009	-.042	-.494
ARTIST	f	-.251	-.358	-.529	-.344	-.398	-.251	-.227	-.625	-.551	-.652	-.799
ARTIST	m	.001	-.021	-.535	.002	-.158	-.253	-.318	-.599	-.680	-.738	-.575
ART TEACHER	f	.435	.311	-.216	.333	.148	.200	.090	.119	-.147	-.042	-.187
PHOTOGRAPHER	m	.048	.037	-.578	.030	-.169	-.062	-.130	-.435	-.541	-.590	-.578
MUSICIAN	f	.276	.309	-.341	.303	.216	.162	-.002	-.144	-.326	-.262	-.182
MUSICIAN	m	.127	.159	-.515	.194	.017	-.113	-.205	-.150	-.330	-.323	-.204
ENTERTAINER	f	.110	.177	-.328	.168	-.073	.108	-.025	-.110	-.274	-.289	-.373
INT.DECORATOR	f	-.116	-.080	-.502	-.024	-.176	.028	-.017	-.009	-.108	-.180	-.390
INT.DECORATOR	m	.125	.226	-.593	.322	.091	-.079	-.208	-.005	-.240	-.267	-.157
ADVERTISING EXEC.	m	.271	.391	-.187	.225	.081	.495	.313	.251	.035	.108	-.139
LANGUAGE TEACHER	f	.517	.464	-.330	.308	.193	.287	.196	.061	-.147	-.068	-.042
LIBRARIAN	f	.249	.097	-.491	-.058	.003	.376	.393	-.005	-.091	.010	-.128
LIBRARIAN	m	.333	.293	-.619	.241	.194	.196	.081	-.091	-.320	-.203	-.024
REPORTER	f	-.020	-.048	-.457	-.239	-.269	.173	.184	-.299	-.326	-.360	-.654
REPORTER	m	.182	.238	-.372	.057	-.039	.195	.148	-.243	-.411	-.354	-.388
ENGLISH TEACHER	f	.499	.474	-.287	.246	.182	.478	.358	.170	-.072	.061	-.017
ENGLISH TEACHER	m	.532	.540	-.190	.351	.299	.432	.295	.122	-.111	.017	-.016
NURSE,REGISTERED	f	.374	.516	.239	.461	.406	.192	.126	.169	.014	.118	.269
PHYS.THERAPIST	m	.302	.328	.552	.270	.369	.233	.209	.238	.173	.292	.312
NURSE,LIC.PRACT.	m	.344	.538	.047	.599	.459	-.010	-.123	.187	-.010	.075	.498
SOCIAL WORKER	f	.449	.684	-.020	.260	.244	.629	.646	.339	.149	.370	.139
SOCIAL WORKER	m	.564	.716	-.076	.374	.310	.622	.553	.345	.098	.339	.169
PRIEST	m	.520	.701	-.144	.407	.508	.484	.335	.147	-.092	.047	.054
DIR,CHRIST.ED.	f	.727	.781	.006	.499	.400	.484	.305	.221	-.023	.176	.219
YWCA STAFF	f	.563	.727	.219	.338	.310	.700	.549	.484	.285	.494	.202

CORRELATION MATRIX FOR TOTAL SAMPLE

VARIABLE		TEACHING	SOCIAL SERVICE	ATHLETICS	DOMESTIC ARTS	RELIGIOUS ACTIVITIES	PUBLIC SPEAKING	LAW POLITICS	MERCHANDISING	SALES	BUSINESS MANAGEMENT	OFFICE PRACTICES
MINISTER	m	.415	.796	.039	.456	.539	.634	.473	.349	.104	.299	.239
ELEM.TEACHER	m	.679	.742	.229	.507	.408	.453	.371	.460	.164	.376	.367
ELEM.TEACHER	f	.643	.628	.166	.640	.673	.225	.091	.346	.108	.289	.598
SCH.SUPERINTEND.	m	.553	.603	.349	.312	.416	.645	.586	.575	.407	.477	.420
