Interpersonal Choice and Networks in China*

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Abstract

Personal choices and relations in China, a socialist country at early stages of industrialization and economic development, seem to be remarkably similar to those in the United States, a capitalist country at advanced stages, quite possibly because particularism governs personal relations regardless of cultural, political, or economic differences. In-group choices are at a maximum for young adults and decline after the thirties in both countries. Including kin in one’s discussion network reduces homophily and increases, directly as well as indirectly, diversity in the networks of both. In-group choices mathematically constrain diversity but are not the only influence on it in China or the U.S. Confining discussions of serious matters largely to a friendship clique narrows the range of associates for Chinese as well as Americans. An interesting difference is that Chinese kin tend to act as brokers who link a person to diverse nonkin associates, whereas the data provide no evidence that American kin do.

This is an empirical study of the network of role relations of a sample of urban Chinese. After introducing the theoretical problem of interpersonal choice and the Chinese context as well as the research procedures, the choices of close associates are first analyzed. We then examine the influences of these choices on the structure of the networks of a person’s discussion partners, notably on the diversity, or range, of associates. Finally, these networks in the People’s Republic of China (P.R.C.) will be compared with those of a sample of respondents in the U.S.

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Criteria of Interpersonal Choice

Microstructural and macrostructural sociology have different but complementary perspectives. Microstructural studies center attention on how individuals' interpersonal choices and the criteria underlying them affect their role relations and the resulting network structures. Macrostructural investigations focus on the ways a society's or community's structure of different social positions affects the rates and patterns of relations among people by limiting or expanding their opportunities to realize choices.

The present article is a microsociological study of people's role relations and networks of associates. Two types of network studies must be distinguished. One refers to the web of links in a group and the other to the links between people and their associates. The former is an investigation of the network structure of groups, whereas the latter is a study of the interpersonal (also called "egocentric") networks of individuals. This article is of the second type: it analyses the network of associates with whom an individual discusses important problems for a sample of Chinese respondents and compares results with those from an American sample. Specifically, we shall examine how people's characteristics influence their choices of associates and, both directly and indirectly, the diversity of their network of members. Whereas this is primarily a microstructural study, it will involve some macrosociological comparison of networks in two quite different cultures and social systems, the P.R.C. and the U.S.

The interpersonal network of an individual depends, of course, on the choices of discussion partners one makes, but the network structure is a by-product of one's choices and not the result of the chooser's deliberate design. People can be distinguished in numerous ways, and a person's in-group choices in one respect typically do not result in associates who also have the same attributes as the chooser in most other respects. Thus, ego's choices do not self-consciously determine the diversity of alters, though they certainly influence it. (Dichotomous attributes are exceptions, as we shall see.)

Parsons's (1951:61-63 and passim) concept of particularism provides a general theoretical criterion for distinguishing choices in social life. Its opposite is universalism. Choices of associates and orientations to them rest on a universalistic standard if they are governed by a yardstick exogenous to the social relation itself, as illustrated by selecting the employer who offers the highest pay or the employee with the best education. Particularistic standards involve judgments based intrinsically on the relation itself, such as loving one's mother or preferring associates of one's own religion. Parsons notes that cognitive pursuits are expected to rest on universalistic standards, objective criteria external to the relation. Performance in science or in business should be judged independently of the judge's personal relation to the performer. But the opposite is the case for cathetic orientations, like those in the family. Socialization of successive generations depends on parents' attachment to their own children rather than on their universalistic preferences for the most beautiful or intelligent ones.

Included under particularism by Parsons (1951) are both orientations to particular individuals (e.g., one's mother) and toward particular collectivities
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(e.g., patriotism or racial bias). These illustrations refer to ascriptive criteria, but Parsons clearly considered ascription and achievement a dimension of social life independent of particularism and universalism. Particularism can occur in achieved relations, as exemplified by friends or lovers for individuals and by esprit de corps or class consciousness for collectivities. Choices of kin as close associates are clearly particularistic. But how can choices of nonkin be distinguished as being particularistic or universalistic? They can by using Parsons's abstract criterion of whether ego's choice of alter rests on the nexus between their attributes (particularism) or on criteria independent of this nexus (universalism). In these terms in-group choices reflect particularism, because they manifest some common position in the social structure — young adult or college graduate (see Blau 1962).\(^1\) Out-group preferences can also reflect particularism, as in the preference of most persons for sex partners of the opposite gender. Only choices that are independent of the nexus between one's own and another's attribute are universalistic. Kin choices are particularistic because they are based on common membership in a kin group. In-group choices in some respects are likely to be out-group choices in others because in-group preferences in some dimensions restrict freedom of choice in others (unless the dimensions are highly correlated). Kin choices provide an extreme case of the restraint of some in-group choices on others, as we shall see.

The Chinese Context

China has one of the oldest civilizations, with a feudal tradition involving a hierarchy of strict status distinctions quite different from the democratic traditions that have evolved in Western countries. On the other hand, the P.R.C. is a socialist country with an egalitarian ideology, whereas the U.S. is a capitalist country with great differences in income and wealth. Moreover, the U.S. has one of the most highly developed economies, whereas the P.R.C. has one at an early stage of development.

China has much less residential and job mobility than the U.S. Household registration and rationing tie Chinese people to their villages and urban neighborhoods, and the housing shortage reinforces the obstacles to residential mobility. Workers are greatly dependent on their work units for health care, pensions, housing, and many other services and benefits, and the work unit's permission is required for an individual to accept a job elsewhere. Hence, most employees stay with the same work units for their entire working lives. Place of work and residence are often combined, not only in rural communes but also in urban factories which frequently own housing for their workers (see Walder 1986, 1989.) The lower residential and job mobility in the P.R.C. would be expected to result in more choices of kin, neighbors, and fellow workers, and probably also more in-group choices generally and less network diversity, than in the U.S.

Abolishing hereditary class privileges was a major objective of the 1949 revolution, and class differences were greatly diminished, though not entirely eliminated, after the revolution. Income inequality within cities and villages had been reduced substantially by the 1970s not only below that in countries with
a market economy but also below that in other socialist countries (Parish 1981). Although there remained great economic differences between rural and urban regions, as Walder (1989) notes, they have diminished since the post-1978 reforms. Surprisingly, these market reforms also reduced income inequality within cities. Thus, the low family-income inequality at the end of the Cultural Revolution in Tianjin, the city of our survey, declined further during the next decade, 1976-86 (Walder 1989), while it has increased in the U.S. in recent decades (Blackburn & Bloom 1987). A main reason for the low Chinese inequality is undoubtedly the decline in inherited class distinctions (Parish 1981:49-50), as illustrated by the research finding that intergenerational mobility is substantially higher in the Chinese city under study than in American cities (Blau & Ruan 1990). However, the less-pronounced class differences and greater mobility opportunities in the P.R.C. are accompanied by much lower incomes and standards of living than exist in the U.S.

The most important contrast is that Chinese industrialization and economic development are much less advanced than in the U.S., a contrast that is reflected in differences in the division of labor, industrial diversity, and income inequality. The result is a more complex social structure in the U.S. than the P.R.C. This difference in structural complexity may be expected to find expression in more in-group choices and less diverse interpersonal networks in the P.R.C. than the U.S. Hence, the expected influences on Chinese networks of the lower spatial and job mobility and the lower structural complexity in the P.R.C. are parallel. The inference from both is that Chinese persons tend to make more in-group choices and have less diverse networks than Americans.

