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INTERPERSONAL NEEDS
AND
VOCATIONAL SPECIALIZATION
AMONG FEMALE BUSINESS STUDENTS

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Abstract

This study examined interpersonal needs as measured by the FIRO-B instrument in relation to choice of a functional specialty among a sample of female business students. The students were categorized into four specialities: finance, accounting, marketing, and personnel. The results indicate a significant relationship between total need for interpersonal interaction and choice of speciality, with personnel majors preferring more active interpersonal relations and finance majors preferring less active, more distant personal relations. The results are discussed in terms of Roe's work on vocational choice.

This study examines the relationships between interpersonal needs and preference for a functional specialty among a sample of female business students. The underlying theoretical framework is most closely connected to the formulations of Anne Roe (1956, 1969) and Roe and Siegelman (1964). Roe's theory postulates that the interpersonal climate in the family of origin creates an orientation in the individual either toward things or toward people, and that this orientation in turn influences later occupational choice and development processes. It is important to note, however, as Crites points out (1969, p. 97), that while Roe's is the most prominent need theory of vocational choice, it focuses more on levels than on kinds of needs and occupational choice. While Roe has developed an occupational classification scheme relating personality characteristics to different fields, she also notes that different occupations may satisfy particular needs, but at different levels.

In spite of the theoretical appeal of Roe's work, the supporting evidence has generally been disappointing. Commenting on need theories of occupational choice, Super and Bohn (1970) note:

It is one thing to hypothesize relationships between needs and occupations according to a logical scheme and explanation. It is something else to obtain evidence in support of these basic hypotheses. While some formulations about needs and personality make good sense and have a certain amount of appeal, in general the data have not lived up to the expectations. No generalizations can be made; however, there is evidence for some relationships (p. 100).

Crites more specifically summarizes the relevant evidence up through 1968 by focusing on several studies (1969, pp. 235, 236). The first was conducted by Grigg (1959) on a sample of 24 graduate nurses and 20 female students majoring in chemistry, physics and mathematics. The results generally did not corroborate the hypotheses. This study was criticized by Roe (1959) on grounds that it used unvalidated instruments, and--what is more interesting from the

standpoint of the present study--that it used a sample of female subjects when the theoretical foundations were developed using male subjects. Utton (1962) also reported disappointing results in a study of female social workers, occupational therapists, dietitians, and laboratory technicians. Similarly, negative results for male subjects have been reported by Hagen (1960) in a study of Harvard graduates, and by Switzer, Grigg, Miller, and Young (1962) in a study of ministerial students and chemistry majors. Brunkan (1965), using the Brunkan-Crites (1964) Family Relations Inventory, was unable to detect significant relationships between recalled parental relations and Roe's occupational fields on a sample of undergraduate students. Even Roe's own attempts at validating her framework were disappointing (Roe & Siegelman, 1964), although she did establish moderate relationships between family climate and person-thing orientation.

Additional studies in the late sixties and early seventies provide moderate support for Roe's framework. Byers, Forrest, and Faccaria (1968), using the Family Relations Inventory (FRI), found several significant associations between early family relations, adult needs, and occupational choice among ministers and ministerial students. Medvene (1969) found support for theoretically expected relationships between the FRI and person- or data-orientation among graduate psychology students. In a slightly different, but related, vein, Kriger (1972) found a significant relationship between recalled parental control and homemaker versus career orientation in a sample of college-educated women between the ages of 28 and 48. She notes that:

The findings concerning the control factor are of particular interest in terms of Roe's theory.... Homemakers perceived their parents as highly restrictive in comparison to career women, who, in turn, perceived their parents as relatively permissive (p. 428).

Kruger extrapolated Roe's framework to suggest that homemaking was essentially a person-oriented choice for women which tended to flow from a family climate Roe would characterize as "concentrated" (controlling), and thus supported the underlying theory.

Looking more directly at personality and choice of business specialty among students, Grace (1970) found accounting majors characterized as less friendly (less person-oriented) on Guildford-Zimmerman temperament profiles than data processing, management, or office practice majors; management majors were higher on ascendance than any other group of students. Harris (1971) reported that accounting students rated significantly higher in control-related variables than marketing majors, but only minor differences were found among accounting, finance, management, and insurance majors. Closely related to the present study is an earlier study by Hill (1974) on male business students, in which systems analysis and accounting majors were characterized as having lower affiliation and control needs than marketing, personnel, and production supervision majors.

