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ABSTRACT
        Intercorrelations among the 1985 occupational scales
of the Strong-Campbell Interest Inventory (SCII) for 1985 for each of
the six Holland groups are presented. These intercorrelations are
based on large recent samples of entering college students. A second
objective was to determine the extent to which the 1985 occupational
scales are correctly placed. The men's sample was 3,153 entering
students at the University of Illinois at Chicago for 1985 through
1990. The women's sample was 3,318 entering students from the same
time period. Students were tested on the 1985 SCII. The
intercorrelations are presented in six tables. Major conclusions are
that (1) many scales are misplaced; (2) the assumption that all
occupations within a Holland group have similar interests is
untenable, given the intercorrelation results; and (3) more than six
Holland categories are required to accommodate the diversity of
interests in the world of occupations adequately. Ten tables and one
figure illustrate the results. (Contains 9 references.) (SLD)

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Over Half of the 1985 SCII Occupational Scales Are Misplaced, Based on Intercorrelations from Very Large College Samples [1]

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The procedure used in the 1985 Strong-Campbell Interest Inventory (SCII) (Hansen & Campbell, 1985) for placing occupational scales into Holland groups is markedly different from the procedure used in the earlier versions of the Strong Vocational Interest Blank (SVIB). The primary basis for grouping occupational scales of the SVIB into groups was the intercorrelations among the occupational scales. (Hereinafter, we refer to the occupational scales simply as scales.) In the earlier versions, Strong (1943, p. 134) required a scale to have a mean correlation of .60 with other scales within a group to be assigned to a given group. The SCII does not use the intercorrelations among the scales as the basis for grouping the scales into the six Holland groups. Instead, the scales are grouped together primarily on the basis of the mean scores of the occupational criterion groups on the six General Occupational Theme scales. The 1985 procedure is described in more detail later in this section.

In reference to the groupings on the earlier forms of the Strong, Hansen

nd Campbell (1985) make these comments:

> These grouping were not entirely satisfactory for a variety of reasons:
> some scales had only small correlations with other scales and could not be
> grouped with others; some scales seemed to belong, statistically, to more
> than one group;...and some groupings just did not seem reasonable. (p.59)

In the 1966 SVIB, eleven groups (two groups were single-scale groups) were needed to

contain 51 men's scales, and nine groups (one group was a single-scale group) were

needed to contain 30 women's scales (Campbell, 1966). In contrast, in the 1985 SCII

102 men's scales and 105 women's scales are contained in six Holland groups. In

reference to the 1985 SCII, one might ask how more scales could be placed in fewer

categories.

To date, the meager empirical results which are available suggest that the 1985

SCII Holland groups are not quite as homogeneous as 1966 SVIB men's groups.

Creaser (1976) calculated the intercorrelations for the men's scales of the 1966 SVIB

and of the 1974 SCII (Campbell, 1974). Creaser found that the overall mean within-

group intercorrelation was higher for the 1966 SVIB (.60) than for the 1974 SCII (.57).

Creaser's study is important because, so far as we can ascertain it, is the only

study that has published the mean within-groups intercorrelations for any edition of the

SCII. Creaser did not report all the intercorrelations among all men's scales in the

respective six Holland groups, but he did report the mean intercorrelations for each

Holland group, plus some selected correlations between pairs of scales. The mean

within-group intercorrelations, for the 1974 men's scales were as follows: Realistic (.49),

Investigative (.52), Artistic (.45), Social (.68), Enterprising (.62), and Conventional (.73). Because the 1985 SCII contains many more scales than the 1974 SCII, one would expect that the average intercorrelations would tend to be lower for the 1985 SCII than for the 1974 SCII.

Creaser (1976) stated that "there was strong evidence that some occupations were misplaced, and the grouping would have been more homogeneous without them" (p. 239). Creaser also noted that there were more negative intercorrelations among the 1974 SCII scales than for the earlier SVIB.

Apostal (1984) calculated the median within-group intercorrelations for 75 of the 81 women's occupational scales of the 1981 SCII (Campbell & Hansen, 1981). Apostal organized the median correlations into three categories: .50 or higher, .40 to .49, and below .40. Of the 75 scales, 25 scales had median correlations of .49 or lower; eight of the 25 scales had median correlation in the .40 to .49 range, and 17 of the 25 scales had median correlations below .40. Apostal noted that all seven Realistic scales (Air Force Officer, Army Officer, and Navy Officer were omitted from the study) had median correlations of lower than .50.

Hansen and Campbell (1985) describe their procedure for assigning scales to groups:

> Several kinds of information were used to derive the codes for the Occupational Scales. The most important were the mean scores of the Criterion Samples on the six General Occupational Themes...; next, were the correlations between the Themes and the Occupational Scales; next, the mean scores of the Criterion Samples on the combined sex-normed Themes;...(p.59).

Intercorrelations among the occupational scales played no part in determining scale placement. Mean scores on the Theme scales were the primary basis for assigning scales to groups.

No intercorrelations of the 1985 SCII occupational scales have been published, neither in the SCII Manual, nor in the Strong literature. Thus, the primary objective of this study was to present in one place the intercorrelations among the 1985 SCII occupational scales for each of the six Holland groups. The intercorrelations are based upon very large, recent samples of entering college students.

The second objective was to determine to what extent the 1985 occupational scales are correctly placed. On the basis of Creaser's 1974 SCII men's results, and Apostal's 1981 SCII women's results, we expected that one-third or more of the scales which comprise the respective Holland groups would be "misplaced." We adopted the following classification system to determine if a scale were misplaced: A scale having a median correlation of .60 or higher with other scales within the same Holland group was classified as "correctly placed;" a scale having a median correlation in the range of .50 to .59 was classified as "somewhat misplaced;" a scale having a median correlation of .49 or lower was classified as "clearly misplaced."