However, there are also conditions that may be expected to have parallel implications for social life in the two places under consideration and perhaps also in others. Ascriptive background attributes, in particular, may affect interpersonal choices and networks in parallel fashion independent of variations in culture, economic development, and political system. Age and sex differences in the family at various stages in the life cycle limit opportunities for some social relations and expand those for others. Most family roles — child, spouse, mother — restrict the freedom to make certain social choices while providing easy access to other associates. Moreover, class differences still exist in the P.R.C., though they are less pronounced than in the U.S., and corresponding differences have been observed in all societies. These might exert similar influences on role relations, particularly since relative standing may well be more significant for social life than absolute level. Finally, the unanticipated consequences that choices of specific associates — prompted by one or a few of their attributes — have for the diversity among them in all other respects is not directly, and hence probably not greatly, affected by the differences in culture and social system between the two samples. Do the data support the inferences about differences or those about similarities in networks?

This article seeks to answer this question on the basis of an analysis of the interdependence of people’s own characteristics, their choices of associates, and the resulting diversity in their networks. As a preliminary, we note some simple comparisons. On the average, Chinese have fewer family members in their networks (39%) than Americans (53%), and the former are just as unlikely to include neighbors (5%) as the latter (6%). Both of these results are contrary to
expectation. As expected, however, co-workers comprise a larger proportion of the average Chinese (38%) than the average American network (16%), and this difference helps to account for the unexpected larger proportion of American kin choices. The higher job turnover makes it less likely for Americans than Chinese to be sufficiently intimate with coworkers to discuss serious problems with them. Data on choices and diversity are available in both samples for education, age, and sex. In-group choices in education are virtually the same in the two countries; those in age are very similar; and same-sex choices are more likely among Chinese men than Chinese women or Americans of either sex. Network diversity is essentially the same in both countries with respect to education and sex, and very similar with respect to age. These comparisons disclose more parallels than differences, and the question raised now is whether these results can be refined by distinguishing direct and indirect influences under controls.

Research Procedures

Tianjin is the third-largest city in China, with a population of more than four million. The survey was conducted in 1986 in collaboration with the Tianjin Academy of Social Sciences. The 1,011 persons in the sample represent the residents of urban Tianjin who are 18 years or older and who are employed or retired. The sample was designed to represent the occupational distribution of Tianjin’s work force among the seven occupational groups used by the 1982 national census. Within each occupational group, the households were chosen randomly, and so was the employed or retired member of the household interviewed. Comparison with census data indicates that this sample is fairly representative of the city’s labor force in terms of age and sex as well as occupation.

The data on U.S. networks were collected by the 1985 General Social Survey (GSS). A module to obtain information about associates was included in the 1985 GSS (Burt 1984), which yielded data on the interpersonal networks of a representative sample of Americans, and which served as a model for the network part in the Tianjin questionnaire. Since the Tianjin sample pertains to the employed and retired population, the American sample was correspondingly confined; this reduced the number of cases from 1,534 to 1,167.

The question used to elicit a respondent’s network members was chosen (see Burt 1984:317; Marsden 1987:123) to obtain fairly intimate associates without using the term friend, which does not have the same meaning in different social classes or cultures. Respondents were asked with whom they have discussed important matters in the last six months, and the same question was asked in Tianjin.

Both the Tianjin and GSS survey then requested respondents to provide some information about each of the first five respondents named. (Most Tianjin respondents did name five associates [mean, 4.6], but most Americans did not [mean, 3.0].) They were asked what the nature of each relation was and, if kin, whether the associate was spouse, parent, child, sibling, or other relative. Then they were asked about some attributes of each associate. Both surveys requested
information on age, sex, and education, and the American one also requested information on race and religion. Since race and religion are not significant categories in the P.R.C., we substituted two others: membership in the Communist Party and occupation. We also transformed occupation into a socioeconomic status (SES) score, using a Chinese adaptation by Lin and Xie (1988) of the socioeconomic index (SEI) scoring procedure created by Duncan (1961). The only attributes of respondents used are those on which we have information for network members. Thus, the network analysis is based on six attributes for Tianjin data: age, sex, education, party, occupation, and SES; American network data are available for comparison on the first three.

Age is measured in years. Sex is a dichotomy, men being scored one and women zero. Education is a six-category score, designed to produce similar distributions from eight-category original variables, since the average education in the two surveys differs greatly. (For the Tianjin respondents, average education is 9.5 years, and for the American ones it is 12.7 years. These data are available for respondents in both surveys but for network members in neither.)

The assumption made in creating comparable scores despite the educational differences between the two countries is that relative standing, not absolute level, influences social relations. Party-member status is a dichotomy (with members scored one). Occupation refers to ten occupational groups. The SES score is generated by applying Lin and Xie's (1988:830) equation for occupational status (SEI) in urban China to the ten occupational groups. For the GSS data, race is a dichotomy (with whites coded one), and religion entails three categories — Protestant, Catholic, and Other.

These data for egos and their alters permit us to construct numerous measures of the structure of interpersonal networks. The two most important ones are the degree of particularism in interpersonal choices and the diversity of interpersonal networks. One form of particularism is the proportion of choices that are ego's kin. Its other form is reflected in in-group choices. For categorical variables, it is the proportion of alters who are like ego — for example, those who have the same occupation. To take the degree of difference into account for scalar variables, in-group choices for them are measured by the mean absolute difference between ego and alters, subtracted from the entire sample's maximum of this mean absolute difference. In short, the second form of particularism — the tendency to choose others like oneself — is measured either by a large proportion of in-group choices or by a small average absolute difference between one's own attribute and those of one's choices. (The term in-group choices will be used for scalar as well as categorical attributes.) A prevalence of in-group choices is often termed homophily.

Whereas in-group choices refer to no or little difference between ego and alters, diversity refers to the variation among alters in a given respect, which indicates the diversity (range) of a person's close associates. The measure for nominal variables is the chance expectation that any two randomly chosen individuals belong to different groups, for instance, the probability that any two members of the labor force have different occupations. The measure of diversity for scalar variables is the mean absolute difference between all pairs of alters; for instance, if ego names five alters, there are ten pairs, and the index of age diversity is the absolute sum of the ten differences in age divided by ten.
A few other variables are used to refine the analysis. One is the proportion of all pairs of network members who are close to each other. To decompose the influence of kin choices, choice of kin is replaced by choices of four specific relatives—spouses, parents, children, and siblings (with “other relatives” as the reference category). Finally, the polynomials for age and for in-group measures are included, because the influences of these two variables tend to be curvilinear.

All characteristics of respondents are assumed to be exogenous variables that may influence choices and network structure, and their interrelations are not analyzed. These variables and percent kin are considered antecedents of in-group choices. As these choices exert mathematical constraints on diversity (because the greater the similarities between ego and alters, the less different alters can be from one another), they are controlled in analyzing diversity. The respondent’s characteristics, kin and in-group choices (particularism), and percent close are treated as possible influences on diversity. Regression analysis (ordinary least squares) is used. Equations are trimmed, and all coefficients shown are significant at the .05 level (two-tailed), unless otherwise indicated. Correlations, means, standard deviations, and N’s are presented in Appendix A for the Tianjin sample and in Appendix B for the U.S. sample. The maxima of the mean absolute differences between ego and alters in age and education for both countries and in SES for Tianjin are indicated in Appendix C.

In-Group and Kin Choices in Tianjin

In-group as well as kin choices express particularism, as conceptualized, because both imply choices based on a particular shared affiliation of chooser and chosen rather than on attributes of the chosen judged independently of the chooser’s own. Kin choices may, in turn, affect the various in-group choices.

