

# HOMOPHILY IN VOLUNTARY ORGANIZATIONS: STATUS DISTANCE AND THE COMPOSITION OF FACE-TO-FACE GROUPS

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*Recent work on the organized sources of network ties and on the social structural determinants of association are synthesized to produce several hypotheses about homophily. These hypotheses are tested with data on 304 face-to-face groups from 10 communities. We find that friends are more similar on status dimensions than chance and that this homophily is produced both by the restricted opportunity structure offered by the group and by homophilous choices made within the group. Organizational heterogeneity leads to substantially greater dyadic status distance within the organization, while organization size consistently reduces dyadic status distance. At a given level of diversity, a larger group will permit more homophilous friendship pairing. However, correlated status dimensions create little reduction in dyadic social distance. In general, homogeneity within groups is the overwhelming determinant of homophily.*

Researchers recognized *homophily,* the tendency of people in friendship pairs to be similar, in their work before the turn of the century (Galton, cited in Byrne 1971). Research by sociologists and social psychologists has since found homophily on a wide variety of characteristics in many different settings.[1] In this paper, we are interested in the effects of face-to-face groups on homophily. In particular, we want to show how a group's composition sets the stage for homophilous friendship tie formation.[2]

Since groups provide opportunity structures for tie formation, the nature and extent of homophily is related to these social origins of the association. The composition, size, and structure of groups determine the types of opportunities they offer for network contacts (McPherson 1982, 1983; McPherson and Smith-Lovin 1982, 1986). Ties formed in work-related groups, for example, are likely to be homophilous on socioeconomic status (Fischer, Jackson, Srueve, Gerson, and Jones 1977). Feld (1982) called the social entities around which activities were organized "foci" and derived three propositions about them. First, most relationships will originate in foci—since we must meet to associate, centers of our activity will lead us to contact others. Second, foci tend to be homogeneous.[3] Third, the more homogeneous are foci,

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[1] Homophily has been found among all age groups, from schoolchildren (Billy, Rodgers, and Udry 1984; Gerard and Miller 1975; Hargreaves 1972; Kandel 1978; St. John and Lewis 1975; Singleton and Asher 1977; Tuma and Hallinan 1979) to the elderly (Nahamow and Lawton 1975; Riley and Foner 1968; Rosow 1967). It occurs on many dimensions, including basic sociodemographic characteristics such as age and sex (Lazarsfeld and Merton 1954; Tuma and Hallinan 1977; Verbrugge 1977, 1979), acquired characteristics like education, prestige, and social class (Barnes 1954; Coleman 1957; Curtis 1963; Domhoff 1970; Ellis 1957; Gans 1962, 1967; Garrison 1979; Greer 1956; Kahl and Davis 1955; Laumann 1966, 1973; Lincoln and McBride 1985; Lincoln and Miller 1979; Lipset, Trow, and Coleman 1956; Loomis 1946; Lundberg and Steele 1938; Michaelson 1970; Suttles 1968; Verbrugge 1977, 1979), personal attributes like attitudes and beliefs (Ajzen and Fishbein 1980; Berscheid 1985; Byrne 1971; Hallinan 1974; Richardson 1940; Williams 1959; Zander and Havelin 1960), aspirations (Cohen 1977, 1983) and social behavior (Billy et al. 1984; Berkum and Meeland 1958).

[2] Social psychologists have long recognized that availability is an important factor in attraction and association (Festinger, Schachter, and Back 1950; Kerchoff 1974; Nahaynow and Lawton 1975; Newcomb 1961; Segal 1974; Verbrugge 1977). One of the most important arenas for the formation and maintenance of social networks is social groups (Feld 1981, 1982, 1984; Fischer et al. 1977; Fischer 1982; Verbrugge 1979). Indeed, Feld (1982) argued that almost all social ties are formed in some type of organized activity.