Creaser observed that the 1974 Holland groups would be more homogeneous if some scales were moved to other Holland groups, or deleted from their Holland group. Hence, the third objective of the study was, contingent upon the magnitude of the intercorrelations, to determine if some scales should be relocated in other Holland groups, or simply deleted from their present Holland group.

Method

Samples. The men's sample was comprised of 3,153 entering students at the University of Illinois at Chicago during the years 1985-1990. The women's sample was comprised of 3,318 entering students at the same university during the same time period.

Instrument. The students were tested on the 1985 SCII. The students were tested during the orientation period prior to the beginning of the respective fall semesters.

Data analysis. Means, standard deviations, and intercorrelations for each sample were calculated by the Student Counseling Service at the University of Illinois at Chicago. Dr. Mitchell Jacobs made these statistics available to us. We calculated the median within-group correlation for each occupational scale, by sex.

Results and Discussion

The intercorrelations among the occupational scales, by sex, are presented in Tables 1 through 6. The scales with median within-group correlations below .60 are presented in Tables 7 & 8. A listing of the scales which correlated negatively with other scales within their respective Holland groups is presented in Figure 1.

The primary objective of the study was to present in one place the intercorrelations among the occupational scales which comprise the respective six Holland groups. Thus, the presentation of Tables 1 through 6 fulfill the primary objective of the study.

The second objective was to determine to what extent, if any, the occupational scales were misplaced in their respective Holland groups. For each scale the median

correlation with all other scales within the same Holland group was calculated. In Table 7 we present the women's scales which have median correlations of .59 or lower. Twenty-three of the women's scales have median correlations ranging from .50 to .59, and 42 scales have medians ranging from .49 to -.11. Hence, according to our classification scheme, 23 women's scales are "somewhat misplaced," and 42 are "clearly misplaced." These misplaced scales account for well over half of the 105 women's scales; approximately 22% (23/105) are somewhat misplaced, and 40% (42/105) are clearly misplaced.

The comparable results for the men's scales are presented in Table 8. Thirty percent (31/102) of the men's scales are somewhat misplaced, and 43% (44/102) are clearly misplaced.

As can be noted in Table 7, 100% of the women's scales in the Realistic and Artistic groups are misplaced. For the men's, 100% of the scales in Enterprising and 90% in Conventional are misplaced.

We viewed the presence of the numerous negative correlations between pairs of scales within a given Holland group as constituting a serious weakness in the assumption that all scales within a Holland group represent occupations with similar interests. Accordingly, we have listed separately in Figure 1 the pairs of scales which correlate negatively with each other in Tables 1-6. For the women's scales there were a total of 69 negative correlations; for the men's scales, a total of 46 negative correlations. The negative correlations are concentrated in several groups. Twenty-seven of the women's negative correlations occur within the Enterprising group while there is only one

negative correlation (Psychologist with Medical Technician, -.01) in the Investigative group, and no negative correlations for Conventional. For the men's scales, 18 of the 46 negative correlations occur in Enterprising; Realistic and Artistic have only two and four negative correlations, respectively.

One of the problems in using the mean correlation or the median correlation as an index of a given scale's "belongingness" is the fact that the presence of one scale with mostly low or negative correlations tends to reduce the other scales' mean or median correlations. As Creaser (1976) noted, the deletion of a scale with mostly low correlations can result in an improvement in the homogeneity of the remainder of the scales. The women's Beautician scale illustrates this effect. As can be seen in Table 5, the women's Beautician scale correlates negatively with ten of the other 15 scales in the Enterprising group. Beautician correlates above .60 with only one other scale (.72 with Florist). Consequently, the median correlations of the other scales (save Florist) are lowered by their correlations with Beautician. This effect is magnified in the women's Enterprising group because four other scales have low or negative correlations with their member scales: Investments Manager, Marketing Executive, Florist, and Optician each have only one correlation above .60 (see Table 5). Clearly, the deletion of these five "worst fit" scales from the Enterprising group would leave ten scales whose median intercorrelations are above .60; Elected Public Official would be a marginal member.

Several of these negative correlations in Table 5 which are associated with women's Beautician, Florist, and Investments Manager scales are relatively high. Beautician correlates -.38 with Personnel Director, -.70 with Elected Public Official,

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and -.40 with Life Insurance Agent. Florist correlates -.48 with Elected Public Official, and Investments Manager correlates -.57 with Funeral Director, and -.37 with Optician.

We considered presenting in this paper our suggestions for revising the composition of the six Holland groups. We decided not to do so in this paper because it would have made the paper virtually unmanageable in terms of length. (e.g., to justify the reassignment of scales we would have needed to present the entire occupational intercorrelation matrices for each sex.)

However, having said this, we have listed below some scales which we believe should be deleted from the current Holland groups. The 19 "worst fit" women's scales are presented in Table 9, and the 20 "worst fit" men's scales are presented in Table 10.

The criterion for including a scale in the worst fit category was that the scale had two, one, or no correlations of .60 or higher with the other scales within the Holland group. The reader can identify these scales by an inspection of Tables 1-6. Thus, in Table 1, we see that the women's Bus Driver scale has only one correlation above .60 (.69 with Farmer). In Table 9, the reader can note that five of the 19 scales have two correlations of .60 or above, 12 scales have only one correlation of .60, and one scale (Flight Attendant) has no correlations of .60 or above. In like fashion, the reader can note in Table 10 that 11 of the men's worst fit scales have only two correlations of .60 or above, seven scales have only one correlation of .60 or above, and two scales (Chef and Mathematics Teacher) have no correlations as high as .60.

In Tables 10 and 11 we present also the median within-group correlation for each of the worst fit scales. As might be expected, the median correlations are quite low.

For the 19 women's scales, the median correlations range from .45 to -.11 (see Table 10); for the 20 men's worst fit scale listed in Table 10, the median correlations range from .47 to -.08. The majority of the worst fit scales have at least one negative correlation within the other scales in their Holland group. (See Figure 1.)