Table 1 presents regression analyses of five forms of in-group choice regressed on the same attributes of respondents used in the five in-group measures plus respondent’s kin choices. (Choice of party members is discussed separately.) The first row shows that age influences four of the five kinds of in-group choices, and three of these influences are negative. Older workers are less likely than younger ones to discuss important problems with others whose education, occupation, and socioeconomic status is similar to theirs. It appears that class differences inhibit close associations more for younger than older Chinese, which implies more class homogeneity in the associations of younger than older persons.

The relationship of age to age homophily, however, is nonmonotonic. The coefficients for age and age-square (Table 1, column 1) indicate that the curve is an upside-down U. As young people in Tianjin grow older, their associates initially become increasingly similar to them in age, but, in later years, their associates become increasingly different from them in this respect. Setting the first derivative of this equation (column 1) with respect to respondent’s age to zero reveals that the curve peaks at 37.7 years, which is virtually the same as the median age (38). An inference suggested by these results is that young persons tend to discuss serious problems with others older than they are and
old persons with others younger than themselves and hence that people in their middle years are most likely to be consulted by both younger and older persons. The data on mean age of alters for egos in different ten-year cohorts support this inference. The mean age of alters for respondents in their 20s is older (32.3); for those in their 30s and 40s it is about the same age (38.6 and 43.1, respectively); and for those in their 50s and 60s it is younger (47.2 and 51.0).

A plausible reason for these tendencies is that young persons often discuss problems with their parents and old ones with their children. This seems to be the case. The percent who name a parent among their associates decreases consistently with increasing age of cohort. (For the five cohorts, from those in their 20s to those in their 60s, it is: 45, 32, 30, 8.3, 2.4.) The percent who name a child increases in complementary fashion with increasing age. (It is for the five cohorts: 0.0, 4.2, 23, 34, and 34.) One reason for these trends is, of course, that many young people do not have children or only very young ones and many old persons no longer have living parents. But these facts cannot entirely account for the nonmonotonic relationship between ego’s and alters’ age, nor can any other basis for age differences in the tendency to discuss problems with parents or children. For a nonmonotonic relationship, though less pronounced, persists when the proportion of parents and children among discussion partners is controlled.

This becomes apparent when the regression of age in-group choices is replicated with the same variables except fraction kin, which is replaced by the fractions of four specific relatives (spouse, parent, child, sibling) that exert a significant influence. The results show that inclusion of parents and children in the network greatly reduces and inclusion of spouse increases age homophily, which is what one would expect. The substitution of these variables enlarges the variation in age homophily accounted for dramatically (raising $R^2$ from .30 to .53) because the opposite effects on it of spouse, whose age is close to ego’s, and of parents or children, whose ages differ greatly from ego’s, now reinforce rather than counteract each other. Finally, the data demonstrate that the nonmonotonic influence of ego’s age on the age of alters does not reflect merely the fact that young persons rarely discuss problems with their children and old ones rarely with their parents. To be sure, the influence of age is much reduced when the combination of kin is replaced by specific relatives (the polynomial’s coefficients are reduced from .65 and -.009 [Table 1] to .17 and -.0035 [note 16]). However, some curvilinear effect of age on in-group choices with respect to age continues to be observable when parents and children are controlled in the regression of age in-group choices (as shown by the significant coefficients for age and age-square).

Age exerts no influence on choices of associates of the same sex for discussing problems, but sex does (Table 1, column 2). Men are more likely than women to discuss their problems with others of their own sex. The average proportion of in-group sex choices is .73 for men and .59 for women. Thus, women as well as men discuss serious matters disproportionately with their own sex, but men do so considerably more than women in China (while in the U.S., as already mentioned, men make such in-group choices [.58] no more than women [.59]).
TABLE 1:  Tianjin Sample — In-Group Choices*  

<table>
<thead>
<tr>
<th></th>
<th>Age 1</th>
<th>Sex 2</th>
<th>Education 3</th>
<th>Occupation 4</th>
<th>SES 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Respondent's</td>
<td>b</td>
<td>b</td>
<td>b</td>
<td>b</td>
<td>b</td>
</tr>
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<td>-.007</td>
<td>-.003</td>
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<td>(.001)</td>
<td>(9.5E-4)</td>
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<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td>(.001)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
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<td></td>
<td>.111</td>
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<td></td>
<td></td>
<td></td>
<td>(.014)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Education</td>
<td></td>
<td></td>
<td>-.018</td>
<td></td>
<td></td>
</tr>
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<td></td>
<td></td>
<td></td>
<td>(.007)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. SES</td>
<td></td>
<td></td>
<td></td>
<td>-.006</td>
<td></td>
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<td></td>
<td></td>
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<td>(.022)</td>
<td>(.051)</td>
<td>(.033)</td>
<td>(.501)</td>
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<td>7. Constant</td>
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<td>.926</td>
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<td>(.127)</td>
<td>(.082)</td>
<td>(1.236)</td>
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<tr>
<td>8. Adjusted R²</td>
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<td>.32</td>
<td>.08</td>
<td>.09</td>
<td>.09</td>
</tr>
<tr>
<td>9. N</td>
<td>1000</td>
<td>1001</td>
<td>999</td>
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</table>

* For all coefficients, p < .05. As the standard errors (in parentheses) show, most coefficients are significant beyond the .05 level.

Table 1 (rows 4 and 5) indicates that one or the other of the two indications of hierarchical status diminishes all forms of in-group association except age homophily. Superior education reduces the likelihood of associating mostly with others of the same sex. Superior SES lessens the probability of associating with others whose education, occupation, and SES are similar to one’s own. Thus, persons in lower social positions are most likely to confine their discussions to their in-groups, which suggests that superior social standing facilitates using universalistic criteria in deciding with whom to discuss serious problems.

Many associates who are kin reduces the likelihood of in-group choices in all regressions in Table 1 (row 6). This is natural for the two ascribed positions, age and sex, owing to the inevitable differences in age between generations and in sex between spouses, and to the fifty-fifty chance of a sex difference between other relatives. The negative influence of percent kin on homophily in three achieved positions (columns 3, 4, and 5), however, is not the natural result of family composition. It implies much heterogeneity in the Chinese family in regard to class-related characteristics. We shall return to these unexpected findings.17
Only a minority of the Chinese population are members of the Communist Party, and the same is true for the Tianjin sample (15%). In-group choices are in this case of less interest than what influences nonmembers (as well as members) to discuss their problems with party members. About 60% of the sample include at least one party member in their choices, and 25% of the average respondent's consultants are party members. The two regressions of choice of party members for nonmembers and members are in Table 2.

For nonmembers, the probability that they discuss serious matters with members of the Communist Party increases with age up to the middle fifties (56.5) but thereafter declines. Associating with the political elite has undoubtedly many advantages, which may well grow in importance as people become more established and achieve senior positions in their jobs, but its importance probably recedes as older persons approach the end of their careers and retirement. The interpretation that the significance of one's career helps explain the nonmonotonic influence of age is lent some support by other influences on discussions with party members. For such discussions are most likely for nonmembers who are better educated and who are male, and for them as well as for party members if they have superior socioeconomic standing and are not much involved in their relations with kin. (Tests show that the smaller number of party members is not the reason that the coefficients of age, sex, and education for them are insignificant.)

Diversity of Associates in Tianjin

Many in-group choices mathematically constrain the degree of diversity in interpersonal networks. The more people choose discussion partners similar to themselves, the smaller are the differences between them and their partners. As a matter of fact, for dichotomous attributes, like sex and party membership, in-group choices mathematically determine the degree of diversity exactly, and the regression line is a perfect upside-down U. Since diversity is a mathematical function of in-group choices for sex and party membership, it does not make sense to analyze it empirically. For scalar (age, education, SES) and multivariate (occupation) attributes, however, in-group choices greatly constrain but do not predetermine diversity.