[3] Since organizational homogeneity and heterogeneity are so important to our argument, we should briefly outline why groups tend to be homogeneous. First, voluntary groups often recruit through friendship networks (Babchuk and Booth 1969; Booth and Babchuk

the more homogeneous are the ties that are created there. This argument, which appears in many places in the literature (e.g., Blau 1977), is the main theme of our paper.

## INDUCED HOMOPHILY AND CHOICE HOMOPHILY

To illustrate the effect of group homogeneity on homophily, we contrast two poles of the influence of groups on friendship ties. First, consider entirely homogeneous groups within which random pairing occurs. In this form, which we call the "focus" model after Feld (1981, 1982, 1984), the character of the organization dictates the nature of the friendship tie completely. Groups account for all of the similarity in friendship pairs; the composition of the group dictates that all pairs will be homophilous. We call the type of homophily produced by group composition *induced homophily*.

On the other hand, in the "network" model all groups are maximally heterogeneous (reflecting the composition of the total population), and pairs within groups are formed purely on the basis of dyadic similarity. In this model, none of the similarity among pairs is an effect of group composition; groups merely provide a local arena for the formation of friendship ties. We term the type of homophily produced by individual choices *choice homophily*.[4] In this pure case, there is no effect of group composition on homophily; friendship dyads are as heterogeneous as if the pairs were formed in the population at large, with no opportunity structure created by organized social groups.

Clearly then, there are two basic features of the system which govern the amount of observed homophily: the individual-level propensity to choose similar others (choice homophily) and the composition of the groups in the system, which dictate the possibilities for friendship choice (induced homophily). If there is only between-group (as opposed to within-group) variance in social characteristics, then induced homophily must dominate, since all members of the group have the same values on social characteristics. If there is only within-group variance, then choice homophily dominates and the network model is true by definition, since group composition cannot have an effect. If there is an intermediate level of between- versus within-group variance, then there could be a mixture of the types of homophily.

Blau (1977) called our distinction between between-group and within-group variance "penetrating differentiation." According to Blau, "the further society's differentiation penetrates into successive subunits of its structural components, the more it promotes the integration of groups and strata by increasing the social associations among their members" (1977, p. 175). The greater the diversity within groups, the greater the status diversity of pairs of friends in the groups. The basic idea in Blau's work is that social associations develop from opportunities generated by the structure of the group. Blau's (1977) concerns with heterogeneity and homogeneity led him to derive from his theory a theorem (T-1.2) exactly analogous to Feld's proposition from his focus approach: "Increasing status diversity increases the probability of association among persons whose status differs."

This study tests Blau's theorem and Feld's focus proposition with a unique body of data on the members of 304 face-to-face organizations to show how dyadic homophily is conditioned by the opportunity structure of social organizations.[5] Our form of this relationship is:

HYPOTHESIS 1. *The greater the diversity within an organization, the greater the*

1969). Dyadic homogeneity in friendships across the organizational boundary is translated directly into organizational homogeneity when the friend is brought into the organization. Some recent results in the social network literature suggest that cliques and informal groups create and maintain their homogeneity primarily through recruitment (Cohen 1977). Second, ecological selection at the level of the population of organizations probably favors homogeneous organizations. Indirect evidence for this proposition comes from Newcomb (1961), who found that groups marked by internal differences are most likely to dissolve. Some important theoretical work such as that of Davis (1963) suggests that intraorganizational diversity leads to dissension and division. If groups are subject to differential mortality by level of homogeneity, the groups that survive will be more homogeneous. Third, organizations are likely to become homogeneous through the competition of other groups for members (McPherson 1983). Organizations tend to develop distinctive social niches. Competitive pressures from other groups tend to sharpen and focus the compositional features of the group, resulting in organizational homogeneity. Finally, groups tend to become homogeneous because the tasks performed are related to the social positions of the members. Unions are occupationally homogeneous; Parent Teacher Associations (PTAs) are homogeneous with respect to age and marital status, and so forth.

[4] Skvoretz (1983) has called this tendency "tau bias," the probability that a homophilous choice will be made, over and above the probability of such a choice by chance under random pairing.