PUBLIC ADMINISTR.	m	.352	.419	.190	.145	.183	.780	.787	.581	.449	.720	.348
GUIDANCE COUNSEL.	m	.532	.680	.481	.391	.413	.500	.461	.575	.382	.584	.463
RECREATION LEAD.	f	.598	.721	.381	.449	.423	.459	.503	.593	.365	.595	.395
RECREATION LEAD.	m	.471	.644	.582	.353	.412	.444	.531	.445	.480	.478	.417
GUIDANCE COUNSEL.	f	.667	.728	.047	.360	.317	.625	.554	.347	.111	.361	.215
SOC.SCI.TEACHER	f	.579	.519	.036	.166	.191	.714	.770	.349	.160	.379	.196
SOC.SCI.TEACHER	m	.505	.646	.443	.289	.307	.592	.541	.573	.405	.568	.319
PERSONNEL DIR.	m	.304	.428	.276	.187	.169	.686	.641	.699	.529	.759	.343
DEPT.STORE MGR.	m	.097	.235	.539	.123	.135	.446	.461	.734	.631	.742	.395
HOME ECON.TCHR.	f	.490	.581	.135	.836	.449	.103	-.032	.464	.150	.250	.473
FLIGHT ATTENDANT	f	.320	.515	.365	.505	.287	.392	.319	.718	.457	.561	.466
CH.OF COMM.EXEC.	m	.307	.429	.193	.182	.171	.749	.721	.676	.528	.727	.336
SALES MANAGER	m	.122	.288	.349	.121	.110	.589	.525	.749	.709	.762	.312
LIFE INS. AGENT	m	.211	.409	.521	.205	.278	.608	.539	.679	.623	.706	.368
LIFE INS. AGENT	f	.178	.340	.320	.081	.132	.736	.711	.693	.642	.747	.290
LAWYER	f	-.058	-.119	-.212	-.146	-.243	.544	.656	.019	.065	.137	-.275
LAWYER	m	.379	.469	-.111	.156	.140	.698	.690	.298	.123	.290	.051
COMPUTER SALES	m	.181	.270	.393	.101	.163	.662	.624	.657	.631	.734	.334
INVESTM.FUND MGR.	m	-.298	-.326	-.268	-.317	-.456	.129	.217	.017	.024	.025	-.262
PHARMACIST	m	.096	.179	.421	.223	.237	.167	.149	.601	.539	.578	.551
BUYER	f	-.227	-.015	.306	-.061	.015	.169	.195	.584	.618	.613	.410
BUYER	m	.049	.243	.325	.178	.119	.395	.370	.849	.742	.602	.476
CREDIT MANAGER	m	.193	.280	.383	.192	.228	.480	.529	.810	.726	.686	.458
FUNERAL DIRECTOR	m	-.008	.262	.439	.292	.231	.309	.284	.766	.718	.731	.561
REALTOR	m	-.217	-.044	.446	-.098	-.022	.223	.261	.640	.767	.678	.362
AGRIBUSINESS MGR.	m	-.262	-.216	.449	-.034	.048	-.166	-.125	.367	.549	.439	.499
PURCHASING AGENT	m	-.080	.024	.509	.031	.106	.291	.341	.731	.757	.806	.499
CHIROPRACTOR	m	.273	.458	.276	.269	.262	.527	.490	.462	.358	.504	.294
ACCOUNTANT	m	-.038	-.061	.409	-.113	.042	.297	.407	.539	.599	.480	.489
BANKER	f	-.147	-.172	.305	-.086	-.000	.119	.282	.479	.571	.621	.455
BANKER	m	-.211	-.119	.388	-.149	-.046	.241	.333	.505	.547	.617	.378
CREDIT MANAGER	f	-.145	-.089	.357	-.055	.021	.215	.280	.609	.695	.753	.609
DEPT.STORE SALES	f	.064	.236	.315	.451	.418	.103	.051	.629	.559	.580	.809