The influence of in-group choices on network diversity in age, education, occupation, and SES is nonmonotonic, as Table 3 (rows 5 and 6) shows, and these choices exert in all four cases by far the strongest influence on diversity. This raises the question of whether other apparent influences significantly increase the explained variance. F-tests indicate that in all four diversity regressions the increment in $R^2$ produced by other variables (row 10) is significant beyond the .0001 level. In the regressions of age, education, and SES, the regression curve rises initially a bit but then for most of its course declines, which implies that in-group choices, except in a very low range, largely reduce diversity in these three respects. In the ten-category variable of occupation, the apex of the curve is nearly the mean, and this implies that in-group choices increase diversity until they reach their average and only above that decrease it.
TABLE 2: Tianjin Sample — Party Choices

<table>
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<tr>
<th>Choice of Party Members by:</th>
<th>Nonparty Members</th>
<th>Party Members</th>
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<tr>
<td>1. Age</td>
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<td>2. Age(^2)</td>
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</table>

* For all coefficients, p < .05. As the standard errors (in parentheses) show, most coefficients are significant beyond the .05 level.

Age also has a nonmonotonic relationship to age diversity (column 1). As persons grow older, the diversity among their associates tends to increase initially and decrease afterward. Accordingly, the influence of respondent’s age on the diversity in age of his or her discussion partners is parallel to its influence on age homophily: advancing age first raises and then reduces both. This age-diversity curve reaches its maximum at 32.5 years, which is not very much less than that of the age-homophily curve (37.7) and median age (38). If persons of various ages often choose to discuss problems with others in their thirties, it follows that these young adults have the most age-diverse discussion partners. The opportunity structure generated by the age distribution may contribute to these nonmonotonic curves. Persons in their thirties comprise the largest ten-year age cohort (35%), which implies that, by chance, members of this cohort are most likely to be chosen as associates by others.

The percent kin among discussion partners has direct positive effects on all four forms of diversity (Table 3, row 4). It also has positive indirect effects on these four forms, mediated by in-group choices, because it is inversely related.
TABLE 3: Tianjin Sample — Network Diversity$^a$

<table>
<thead>
<tr>
<th>Respondent's</th>
<th>Age</th>
<th>Education</th>
<th>Occupation</th>
<th>SES</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Age</td>
<td>.162</td>
<td>.073</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Age$^2$</td>
<td>-.002</td>
<td>8.7E-4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. White-collar</td>
<td>.120</td>
<td>.027</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. % Kin</td>
<td>6.306</td>
<td>.359</td>
<td>.139</td>
<td>2.001</td>
</tr>
<tr>
<td></td>
<td>(.450)</td>
<td>(.043)</td>
<td>(.015)</td>
<td>(.387)</td>
</tr>
<tr>
<td>5. In-group</td>
<td>1.169</td>
<td>1.668</td>
<td>.970</td>
<td>1.659</td>
</tr>
<tr>
<td></td>
<td>(.113)</td>
<td>(.174)</td>
<td>(.039)</td>
<td>(.123)</td>
</tr>
<tr>
<td>6. In-group$^2$</td>
<td>-.050</td>
<td>-.320</td>
<td>-1.420</td>
<td>-.057</td>
</tr>
<tr>
<td></td>
<td>(.003)</td>
<td>(.025)</td>
<td>(.040)</td>
<td>(.003)</td>
</tr>
<tr>
<td>7. % Close</td>
<td>-.058</td>
<td>-.890</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(.014)</td>
<td>(.382)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Constant</td>
<td>7.463</td>
<td>-.954</td>
<td>.445</td>
<td>-.418</td>
</tr>
<tr>
<td></td>
<td>(1.550)</td>
<td>(.301)</td>
<td>(.010)</td>
<td>(1.253)</td>
</tr>
<tr>
<td>9. Adjusted $R^2$</td>
<td>.73</td>
<td>.43</td>
<td>.72</td>
<td>.59</td>
</tr>
<tr>
<td>10. Adjusted $R^2$ increment$^b$</td>
<td>.067</td>
<td>.049</td>
<td>.026</td>
<td>.011</td>
</tr>
<tr>
<td>11. N</td>
<td>983</td>
<td>980</td>
<td>982</td>
<td>969</td>
</tr>
</tbody>
</table>

$^a$ For all coefficients, $p < .05$. As the standard errors (in parentheses) show, most coefficients are significant beyond the .05 level. The difference in $R^2$ between the model as reported in the table and a model with only "In-group" and "In-group$^2$" as independent variables. All $R^2$ increments are statistically significant.

to in-group choices in all four respects (Table 1, row 6) and diversity, in turn, is inversely related to in-group choices in age, education, and SES for most of their range and in occupation for about one-half of their range. This indirect effect is natural for diversity in age, because associations with parents and children reduce age homophily and increase age diversity. But the natural conditions of the family structure cannot account for the indirect effects of kin choices on diversity in education, occupation, and SES, nor can they account for positive direct effects of kin choices on all these forms of diversity that reinforce its indirect effects. The findings appear to reflect substantial differences among family members in these attributes.
Newcomb's (1961) ABX theory, a version of balance theory, suggests another possible explanation of these results in terms of brokerage. A respondent's kin associates, who tend to be unlike him or her in five of the six characteristics examined (Table 1, row 6), typically have given the prevalence of in-group choices, nonkin associates who are like them and thus also unlike him or her in several respects. An implication of Newcomb's theory is that friends of friends often become friends (1961:423, 160-65). This, in turn, implies that the unlike kin associates of a respondent sometimes bring that respondent together with their associates, who share some attributes with them and hence are also unlike the respondent. Thus, the assumption is made that the unlike kin associates of a respondent link him or her to their nonkin friends who are also unlike the respondent, and this can explain the finding that kin choices increase the achieved as well as the ascribed diversity in a person's network. The reasoning is that the unlike nonkin alters to whom relatives link ego reduce the typical excess of like (in-group) nonkin alters and thereby enhance the diversity in the network.\(^9\) The alternative explanation is that there are substantial variations in achieved (as well as ascribed) attributes in the Chinese family.

The first explanation implies that the fraction kin is positively related to diversity among nonkin in the network. This implication is tested in the regressions in Table 4. In these regressions, four variables — diversity, in-group choices, the latter's square, and percent close — are replaced by their equivalents based on nonkin associates only. Otherwise the same variables as in Table 3 are used, including percent kin.

The data in row 4 show that the fraction kin is positively related to diversity among nonkin network members in every regression — to diversity in age, education, occupation, and SES. These findings corroborate the explanation inferred from Newcomb's theory. Although they do not demonstrate its validity, of course, they imply that the influence of kin choices on diversity among nonkin associates can be explained by the assumption that the unlike kin associates of a respondent bring him or her together with their nonkin friends who tend to be like them and thus also unlike the respondent. This reduces the widely observed prevalence of in-group friends, and whereas it undoubtedly does not obliterate the usual excess of in-group choices it may diminish it sufficiently enough to dampen its adverse effect on diversity.

