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Interlocking and Radial Friendship Nets:

A Formal Feature with Important Consequences*

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This is an early version of chapter 7 of my book " The Form and Substance of Urban Pluralism".

Edward O. Laumann

Intimate face-to-face interaction, whether in dyadic or larger group relationships, has long been recognized to be of crucial importance in the formation of an individual's basic personality or self-conception (cf. Brim, 1966: 3-49; McCall and Simmons, 1966), the development and maintenance of myriad attitudes toward the world,[1/] the determination and social control of "appropriate behavior" (cf. Merton and Kitt, 1950; Kemper, 1968), and the maintenance of "motivational commitment to participate" through the provision of opportunities for emotional tension-release and socio-emotional support (cf. Bales, 1958; Parsons and Bales, 1955; March and Simon, 1958). Indeed, the intimate face-to-face group is often held to form the critical "primary environment" by which an individual is related to the larger society (cf. Verba, 1961: 17-60; Scheuch, 1968). (See Chapter __ below for a fuller discussion of this point.) One might reasonably argue that much of the research enterprise in social psychology has been devoted to the task of analyzing the specific mechanisms by which these various functions of intimate interaction are achieved. A subsidiary concern has also received considerable attention (cf. Lazarsfeld and Merton, 1954; Broderick, 1956; Newcomb, 1961; Schacter, 1959; Chambliss, 1965): what are the processes by which

these small groups are formed and maintain themselves?

While social scientists have long recognized the significance of the face-to-face group for individual behavior, until recently urban sociologists have lamented the disappearance of the small intimate group as a sustaining social force. Louis Wirth, for example, in his classic essay (1938: 12, 20-21) on "Urbanism as a Way of Life," observed:

> ...This is essentially what is meant by saying that the city is characterized by secondary rather than primary contacts. The contacts of the city may indeed be face to face, but they are nevertheless impersonal, superficial, transitory, and segmental. The reserve, the indifference, and the blasé outlook which urbanites manifest in their relationships may thus be regarded as devices for immunizing themselves against the personal claims and expectations of others.
>
> The superficiality, the anonymity, and the transitory character of urban-social relations make intelligible, also, the sophistication and the rationality generally ascribed to city dwellers....
>
> The distinctive features of the urban mode of life have often been described sociologically as consisting of the substitution of secondary for primary contacts, the weakening of bonds of kinship, and the declining social significance of the family, the disappearance of the neighborhood, and the undermining of the traditional basis of social solidarity. All these phenomena can be substantially verified through objective indices....

In effect urban sociologists have tended to infer micro-structural characteristics of social networks based on inferences from large-scale changes in society as they shift from Gemeinschaft (or rural community) to Gesellschaft (or urban society).

But perhaps beginning with Bott's (1957) highly suggestive analysis of the closely knit and intensive kin and friend networks of some twenty working class families in London, a number of authors have contributed intensive case studies of the social networks of various populations living in fairly circumscribed urban neighborhoods.[2] One of the fundamental implications drawn from these studies has been to suggest that in heavily populated, even economically depressed sections of the city, residents enjoy much more vigorous and vital informal social networks than has hitherto been assumed, and these networks perform many of the same important social functions attributed to them by anthropologists studying nonurban societies.

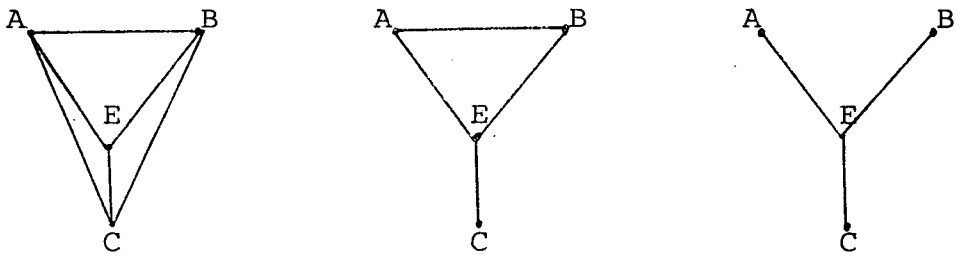
With the "rediscovery" of social networks in urban society and, admittedly, to some extent independent of this development, a number of writers have attempted to develop more formal, theoretical treatments of the properties of social networks as communication systems and as mechanisms by which individuals may be linked into the larger society.[3] While some important advances have been made in developing the theory of networks, one major constraint on such a venture, in my opinion, has been the relatively limited cross-sectional and comparative data available on urban populations in general. Case studies are excellent vehicles for developing interesting new working hypotheses, but they are of considerably more

limited value in identifying the general features of the phenomenon from the idiosyncratic features of the specific case. For example, it is important to know the extent to which closely knit networks are a special feature of settled working class populations of particular ethnic backgrounds (the groups most often studied in these case studies) and the extent to which they are commonly found throughout the social structure without regard to socioeconomic status or ethnicity. The findings reported below should provide us with more suitable "fixes" on the general features of informal urban networks at least for the white population.