BUSINESS ED.TCHR.	f	.244	.200	.262	.186	.155	.172	.185	.536	.563	.584	.717
BUSINESS ED.TCHR.	m	.317	.345	.392	.282	.236	.391	.423	.831	.735	.863	.693
EXEC.HOUSEKEEPER	f	.272	.425	.326	.549	.522	.289	.208	.621	.467	.651	.741
ACCOUNTANT	f	-.221	-.350	.194	-.286	-.039	.182	.290	.307	.428	.493	.353
SECRETARY	f	.003	.188	.161	.300	.125	.008	-.004	.543	.457	.466	.647
DENTAL ASSISTANT	f	.008	.196	.419	.397	.285	-.056	-.081	.363	.327	.391	.711
NURSE,LIC.PRAC.	f	.247	.382	.311	.469	.562	.114	.093	.218	.124	.239	.513
BEAUTICIAN	f	-.376	-.193	.253	.047	-.054	-.409	-.447	.098	.197	.028	.184
AOR		.447	.276	-.159	.250	.282	.291	.235	-.057	-.198	-.036	.072
IE		-.484	-.428	-.281	-.325	-.308	-.788	-.683	-.518	-.531	-.514	-.237
TOTAL RESPONSES		.003	.018	.027	-.018	-.026	.006	.032	.018	-.026	-.003	.005
OCCUPATIONS	LP	.423	.454	.256	.380	.307	.472	.429	.497	.265	.448	.372
	IP	.150	.158	.234	.170	.195	.185	.177	.380	.394	.406	.424
	DP	-.392	-.418	-.361	-.389	-.360	-.455	-.419	-.637	-.508	-.630	-.594
SCHOOL SUBJECTS	LP	.320	.349	.123	.348	.315	.401	.352	.184	.012	.176	.212
	IP	.018	.026	.175	.044	.100	.030	.026	.216	.263	.235	.243
	DP	-.310	-.342	-.273	-.362	-.389	-.399	-.345	-.377	-.256	-.379	-.421
	LP	.389	.506	.172	.473	.328	.482	.385	.384	.189	.373	.241
ACTIVITIES	IP	-.027	-.037	.147	-.041	.058	.030	.050	.180	.243	.211	.212
	DP	-.330	-.430	-.310	-.426	-.363	-.476	-.406	-.641	-.420	-.561	-.440
	LP	.304	.393	.198	.425	.357	.409	.308	.330	.119	.271	.184
AMUSEMENTS	IP	.029	.029	.157	.003	.127	.088	.100	.179	.231	.223	.204
	DP	-.286	-.364	-.318	-.368	-.426	-.435	-.358	-.447	-.320	-.442	-.332
TYPES OF PEOPLE	LP	.292	.369	.142	.282	.281	.327	.256	.229	.052	.193	.116
	IP	-.113	-.097	.025	-.085	-.034	-.140	-.107	-.035	.074	.002	.033
	DP	-.232	-.345	-.201	-.251	-.326	-.221	-.175	-.228	-.159	-.240	-.185
	LP	.091	-.032	-.039	.028	-.059	-.019	-.041	-.055	-.172	-.122	-.137
PREFERENCES	YP	-.096	-.047	.001	-.033	.023	-.039	-.042	-.017	.070	-.003	.032
	RP	.059	.193	.091	.027	.029	.075	.115	.090	.070	.138	.093
CHAR-	YP	.235	.199	.079	.091	.109	.350	.240	.126	.079	.163	-.017
ACTER-	IP	-.096	-.080	.049	-.047	-.025	-.132	-.090	-.006	.062	.006	.014
ISTICS	NP	-.144	-.136	-.138	-.052	-.098	-.257	-.190	-.130	-.155	-.190	.010

Note. The data are based on 1,134 male and 1,044 female first-year students at the University of Wisconsin — Madison.