We have also presented in Tables 9 and 10 the respective correlations between worst fit scales and the appropriate General Occupational Theme (GOT) scales, as presented in Table 6-2 of the 1985 SCII Manual. These correlations constitute the "second basis" for assigning occupational scales to the various Holland groups; mean scores of the occupational criterion group on the GOT scales constitute the primary basis for assigning scales to groups (Hansen & Campbell, 1985, p. 59). We note that these occupational scale - GOT scale correlations for the worst fit scales are generally low; only one women's scale (Librarian) in Table 9 and only one men's scale in Table 10 (Nurse, LPN) has a correlation with the appropriate Theme scale higher than .56; twelve of the 19 women's worst fit scales in Table 9 have correlations with their respective GOT scales of .39 or lower; eleven of the 20 men's worst fit scales in Table 10 have correlations with their respective GOT scales of .39 or lower.

We observed that, for the scales which tended to have within-group median correlations of .60 or higher, (not reported in this paper) the correlations with the GOT scales were much higher than the comparable correlations of the worst fit scales in Tables 9 and 10. For example, the men's Marine Corp Enlisted Personnel scale has a median correlation of .65 with the other Realistic scales. According to Table 6-2 of the 1985 Strong manual, Marine Corp Enlisted Personnel correlates .71 with the Realistic

GOT scale. Hansen and Campbell (1985) do not specify any minimum value for the GOT scale - occupational scale correlations although they do specify minimum values for the mean scores. They state that "usually, only means of 53 or higher were considered in the coding" (p. 59).

Although it is beyond the scope of the paper to discuss at length the merits of the scheme used by Hansen and Campbell to assign scales to groups, it appears to us that the correlations between the occupational scales and the GOT scales are probably more important than are the GOT mean scores for the purpose of assigning scales to groups. Johannson used correlations as his primary basis for assigning occupational scales of the Career Interest Inventory to groups. Johannson (1982) noted that "reliance on mean scores can effectively describe the salient characteristics of an occupational sample but not necessarily the salient characteristics of its scale" (p. 86).

We believe that the evidence suggests that more than six Holland groups are required to capture the range of interests represented by the 100 - plus men's and women's scales of the 1985 SCII. The Guide for Occupational Exploration (1979) uses a 12 group, rather than a six group, classification system. The Guide uses four groups to represent Realistic occupations and four groups to represent the Holland Social occupations.

We believe our results will generalize to other college samples, and to adult samples. In reference to college samples, our results are in general agreement with Creaser's findings for the 1974 men's scales, and with Apostal's results for the 1981 women's scales. In reference to adult samples, our correlations between selected GOT

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and Basic Interest Scale correlations are very similar to the comparable correlations reported in the 1985 SCII manual (p. 39). The highest six correlations, based on the WIG reference group, presented in the manual between the GOT scales and corresponding Holland - coded Basic Interest Scale are presented as follows (with our respective correlations presented in parentheses): Realistic with Mechanical Activities, .91 (.90); Investigative with Science, .91 (.90); Artistic with Art, .87 (.89); Social with Social Service, .84 (.85); Enterprising with Merchandising, .86 (.89); and Conventional with Office Practices, .80 (.84). The correspondence between the respective same six pairs of men's correlations are also very similar: .91 (.90); .90 (.89); .90 (.89); .82 (.80); .88 (.91); and .79 (.82).

CONCLUSIONS

1. Many scales are misplaced.

2. The assumption that all occupations within a Holland group have similar interests is simply untenable, given these results.

3. We believe these results strongly suggest that more than six Holland categories are required to adequately accommodate the diversity of interests inherent in the world of occupations.

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TABLE 1

INTERCORRELATIONS AMONG THE OCCUPATIONAL SCALES WHICH COMPRISE THE REALISTIC GROUP (Correlations above the diagonal are for the women's sample (n=3,300); correlations below the diagonal are for the men's sample (n=3,100)

Note. Decimals have been omitted.

1985 SCII Occupational Scales (Women's) — columns; 1985 SCII Occupational Scales (Men's) — rows.

1985 SCII Occupational Scales (Men's)	(Marine Corps Enlisted Personnel)	Navy Enlisted Personnel	Army Officer	Navy Officer	Air Force Officer	(Air Force Enlisted Personnel)	Police Officer	Bus Driver	Horticultural Worker	Farmer	Vocational Agriculture Teacher	Forester	(Veterinarian)	Athletic Trainer	Emergency Medical Technician	Radiologic Technologist	Carpenter	Electrician	Architect	Engineer
Marine Corps Enlisted Personnel	--													57	62	41	36	54	02	43
Navy Enlisted Personnel	71	--	76	74	74		69	59	19	40	28	43		52	38	07	36	58	07	45
Army Officer	77	54	--	88	80		72	17	12	01	03	24		59	37	13	58	75	33	66
Navy Officer	83	58	89	--	84		62	24	10	-03	09	43		40	36	10	45	61	30	61
Airforce Officer	76	66	90	89	--		56	36	07	14	06	32								
Airforce Enlisted Personnel	78	92	63	66	73	--								61	49	25	32	46	-07	26
Police Officer	68	42	63	55	56	51	--	36	-04	02	19	22		37	57	51	30	26	03	19
Bus Driver	49	79	36	30	47	72	44	--	47	69	55	20		43	38	57	51	40	43	35
Horticultural Worker	23	53	-02	14	16	44	-04	47	--	31	67	61		08	47	45	-09	-13	-26	-05
Farmer	15	64		04	30	58	22	78	40	--	46	-07		50	51	57	39	28	13	24
Vocational Agriculture Teacher	65	67	58	58	60	69	50	58	46	43	--	51		65	41	40	82	71	66	68
Forester	22	47	22	21	30	48	15	42	73	54	56	--								
Veterinarian	15	37	14	12	23	46	21	37	53	53	50	75	--		71	66	63	71	23	57
(Athletic Trainer)														--	83	30	37	-05	35	
Emergency Medical Technician	58	68	58	49	61	74	58	67	26	58	67	45	62	72	--	29	29	02		30
Radiologic Technologist	50	57	42	50	51	67	20	33	38	27	55	39	60	57	65	--	87	74		74
Carpenter	71	76	48	62	61	80	36	59	60	34	63	48	44	70	71	86	--	66		84
Electrician	65	87	49	57	65	90	37	71	57	59	64	53	52	55	73	74	77	--		72
(Architect)																			--	72
Engineer	49	63	51	64	66	70	10	39	48	34	53	53	52	55	73	74	77		--	--