Comparison of P.R.C. and U.S. Networks

The similarity between the microstructures of interpersonal relations in the P.R.C. and the U.S. is impressive, considering the differences in culture and tradition, and in economic, political, and social institutions. Comparable data on both are available for the influences of ego's age, sex, education, and kin choices on in-group choices in age, sex, and education, and for these influences plus those of in-group choices and closeness of ties on network diversity.\(^{20}\)

These parallels may well be rooted in the particularistic nature of intimate and social relations. Universalistic criteria are expected to govern cognitive decisions in economic, administrative, and other instrumental affairs, which would probably make them affected by the great differences between Tianjin
<table>
<thead>
<tr>
<th>Respondent's</th>
<th>Age</th>
<th>Diversity in:</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Age</td>
<td>.313</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(.091)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Age²</td>
<td>-.004</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(.001)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. White-collar</td>
<td>.102</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(.032)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. % Kin</td>
<td>1.428</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(.519)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Nonkin in-group</td>
<td>2.604</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(.206)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Nonkin in-group²</td>
<td>-.023</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(.002)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Nonkin % close</td>
<td>-1.847</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(.418)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Constant</td>
<td>-63.084</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(4.376)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Adjusted R²</td>
<td>.46</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>.37</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. N</td>
<td>804</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>798</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Education</td>
<td>b</td>
<td>b</td>
<td>b</td>
</tr>
<tr>
<td>Occupation</td>
<td>b</td>
<td>b</td>
<td>b</td>
</tr>
<tr>
<td>SES</td>
<td>b</td>
<td>b</td>
<td>b</td>
</tr>
</tbody>
</table>

* For all coefficients, p < .05. As the standard errors (in parentheses) show, most coefficients are significant beyond the .05 level.

and the U.S. People's choices in private matters, however, tend to be particularistic. If one looks for a confidant, one turns either to one's family or to someone else who shares significant attributes. Particularism may rest on fundamental human qualities and hence entail similar choices across cultures and social systems. People's opportunities for maintaining private relations depend in large part on their stage in the life course and role in a family, which are quite similar in different contemporary societies.

Table 5 shows that an American's age has a nonmonotonic effect on age ingroup choices (column 1): the likelihood of choosing associates near one's own age first rises and then declines with increasing age, the curve's apex being at 42.8, nearly the same as the median age (42). This American pattern parallels the one observed in Tianjin. One reason for the nonmonotonic curve in Tianjin is that people, as they get older, discuss problems less with parents and more with children, and the same is the case here. For the six cohorts, from Ameri-
TABLE 5: U.S. Sample — In-group Choices

<table>
<thead>
<tr>
<th>Respondent's</th>
<th>Ingroup Choices in:</th>
<th>Education</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Age</td>
<td>Sex</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>b</td>
<td>b</td>
</tr>
<tr>
<td>1. Age</td>
<td>.675</td>
<td>-.007</td>
</tr>
<tr>
<td></td>
<td>(.072)</td>
<td></td>
</tr>
<tr>
<td>2. Age²</td>
<td>-0.008</td>
<td>-.318</td>
</tr>
<tr>
<td></td>
<td>(7.2E-4)</td>
<td></td>
</tr>
<tr>
<td>3. % Kin</td>
<td>-6.112</td>
<td>-.318</td>
</tr>
<tr>
<td></td>
<td>(.569)</td>
<td>(.024)</td>
</tr>
<tr>
<td>4. Constant</td>
<td>30.995</td>
<td>.752</td>
</tr>
<tr>
<td></td>
<td>(1.678)</td>
<td>(.015)</td>
</tr>
<tr>
<td>5. Adjusted R²</td>
<td>.25</td>
<td>.14</td>
</tr>
<tr>
<td>6. N</td>
<td>1057</td>
<td>1072</td>
</tr>
</tbody>
</table>

* For all coefficients, p < .05. As the standard errors (in parentheses) show, most coefficients are significant beyond the .05 level.

cans in their 20s to those in their 60s, the percent who name a parent decreases regularly (58, 34, 16, 8.0, 1.9), and the percent who name a child increases in complementary fashion (0.4, 2.2, 21, 25, 30). But these differences, just as those in Tianjin, do not entirely account for the U-shaped regression curve.

A regression in which specific relatives are substituted for all kin reveals this. It shows that including parents and children as regressors, which controls generational age differences, reduces the specific influence of age and more than doubles the variation in age in-group choices accounted for (from .25 to .54). Although these results indicate that consulting parents or children is in part responsible for the nonmonotonic effect of age in Table 5, they also disclose that such discussions are not alone responsible for this effect. For it persists if the specific relatives named are controlled (as the coefficients of age and age-square in note 21 show). A plausible interpretation of the residual nonmonotonic curve is that people in mid-life, who tend to be at the height of their careers, are in demand as consultants about serious problems by both younger, less experienced persons and older, less up-to-date ones. The finding of the influence of age on age diversity in American networks (Table 6, rows 1 and 2) supports this interpretation. It shows that this influence is also nonmonotonic: American network diversity increases with age up to the middle years and then decreases, so that persons of median age have networks with the widest age range, just as in Tianjin. If people in their middle years are chosen as discussion partners by both younger and older persons, then their network has a wide age range.

Kin choices in the U.S. have negative effects on age and sex homophily, just as they do in Tianjin, though they have no such influence on homophily in
TABLE 6: U.S. Sample — Network Diversity*

<table>
<thead>
<tr>
<th>Diversity in:</th>
<th>Age</th>
<th>Education</th>
</tr>
</thead>
<tbody>
<tr>
<td>Respondent's</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>1. Age</td>
<td>.148</td>
<td>.098</td>
</tr>
<tr>
<td></td>
<td>(0.070)</td>
<td>(0.045)</td>
</tr>
<tr>
<td>2. Age$^2$</td>
<td>-.002</td>
<td>-.186</td>
</tr>
<tr>
<td></td>
<td>(7.1E-4)</td>
<td>(0.025)</td>
</tr>
<tr>
<td>3. Catholic</td>
<td></td>
<td>.098</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0.045)</td>
</tr>
<tr>
<td>4. % Kin</td>
<td>5.758</td>
<td>.217</td>
</tr>
<tr>
<td></td>
<td>(.588)</td>
<td>(.059)</td>
</tr>
<tr>
<td>5. In-group</td>
<td>2.521</td>
<td>.869</td>
</tr>
<tr>
<td></td>
<td>(.168)</td>
<td>(.188)</td>
</tr>
<tr>
<td>6. In-group$^2$</td>
<td>-.042</td>
<td>-.186</td>
</tr>
<tr>
<td></td>
<td>(.002)</td>
<td>(.025)</td>
</tr>
<tr>
<td>7. % Close</td>
<td>-2.902</td>
<td>-.297</td>
</tr>
<tr>
<td></td>
<td>(.577)</td>
<td>(.060)</td>
</tr>
<tr>
<td>8. Constant</td>
<td>-22.522</td>
<td>.608</td>
</tr>
<tr>
<td></td>
<td>(3.201)</td>
<td>(.359)</td>
</tr>
<tr>
<td>9. Adjusted $R^2$</td>
<td>.52</td>
<td>.33</td>
</tr>
<tr>
<td>10. Adjusted $R^2$ increment$^b$</td>
<td>.062</td>
<td>.024</td>
</tr>
<tr>
<td>11. N</td>
<td>843</td>
<td>830</td>
</tr>
</tbody>
</table>

* For all coefficients, $p < .05$. As the standard errors (in parentheses) show, most coefficients are significant beyond the .05 level.