Deriving from certain suggestions of George Simmel and others, the preceding chapter focussed our attention on the "formal" property of friendship networks with respect to their compositional homogeneity as it relates to a variety of demographic, social and attitudinal characteristics of our sample. In this chapter we shall be concerned with the extent to which the set of three friends and the respondent form an interrelated group. In gathering information on the respondent's three closest friends, we also determined which of the three "nominated" friends were good friends of one another (see Q24 and Q25, Appendix___). We were thus in a position to characterize the friendship network of our respondents as being radial or interlocking. A radial network is one in which ego (the main respondent) engages in three discrete

dyadic relations with his friends inasmuch as they are not friends of one another and do not have common interaction among themselves, while an interlocking network is one in which at least two of the friends are good friends of one another and have common interaction with ego. Diagramatically these networks may be represented as follows:

Figure 1. Types of Friendship Networks.



Completely Interlocking | Partially Interlocking | Radial

Legend: E = Ego or Main Respondent
A, B, C = Friends A, B, and C
——— = Friendship Link

Although there are many features of our inquiry that must be frankly exploratory, we do have a number of general expectations that will guide our analysis. In general, we expect an interlocking network to be composed of a set of individuals who are alike in a number of important social respects on the grounds that similarity of social attributes tends to imply similarity of social attitudes and personality characteristics. These similarities facilitate the development of common intimacy since an extensive, common set of

values, interests and concerns are likely to be shared (cf. Newcomb, 1961; Davis, 1963: 451-459; Rosow, 1957; Shils, 1951). A salient characteristic of an intimate face-to-face relationship, especially when voluntarily created and dissolved without institutional constraint as in marriage (friends in a sense continuously choose each other), is the minimization or at least strict regulation of heated conflict and dissension among the participants. Friendship may almost be defined as a consensual relationship. Similarity of religious or political views, for example, would tend to reduce the potential for conflicting attitudes and opinion.

Radial networks, on the other hand, may be formed on some more specialized basis (e.g., a common interest in chess, work activities, sports, etc.). There is little need for uniformity of opinions across the set of persons inasmuch as they do not interact with other than ego and he can tailor the interactional exchange to fit a particular dyadic relationship. Consequently, the alters can be considerably more differentiated or heterogeneous in important social respects although, of course, they do not have to be so differentiated.

People in radial networks are, moreover, likely to have a relatively lower affective involvement and commitment to their relations with alters because the set of

common interests and concerns is likely to be more severely circumscribed and limited by virtue of the greater likelihood of differing statuses comprising the networks. The exchange of intimate information about oneself is more problematic when there is uncertainty about the evaluative standards that may be employed by alter who is different from ego in important social respects. Persons of very different status attributes are likely to have differing standards for evaluating the same information (cf. Berelson, et al., 1954, on cross-pressures on vote intentions; Turner, 1965). Consequently, relations in radial structures are likely to be weaker in affective involvement and more functionally specific; while relations in interlocking networks are likely to be much more affective and functionally diffuse.[4/]

We may further expect that the successful maintenance of a radial network is inherently more difficult and complicated for the individual than the maintenance of an interlocking network because of the need to balance conflicting demands and expectations. Consequently, we expect that, holding educational attainment constant, persons in radial networks are likely to have greater intellectual capabilities than persons in interlocking networks.

Networks having high emotional involvement for the individual, a relatively monolithic set of expectations (due to the commonalities of the components), and high frequencies of contact should be more effective mechanisms of social influence on ego than those that are "disorganized" with respect to given social perspectives and relatively lacking in personal involvements. Consequently, we would expect attitudes of persons in interlocking networks to be more "decisive" than those of persons in radial networks.[5/] For example, persons in interlocking networks should be more likely to have explicit identifications with political parties than those in radial networks, given the expectation that interlocking networks are likely to be more politically homogeneous than radial networks. In short, interlocking networks should serve as more effective group anchors for opinions and attitudes than radial networks (cf. Kelley and Volkart, 1952; Festinger, 1950).

In a more speculative vein, we argue that radial networks are in some sense more flexible and, consequently, more adaptive to the demands of a modern industrial society that is undergoing continuous social change and in which many of its personnel are likely to be highly mobile, both geographically and socially. The formation of friendship ties on functionally more specific criteria may

facilitate an individual's adaptation to new social circumstances (cf. Eisenstadt, 1954; Blau, 1956; Whyte, 1956). Consequently, socially mobile persons should be more likely to have radial networks. Interlocking networks should be associated with more localistic and ascriptive orientations of ego and should be rooted in long-term neighborhood associations and ascriptive ties of kinship and common ethno-religious backgrounds (cf. Gans, 1962, description of intimate relations among working class Italo-Americans; Bott, 1957). To summarize our speculations in terms of the pattern variables, radial networks are more likely to be functionally specific, universalistic, affectively more neutral, and performance- or achievement-oriented; while interlocking networks are more likely to be functionally diffuse, particularistic, affective, and quality- or ascription-oriented.[6/]