TABLE 2

INTERCORRELATIONS AMONG OCCUPATIONAL SCALES WHICH COMPRISE

THE INVESTIGATIVE GROUP (Correlations above the diagonal are for the women's

sample; men's correlations are below the diagonal)

Row labels are the 1985 SCII Occupational Scales (Men's); column headers are the 1985 SCII Occupational Scales (Women's).

1985 SCII Occupational Scales (Men's)	Computer Programmer	Systems Analyst	Medical Technologist	R&D Manager	Geologist	Biologist	Chemist	Physicist	Veterinarian	Science Teacher	Physical Therapist	Respiratory Therapist	Medical Technician	Pharmacist	Dietitian	(Nurse, RN)	Chiropractor	Optometrist	Dentist	Physician	(Biologist)	Mathematician	Geographer	College Professor	Psychologist	Sociologist
Computer Prog.	--	91	87	78	73	66	85	81	64	61	44	63	63	74	42		38	82	80	54		71	64	48	21	32
Systems Analyst	77	--	84	87	77	67	87	81	60	60	37	54	54	60	36		40	79	78	69		69	71	43	34	44
Medical Tech.	69	72	--	80	75	73	86	78	77	82	67	83	70	82	66		66	92	90	68		66	64	47	31	38
R&D Manager	72	85	68	--	83	75	87	84	65	63	43	51	43	65	43		46	75	79	69		76	77	55	52	57
Geologist	56	28	29	57	--	92	90	91	84	60	61	60	50	64	35		41	67	79	83		88	84	80	59	68
(Biologist)						--	90	91	87	68	69	62	48	62	42		50	65	75	91		88	79	86	68	77
Chemist	75	68	67	80	79		--	95	77	72	58	64	52	67	44		51	78	83	79		88	82	71	54	66
Physicist	73	62	56	81	87		95	--	77	63	55	57	52	65	37		42	70	77	81		93	81	81	57	71
(Veterinarian)									--	71	84	80	63	76	52		60	73	92	87		70	66	71	53	55
Science Teacher	63	54	83	64	54		79	71		--	75	77	49	68	78		79	85	79	71		51	50	43	44	46
Physical Ther.	30	17	64	27	25		42	33		71	--	86	61	69	66		67	65	70	76		50	41	54	39	36
Resp. Ther.	48	40	85	39	23		55	42		81	79	--	75	79	69		70	80	81	67		48	44	44	23	24
Medical Technician	61	53	84	59	40		62	55		78	68	76	--	85	54		42	64	64	54		54	36	48	-01	08
Pharmacist	30	37	58	41	09		27	23		50	56	47	72	--	65		53	82	80	70		63	51	23	19	21
(Dietitian)															--		70	70	61	52		29	31	23	19	21
Nurse, RN	16	19	63	13	-07		25	12		58	74	78	65	53		--										
Chiropractor	20	18	52	38	37		47	45		58	65	61	56	45		54	--	72	70	61		29	31	23	33	33
Optometrist	66	62	78	68	51		77	70		77	62	71	77	55		52	65	--	94	67		57	55	39	29	33
Dentist	57	42	77	52	45		61	56		77	75	77	82	62		60	73	83	--	75		65	62	51	36	40
Physician	48	34	45	61	85		86	88		71	48	46	54	27		24	63	68	61	--		80	69	83	71	73
Biologist	43	20	33	48	89		80	84		54	37	37	41	07		13	47	53	47	92	--		82	88	57	70
Mathematician	62	38	27	59	89		84	89		54	18	20	33	06		-10	26	48	35	83	86	----	82	88	57	70
Geographer	30	21	11	37	74		65	68		39	07	11	25	08		-13	17	25	13	68	80	77	--	69	59	74
college prof.	30	24	26	45	73		76	76		56	23	33	25	-21		-06	09	44	44	29	83	88	78	--	66	75
Psychologist	06	03	03	34	66		52	59		32	11	09	06	-06		09	44	44	29	83	88	78	85		--	66
Sociologist	-01	11	17	18	30		46	40		37	18	34	03	-16		19	37	24	11	51	56	40	66	77	71	--

Note. Decimals have been omitted.

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TABLE 3

INTERCORRELATIONS AMONG THE OCCUPATIONAL SCALES WHICH COMPRISE THE ARTISTIC GROUP (Correlations above the diagonal are for the women's sample (n=3,300); correlations below the diagonal are for the men's sample (n=3,100)

Column headers: 1985 SCII Occupational Scales (Women's). Row headers: 1985 SCII Occupational Scales (Men's).