$^b$ The difference in $R^2$ between the model as reported in the table and a model with only “In-group” and “In-group$^2$” as independent variables. All $R^2$ increments are statistically significant.

education (Table 5, row 3), while they do in Tianjin. American kin choices have direct positive effects on diversity in both age and education (Table 6, row 4), as do kin choices in Tianjin. However, the direct positive effects of kin choices on diversity in both age and education are reinforced in the P.R.C. by positive indirect effects, mediated by homophily, which is low, whereas in the U.S. there are no such reinforcing indirect effects on diversity in education, only on that in age. The finding that kin associates reduce educational homophily (thereby further increasing educational diversity) only in Tianjin and not in the U.S. is one of only three instances when influences in our data are not parallel in the two countries. A possible reason is that cohort differences in education are particularly pronounced in Tianjin.23
The Tianjin finding that ego's choices of kin reduce in-group choices and increase diversity among alters indirectly, as well as directly, has been explained in terms of Newcomb's ABX theory. The relatives with whom egos discuss matters tend to be unlike them in all ways examined in Tianjin and in two of three in the U.S. (Table 1, row 6; Table 5, row 3). The inference drawn is that these relatives recurrently introduce ego to their friends, who tend to be like them and thus unlike the ego, and sometimes a friendship develops. This inference implies that family members in the network increase the diversity of nonkin network members. An alternative interpretation of the empirical result is that family members exhibit a great variety of achieved as well as ascribed characteristics. Empirical tests of the first hypothesis corroborated it for all forms of diversity in the Tianjin sample (Table 4, row 4). The American sample, however, reveals no such significant effects of kin on diversity among nonkin (Table 7, row 4). This indicates that the first hypothesis must be rejected in favor of the alternative — that there is substantial diversity among American kin associates, a diversity that is independent of a person's in-group choices.

The strong mathematical constraints of in-group choices on diversity are, of course, also evident in the American data on diversity in age and education (Table 6, rows 5 and 6). Either kind of in-group choice initially increases diversity some but then decreases it for most of its range (with education's initial positive effect being particularly small). The pronounced, largely negative effects of in-group choices on diversity, however, do not mean that other influences on it are trivial, as indicated by the increments in R² in row 10, which are both significant at .0001. These results closely parallel those in Tianjin (Table 3).

Associates who are members of one's family tend to be close, but close ties among nonkin associates imply that nonkin choices are largely confined to a friendship clique. Close ties in the network are inversely related to two forms of diversity in the U.S. (Table 6, row 7) and to two other forms in Tianjin (Table 3, row 7). But one cannot infer from these data that clique choices impede diversity, not only on account of the inconsistent results but also because the data include kin choices. To test this inference requires that the measures for close ties, in-group choices, and diversity be confined to nonkin alters. Such regressions have already been presented, earlier for the Chinese sample and just above for the American data.

The results support the inference for age and education in both Tianjin (Table 4, row 7) and the U.S. (Table 7, row 7). Confining most friends to a closely knit clique tends to diminish their differences in age and education, and probably their range of experience and knowledge, interests, and skills. Discussing problems with others from a variety of contexts expands the scope of one's role relations. Such a complex role set fosters intellectual flexibility (Coser 1975) and improves the advice and help one can get (Granovetter 1973, 1974). Choices from a friendship clique imply particularism, since its members typically share many attributes, and these choices thus restrict the range of associates, just as in-group choices generally do. In contrast to this form of particularistic choice, the other form, choice of one's kin, seems to enlarge the diversity of attributes of one's discussion partners, partly because kin groups are naturally diverse in age and sex, and partly because kin...
TABLE 7: U.S. Sample — Nonkin Network Diversity

<table>
<thead>
<tr>
<th>Diversity in:</th>
<th>Age</th>
<th>Education</th>
</tr>
</thead>
<tbody>
<tr>
<td>Respondent's</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Age</td>
<td>-0.086*</td>
<td>0.156</td>
</tr>
<tr>
<td></td>
<td>(0.077)</td>
<td>(0.072)</td>
</tr>
<tr>
<td>2. Age²</td>
<td>6.3E-4*</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(7.9E-4)</td>
<td></td>
</tr>
<tr>
<td>3. Catholic</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. % Kin</td>
<td>0.164*</td>
<td>0.028*</td>
</tr>
<tr>
<td></td>
<td>(0.586)</td>
<td>(0.088)</td>
</tr>
<tr>
<td>5. Nonkin in-group</td>
<td>1.367</td>
<td>1.064</td>
</tr>
<tr>
<td></td>
<td>(0.208)</td>
<td>(0.239)</td>
</tr>
<tr>
<td>6. Nonkin in-group²</td>
<td>-0.025</td>
<td>-0.204</td>
</tr>
<tr>
<td></td>
<td>(0.003)</td>
<td>(0.032)</td>
</tr>
<tr>
<td>7. Nonkin % close</td>
<td>-1.803</td>
<td>-2.61</td>
</tr>
<tr>
<td></td>
<td>(0.558)</td>
<td>(0.086)</td>
</tr>
<tr>
<td>8. Constant</td>
<td>0.817</td>
<td>0.097</td>
</tr>
<tr>
<td></td>
<td>(3.842)</td>
<td>(0.448)</td>
</tr>
<tr>
<td>9. Adjusted R²</td>
<td>0.42</td>
<td>0.25</td>
</tr>
<tr>
<td>10. N</td>
<td>487</td>
<td>475</td>
</tr>
</tbody>
</table>

* For all coefficients, p < .05 (with the exceptions indicated). As the standard errors (in parentheses) show, most coefficients are significant beyond the .05 level.

* Coefficient is not significant at the .05 level.

associates may act as brokers that link a person to diverse nonkin friends. Although our data provide evidence for the latter only in Tianjin and not in the U.S., this may simply be a happenstance of the available American data, which are poorly suited for testing the brokerage hypothesis.

The schema in Table 8 summarizes the foregoing comparisons and highlights the resemblance of the network structures. Only three of fifteen influences on interpersonal networks examined are not parallel in the P.R.C. and the U.S. All influences on age choices are equivalent in the two countries, and so are all pairs of direct influences on both forms of diversity examined. The extent to which persons include kin in their network exerts a pervasive direct influence in both countries on homophily, which is negative, and on diversity, which is positive. In only one of the ten regressions summarized in Table 8 does kin exert no influence, educational homophily in the U.S. Kinship is clearly, in Feld’s (1981) phrase, a major organizing focus of social relations in both
TABLE 8: Comparison of Influences on Interpersonal Networks in Tianjin and the U.S.*

<table>
<thead>
<tr>
<th>Influence of Respondent's Attribute in:</th>
<th>Both Tianjin &amp; U.S.</th>
<th>Only Tianjin</th>
<th>Only U.S.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Homophily in age</td>
<td>+age, -age,² -kin</td>
<td></td>
<td></td>
</tr>
<tr>
<td>in sex</td>
<td>-kin -kin</td>
<td>+ male, -educ</td>
<td></td>
</tr>
<tr>
<td>in educ.</td>
<td>-age -kin</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diversity in age</td>
<td>+age, -age,² +kin</td>
<td>-kin</td>
<td></td>
</tr>
<tr>
<td>in educ.</td>
<td>-homoph, -homoph,² -close</td>
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</tr>
<tr>
<td></td>
<td>+kin -kin</td>
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</tr>
<tr>
<td></td>
<td>-homoph, -homoph,² -close</td>
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<td></td>
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</tbody>
</table>

* Homophily is the same as ingroup choices. Sources for Tianjin data/U.S. data: homophily, Table 1/Table 5; diversity, Table 3/Table 6.

countries, and undoubtedly in others.

Conclusion

The microstructures of interpersonal networks reveal many consistent patterns in the P.R.C. and the U.S., regardless of the countries' great differences. The complex direct and indirect influences of age and kin choices on these microstructures are rooted in the natural age and sex differences in the family but have repercussions that go far beyond these roots. A good example from the study of Chinese networks is that an individual's unlike kin associates often act as brokers and bring him or her together with their nonkin friends, who tend to be unlike him or her, just as they are, and consequently increase network diversity.

The paradox of the role of kinship in microstructures is that kinship choices — one form of particularism — apparently diminish in-group choices in various respects — another form of particularism. Close kinship is a sufficient basis for maintaining a social relation. In its absence another basis, such as discovering common interests, is needed to establish a relation. To be sure, relatives often have more matters in common than friends have and certainly have more in common than less-intimate associates, but close kinship is sufficient for an established relation whereas another common basis is necessary for a voluntary relation to be established. Once a firm bond exists, it can withstand great differences in other respects, as evidenced by great educational differences between parents and children.