The schematic diagram in Figure 2 attempts to summarize our model of the hypothesized interrelationships

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Insert Figure 2 about here

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among various features of an individual's personality and social position, structural characteristics of his non-kin-based "primary environment" and attitudes toward politics, ethnic identity and work that might be presumed

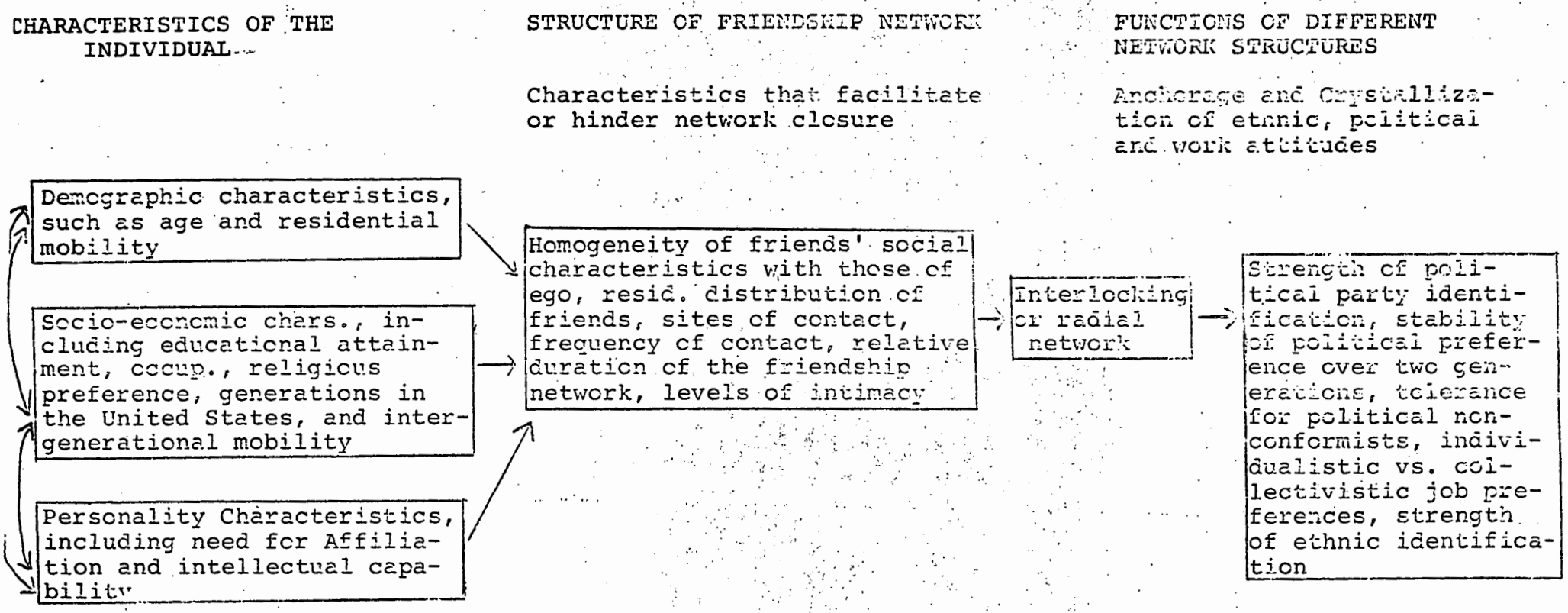

Figure 2. A Hypothetical Model for the Structural-Functional Analysis of Interlocking and Radial Networks.

to be especially responsive to his experiences in his current social environment. We might informally characterize the model as a "path diagram" (cf. Duncan, 1966b) as it follows the logic and conventions of path analysis whereby causal direction between two variables are indicated by single-headed arrows, double-headed arrows indicate the the model makes no assumptions about the causal ordering between variables so connected, and the variables are arranged along a dimension of temporal and causal priority from left to right. Strictly speaking, however, it is not a path diagram because a number of the variables and their interrelationships violate some of the basic assumptions underlying linear regression analysis and, consequently, we could not estimate the path coefficients for the model from the data we will be considering. Nevertheless, we believe the model will provide a useful theoretical overview for integrating the complex set of findings to be discussed below.

With these general considerations and expectations in mind, we shall attempt to answer three general questions:

(1) Are interlocking and radial networks differentially distributed in the population with respect to demographic, socioeconomic and personality characteristics of respondents?

(2) Do these networks differ systematically with respect to their composition (i.e., similarity or dissimilarity of social attributes of the participants), frequencies and sites of interaction and levels of intimacy?

(3) Do men involved in these networks differ with respect to selected characteristic attitudes?