(Men's) \ (Women's)	Medical Illustrator	Art Teacher	Artist, Fine	Artist, Commercial	Interior Decorator	(Architect)	Photographer	Musician	Chef	(Beautician)	Flight Attendant	Advertising Executive	Broadcaster	Public Relations Director	Lawyer	Public Administrator	Reporter	Librarian	English Teacher	(Foreign Language Teacher)
Medical Illustrator	--	48	75	79	18		68	74	39		-04	13	-03	-02	26	-02	33	30	-08	
Art Teacher	78	--	29	73	46		71	60	62		50	44	42	38	03	00	57	55	60	
Artist, Fine	67	67	--	74	27		69	73	17		-24	34	07	11	45	15	31	20	-07	
Artist, Commercial	75	82	92	--	54		91	76	49		25	54	37	36	41	20	61	48	28	
Interior Decorator	35	70	52	68	--	--	51	18	26		39	75	50	57	30	37	38	29	33	
Architect	78	59	79	77	33	--														
Photographer	77	74	75	83	53	81	--	71	47		26	61	49	49	49	29	71	57	40	
Musician	78	78	86	87	55	71	77	--	43		03	28	14	07	19	-12	42	43	24	
(Chef)									--		50	17	17	09	-10	-16	10	29	27	
Beautician	40	53	04	27	57	11	33	29		--										
Flight Attendant	37	43	16	09	33	02	26	15		79	--	36	57	36	-07	-04	39	11	47	
Advertising Executive	57	80	58	76	76	43	72	70		48	44	--	80	84	56	53	70	46	61	
Broadcaster	25	60	54	66	79	24	53	57		28	20	85	--	86	50	50	78	42	75	
Public Relations Director	10	48	15	36	64	-06	32	24		38	42	77	81	--	64	72	81	58	74	
Lawyer	24	40	16	31	33	11	40	27		20	41	63	59	77	--	82	63	46	24	
Public Administrator	13	27	-20	-01	21	-13	16	01		34	64	44	33	70	78	--	56	48	32	
Reporter	50	70	62	69	53	37	59	70		16	16	81	74	66	60	36	--	72	75	
Librarian	54	68	58	36	55	40	53	73		22	20	72	62	55	52	40	83	--	65	
English Teacher	50	70	20	40	47	15	42	48		51	64	72	51	69	68	74	68	74	--	
Foreign Language Teacher	49	68	24	37	40	16	33	49		39	50	59	41	54	57	61	63	74	91	--

Note. Decimals have been omitted.

TABLE 4

INTERCORRELATIONS AMONG THE OCCUPATIONAL SCALES WHICH

COMPRISE THE SOCIAL GROUP (Correlations above the diagonal are based on the

women's sample (n=3,300); correlations below the diagonal are based on the men's sample

(n=3,100)

1985 SCII Occupational Scales (Men's)	Foreign Language Teacher	Minister	Social Worker	Guidance Counselor	Social Science Teacher	Elementary Teacher	Special Education Teacher	Occupational Therapist	Speech Pathologist	Nurse, RN	Dental Hygientist	Nurse, LPN	(Athletic Trainer)	Physical Education Teacher	Recreation Leader	YWCA/YMCA Director	School Administrator	Home Economics Teacher
Foreign Language Teacher	--	56	57	63	60	63	74	37	63	38	06	08		12	40	53	50	62
Minister	80	--	74	72	61	18	58	56	75	64	-03	-06		06	57	53	61	24
Social Worker	73	83	--	75	63	22	57	43	84	58	-06	-14		04	53	60	66	31
Guidance Counselor	69	82	88	--	77	39	75	29	75	55	07	00		11	66	80	85	56
Social Science Teacher	61	78	84	82	--	23	58	16	59	41	-11	-28		-05	64	71	88	38
Elementary Teacher	38	40	24	33	39	--	79	35	34	30	42	58		44	25	44	18	82
Special Education Teacher	61	77	68	75	73	74	--	57	68	64	40	36		43	63	79	60	81
Occupational Therapist	62	61	57	52	35	52	65	--	54	77	48	28		51	49	42	20	36
Speech Therapist	76	82	79	73	64	47	75	75	--	71	10	-03		12	57	63	65	41
Nurse, RN	21	43	27	26	27	47	54	50	54	--	52	30		43	60	62	50	36
(Dental Hygientist) [a]											--	64		67	36	35	-01	46
Nurse, LPN	34	55	35	41	45	52	61	37	54	76		--		57	-09	05	-26	43
Athletic Trainer	-35	-25	-27	-14	-17	30	06	04	-07	32		19	--	68				
Physical Education Teacher	-03	22	17	28	37	63	56	23	28	45		42	68	--	41	44	02	43
Recreation Leader	28	60	67	69	78	26	62	27	44	26		32	09	51	--	88	76	46
YWCA/YMCA Director	36	73	69	78	80	34	73	32	55	36		49	08	53	90	--	82	63
School Administrator	29	63	62	70	80	33	69	20	45	39		47	01	48	85	89	--	40
(Home Economics Teacher) [a]																		--

Note. Decimal points omitted.

[a] There is no male Dental Hygientist nor Home Economics scale.

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TABLE 5

INTERCORRELATIONS AMONG THE OCCUPATIONAL SCALES WHICH COMPRISE THE ENTERPRISING GROUP (Correlations below the diagonal are based on the women's sample (n=3,330); correlations below the diagonal are based on the men's sample (n=3,100)