Thus, while specific studies relating personality characteristics of business students to vocational specialization have been limited, it appears that accounting majors at least have been characterized as less-person oriented than students in other specialities. The evidence for this statement, however, derives from studies based primarily on male samples, and specific evidence for samples consisting exclusively of female business students is virtually nonexistent.

The personality variables studied in this paper are the needs which find expression in interpersonal settings. The manager's job has been described as overwhelmingly interpersonal, or in Roe's terms, person-oriented. Sayles (1964, p. 38) suggests that administration involves virtually constant contact with people, and managers whose personalities do not dispose them toward a high amount of interpersonal activity are likely to be frustrated and dissatisfied. Still, it seems appropriate to ask whether persons entering the different managerial functions reflect different levels of person-orientation.

Methodology

Instrument

The Fundamental Interpersonal Relations Orientation (FIRO-B) questionnaire attempts to scale three basic interpersonal needs--inclusion, control, and affection--which were defined by Schutz (1966) in his three-dimensional theory of interpersonal behavior. Inclusion refers to the need to be included in other people's activities, or to include others in one's own activities, and is analogous to the introversion-extroversion dimension of other authors or to sociability. Control refers to the need to give and receive structure, directions, influence, power, and authority, and corresponds roughly to the need for power used in other studies (Schutz, 1966, chap. 5). Affection is concerned with emotional closeness to others, friendship, liking or disliking, and refers to the need to act in a personal way toward others or to receive friendly behavior from others. It is analogous to the need for affiliation (Schutz, 1966, p. 58).

Each of the three need areas is broken down into a need to express and a need to receive; thus, six subscales, each scaled from a low of 0 to a high of 9, comprise the framework. In addition, all scales can be summed to obtain an estimate of the total need for interpersonal activity. This composite scale which ranges from a low of 0 to a high of 54, is the main dependent variable in the present study.

Schutz's framework, like Roe's, is based on Freudian concepts. In his postulate of relational continuity, Schutz suggests that individuals develop a rather stable or fundamental profile of interpersonal needs from early childhood experiences (1966, p. 81). This fundamental orientation results in a relational continuity or constancy over time, with the result that adults repeat the interpersonal behavior patterns they learned as children. Thus the FIRO-B questionnaire was judged to be particularly well-suited to an exploration of Roe's theory; in fact, at one point Roe herself considered using it as a proxy for intensity of person-orientation, but invested instead in the development of her own instrument.

Sample

The FIRO-B instrument was administered to both graduate (MBA) and undergraduate (BBA) female students enrolled in the University of Michigan's School of Business Administration from 1975 to 1979 (a new class was sampled each year). All respondents were members of the author's required introductory course in organizational behavior. MBA students were surveyed during their first term, and BBAs during the fall term of their senior year. All FIRO-B instruments were administered by the author under supervised group conditions during class time. The sample consisted of 190 respondents, but only 148 were used in the analysis, since only four specialities (finance, accounting, marketing, and personnel) were adequately represented. Of the 148 students,

91 were MBAs and 57 were BBAs. Table 1 shows pairwise comparisons of MBAs and BBAs by functional specialty on means of total need for interpersonal activity. Since the comparison indicated no significant differences on the dependent variable, the two subsamples were treated as one, even though MBA's may presumably be at a more advanced stage of vocational crystallization than BBA's.

The two groups were differently distributed with respect to age, as might be expected. Table 2 shows a chi-squared analysis of the relative age distributions, where the students are divided into the age categories of 18 to 20 and 21 and older.

Procedure

After completing the FIRO-B instrument, students were asked to select from a list of ten functional areas of management the one area in which they would most prefer to work upon graduation. The ten areas included finance, systems analysis, accounting, marketing, small business management, personnel management, manufacturing supervision, engineering, sales, and labor relations. If the list did not include the student's first preference, write-ins were allowed. The choice of functional area was written on the FIRO instrument and no student was required to disclose her name; thus the preference and test scores were completely anonymous. The FIRO instruments were scored and the scores were then categorized into particular areas of business. As indicated earlier, only four areas of specialization were represented by enough students to allow their inclusion in the analysis. These were finance, accounting, marketing, and personnel, for a total sample of 148. It is not known whether completing the FIRO-B instrument prior to indicating an occupational preference had any effect on occupational preference.