There is a fundamental ambiguity in our data regarding the appropriate explanatory model linking the type of friendship network to other characteristics of the respondent. On the one hand, a "self-selectivity" model would suggest that the relationship between the type of network and another variable is mediated by certain perduring features of the personality of ego. That is, a man with certain characteristic ways of looking at the world creates a social network that supports his outlook. Indeed his associates may meet an important need for social validation of his points of view. On the other hand, a "structuralist" model would place primary emphasis on the characteristics of the current social environment of ego to which he reacts and by which his attitudes are formed and maintained. Macrostructural

processes, which place very sharp constraints and limitations on active individual choice in "creating" his social environment, are the principal determinants of these characteristics. For example, occupational activity or the social ecology of the neighborhood in which the individual lives willynilly involves him in physical contacts and social opportunities to meet prospective friends. His values, attitudes and habits become congruent with those expected in the group in which he has become involved. Each model obviously implies quite different causal processes. Yet our survey data provides little information to enable one to determine which model is more appropriate in a given case.

My theoretical predilections incline me toward the "structuralist" point of view where forces typically beyond the control of the individual are regarded as providing the determinative causal force rather than the converse notion where the individual essentially creates his primary environment to reflect his pre-existing needs and orientations. There is no doubt that the "real world" is probably a mixture of these two processes. But the schema portrayed in Figure 2 is reflective of the structuralist presumption; the reader is warned that the cross-sectional nature of the

data precludes an explicit test of this presumption. Of course, there is no reason why social forces must neatly parallel each other in any case. Contingencies making interlocking networks likely may be quite randomly distributed among socioeconomic status levels while the attractiveness of one type of network over another may vary more directly with personality characteristics, e.g., need for autonomy, and world views (see Chapter ___ below).

Before turning to the findings, it is useful to describe the distribution of types of networks for the entire sample. Table 1 indicates that 27 percent of the men are in completely interlocking networks (all three friends are good friends of one another) and another 42 percent have at least two friends who are good friends of one another. Only 31 percent are in completely radial networks. The entire analysis described below was first performed on these three types of networks: completely interlocking, partially interlocking, and radial (see Figure 1 above). Rarely were there any significant differences between completely and partially interlocking networks when compared to radial networks. Consequently, for the purposes of this chapter, the completely and partially interlocking networks will be treated as a single category.

Table 1. Types of Friendship Networks (Answers to Q25, "Of your three best friends, how many of them are good friends with one another?").

	Percent	
All three of them (completely interlocking)	27%	
AB, AC, or BC (partially interlocking)	40	69%
AB,AC; BA,BC; or CA,CB (partially interlocking)	2	
None of them (radial)	31	
Total	100%	

Total N	988
Not ascertained	12
No friends reported	13
Sample total	1,013

An Aside on Method: Multiple Classification Analysis

For much of the analysis which follows, we shall be regarding interlocking networks as a dichotomous dependent variable. We shall examine this variable's relationship to a number of demographic and social characteristics including religious preference, educational attainment, occupation, age and so on. Not only are these independent variables correlated among themselves (which poses questions about each variable's relationship to the dependent variable "net" of the effects of the other variables that may be correlated with the independent variable under examination), but also some of these variables are qualitative (e.g., religion) rather than continuously ordered

along some scale (e.g., family income). Consequently, multiple regression analysis, which assumes, among other things, the presence of linear relationships among the independent and dependent variables, is inappropriate.

The major analytical tool to be employed is the technique of multiple classification analysis (Hill, 1959; Pelz and Andrews, 1961; Morgan, et al., 1962; Andrews, 1963; Andrews, Morgan and Sonquist, 1967), a multivariate technique that can be used to examine the relationship between a predictor (independent) variable and a dependent variable or the relationships between each of a set of predictor variables and a dependent variable holding the effects of the remaining predictors constant. While operating in principle similar to analysis of variance and multiple regression techniques with respect to its additive assumptions (cf. Fennessy, 1968), its advantage over analysis of variance techniques is that the predictors can be correlated while, unlike regression techniques, predictor variables may be in a form as weak as the nominal level of measurement. The two major constraints of multiple classification analysis are that the dependent variable must be either a dichotomy or an interval scale, while no predictors should be so highly correlated that there is complete overlapping on any categories.

To determine the relationship between an independent and a dependent variable, the computer routine yields (in addition to the N and the per cent of the total) the mean value of the dependent variable for each category of each predictor variable, thus allowing one to see whether the relationship is positive, negative, or curvilinear. The program also yields an eta coefficient (or correlation ratio), the square of which indicates the proportion of the total variance in the dependent variable accounted for by the effect of each predictor variable considered by itself. When multiple predictors are used, the program yields an adjusted mean giving the mean value of the dependent variable for each category of the predictor, controlling for the effects of the remainder of the set of predictors.

Other output includes an adjusted multiple correlation coefficient, which, when squared, yields the proportion of variance in the dependent variable accounted for by all of the predictor variables considered simultaneously, the total sum of squares, the total explained sum of squares, and the residual sum of squares. From these statistics, a variety of F-tests can be computed, (cf., Andrews, Morgan, and Sonquist, 1967: 99-100, for computing formulae) to test the statistical significance

of various summary statistics, such as the correlation ratio and the net increment of an additional variable in the multivariate model.