1985 SCII Occupational Scales (Men's) \ 1985 SCII Occupational Scales (Women's)	Personnel Director	Elected Public Official	Life Insurance Agent	Chamber of Commerce Executive	Store Manager	(Agribusiness Manager) [a]	Purchasing Agent	Restaurant Manager	(Chef)	Travel Agent	Funeral Director	(Nursing Home Administrator)	Optician	Realtor	Beautician	Florist	Buyer	Marketing Executive	Investments Manager
Personnel Director	--	78	92	66	75		81	79		74	62		23	88	-38	-19	53	21	-04
Elected Public Official	73	--	82	35	46		56	54		43	40		-12	70	-70	-48	16	12	-00
Life Insurance Agent	88	69	--	65	73		80	79		73	62		24		-40	-21	53	22	01
Chamber of Commerce Executive	85	85	84	--	71		69	75		79	66		51	79	19	32	75	07	-16
Store Manager	78	53	86	77	--		81	85		86	64		43	82	-02	32	83	21	-11
Agribusiness Manager	02	-27	12	-02	32	--													
Purchasing Agent	83	50	81	74	86	37	--	93		83	77		56	83	-15	01	61	14	-10
Restaurant Manager	34	22	40	47	64	53	55	--		84	79		57	85	-09	10	66	09	-16
Chef	30	19	40	14	41	-03	26	29	--										
Travel Agent	37	50	42	58	55	20	39	67	10	--	65		48	82	-01	24	79	25	-03
Funeral Director	31	01	40	24	51	75	49	63	04	37	--		68	68	06	03	46	-33	-51
Nursing Home Administrator	84	54	79	71	74	07	73	26	39	30	34	--							
Optician	-15	-49	-02	-24	22	67	21	34	11	-11	49	-03	--	35	49	31	47	-20	-37
Realtor	35	62	91	82	90	24	87	54	38	48	46	81	11	--	-21	01	66	14	-11
(Beautician)															--	72	29	-27	-27
Florist	-06	03	11	18	37	53	16	65	21	64	43	-03	37	22		--	53	-01	-15
Buyer	57	50	68	68	85	28	63	76	36	75	48	48	13	72		59	--	31	02
Marketing Executive	04	24	08	28	15	04	12	45	-16	48	03	-26	-07	08		38	40	--	81
Investments Manager	-01	18	02	19	06	12	15	36	-35	39	04	-27	-09	04		25	25	81	--

Note. Decimals have been omitted.

[a] There is no female Agribusiness scale.

TABLE 6

INTERCORRELATIONS AMONG THE OCCUPATIONAL SCALES WHICH

COMPRISE THE CONVENTIONAL GROUP (Correlations below the diagonal are based

on the women's sample (n=3,300); correlations below the diagonal are based on the men's

sample (n=3,100)

1985 SCII Occupational Scales (Men's)	Accountant	Banker	IRS Agent	Credit Manager	Business Education Teacher	(Food Service Manager)	(Dietician)	Nursing Home Administrator	Executive Housekeeper	Food Service Manager	Dental Assistant	Secretary	Air Force Enlisted Personnel	Marine Corps Enlisted Personnel	Army Enlisted Personnel	Mathematics Teacher
Accountant	--	63	40	62	49			26	27	49	23	51	52	38	20	56
Banker	61	--	14	70	69			39	26	58	17	82	48	25	13	09
IRS Agent	64	48	--	65	56			64	69	27	32	35	46	71	76	61
Credit Manager	60	48	82	--	88			76	75	72	50	85	70	67	61	49
Business Education Teacher	38	48	67	74	--			77	73	73	52	87	69	64	60	46
Food Service Manager	27	27	61	76	79	--										
Dietician	-15	-07	26	36	56	72	--									
Nursing Home Administrator	34	66	68	68	69	80	43	--	85	66	60	63	60	65	72	50
Executive Housekeeper	29	34	64	77	68	81	55	80	--	75	59	76	84	48	60	53
(Food Service Manager)										--	75	72	80	57	48	53
(Dental Assistant)[a]											--	46	77	68	62	60
(Secretary)[a]												--	68	53	44	22
(Air Force Enlisted Personnel)													--	84	73	60
(Marine Corps Enlisted Personnel)														--	92	61
Army Enlisted Personnel	33	01	51	60	37	47	72	26	57						--	56
Mathematics Teacher	30	-37	09	-05	-21	-12	-15	-39	-05						38	--

Note. Decimals have been omitted.

[a] There is no male Dental Assistant nor male Secretary scale.

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Table 7. Women's Occupational Scales Which Have Median Intercorrelations With Other Scales in the Same Holland Group of .59 and Lower

Range of Median Intercorrelation	Holland Group						Total
	Realistic	Investigative	Artistic	Social	Enterprising	Conventional	
.50 - .59	Athletic Trainer (.57) Electrician (.56) Navy Officer (.51)	College Professor (.54) Medical Technician (.52) Chiropractor (.50)	Reporter (.59) Advertising Executive (.54) Photographer (.54) Public Relations Director (.53) Artist, Commercial (.52) Broadcaster (.50)	Social Science Teacher (.59) Minister (.57) Social Worker (.57) Recreation Leader (.55) Foreign Language Teacher (.55) School Administrator (.55) Nurse, RN (.54)	Buyer (.53)	Secretary (.59) IRS Agent (.56) Mathematics Teacher (.56)	23
.40 - .49	Navy Enlisted Personnel (.49) Engineer (.45) Forester (.43) Carpenter (.42) Emergency Medical Technician (.40)	Sociologist (.46) Psychologist (.44) Dietitian (.44)	Art Teacher (.49) Librarian (.45) Lawyer (.43)	Occupational Therapist (.43) Physical Education Teacher (.42) Home Economics Teacher (.42)	Optician (.43) Elected Public Official (.40)	Accountant (.49)	17
.30 - .39	Horticultural Worker (.39) Navy Officer (.38) Air Force Officer (.37) Bus Driver (.36) Police Officer (.34) Radiologic Technologist (.35) Vocational Agriculture Teacher (.34)	(None)	Interior Decorator (.38) English Teacher (.37) Musician (.35) Medical Illustrator (.32) Flight Attendant (.31) Public Administrator (.31)	Elementary Teacher (.37) Dental Hygienist (.36)	(None)	Banker (.39)	16
.20 - .29	(None)	(None)	Artist, Fine (.28) Chef (.28)	(None)	(None)	(None)	2
.10 - .19	Architect (.18)	(None)	(None)	(None)	Marketing Executive (.14)	(None)	2
.00 - .09	Farmer (.02)	(None)	(None)	Nurse, LPN (.07)	Florist (.03)	(None)	3
-.01 - -.20	(None)	(None)	(None)	(None)	Beautician (-.09) Investments Manager (-.11)	(None)	2
Number of scales below .60	17	6	17	13	7	5	65
Number of scales in Holland group	17	24	17	17	16	14	105
Percentage of scales below .60	17/17 = 100%	6/24 = 25%	17/17 = 100%	13/17 = 76%	7/16 = 44%	5/14 = 36%	65/105 = 62%