Hypotheses

Although the literature does not indicate precisely what the nature of the differences in interpersonal needs might be for the different functional specialities, it was expected that those preferring accounting and finance would rate lower on total activity needed than those opting for marketing and personnel, because the former are primarily concerned with data analysis or "things" whereas the latter are oriented toward people. Thus Hypothesis 1 reads:

H₁: Students preferring accounting and finance will rate lower on total interpersonal activity needed than students preferring marketing and personnel.

The three individual need areas were expected to show differences similar to those for total activity, with the exception of the control dimension. It was expected that students preferring accounting and finance would score higher on the control scale, since much of the work in these fields is oriented toward control activity even though it is not explicitly interpersonal. However, because of the structure of the data, individual tests of the above hypothetical relations for the separate need scales cannot be made. The FIRO scales are highly inter-correlated, as shown in Table 3, and a composite hypothesis of the above relations is therefore indicated. Thus Hypothesis 2 states:

H₂: Students preferring accounting and finance will rate lower on inclusion and affection but higher on control than students preferring marketing and personnel.

Results

The first hypothesis was tested by using a one-factor analysis of variance (ANOVA) on the total FIRO scores, where the levels of the factor represented

different functional areas. The second hypothesis was tested by using a multivariate one-way analysis of variance (MANOVA), where the multiple variates were inclusion, control, and affection. The assumptions of the MANOVA model are consistent with dependencies among the variates (Morrison, 1967, p. 168). The levels of the factor were again the functional areas. The MANOVA procedure tests whether there are differences between the mean vectors for the three variates by factor level. The null hypothesis is that the mean vectors are equal across levels of the factor. The assumption of homogeneous variances and covariances was supported for both the ANOVA and MANOVA procedures.

Total Interpersonal Activity versus Functional Area

Figure 1 shows means and standard deviations of total activity by functional area. Sample sizes (N) are also shown for each area. Table 4 presents the ANOVA results for the data illustrated in Figure 1.

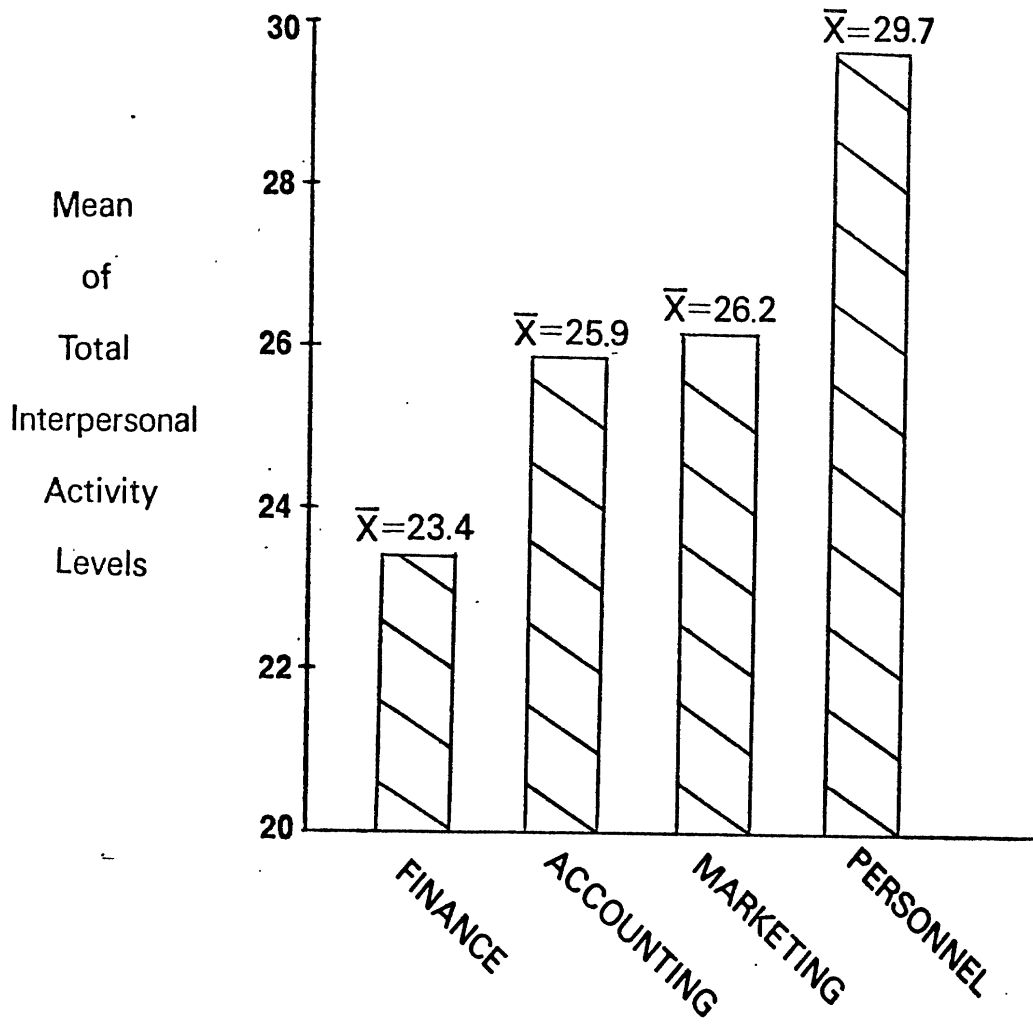
The analysis of variance indicated that the observed differences in the mean total interpersonal activity levels across functional areas were statistically significant at the .03 level.