The Findings

Turning to the first of the three general questions posed above, we can determine from Table 2 that only one of the seven demographic and social characteristics of

Table 2. Correlation Ratios (Etas) of Selected Demographic and Social Characteristics of Respondents and Their Involvement in an Interlocking or Radial Network.

Demographic and Social Characteristics#	Etas
Number of generations in the U.S. (paternal line) (2)	.005
Age (4)	.071
Broad religious preference (4)	.114**
Ethnic Group ( )	
Educational attainment (6)	.089
Occupation (7)	.061
Proportion of life spent in Detroit (5)	.088

#The number of categories employed in each predictor variable is reported in the parenthesis.

*p less than .05.
**p less than .01.

the respondents considered was significantly related to the type of network--namely, that of broad religious preference. Holding all the other predictor variables

"constant", 75 percent of the Catholics and 77 percent of the Jews were in interlocking networks while only 63 percent of the Protestants and 62 percent of the "other" religious category were in closely knit networks. Not only are there no zero order effects of the other variables on the type of network favored, but all of them together make no significant contribution to the explained sum of squares once the net effects of religious preference are taken into account.

This is a puzzling and important result as one would certainly expect that a man's ethnic group membership, relative socioeconomic standing and age would also be of some importance in determining the form of his friendship network. First, it is noteworthy that it is Catholic religious affiliation per se that affects the type of network and not the recency of arrival of the man's family (i.e., generations in the United States) or specific ethnic affiliation. Many descriptive studies of the behavior of working class members of various ethnic and racial groups (including those of Whyte (1943), Gans (1962), Liebow (1967), and Suttles (1968)) have stressed the intensive and closely knit nature of their interpersonal relationships. Surely we would have expected to find that second-generation Americans would be more likely to have interlocking networks since they

manifest stronger ethnic-based affiliations than later-generation Americans (see preceding chapter on the correlation of homogeneous ethnoreligious friendship groups and generations in the U. S.)

Secondly, we would have supposed that younger men in their twenties would have closer and more interconnected ties with friends than older men who are more involved with family and occupational responsibilities and presumably have less time to devote to activities with friends. (See Chapter___ above that reports younger men as having closer ties with friends than older men.) While the pattern of net effects on age does conform with this expectation, it is not strong enough to be statistically significant.

Thirdly, these same observers and others (e.g., Bott, 1957; Young and Willmott, 1957) would also suggest that working class men should be more likely to form more tightly knit networks than middle and upper middle class men because their friendships are more likely to be neighborhood based making interlocking networks more probable. But neither educational attainment nor occupation is related to the differential formation of interlocking and radial networks. That is, a strong majority of men, i.e., 69 percent, at every class level (however indexed) appear to form closely knit networks.

Finally, we would expect that the longer a man lived in one place, the more likely time alone would enable his intimate associates to come to know one another. Apparently the weaving of closely knit networks requires relatively little time to be completed. (An examination of the pattern of net effects of the proportion of life spent in Detroit does conform with this "opportunity" hypothesis, but is not of sufficient magnitude to achieve significance. Men of less than five years residence in Detroit do appear to be somewhat less likely to be in interlocking networks than men of longer residence.)

As a final observation on "background" characteristics, we should note our speculation that intergenerational occupational mobility should be associated with the type of friendship network on the grounds that substantial upward or downward movement in occupational status from father to son (the respondent) involves major changes in the nature of social contacts available to an individual and should lead to a more socially heterogeneous set of friendships, some of which were formed at the man's status of origin and some at his status of destination. The formation of an interlocking network should be more difficult for the socially mobile (cf. Eisenstadt, 1954; Blau, 1956). But we found that

there was simply no zero-order or higher order (with education and religion controlled) relationship between intergenerational mobility and the type of network.

In arguing that the successful maintenance of a radial network is inherently more difficult and complicated for the individual than the maintenance of an interlocking network because of the greater need to balance conflicting demands and expectations arising from a more heterogeneous set of friends, we concluded above that, net of educational differences, persons in radial networks are likely to have greater intellectual capabilities than persons in interlocking networks. We measured "intellectual capabilities" with the 13-item Similarities Subtest of the Wechsler Adult Intelligence Scale (cf. Q70, Appendix __),[7/] contrasting those who scored in the bottom third of the distribution with those in the average and above average thirds. The zero-order correlation ratio is .080 ($p < .02$) with men scoring in the bottom third being more likely to be in interlocking networks. While just failing to achieve statistical significance when educational and religious differences are taken into account, the pattern remains. For high school graduates alone, 85 percent of the men scoring in the lowest third were in interlocking networks while only 67 percent of the men in the upper two-thirds were in interlocking networks ($p < .001$).

We may now turn to the second general question: do these networks differ systematically with respect to their composition (i.e., similarity or dissimilarity of social attributes of the participants), frequencies and sites of interaction and levels of intimacy? Each of these network characteristics may be expected to affect the manner in which ego's friends influence his values and attitudes. Table 3 summarizes the zero-order correlation ratios.