[5] Blau's major test of the theory (Blau and Schwartz 1984) uses "groups" that are actually statistical aggregates. We think that our face-to-face groups actually provide a stronger test for the theory, as well as allowing a generalization of Blau's theory to more concrete networks.

*dyadic status distance between friends within the organization.*

Now, if dyadic similarity is attributable mostly to organizational homogeneity, then the focus model and its induced homophily are supported. On the other hand, if choice homophily is very strong, the hypothesis is false. If people within organizations make homophilous choices, they produce similar pairings even in cases of high group diversity. For example, perfectly homophilous sex pairings can be made in both an organization with 50 men and 50 women—high sex diversity—in an organization with 10 men and 90 women—low sex diversity—and, of course, in an organization with 100 women—zero sex diversity. Moderate levels of choice homophily produce moderate support for the hypothesis, and a complete absence of choice homophily produces friendship dyads that are completely explained by the opportunity structure of the group (because they are random within the group). Therefore, the level of support for Hypothesis 1 is related to the level of choice homophily.

## MULTIDIMENSIONAL STATUS STRUCTURE AND HOMOPHILY

So far, we have treated status distance on a single dimension as though it existed in isolation. Blau (1977) developed his theory to deal with the influence of multiple status dimensions, arguing that the correlations among the status dimensions affect the similarity of ties in the group. These correlations among status dimensions are the subject of four of Blau's key theorems about association:

> T-12.2. Intersecting graduated parameters [uncorrelated continuous variables] integrate different strata by raising the rates of social association among them.
> T-12.21. Consolidated graduated parameters attenuate the rates of social associations among different strata and thus weaken their integration.
> T-12.3. The intersection of nominal [categorical] by graduated parameters integrates groups and strata by raising the rates of social associations among them.
> T-12.31. The more consolidated are group differences with correlated status differences, the less frequent are integrative social relations among groups and strata. (p. 108)

Our form of this set of propositions is:

HYPOTHESIS 2. *Correlated status dimensions reduce dyadic social distance.*

This hypothesis is strongly related to Hypothesis 1 in that correlations among the dimensions force persons who are status distant (or close) to ego on a single dimension to be status distant (or close) on several dimensions. When this is true, dissimilarity tends to be minimized because of the cumulative impact of several dimensions on choices. Obversely, when correlations are weak, then a similarity on one dimension does not imply similarity on another; people are faced with a system in which most choices imply dissimilarity on some dimension. The extent of correlation among dimensions constrains the kind of choices that are possible in the system in much the same way that the simple presence or absence of diversity does in Hypothesis 1.

Hypothesis 2 is one of Blau's most appealing ideas in that it gets to the heart of the social environment provided by the group. Correlated dimensions constrict and simplify social space; dimensions become more and more interchangeable the more they are correlated. At the limit, when all dimensions are perfectly correlated, there is only a single axis of social differentiation—all of the poor are also black, uneducated, female, and so on. At the other extreme, when dimensions are uncorrelated, then people are scattered randomly through the multidimensional space defined by the status characteristics. A person similar to ego on one dimension is unlikely to be similar on others. The correlations of the dimensions define a form of multivariate diversity which is a logical extension of the univariate diversity of Hypothesis 1.

Hypothesis 2 is logically tied to the distinction between induced and choice homophily. If only induced homophily is operating (that is, if choices are random within the group), then the correlation of traits within the group does not influence dyadic status distance. If the homophily is being imposed upon the dyad by group composition, there is no effect of correlated characteristics on homophily, since the choices made are independent of the individuals' location on a given dimension. It is only when there is choice homopohily that a dimension's correlation with other dimensions can affect homophily.

Consider, for example, Dimensions A and B in a group, where Dimension A (e.g., eye color) does not produce choice homophily and Dimension B (e.g., race) does. If A and B are not correlated, there is no homophily on A above and beyond the amount dictated by the composition of the group. If A and B are correlated, A shows what will appear to be choice-homophilous effects in direct proportion to the correlation between A and B. At the limit, when they are perfectly correlated, there appears to be

exactly as much choice homophily on A as on B.