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Table 8. Men's Occupational Scales Which Have Median Intercorrelations of .59 or Lower With Other Scales Within the Same Holland Group

Holland Group

Median Intercorrelation	Realistic	Investigative	Artistic	Social	Enterprising	Conventional	Total
.50 - .59	Vocational Agriculture Teacher (.58), Emergency Medical Technician (.58), Navy Officer (.57), Engineer (.53), Army Officer (.51), Radiologic Technologist (.51)	Medical Technician (.59), Research and Development Manager (.57), Computer Programmer (.56), Geologist (.51), Biologist (.51)	English Teacher (.58), Artist, Fine (.56), Broadcaster (.56), Librarian (.55), Interior Decorator (.54), Photographer (.53), Medical Illustrator (.52), Public Relations Director (.51), Foreign Language Teacher (.50)	Speech Pathologist (.55)	Chamber of Commerce Executive (.58), Buyer (.57), Store Manager (.55), Realtor (.54), Purchasing Agent (.50), Elected Public Official (.50)	IRS Agent (.56), Executive Housekeeper (.55), Business Education Teacher (.52), Food Service Manager (.51)	31
.40 - .49	Forester (.47), Bus Driver (.47), Horticultural Worker (.46), Veterinarian (.46), Police Officer (.42), Farmer (.40)	Mathematician (.48), Respiratory Therapist (.47), Chiropractor (.45), College Professor (.44), Physical Therapist (.42)	Lawyer (.41)	Nurse, LPN (.45), Physical Education Teacher (.42)	Restaurant Manager (.47), Life Insurance Manager (.46), Travel Agent (.42), Funeral Director (.40)	Army Enlisted Personnel (.43)	19
.30 - .39	(None)	Systems Analyst (.38), Pharmacist (.37), Psychologist (.32), Geographer (.30), Sociologist (.30)	Architect (.35), Flight Attendant (.34), Beautician (.34), Public Administrator (.34)	Elementary Teacher (.39), Occupational Therapist (.37)	Nursing Home Administrator (.39), Personnel Director (.37)	Accountant (.32), Dietician (.31), Banker (.31)	16
.20 - .29	(None)	Nurse, RN (.24)	(None)	(None)	Chef (.26), Florist (.25), Agribusiness (.20)	(None)	4
.10 - .19	(None)	(None)	(None)	(None)	Marketing Executive (.12), Investments Manager (.12), Optician (.11)	(None)	3
.00 - .10	(None)	(None)	(None)	Athletic Trainer (.04)	(None)	(None)	1
-.01 - -.10	(None)	(None)	(None)	(None)	(None)	Mathematics Teacher (-.08)	1
Number of scales below 60	12	16	14	6	18	9	75
Number of scales in a Holland group	18	23	19	14	18	10	102
Percentage of scales below .60	12/18 = 67%	16/23 = 70%	14/19 = 73%	6/14 = 43%	18/18 = 100%	9/10 = 90%	75/102 = 74%

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FIGURE 1. Occupational Scales Which Correlate Negatively With One or More Scales Within the Same Holland Group

Holland Group

Women's Scales

Realistic
- Farmer/Navy Officer (-.03)
- Farmer/Forester (.07)
- Farmer/Carpenter (-.09)
- Farmer/Electrician (-.13)
- Farmer/Architect (-.26)
- Farmer/Engineer (-.05)
- Police Officer/Horticultural Worker (-.04)
- Police Officer/Architect (-.07)
- Emergency Med Technician/Architect (-.05)

Investigative
- Med Technician/Psychologist (-.01)

Artistic
- Medical Illustrator/Flight Attendant (-.04)
- Medical Illustrator/Broadcaster (-.03)
- Medical Illustrator/Public Relations Director (-.02)
- Medical Illustrator/Public Administrator (-.02)
- Medical Illustrator/English Teacher (-.08)
- Artist, Fine/Flight Attendant (-.24)
- Artist, Fine/English Teacher (-.07)
- Musician/Public Administrator (-.12)
- Chef/Lawyer (-.10)
- Chef/Public Administrator (-.16)
- Flight Attendant/Lawyer (-.07)
- Flight Attendant/Public Administrator (-.04)

Social
- Dental Hygienist/Minister (-.01)
- Dental Hygienist/Social Worker (-.06)
- Dental Hygienist/Social Science Teacher (-.11)
- Dental Hygienist/School Admin (-.01)
- Nurse, LPN/Minister (-.06)
- Nurse, LPN/Social Worker (-.14)
- Nurse, LPN/Social Science Tchr (-.28)
- Nurse, LPN/Speech Pathologist (-.03)
- Nurse, LPN/School Administrator (-.26)
- Social Science Teacher/Physical Ed Tchr (-.05)

Enterprising
- Beautician/Personnel Director (.38)
- Beautician/Elected Public Official (-.70)
- Beautician/Life Insurance Agent (-.40)
- Beautician/Store Manager (-.02)
- Beautician/Purchasing Agent (-.15)
- Beautician/Restaurant Manager (-.09)
- Beautician/Travel Agent (-.01)
- Beautician/Realtor (-.21)
- Beautician/Marketing Executive (-.27)
- Beautician/Investments Manager (-.27)
- Florist/Personnel Director (-.19)
- Florist/Elected Public Official (-.48)
- Florist/Life Insurance Agent (-.21)
- Florist/Marketing Executive (-.01)
- Florist/Investments Manager (-.15)
- Investments Manager/Personnel Director (-.04)
- Investments Manager/Chamber of Commerce Executive (-.16)
- Investments Manager/Store Manager (-.11)
- Investments Manager/Purchasing Agent (-.10)
- Investments Manager/Restaurant Manager (-.16)
- Investments Manager/Travel Agent (-.03)
- Investments Manager/Funeral Director (-.51)
- Investments Manager/Optician (-.37)
- Investments Manager/Realtor (-.11)
- Marketing Executive/Funeral Director (.33)
- Marketing Executive/Optician (-.20)
- Elected Public Official/Optician (-.12)