These reflections call attention to the underlying principle that people's out-group and intergroup relations of various kinds are generally the result of in-
group relations in another dimension. The sex and age differences in the nuclear family are merely a special case of a general phenomenon. Any large society exhibits a multitude of social differences, and these differences in various dimensions are not perfectly related but more or less intersect. The more complex the society, the more dimensions intersect, and the more they intersect the more in-group relations of one kind involve people in intergroup relations of other kinds (Blau 1977). This applies to microstructures as well as macrostructures, and it is related to the dialectical interplay between particularism and universalism. Particularistic relations in the family integrate children into society, and such relations in peer groups of intimates and, to a lesser extent, in other in-groups maintain people's integration into social structures. This particularistic foundation sustains us and makes it possible to make universalistic decisions in instrumental matters, decisions that become more and more predominant with growing industrialization and economic development.

Notes

1. In-group choices are often the result of the superior opportunity of making such choices because people with the same background tend to live in the same neighborhood and congregate together at work and play. The spatial segregation that creates these differences in choice opportunity are, however, in good part themselves the result of particularistic choices among whom to live, work, and play.

2. The empirical difference in structural complexity is reinforced by a methodological artifact, namely, that our research compares a sample from a single Chinese city with one from the entire U.S. Structural complexity is, of course, much greater in a nation containing many cities than in one city. (However, comparing the total Chinese population, which is three-quarters rural, with the largely urbanized American population would also be problematical.)

3. For a full discussion of the survey, see Walder et al. (1989).

4. Professional-technical, leading official (cadre), clerical, commercial, service, production-transportation, other.

5. See Table 1 in Blau and Ruan (1990). However, it should be noted that the 1982 census did not include the new occupation of "private business owner." Possibly for this reason, only one respondent designated himself as a business owner.

6. The GSS is a full probability sample of "the total noninstitutionalized English-speaking population of the continental U.S., 18 years of age or older" (Davis & Smith 1989:328).

7. "From time to time, most people discuss important matters with other people. Looking back over the last six months — who are the people with whom you discussed matters important to you?"

8. The six categories in the two countries are:

<table>
<thead>
<tr>
<th>Tianjin</th>
<th>U.S.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. None or little</td>
<td>2.7%</td>
</tr>
<tr>
<td>2. Primary school</td>
<td>16.5%</td>
</tr>
<tr>
<td>3. Lower middle</td>
<td>39.2%</td>
</tr>
<tr>
<td>4. High school</td>
<td>31.8%</td>
</tr>
<tr>
<td>5. Technical college</td>
<td>6.5%</td>
</tr>
<tr>
<td>6. College or higher</td>
<td>3.3%</td>
</tr>
</tbody>
</table>

9. The ten are based on the six census categories (shown in note 4, excluding "other") by dividing three — professional-technical, officials, and production-transportation — by skill or rank, and adding a category for business owner.
10. The two multicategory variables are transformed into one or more dichotomies when used as independent variables characterizing the respondent: occupation is dichotomized into white-collar and blue-collar; religion is replaced by three dichotomies — Protestant/not, Catholic/not, and Other/not. (Since American data are used solely for comparison, race and religion are employed only as controls of choosers' attributes and not analyzed in terms of in-group choices or diversity.)

11. Percentages of network members have very small denominators (5 or less), which makes proportions imprecise indicators. But raw numbers are very misleading for comparisons, because the differences in number of choices (the denominator) between the Tianjin and U.S. and among the U.S. respondents is so great. (The standard deviation for Tianjin data is .99, less than one-quarter of the mean [4.58], whereas that for U.S. data is 1.64, more than one-half of the mean [3.00].) As a precaution, we have replicated the regressions substituting for percent x the raw number x and simultaneously controlling total number of choices. The results are essentially the same. The only exceptions are that the number of choices may or may not have a significant influence and that in two of twelve regressions one variable that was not significant at .05 becomes so, which can easily happen by chance.

12. Thus, scalar degree of “in-group” choices is computed by subtracting the mean absolute difference between ego’s score and alters' from the maximum of this difference observed in the data, which shows how close to zero this ego’s difference from alters score is. The procedure yields measures for scalar attributes whose higher values indicate choices of others more like oneself, as proportion in-group choices do. Note that the means of scalar in-group choices in Appendixes A and B must be subtracted from the variable’s maximum (in Appendix C) to obtain the actual in-group values.

13. The formula for diversity (D) is: 

\[ D = 1 - \sum p_i^2 \]

where \( p_i \) is the fraction of the total (sample of population) in each subunit (category), \( i \), and the sum is taken over all subunits (Gibbs & Martin 1962; see also Lieberson 1969). This index takes both the number of subunits and the distribution of persons among them into account.

14. The results of such substitution are reported only if it makes an appreciable difference.

15. This is often not done in network analysis, which makes it impossible to tell whether a particular influence on network diversity is direct or mediated by homophily. The significance of this becomes evident when an antecedent has both direct and indirect influences.

16. The equation for age homophily in Tianjin is:

\[ H_A = 23.451 + .172 \text{(Age)} - .0035 \text{(Age)}^2 - 24.041 \text{(Parent)} - 19.282 \text{(Child)} + 4.375 \text{(Spouse)} \]

\[ \text{SE: } .1468 .073 .0009 .968 .1073 .873 \]

17. Kin choices are, of course, also influenced by the attributes of the chooser. Although this is not the focus of our analysis, the regression equation of kin choices is:

\[ %K = .272 + .0045 \text{(Age)} - .089 \text{(Sex)} - .071 \text{(Party)} \]

\[ \text{SE: } .036 .0009 .020 .028 \]

18. As noted, the in-group variable measures how far below the maximum in the sample ego's mean absolute difference from alters' is (hence how close the scores of alters are to ego's score). The apex of the curve is 1.93 standard deviations below the mean for age, 2.01 for education, and 1.59 for SES, which shows that only very rare in-group choices affect diversity positively, whereas for most of its range (nearly nine-tenths or more) increases in in-group choices affect diversity negatively. In short, the main effect of in-group choices on these three forms of diversity is negative.

19. We do not know whether the respondent's kin associate is the broker who links the respondent and his or her friend, as implied above, or the respondent is the broker who links a kin and a nonkin associate of his or hers. However, it makes no difference for the brokerage explanation, because either alternative implies that a person's brokerage linking a kin and a nonkin associate enhances network diversity. (The only difference between the two is which one of two relatives — the broker or the one whose network diversity brokerage increased — happens to be in the sample.)