Therefore, the amount of support for Hypothesis 2 tells us how strong the choice homophily in the system is. The hypothesis will be supported most strongly in situations where a characteristic without choice homophily is the variable of interest and is correlated with a characteristic with strong choice homophily. In the absence of choice homophily, the hypothesis should be falsified.

## GROUP SIZE AND HOMOPHILY

One variable with substantial impact on almost all organizational variables is the size of the group (McPherson 1983b). Two factors lead us to suspect that larger groups might create more homophilous pairings. First, there is a substantial literature indicating that size is related to internal differentiation: larger groups are more differentiated into subparts (see review in Kasarda 1974). Because of their greater differentiation, larger groups should have more homophily at a given level of diversity. Dissimilar others may be in the same umbrella organization, but they may be segregated into separate subparts of that group. For example, the PTA may include both males and females, but if the females are all on the bake sale committee and the males are on the fund-raising committee, then the organization will not integrate the sexes to the degree that its overall sex diversity would indicate. In a small bridge club with three couples, such differentiation would be unlikely to occur.

If groups are arenas for tie formation, large groups should produce more homophily, even net of diversity. At a given level of diversity, there will be more potential matches for each individual. For example, a group with a two-to-one male/female split at size six there are only four men and two women; to make a sex-homophilous choice, each woman has only one other woman to choose, who may differ in other important respects such as age. However, in a group of size 60 there are 40 men and 20 women; each woman would have 19 alters to choose to make a sex-homophilous choice. If there is choice homophily on many characteristics (and the literature strongly indicates that there will be), then the smaller group is more likely to produce a non-sex-homophilous choice because some other aspect of the match is not appealing. The larger group offers many opportunities for making a sex-homophilous choice that is also acceptable on other dimensions.

Both the size-differentiation relationship and the unmeasured choice homophily argument lead us to our third hypothesis:

HYPOTHESIS 3. *Group size is positively related to homophily.*

## DATA AND METHODS

The data were collected in a three-stage probability sample in 10 communities in the state of Nebraska. This location was chosen for a variety of reasons, including the proximity of the Bureau of Sociological Research at the University of Nebraska, an organization that has had extensive experience in studies of voluntary organization. The citizens of the area have a history of cooperating with projects of this type. In addition, more is known about the voluntary sector of this population than virtually any other, because of several major studies done here. These include panel studies (Babchuk and Booth 1969; McPherson 1981, 1983), ongoing trend studies (McPherson 1982; McPherson and Smith-Lovin 1982), and a variety of other projects.

One goal of the project was to obtain a probability sample of the face-to-face voluntary organizations in a set of communities. We began with a probability sample of individuals and then sampled their organizations. The methods and the rationale for this procedure appear in McPherson (1982). The 10 communities chosen were (nominal population size in parentheses): Omaha (311,681), Lincoln (171,932), Grand Island (33,180), Columbus (17,328), Seward (12,891), York (7,743), Beatrice (5,713), West Point (3,609), Geneva (2,400), and Pender (1,318).

A total of 656 respondents (a minimum of 54 to a maximum of 88 per community) were contacted in the first stage. The refusal rate (including those too sick or disabled to interview) was less than 24 percent. A list of the organizations to which these respondents belonged provided the sampling framework for the second stage. These lists produced from 67 to 114 eligible organizations in each community. From each of these 10 lists, approximately 45 organizational leaders were interviewed (total of 457 respondents in the second stage), to provide information on interorganizational relationships, organizational structure, and most importantly for this paper, to get permission to interview members at a meeting of the group. The refusal rate for this stage was less than 5 percent.

The groups for the third stage were selected from the 10 lists by a probability process based on McPherson (1982). Over 75 percent of the organizations contacted (311 of 413) allowed our interviewers access to meetings for the third-stage interviews. This rate of cooperation substantially exceeded the expected rate of 60 percent. The pattern of refusals suggests that fraternal groups have a slightly lower chance of

appearing in the sample, but an analysis in which weights were used to correct this tendency suggests no substantive differences between our sample and a perfectly representative one for this paper.