Table 3. Correlations Ratios (Etas) of Selected Features of Friendship Networks and Their Interlocking or Radial Character.

Features of Friendship Networks#	Etas
Number of Friends Residing in the Neighborhood (3)	.070
Number of Persons Regarded as Friends (3)	.122**
Ethnoreligious Homogeneity (5)	.159**
Occupational Homogeneity (5)	.130**
Political Party Homogeneity (3)	.111**
Average Frequency of Interaction (3)	.194**
Number of Home-Based Interactions (4)	.203**
Number of Work-Based Interactions (4)	.162**
Average Level of Intimacy (5)	.123**
Average Duration of Friendship (5)	.129**

The number of categories employed in each predictor variable is reported in the parenthesis.
* p less than .05.
** p less than .01.

With the exception of the number of friends who live in the respondent's immediate neighborhood, each of our measures of different features of the friendship network are significantly related to whether or not the network is closely knit. Even when both religious and educational background characteristics are controlled, all of the significant zero-order relationships continue to be significant. Apparently propinquity per se does not facilitate the formation of closely knit networks; but the more friends entertained in the home or seen regularly at work, the more interlocking the networks are likely to be.[8/] It is especially noteworthy that interlocking networks are exceptionally likely to be composed of members who are similar to one another in ethnoreligious group memberships, occupational activities, and political party preferences while radial networks are likely to be more heterogeneous in these three respects. As we predicted in our introductory remarks, interlocking networks will be composed of people who are similar to one another in important social respects, while radial networks will be less likely to be socially homogeneous. Similarity on important social attributes among a set of persons should at least facilitate the formation of such networks.

Various subanalyses were performed to determine whether each type of compositional homogeneity contributed independently to the formation of interlocking networks, once religious and educational background differences and all the other measures of homogeneity were controlled. While ethnoreligious and political party homogeneity made significant net contributions to the explained sums of squares when all the other variables were taken into account, rather surprisingly, occupational homogeneity failed to make significant net contributions.

Interestingly enough, the more persons a man counts as his friends, that is, the more extensive his friendship net, the more likely he is himself in an interlocking net and the more likely he reports that his three friends are very close personal friends--that is, the more intensive is his reported friendship relations.[9] Men in radial networks, on the other hand, tend to report fewer friends in general and these are not regarded as especially close personal friends. Finally, as expected, we find that the greater the proportion of one's life one knows his three "best" friends, the greater the likelihood that they form an interlocking network.[10]

We can summarize the results to this point by

saying that interlocking networks are more likely to be homogeneous in the important social respects of ethnoreligious group membership, occupational activity, and political party preference, to involve greater feelings of intimacy and emotional involvement, to involve greater frequencies of contact, and to have, on the average, existed for a longer proportion of one's life than radial networks. These features, separately or in combination, would certainly seem to encourage a more functionally diffuse relationship among the men in closely knit networks. To distinguish among types of friendship bonds, we asked the following question:

Q59. Now, here's a list of several problems that might come up in a person's life. (Present card.) Some people would ordinarily want to discuss some of these with their friends; others would ordinarily prefer not to. In each, if this were a problem for you, would you ordinarily discuss it with your friends, or would you ordinarily rather not? What about

	Discuss	Not Discuss	Total Sample
a. What kind of new car to buy?	64.3%	35.7	100.0
b. Who to vote for President?	52.5	47.5	100.0
c. Troubles between you and your wife?	9.8	90.2	100.0
d. Difficulties at work with your boss?	43.9	56.1	100.0
e. A serious personal medical problem?	44.5	55.5	100.0
f. Whether to change to a better but risky new job?	66.2	33.8	100.0

The problems were selected to vary in degrees of intimacy and yet to be salient to people at all socioeconomic levels. The marginals reported suggest that we were somewhat successful in the first objective, and none of the items was found to be significantly correlated with socioeconomic status.

Perhaps most noteworthy here is the fact that less than two-thirds of the sample as a whole were willing to discuss with their "closest" friends such a matter as what new car to buy. And less than ten percent would discuss marital difficulties with their closest friends. The many ethnographic studies, based on relatively long-term participant observation, of friendship relations among selected subpopulations cited above at least give one the impression that friendship relations tend to be very intensive and, indeed, in many cases even become assimilated into the kinship networks through the extension of "fictive" kinship (e.g., making a close family friend a godparent or having the children call him "uncle"). While our data are by no means strictly comparable to studies such as these, I nevertheless believe it reasonable to conclude that adult friendship relations among white urban men tend, on the average, to be rather circumscribed affairs in which there are relatively restricted exchanges of intimate content.

In any event, we found rather unexpectedly that while a simple count of the number of topics discussed

with friends was not significantly related to the type of network, specific topics of an "intimate" character were more likely to be discussed in closely knit networks. These included discussions of difficulties with the boss, personal medical problems, marital difficulties and changing to a better but risky new job.