The use of pairwise t-statistics for comparing two functional areas indicated that finance and personnel were different beyond the .01 level and the accounting-personnel pair were different at the .06 level. Other comparisons were not particularly significant, although the marketing-personnel pair was close to the .10 level.

The Mean Vectors versus Function Area

Table 5 shows the MANOVA analysis which includes the means for inclusion, control, and affection by functional area; the degrees of freedom; and the approximated F statistic. The sample sizes are the same as those shown in Figure 1. This analysis indicated that the observed differences in the mean

Fig. 1. Means and standard deviations for total interpersonal activity level by functional area.



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Standard Deviation	8.3	9.4	9.4	9.0
Sample (n)	37	39	32	40

Fig. 1

vectors across functional areas were not particularly significant statistically. Inspection of Table 5 indicates that the control dimension did not follow the expected directional pattern, and was in fact the reverse. Affection reflected the hypothesized direction, but the results for inclusion were mixed, with accounting majors scoring higher than marketing majors. Inclusion and affection were also consistently higher than control for each functional specialty. It thus appears that all three dimensions of interpersonal life contribute to the differences in total need for interpersonal interaction among the specialties.

Discussion

The pattern which emerges from the data is that preference for an occupational specialization is related to the need for total interpersonal activity. In addition, it appears that all three dimensions of interpersonal life contribute to the pattern of differences in total activity. It was intuitively surprising to the author to discover that the accounting group was so similar to the marketing group, since on the basis of outside perceptions the two fields appear to involve very different kinds of work. In Roe's classification, finance and accounting would probably be included in the organization field, marketing in business contact (persuasion), and personnel in the service classification. All of these were considered person-oriented by Roe. However, it appears that students opting for finance prefer less active, more arm's-length interpersonal relations than do subjects preferring personnel. Personnel majors appear to need more vigorous and active interpersonal lives. Accounting and marketing majors evidenced moderate need for interpersonal contact.

The association between interpersonal needs and preference for a functional area of management suggests that perhaps the general predictor variable

in Roe's framework (orientation toward or away from people) is useful in, the context of business oriented occupations. These results are interesting since previous research has not demonstrated the usefulness of this variable as a predictor of Roe's occupational classes, particularly for female samples.

One of the differences between the present study and previous tests of Roe's work is that the occupational classes used here were very narrow, compared to the broad classes defined by Roe. Perhaps these findings corroborate Hagen's (1960) explanation of his negative results when he concludes: "we are inclined to think failure occurred because sufficient differentiation among careers is not represented in Roe's theory" (p. 255).

A second factor which perhaps led to strong associations in this study was the use of a standardized, validated instrument to measure interpersonal needs. The FIRO instrument has been fairly extensively studied and is an explicit attempt to measure an interpersonal orientation which is acknowledged to arise in early childhood. Crites (1969, p. 236) suggests that several tests of Roe's theory used unvalidated or unstandardized instruments.

A third aspect of the present data should also be pointed out. Roe's hypotheses tend to be oriented toward male subjects (Crites, p. 236), and some of the early negative findings used female subjects (Grigg, 1959; Utton, 1962). The present sample was totally female; perhaps these results confirm Kriger's (1972) suggestion in her earlier work with Roe's framework that "as society changes to accommodate women's potential...the range of occupational choices will no doubt broaden, at which time traditional career development theories may well apply to women as well as men" (p. 428).