Conventional
- (None)

Men's Scales

Realistic
- Horticultural Worker/Army Officer (-.02)
- Horticultural Worker/Police Officer (-.04)

Investigative
- Nurse, RN/Geologist (-.07)
- Nurse, RN/Mathematician (-.10)
- Nurse, RN/Geographer (-.13)
- Nurse, RN/Psychologist (-.11)
- Pharmacist/Geographer (-.21)
- Pharmacist/College Prof. (-.06)
- Pharmacist/Psychologist (-.06)
- Pharmacist/Sociologist (-.16)
- Sociologist/Computer Programmer (-.01)

Artistic
- Public Administrator/Artist, Fine (-.20)
- Public Administrator/Artist, Commercial (-.01)
- Public Administrator/Architect (-.13)
- Public Relations/Architect (-.06)

Social
- Athletic Trainer/Minister (-.25)
- Athletic Trainer/Social Worker (-.27)
- Athletic Trainer/Guidance Counselor (-.17)
- Athletic Trainer/Speech Pathologist (-.07)

Enterprising
- Agribusiness Manager/Elected Public Official (-.27)
- Agribusiness Manager/Chamber of Commerce Ex. (-.02)
- Agribusiness Manager/Chef (-.03)
- Optician/Personnel Director (-.15)
- Optician/Elected Public Official (-.49)
- Optician/Life Ins. Agent (-.02)
- Optician/Chamber of Commerce Ex. (-.24)
- Optician/Travel Agent (-.11)
- Optician/Nursing Home Administrator (-.03)
- Optician/Marketing Executive (-.07)
- Optician/Investments Manager (-.09)
- Marketing Executive/Chef (-.16)
- Marketing Executive/Nursing Home Administrator (-.26)
- Investments Manager/Personnel Director (-.01)
- Investments Manager/Chef (-.35)
- Investments Manager/Nursing Home Administrator (-.27)
- Florist/Personnel Director (-.06)

Conventional
- Dietician/Accountant (-.15)
- Dietician/Banker (-.07)
- Math. Teacher/Banker (-.07)
- Math. Teacher/Credit Manager (-.05)
- Math. Teacher/Business Ed. Teacher (-.21)
- Math. Teacher/Food Service Manager (-.12)
- Math. Teacher/Dietician (-.15)
- Math. Teacher/Executive Housekeeper (-.05)

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Table 9. Women's Worst Fit Scales: Scales Which Have Two or Fewer Within-Group Correlations cf .60; Also Presented Are the Correlations with the Theme Scales as Reported in the 1985 SCII Manual

Women's Occupational Scale	Holland code	Within-Group Correlations Correlations of .60 or higher	Median correlation	Scale's correlation with appropriate Theme scale (from SCII Manual)	
Bus Driver	R	1	.36	Realistic	.45
Horticultural Worker	R	2	.39	Realistic	.47
Farmer	RC	1	.02	Realistic	.15
Vocational Ag Teacher	R	1	.34	Realistic	.52
Radiologic Technologist	RI	2	.35	Realistic	.33
Flight Attendant	A	0	.31	Artistic	.38
Public Administrator	A	2	.31	Artistic	.20
Interior Decorator	AE	1	.38	Artistic	.42
Chef	AR	1	.28	Artistic	.35
Librarian	A	2	.45	Artistic	.63
Occupational Therapist	SRI	1	.43	Social	.52
Nurse, LPN	SC	1	.07	Social	.30
Physical Ed. Teacher	SR	1	.42	Social	.37
Dental Hygienist	SCI	2	.36	Social	.32
Optician	EC	1	.43	Enterprising	.48
Beautician	E	1	-.09	Enterprising	.09
Florist	E	1	.03	Enterprising	.04
Marketing Executive	EI	1	.14	Enterprising	.06
Investments Manager	EIC	1	-.11	Enterprising	-.08

Table 10.   Men's Worst Fit Scales: Scales Which Have Two or Fewer Within-Group Correlations of .60; Also Presented Are the Correlations with the Theme Scales as Reported in the 1985 SCII Manual

Men's Occupational Scale	Holland code	Within-Group Correlations of .60 or higher	Median correlation	Scale's correlation with appropriate Theme scale (from SCII Manual)	
Police Officer	R	2	.42	Realistic	.43
Horticultural Worker	R	2	.46	Realistic	.38
Farmer	R	2	.40	Realistic	.16
Forester	R	2	.47	Realistic	.53
Pharmacist	IE	2	.37	Investigative	.51
Beautician	AE	1	.34	Artistic	.55
Elementary Teacher	S	2	.39	Social	.53
Nurse, LPN	SC	1	.45	Social	.63
Athletic Trainer	SR	1	.04	Social	.24
Physical Ed. Teacher	SR	2	.42	Social	.56
Agribusiness Mgr	ECR	2	.20	Enterprising	.33
Chef	EA	0	.26	Enterprising	.32
Funeral Director	E	2	.40	Enterprising	.47
Optician	ER	1	.11	Enterprising	.32
Florist	E	2	.25	Enterprising	.25
Marketing Executive	EI	1	.12	Enterprising	-.08
Investments Manager	ECI	1	.12	Enterprising	-.15
Army Enlisted Personnel	CR	2	.43	Conventional	.50
Mathematics Teacher	CIR	0	-.08	Conventional	.23
Banker	C	1	.31	Conventional	.15