We may now turn to our third general question: do men involved in the two types of networks differ with respect to selected characteristic attitudes? In general, we can answer this question in the affirmative.

With regard to a man's subjective interest in his own nationality group,[11] we find that greater interest in one's own nationality group is related to having an interlocking network of friends. This is especially true for high school graduates and Catholics--for Protestants, there is no such relationship but then, Protestants, as a group, tend to have very weak identifications with their countries of origin.

Perhaps one of the most intriguing set of results arises from examining the relationship between type of network and a man's occupational preferences. If our reasoning regarding the nature of the differences between radial and interlocking networks is plausible,

then we could hypothesize that men in radial networks should prefer more individualistic, autonomous, and "risky" sorts of occupations than men in interlocking networks. This expectation is borne out by our finding that, controlling for religious and educational differences, men in radial networks are more likely to prefer, if they had a choice, being the owner of a small business over being an office worker (cf., Question Q57 in Appendix ___) and being a skilled mechanic over having a clerical job (cf. Question Q58 in Appendix ___). (Incidentally, contrary to what one might expect reasoning from recent discussions of Weber's hypothesis concerning the Protestant Ethic and the spirit of capitalism (e.g., Lenski, 1961), there is no difference between Protestants and Catholics in their responses to these two questions.)

Our introductory discussion also suggested that we should expect interlocking networks to serve as more effective social anchors for an individual's attitudes, leading to more well crystallized attitudes on various issues. This hypothesis is supported by our finding that men in interlocking networks are much more likely to have definite preferences for either the Republican or Democratic party, while men in radial networks are much more likely to be politically independent ($p < .02$).

In addition to asking about the respondent's party preference, we asked about the party preference of his father. We divided the respondents into those who had the same party preference as their fathers and those who had switched preferences (including switching to "independent"). While 68 percent of the men in interlocking networks had the same party preference as their father's, only 57 percent of the men in radial networks had the same party affiliation as their fathers ($p.<.001$). These zero order effects persist even when educational and religious differences are taken into account and also when intergenerational occupational mobility is controlled.

Finally, if interlocking networks are especially effective group anchors for attitudes and especially likely to facilitate the emergence of crystallized attitudes and to support and maintain them, then we could expect men in interlocking networks to be more intolerant toward political extremists ("close minded") while men in radial networks should be more tolerant toward political extremists ("open minded"). This expectation is supported in the results reported in Table 4.

Table 4. Tolerance for Political Extremists and Type of Friendship Networks.

	Tolerance for Political Extremists[a]			
Total Sample	Intolerant Towards Both	Tolerant to Klan, Intolerant to Comm.	Tolerant to Both	Total
Interlocking	44%	23%	33%	100% (363)
Radial	30	30	40	100% (148)

x^2 = 7.92, 2 d.f., p .02, Total N = 511[b]

a. Briefly, we measured "tolerance for political extremists" on the basis of ten items. Five items (cf. Q47 and Q61 in Appendix ___) were selected from Samuel Stouffer's (1955) unidimensional scale, "Willingness to Tolerate Non-Conformists," relating to the willingness to extend basic civil liberties to Communists. We added five exactly parallel items dealing with the KuKluxKlan. In order for a man to score high on open-mindedness, he had to answer all ten items (for both Communists and Klansmen) in a tolerant direction, e.g., be willing to allow an admitted Communist (and a KuKluxKlansman) to make a public speech in his community. A "close-minded" individual could be intolerant either toward both Communists and Klansmen or toward one and not the other. See also Rokeach (1960). This measure of open-closed mindedness is modestly correlated (+.30) with a subset of three items drawn from the 40-item Rokeach Dogmatism Scale. Men scoring high on our 3-item Dogmatism Scale were also disproportionately likely to be in interlocking networks.

b. The reduced size of the total sample N to 511 results from the deletion of cases who had intermediate scores on the measure of open-closed mindedness. See Laumann and Schuman (1967) for the rationale for this procedure.

To summarize these results, we have presented evidence that men in interlocking networks are likely to manifest greater subjective interest in their nationality group, to prefer relatively secure "bureaucratic" white-collar occupations over occupations demanding greater risk, self-autonomy, and "work". And finally, they are likely to have more intergenerationally stable and crystallized political preferences and greater intolerance for extremist minorities of the left and right.

It is perhaps worth stressing the point that the impact of participation in interlocking networks is not so much on the specific content or direction of attitudes--for example, leading men to favor the Democratic party over the Republican party--but rather, the impact is in terms of the degree of commitment to given views or to their stability over time. Interlocking networks facilitate the possibility of given views resonating through the network and receiving more frequent mutual reinforcement from significant others.