The present data indicate a link between specific needs and a particular preference in the occupational choice process. Admittedly, use of need data to predict future occupational roles does not necessarily follow, since there

are many intervening variables which obscure the connection between needs and ultimate choice of occupation. An individual makes many choices over time, and it is difficult to determine which job represents her ultimate occupational role. Walsh (1959) has also found that people actively restructure their jobs to meet their own needs, again decreasing the effectiveness of need data in predicting categorical occupational choices. However, if this "restructuring" process compromises Roe's theory of vocational choice, it would seem to make her studies relevant to the redesign of work, a subject which has traditionally been researched by organizational psychologists (Hackman & Suttle, 1977). As Porter, Lawler, and Hackman note, one of the central functions of work redesign in organizations is to provide cues which serve to reactivate previously learned motives (i.e., to arouse needs in the work situation) (1975, p.296). Given Roe's major premise, does this not highlight the fundamental importance of required social interaction and opportunities for social interaction in work settings (which is a major component of redesign considerations)? It is surprising, when one considers the theoretical effort behind Roe's work, that it has not been extrapolated by organizational psychologists interested in the design of work. Lawrence and Lorsch (1967), furthermore, have described organizations as being composed of different subsystems or functional specialties, each of which requires qualitatively different interpersonal relationships, again underscoring the relevance of the theme to organizational psychology.

In any event, the present data raise the question of the influence of childhood forces on career processes, and suggest that Roe's theory may have relevance for female samples. Osipow (1973), nevertheless, urged caution in the use of Roe's framework, and pointed to useful future research strategies by noting:

The variables she chose to emphasize are too diffuse and the gaps between early experience, personality development, and vocational choice too great. The introduction of numerous intervening variables into this chain of events could infuse new life into the theory and make it more testable (p. 34).

In conclusion, the author would like to suggest a shorter term, more parsimonious approach to future research on Roe's framework. It has been noted that different people may adapt to the same job in very different ways. Therefore, it would seem appropriate to examine the intensity of person-orientation in relation to whether people "restructure" their work in a person-oriented or thing-oriented way. If this process were empirically confirmed, would it not provide a new form of validation for Roe's theories?

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TABLE 1

Comparison of MBA and BBA Samples on Mean of Total
Interpersonal Activity Levels by Vocational Specialty

		<u>MBA</u>	<u>BBA</u>	<u>t</u>	<u>sign</u>
<u>Finance</u>	\bar{x}	22.8	26.8	.99	.33
	s^2	71.6	43.2		
	n	32	5		
<u>Accounting</u>	\bar{x}	25.8	25.9	.01	.99
	s^2	127.5	72.6		
	n	13	26		
<u>Marketing</u>	\bar{x}	25.9	26.5	.17	.87
	s^2	96.0	85.9		
	n	19	13		
<u>Personnel</u>	\bar{x}	28.3	32.6	1.46	.15
	s^2	94.2	43.4		
	n	27	13		
<u>All specialties combined</u>	\bar{x}	25.5	27.6	1.36	.17
	s^2	92.9	70.7		
	n	91	57		

TABLE 2
Contingency Analysis on Age Distributions
for MBA and BBA Samples

	<u>Age Category (yrs.)</u>		<u>Total</u>
	<u>18-20</u>	<u>21 & Over</u>	<u>N</u>
MBA	11	80	91
BBA	50	7	57
			—
			148

$\chi^2 = 79.6, P < .001$

df = 1

TABLE 3
Intercorrelation of FIRO Scales

	<u>Inclusion</u>	<u>Control</u>	<u>Affection</u>
Inclusion	1.00	.28*	.53*
Control		1.00	.09
Affection			1.00

*p < .01, r(.05) = .16, r(.10) = .21

TABLE 4
Analysis of Variance for Total Interpersonal
Activity Level by Functional Area

Source	Sum of Squares	Degrees of Freedom	Mean Square
Between strata	778.7	3	259.6
Within strata	11,703.0	144	81.3
Total	12,481.7	147	

F statistic = 3.19, P < .03

TABLE 5
Multivariate One-Way Analysis of Variance of Means
for Inclusion, Control and Affection by Functional Area

	Finance	Accounting	Marketing	Personnel
Inclusion	8.3	9.7	8.9	10.8
Control	6.6	7.1	7.6	8.4
Affection	8.5	9.1	9.6	10.5

df = 9, 345 F = 1.47, p < .15