The number of members of the 311 groups interviewed in the third stage varied from 2 to 88, for a total sample size of respondents in this stage of 5,860. Several smaller groups were eliminated for this analysis, leaving a sample of 304 groups with a total of 5,842 members. Those 304 groups are the focus of this paper. For a detailed analysis of the response rates and other characteristics of the sample, see McPherson (1984).

The status dimensions with which we are most concerned are age, sex, education, and occupational status. Respondents provided this information in response to a four-page questionnaire administered at a meeting of the group. Respondents were also asked to choose the person at the meeting whom they knew best, excluding relatives. The person's first name and initial provided a means of matching respondents and their choices.

The occupation of the respondent and friend are coded with Duncan's socioeconomic index (1962). Education and age are in years, and sex is a binary variable. The group is the unit of analysis because the hypotheses apply at the group level (Blau 1977, pp. 48–49). Each of the 304 groups is characterized by its size, its diversity (the mean absolute difference among members on each of the status dimensions), the correlations among the status dimensions, and the mean status distance between friendship pairs on each status dimension. The correlations among dimensions range from $-1.0$ to $+1.0$, with an unsurprising tendency for the smaller groups to have more extreme correlations.[6] We use generalized least squares for our multivariate analyses to weight by size of group. (The differences among the weighted and unweighted results are minimal. The weighted results are reported, unless otherwise noted.)

## RESULTS

One of the best established findings in the literature is that friends tend to be similar. In Blau's work, this basic finding appears as an axiom, A-1: "Social associations are more prevalent among persons in proximate than between those in distant social positions" (1977, p. 36). Since Blau's predictions (and therefore our Hypotheses 1 and 2) depend logically on this axiom, we must confirm that this pattern exists in our own data on ties within groups.

To establish the presence of homophily, we compare our observations to a model of chance pairing, in which all possible pairs of individuals are equally likely to associate (Mayhew 1984; Verbrugge 1977, pp. 580–82). We apply this baseline model both to the general population and to the face-to-face groups. Column I of the top panel in Table 1 gives the mean distance between all possible pairs of individuals in the population. The column II gives the mean distance between all pairs within groups. The column III gives the distance between dyads of friends. For each of the four dimensions, the

[6] We view the statistical instability of correlations among dimensions for smaller groups as a reflection of the very real effect of group size on social interaction. Smaller groups constrain choice much more than large groups, in both a univariate and multivariate sense. For more on the effects of group size, see the results section. Note that we use unsigned correlations for this analysis.

Table 1. Summary of Status Differences in the Population, within Organizations, and in Observed Dyads

| Status Dimension | I Status Difference in Population[a] | II Status Difference in Organizations[b] | III Status Difference in Dyads[c] |
|---|---|---|---|
| Education[d] | 2.63 | 2.33 | 1.76 |
| Occupation[e] | 24.67 | 17.18 | 14.49 |
| Age[d] | 22.35 | 11.80 | 7.58 |
| Sex[f] | .48 | .17 | .07 |
| Ratio | III/I | II/I | III/II |
| Education | .68 | .89 | .75 |
| Occupation | .59 | .70 | .84 |
| Age | .34 | .53 | .64 |
| Sex | .15 | .35 | .43 |

[a] Status differences in the population are the average distance (e.g., the mean absolute differences in years of education) between all possible pairs of a representative sample from the population. This sample of 656 individuals was obtained in the first stage of the study.
[b] Status differences in the organizations are the average distance between all possible pairs within each of the 304 organizations.
[c] Status differences in pairs are the average distance between the reported friendship pairs in organizations ($N = 4,827$).
[d] Education and Age are in years.
[e] Occupation is measured in Duncan's socioeconomic index (Duncan 1962).
[f] Comparisons for sex may be interpreted as the proportion of pairs (both potential and observed) which differ in sex. Thus, 48 percent of possible pairs in the population differ in sex (column I), while only 7 percent of observed friendship pairs in organizations differ in sex (column III).