Discussion

Despite the fact that we have presented wide-ranging evidence that the type of network is differentially associated with many demographic and socio-economic characteristics and attitudes of the respondents, it is, of course, still true that, while statistically significant, none of the relationships are of exceptional strength in the sense of manifesting high correlational ratios. Perhaps, however, it is to be expected that correlations would be low in an area of such empirical complexity. Given the qualifications that must be introduced when discussing given results, it is still worth noting that one can make sense of the overall pattern of results in terms of our introductory comments suggesting that the comparison between interlocking and radial networks will tend to parallel the classic comparisons between primary and secondary groups, Gemeinschaft and Gesellschaft, mechanical and organic solidarity, and the four pattern variables. This overarching conceptualization of the differences between interlocking and radial networks does, we feel, reduce considerably the need for proposing a number of ad hoc explanations of the results.

In view of the multiplicity of significant relationships reported, there is considerable theoretical and

empirical promise in pursuing a more detailed examination of how these networks come to be formed and how they function once in existence. Since a substantial majority of urban white men at every class level are involved in interlocking networks, one might speculate that this has considerable functional significance, among other things, for the relative political stability of the system. From a comparative point of view, it would be especially interesting to determine whether this proportion varies in systematic ways from city to city, society to society or among racial groups; and, further, if variable, whether the structure of people's primary environments could be linked to characteristics of the relevant political systems.

FOOTNOTES

1. Festinger (1950:272-273) argues, for example, that when opinions, attitudes, or beliefs have no firm anchorage in physical reality, a person seeks a basis for the subjective validity of his opinions in his social reality, i.e., in the fact that they are shared by members of some reference group. "An opinion, a belief, an attitude is 'correct,' 'valid,' and 'proper' to the extent that it is anchored in a group of people with similar beliefs, opinions, and attitudes." For a recent formalization of these propositions, see Davis (1963).

2. The more recent contributions to this growing literature are Young and Willmott's (1957) study of the working class London suburbs of Bethnal Green and Greenleigh; Gans' (1962) study of Italo-Americans in the predominantly working class West End of Boston; Liebow's (1967, especially 161-207) study of Negro streetcorner men in Washington, D. C.; Bert Adams' (1967a) study of kinship in Greensboro, North Carolina; and Suttles' (1968) study of the social structure of a slum area in Chicago.

3. For a selected bibliography, see Rapoport, 1953, 1963; Katz, 1966; Henry, 1958; Davis, 1963; Adams, 1966; Granovetter, 1969; Milgrim, 196 .

4. We are using the terms, functional specificity-diffuseness, affectivity, etc., essentially as Talcott Parsons (1951) defines them in his discussion of the pattern variables.

5. Following a similar line of argument Brim (1966:7) observes:

> "....Personality processes have been analyzed with concepts which do not articulate with analyses of the outside social structure, and what is needed are personality concepts which permit easy and direct movement from characteristics of the social organization to its consequences for personality. For example, if a man lives in a highly differentiated complex social structure, one can describe the effects on his personality using the concept of heterogeneity of his significant reference figures. Similarly, where he is involved with persons who make conflicting and unresolvable role demands, the concept of identity confusion permits one to move directly from the existence of conflict in the objective social order to its consequences

for personality."

6. In the Division of Labor, Emile Durkheim distinguished between two fundamental ways in which a social structure may be integrated: mechanical and organic solidarity. In a mechanically integrated structure (the earlier, more "primitive" type), integration is based on the fact that all the units are fundamentally alike; while in an organically integrated structure (i.e., modern industrial society), integration is based on the interdependence of the functionally differentiated units. Of course, Toennies' distinction between Gemeinschaft and Gesellschaft parallels this distinction, while Talcott Parsons' well-known pattern variables are a decomposition into their essential elements of these global dichotomies. Of course, the comparison of primary and secondary groups is also similar to the above distinctions. Our characterization of interlocking and radial networks is derived from the notion that interlocking networks more closely approximate the classic conceptions of the primary group, while radial networks more closely approximate the classic conceptions of the secondary group. (See also Davis, 1963:444.)

7. The employment of this particular subtest has several advantages. It is relatively simple, short, reliable and non-threatening to administer as part of a basic survey interview situation. It correlates highly--.81--with the total Wechsler Scale (cf. Wechsler, 1955), according to basic standardization information and has a split-half reliability of .85, thus providing about as good a brief measure as one can obtain of what psychologists consider functional intelligence in America today.

8. But for the ten percent of the sample who reported that they only met all three or at least two of their friends in eating, drinking and/or sports establishments and <u>not</u> in their homes, 93 percent of this group had interlocking networks. This group is disproportionately drawn from the working class.

9. Another piece of evidence supporting the notion that men in interlocking networks are likely to form more intensive and affective relations with their friends is the correlation ratio of .113 ($p < .01$) between a personality measure of need Affiliation and interlocking or radial networks. Men high on need Affiliation (measured

by summing responses to the following questions: S16, S19, S21, and S24 (see Appendix ___)) are especially likely to be in interlocking networks.

10. We asked the respondent to estimate how many years he knew each friend. We then averaged the estimates for the three friends and divided by the respondent's age so that we have a measure of the average proportion of the respondent's life he has known his three "best" friends.