(Notes are continued on page 1060.)
APPENDIX A: Simple Correlations for Tianjin Sample

<table>
<thead>
<tr>
<th></th>
<th>Age</th>
<th>Age²</th>
<th>Sex</th>
<th>Educ.</th>
<th>Party</th>
<th>White-Collar</th>
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<td></td>
<td></td>
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<td>-.2230**</td>
<td>.0909*</td>
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<td></td>
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<tr>
<td>Party</td>
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<td>.1714**</td>
<td>.1392**</td>
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<tr>
<td>White-collar</td>
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<td>.1816**</td>
<td>.0273</td>
<td>.4296**</td>
<td>.2840**</td>
<td>1.0000</td>
</tr>
<tr>
<td>SES</td>
<td>.1972**</td>
<td>.1935**</td>
<td>.0657</td>
<td>.5086**</td>
<td>.3128**</td>
<td>.8444**</td>
</tr>
<tr>
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<td>.1068**</td>
<td>-.373**</td>
<td>-.0094</td>
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<td>-.0084</td>
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<td>.0496</td>
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<td>-.0046</td>
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<td>.0602</td>
<td>.0145</td>
<td>-.0149</td>
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<td>-.0403</td>
<td>.2724**</td>
<td>-.0446</td>
<td>.0203</td>
<td>-.0620</td>
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<td>-.0028</td>
<td>.0027</td>
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<td>-.0951*</td>
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<td>.0925*</td>
<td>-.0699</td>
<td>-.0069</td>
<td>-.0445</td>
<td>.0284</td>
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<td>.1272**</td>
<td>-.0645</td>
<td>.0197</td>
<td>.0501</td>
<td>.1551**</td>
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<td>Occup. diversity</td>
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<td>.0389</td>
<td>.0743</td>
<td>.0680</td>
<td>.1089**</td>
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<td>.0928*</td>
<td>-.0011</td>
<td>.0524</td>
<td>.0727</td>
<td>.0960*</td>
</tr>
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</table>

Mean          39.1325   1652.7824  5371  3.3284  .1543  .3990
Std. dev.     11.0248   927.8367  4989  1.0191  .3614  .4899
N             1011     1011       1011  1011  1011  1010

<table>
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<tr>
<th></th>
<th>In-Group Educ.</th>
<th>In-Group Educ.²</th>
<th>In-Group Occup.</th>
<th>In-Group Occup.²</th>
<th>In-Group SES</th>
<th>In-Group SES²</th>
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</thead>
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<td></td>
<td></td>
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<td>In-group occup.²</td>
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<td>.2832**</td>
<td>.7681**</td>
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<td>-.6401**</td>
<td>-.7030**</td>
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</table>

Mean          3.6521  13.6081  .3986  .2724  22.6930  540.9959
Std. dev.     .5199  3.5721  .3370  .3299  5.1038  210.0690
N             999    999       1000  1000  999    999

* p < .01     ** p < .001 (two-tailed)
## APPENDIX A: Simple Correlations for Tianjin Sample (Continued)

<table>
<thead>
<tr>
<th></th>
<th>SES</th>
<th>% Kin</th>
<th>% Close</th>
<th>Ingroup Age</th>
<th>Ingroup Age²</th>
<th>% Same Sex</th>
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<tbody>
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<tr>
<td><strong>Age²</strong></td>
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</tr>
<tr>
<td><strong>Sex (Male)</strong></td>
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<td><strong>% Kin</strong></td>
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<td>.1655**</td>
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<th>Occup. Diversity</th>
<th>SES Diversity</th>
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<td><strong>In-group SES</strong></td>
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<tr>
<td><strong>In-group SES²</strong></td>
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<tr>
<td><strong>Age diversity</strong></td>
<td>1.0000</td>
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<tr>
<td><strong>Educ. diversity</strong></td>
<td>.3965**</td>
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<tr>
<td><strong>Occup. diversity</strong></td>
<td>.2385**</td>
<td>.3054**</td>
<td>1.0000</td>
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<tr>
<td><strong>SES diversity</strong></td>
<td>.1730**</td>
<td>.3430**</td>
<td>.6930**</td>
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<tr>
<td><strong>Mean</strong></td>
<td>11.5126</td>
<td>.9754</td>
<td>.4772</td>
<td>6.9350</td>
</tr>
<tr>
<td><strong>Std. dev.</strong></td>
<td>7.1929</td>
<td>.5470</td>
<td>.2387</td>
<td>5.2818</td>
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<td><strong>N</strong></td>
<td>983</td>
<td>980</td>
<td>983</td>
<td>969</td>
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</tbody>
</table>

* p < .01    ** p < .001 (two-tailed)

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APPENDIX B: Simple Correlations for U.S. Sample

<table>
<thead>
<tr>
<th></th>
<th>Age</th>
<th>Age²</th>
<th>Sex</th>
<th>Educ.</th>
<th>% Kin</th>
<th>% Close</th>
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<tbody>
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<td>.0241</td>
<td>1.0000</td>
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<tr>
<td>% Kin</td>
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<td>.1123**</td>
<td>-.0338</td>
<td>-.2032**</td>
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<tr>
<td>% Close</td>
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<td>.2004**</td>
<td>.0122</td>
<td>-.2063**</td>
<td>.4044**</td>
<td>1.0000</td>
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<td>In-group age</td>
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<td>.0319</td>
<td>.1314**</td>
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<td>-.2711**</td>
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<tr>
<td>In-group age²</td>
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<td>-.2707**</td>
<td>.0438</td>
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<td>-.3802**</td>
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<td>-.0076</td>
<td>.3660**</td>
<td>.1055*</td>
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<td>.0664</td>
<td>.0080</td>
<td>.0707</td>
<td>.0539</td>
<td>-.1227**</td>
</tr>
</tbody>
</table>

Mean 44.9536 2312.7678 .5356 3.4490 .5273 .3962
Std. dev. 17.0937 1702.6759 .4989 1.2386 .3731 .3739
N 1163 1163 1167 1167 1072 854

*p < .01  **p < .001 (two-tailed)

Notes (continued)

20. The comparisons presented are confined to these influences, but they are based on regressions in which party, occupation, and SES in the Tianjin sample and race and religion in the American one are also controlled.

21. The age homophily equation for the U.S. data is:
   \[ H_A = 39.364 + .282(Age) - .0041(Age^2) - 18.467(Parent) - 17.399(Child) + 3.559(Spouse) \]
   SE: 1.388 .059 .0006 .906 .873 .606

22. Kin choices are affected by two of the attributes under consideration: white race increases and education decreases them. The equation for American kin choices is:
   \[ \% K = .665 + .099(White) -.065(Education) \]
   SE: .041 .034 .009

23. Decomposition of kin (in the Tianjin sample) shows that its negative influence on homophily reflects negative influences of parents and children and no other relatives.

24. In Table 7 (just as in Table 4), the measures for in-group choices and its squares, close ties, and diversity are based on nonkin alters only. (Although the American data are not well suited for these tests, as only two forms of diversity are analyzed and only one of them is both indirectly and directly affected by kin choices, we present them to disclose that in this case the American results, in contrast to the Tianjin ones, do not support the brokerage hypothesis.)
APPENDIX B: Simple Correlations for U.S. Sample (Continued)

<table>
<thead>
<tr>
<th>In-Group Age</th>
<th>In-Group Age²</th>
<th>% Same Sex</th>
<th>In-Group Educ.</th>
<th>In-Group Educ²</th>
<th>Age Diversity</th>
<th>Educ. Diversity</th>
</tr>
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<td></td>
<td></td>
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<td>-0.0192</td>
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<td>0.0226</td>
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<td>% Kin</td>
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<td>-0.5727**</td>
<td>-0.1504*</td>
<td>-0.1082*</td>
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<tr>
<td>% Close</td>
<td>-0.5060**</td>
<td>-0.5372**</td>
<td>-0.1569**</td>
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<tr>
<td>In-group age</td>
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<tr>
<td>In-group age²</td>
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<tr>
<td>% same sex</td>
<td></td>
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</table>

Mean: 39.8673 1651.0998 .5837 4.1057 17.3328 13.0502 .9810
Std. dev.: 7.8587 571.2249 .3125 .6904 5.2617 8.0556 .7141
N: 1057 1057 1072 1059 1059 891 876

APPENDIX C: Maxima for Absolute Mean Difference of Ego's Attribute of Same Ones of Alterns

Maximum Ego-Alters Difference Tianjin U.S.
in age (years) 31 51
in education (score) 4.5 5
in SES (SEI score) 28.91

References