average distance in friendship pairs is much smaller than random choice in the population would produce. The ratios of actually observed dyadic status distance to the distance produced by random choice within the population (the first column of the lower panel) range from .68 for education to .15 for sex. This result means that, taking sex as an example, the observed friendship pairs in our groups are only 15 percent as heterogeneous as they would be if random choice were occurring. Clearly, friendships form, and/or are maintained among, pairs which are much more similar than chance within these voluntary groups. The ratios in the bottom panel of Table 1 tell us how salient each dimension is; the smaller the ratio, the more salient the dimension. As in earlier research, the homophily effects in our data for the ascribed statuses age and sex (.34 and .15) are much more pronounced than those for education and occupation (.68 and .59).[7]

*Choice Homophily and Induced Homophily*

Data in the bottom panel of Table 1 allow us to address a question central to our argument: how much of the observed homophily is due to the composition of the organization ("induced," in our terms), and how much is due to choice? That is, we would like to know whether the organization is producing the observed pair homophily through restricting choice or there is substantial pair homophily beyond that produced by restricted choice.

Unsurprisingly, there is evidence for both types. There is a great deal of homophily observed among friendship pairs (first column of rates in Table 1). Organizations are considerably more homogeneous than random selection would produce on all four dimensions, indicating induced homophily (second column of ratios). However, homophilic selection is still taking place inside the groups; the observed homophily in friendship pairs is somewhat greater than would be expected by chance even within the groups (third column of ratios). For example, the ratios in the second column show that about 35 percent of the population heterogeneity in sex exists inside the groups, while 43 percent of the group heterogeneity in sex was reflected within actually observed friendship pairs. For three of the variables (occupation, age, and sex), induced homophily is greater than choice homophily. For education, the pattern is reversed. Thus, the observed pair homophily is due partly, but not entirely, to group composition. We have a mixture of the network and focus models.

*The Influence of Group Structure on Homophily*

The above discussion underlines the importance of considering the impact of status diversity in groups on the similarity of friendship pairs, since there is substantial induced homophily. This topic, the subject of Hypothesis 1, is addressed in Table 2. The correlation of status diversity with the mean status distance between observed friendship dyads within the group is shown in the first column. Again, status diversity is measured by the mean absolute difference among all members of the group on a status characteristic. The correlations are significant and consistent, ranging from .595 for occupational prestige to .630 for education. Groups with low status diversity provide restricted opportunity structures for friendship choice. These four bivariate correlations support the idea that diversity decreases homophily, as stated in Hypothesis 1.

In Table 2, the regressions of group size, diversity, and consolidation[8] on mean status difference between friends clearly support Hypothesis 1; diversity has very strong effects. Hypothesis 2, on the other hand, receives mixed support. The hypothesis predicts that correlated status dimensions reduce dyadic social distance. In the first column, the correlations of consolidation and mean status distance are weak and nonsignificant; the correlation with mean status difference in occupational prestige is in the wrong direction. (Breaking the consolidation measure into its constituent correlations does not improve the situation; five of the correlations are significant, but four are in the wrong direction.)

[7] In one of the earliest of the modern studies of friendship, Lazarsfeld and Merton (1954, p. 22) found that status similarity varied from very strong for ascribed variables such as race and sex to "entirely negligible" similarity in achieved characteristics such as educational status. Similarly, Verbrugge (1977) found that sex and age were the most salient dimensions for friendship choice. Tuma and Hallinan (1979) found that sex was the only social charcteristic that affected both the formation and maintenance of friendships among schoolchildren; other characteristics produced homophily by affecting the survival of the tie. Blau (1977, p. 39) incorporated this consistent strength of ascribed (and often visible) characteristics into his theoretical statement.

[8] Consolidation is the average (absolute value of) produce-moment correlations among all status dimensions for each group. Blau and Schwartz (1984) use factor analysis to construct a scale for consolidation from the set of correlations. Since we have four status dimensions, producing six correlations, we use a simple average. Note that the average is taken across all possible correlations; when a correlation is undefined, as in the case of correlations involving sex for single sex groups, we take the average among the reduced number of correlations.

Table 2. Correlation and Regression of Mean Status Differences among Observed Friendship Pairs on Status Diversity in 304 Groups

| Dependent Variable | Independent Variables | | |
|---|---|---|---|
| Mean Status Distance between Friends in: | | Zero-Order Correlations | Standardized Regressions |
| Years of education | Group size | −.068 | −.153* |
| | Diversity(educ) | .630* | .569* |
| | Consolidation(educ) | −.103 | −.144* |
| | [*r*(educ age)] | −.020 | |
| | [*r*(educ occ)] | .103 | |
| | [*r*(educ sex)] | −.041 | |
| | $R^2$ | | .421 |
| Years of age | Group size | −.055 | −.107* |
| | Diversity(age) | .613* | .559* |
| | Consolidation(age) | −.013 | −.012 |
| | [*r*(age educ)] | −.000 | |
| | [*r*(age occ)] | .019 | |
| | [*r*(age sex)] | −.135* | |
| | $R^2$ | | .409 |
| Occupational prestige | Group size | −.141* | −.088* |
| | Diversity(occ) | .595* | .647* |
| | Consolidation(occ) | .044 | −.092 |
| | [*r*(occ educ)] | .185* | |
| | [*r*(occ age)] | −.055 | |
| | [*r*(occ sex)] | .002 | |
| | $R^2$ | | .479 |
| Sex | Group size | −.055 | −.119* |
| | Diversity(sex) | .613* | .631* |
| | Consolidation(sex) | −.013 | −.007 |
| | [*r*(sex educ)] | .284* | |
| | [*r*(sex age)] | .332* | |
| | [*r*(sex occ)] | .364* | |
| | $R^2$ | | .591 |

* Coefficient exceeds twice its standard error.

*Notes:* Abbreviations: educ—years of education; age—years of age; sex—sex of respondent; occ—occupational prestige in SEI scores (Duncan 1962). Variables: Diversity($x$)—mean absolute difference among all members of group in status dimension $x$; [$r(x\ y)$]—absolute value of Pearson correlation between variables $x$ and $y$ for the group; Consolidation($x$)—average Pearson correlation between all status dimensions within the group (see text).

In the regression analyses (second column), coefficients for consolidation are all in the predicted direction, but only one of them is statistically significant in its equation.[9] Even the significant coefficient, that for education, is not as large as the coefficient for diversity.

An inspection of regressions with the consolidation measure disaggregated into its constituent correlations (not presented) shows that the correlations have extremely varied effects on the status distance variables. In fact, only about half of the correlations have effects in the correct direction.[10] Given this inconsistent result, we tried a very large number of alternative specifications, including signed correlations, alternative indices based on the correlations, and several other forms. None of these specifications produced support for the influence of correlated status dimensions on homophily.[11]

[9] Of course, since these four equations are separate tests of the hypothesis, the fact that all four coefficients are in the same direction provides stronger support for the hypothesis than the comparison of coefficients with their standard errors would suggest.

[10] The differences between the strength of our support for Hypothesis 2 and the corresponding results in Blau and Schwartz (1984) may be due to the fact that they threw out correlations which had low loadings on their factors. We speculate that this procedure effectively eliminates the correlations that have the wrong sign.

[11] A status dimension cannot be correlated with another if it has no diversity. Since groups that are homogeneous on some dimension are not uncommon (McPherson and Smith-Lovin 1986), this issue deserves discussion. If diversity is very low (or zero) on a characteristic, then

The idea that social groups shape friendship patterns receives strong support from results for Hypothesis 3, which argues that group size should increase homophily. The pattern that emerges in the table is quite striking; homophily is greater in larger groups. Apparently, larger groups provide a larger absolute number of people with similar charcteristics to choose from; that is, at a given level of group diversity, a larger group will provide more people who are near in status to choose from. On the other hand, small groups provide fewer people to choose from who are status equals. If idiosyncratic criteria (or unmeasured status dimensions) rule out the nearest status equal, then a distant status choice is forced. Another possible explanation for this finding is that the greater structural differentiation of large groups produces subgroups more homogeneous than the overall group diversity measure indicates.

## SUMMARY AND CONCLUSIONS

The strongest predictor of homophily in our data is group diversity; the more diverse the group, the greater the average status distance between friendship dyads. Clearly, group composition has a very substantial effect on the amount of homophily in friendship networks. Less satisfactory were our results for the correlated dimension hypothesis (2). Blau's prediction here seems to offer little in the way of explanatory power. The relationships tend to be in the predicted direction, but they are not statistically significant. We would be hard pressed to argue that our sample size of over 300 did not offer enough statistical power to detect even moderate effects. We suspect that Hypothesis 2, if true for face-to-face groups, is fairly weak.

Our analysis has the advantage of being a representative sample of naturally occurring groups. Thus, we can weigh the relative amount of induced and choice homophily in natural settings. Our data suggest a greater amount of induced than choice homophily for friendship dyads inside naturally occurring groups. Both the stronger effects of group diversity in the regressions and the relative absence of effects of correlated dimensions seem to point this way. The only result that seems to favor choice homophily is the presence of more homophily in larger groups. This result could be due to the operation of choice homophily in that larger groups allow individuals to minimize distance on several dimensions at once. Even here, however, an induced-homophily explanation is available: greater differentiation of larger groups may structure friendships to a greater degree than the diversity measure indicates.

There are two limitations of our research design. First, since our respondents were limited to choices inside our groups, we were not able to estimate directly what proportion of all friendship ties actually originated in such groups. Fortunately, Feld (1982) has data that bear on this question; groups such as these form the third most important source of these nonkin ties, after work and neighborhood.

Second, we could actually be overestimating the amount of choice homophily in that the ties that appear to us to be affected by variables unrelated to group composition could be due to the effects of some other group. That is, friendship ties that appear to be based on choice rather than induced through group structure could have actually been induced in another group setting. In fact, Feld (1982) argues that most ties occur in such settings.

Our results clearly support the idea that face-to-face groups have substantial effects on tie formation in social networks. We find very strong effects of diversity, consistent but smaller effects of group size, and almost no effects of correlated social characteristics on the formation of dyadic relationships. We expect that our results will encourage further exploration of the idea that face-to-face groups and social networks are coevolutionary social forms.

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induced homophily will explain all homophily on that characteristic (e.g., if there are only women in the groups discussed above, then the age distribution will have no effect on sex homophily). Therefore, one could argue that the impact of a correlation between traits would be greatest when the diversity on the characteristic was high. Interestingly, Fararo and Skvoretz (1984) derive exactly such a specification from a mathematical formalization of Blau's propositions. They predict (equation 23, p. 241) an interaction effect between the correlation and diversity, such that the greater the product of diversity and correlation, the greater the homophily. Their model predicts only an interaction effect between structural consolidation (correlated variables) and diversity: the greater the variance in a characteristic, the greater the effect of consolidation. There is no main effect of consolidation in their model. The results from this alternative specification are mixed. Nine of the 12 coefficients are in the correct direction, but only 2 are significant; 1 coefficient is significant in the wrong direction. In three of the four dependent variables, using the Fararo and Skvoretz specification results in larger coefficients for the diversity variable, and in larger $R$-squares. Another specification is one in which the main effects of the correlations are added to the Fararo and Skvoretz model. When this model is run, none of the correlations has significant coefficients singly or setwise, and only 7 of 12 have the correct sign. Another model includes all types of diversity in each equation, rather than just diversity in the primary dimension. Only the primary dimension (e.g., diversity in education when education is the dependent variable) is significant in this model. We also tried models that included many more of the possible combinations and permutations of variables, with no important differences from the reported results.

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