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Work/Life Segmentation and Human Service Professionals:

A Social Network Approach

A Dissertation Presented

By

George T. Brennan

Submitted to the Graduate School of the
University of Massachusetts in partial fulfillment
of the requirements for the degree of

DOCTOR OF PHILOSOPHY

September, 1977

Department of Psychology

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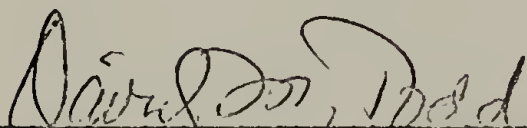
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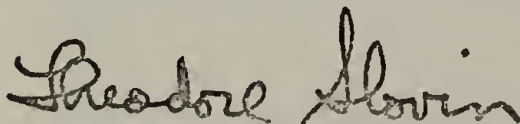
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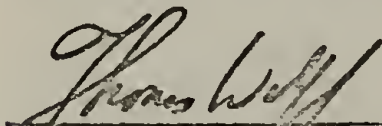
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ABSTRACT

WORK/LIFE SEGMENTATION AND HUMAN SERVICE
PROFESSIONALS: A SOCIAL NETWORK APPROACH

(September, 1977)

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Work/life segmentation is conceptualized as the temporal, physical, and social separation of work from family and leisure activities and relationships. It is assumed that this segmentation may have a profound impact on personal well-being.

In sociology, research on the relationship between work and nonwork has indicated that various occupational groups differ in patterns of work/life interaction. In particular, professionals are usually more work-centered, with work dominating most of their daily activities and relationships. Human service professionals were chosen as the focus for this study, not only because of the potential impact of work/life segmentation on their own lives, but also because of their potential impact on the lives of other people.

A second realm of sociological inquiry, social network research, is also reviewed and used to operationalize the relationship dimension of work/life segmentation, i.e., that different kinds of interpersonal relationships are found in work and nonwork settings. This study develops measures of work/life patterns using social network analysis focusing on a diverse group of university human service professionals.

Three hypotheses are tested: (1) Human service professionals spend

most of their time working and separate work and nonwork activities by setting; (2) Social network analysis can be used to identify distinct sub-networks of work, family, and friendship relations; and (3) These three sub-networks can be shown to be quantitatively different "types" of social networks.

Analysis of the results indicated support for all three hypotheses. In addition to the physical and temporal separation of activities by setting, interpersonal relationships were found to be divided into sub-networks by functional distinctions of role and content: nurturance was primarily associated with nonwork (family and friends) and collaboration was associated only with work relationships. Statistical analysis of the social network data also showed greater interconnectedness within sub-networks than between them.

Finally, the social network approach is discussed as a highly useful tool for further research, especially for community psychology in its study of the impact of social processes on individual functioning.

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Introduction

It is widely agreed that work is an important facet of human life. Sociologists have dealt at length with historical changes in the function and meaning of work (Bryant, 1972; Clayre, 1974; Dubin, 1976a; Simon, 1971) and demonstrated how members of various occupations (Salaman, 1974) and social classes (Dubin, 1956; Orzáck, 1959) differ in their attitudes and beliefs about work. As society moved from an agrarian to an industrial order, work became separated temporally, physically, and socially from family life (Berger, 1964; Dubin, 1976b) and from leisure activities (Parker, 1971; Parker and Smith, 1976; Smigel, 1963). Berger (1964) described this separation, quite simply, as the separation of "work" from "life":

The typical and statistically normal state of affairs in an industrial society is that people do not work where they carry on their private lives. The two spheres are geographically and socially separate. And since it is in the latter that people typically and normally locate their essential identities, one can say even more simply that they do not live where they work. (p. 217)

For an individual, this separation may be called work/life segmentation, i.e., the temporal, physical, and social separation of work, family, and leisure activities and relationships. Berger, Keniston (1965), and others (Parker, 1971; Slater, 1974) have suggested that such segmentation may represent aspects of current social structure which have profound implications for personal well-being. Accordingly, the conceptualization

and study of this issue should be of critical concern to community psychology. The purpose of this paper is to review and develop such a conceptualization, emphasizing social network theory, and to explore patterns of work/life interaction empirically in a sample of university-based human service professionals. This study is intended to provide the basis for further research on the impact of different work/life patterns on personal functioning and well-being.

Each of the major life segments - work, family, leisure - has been singled out for considerable analytic attention¹, but only recently have relationships between them been considered. These studies usually focus on the relationship between two segments, e.g., work and family (Furstenberg, 1974; Rainwater, 1974), work and leisure (Parker, 1971; Smigel, 1963) or, (to some degree) family and leisure (Bott, 1957, pp. 52-54; Farber, 1964, pp. 235, 257; Faunce, 1963, pp. 94-95). Broader analyses have typically dichotomized the individual's social world into two spheres: public-private (e.g., Berger, et al, 1973) or merely into work and "nonwork" (usually a combination of leisure and family; cf., Braude, 1975; Salaman, 1974).

Studies of work/nonwork patterns have used several levels of analysis: societal, institutional, and individual. While the implications of work/nonwork interaction for society and various institutions² are clearly related to the present study, the focus here is more directly on patterns of work and nonwork as they affect the functioning and experience of the individual.

Studies in this area also focus on a variety of dimensions which distinguish work from nonwork spheres of life. In addition to the obvious

separation by physical setting, it is also possible to identify functional distinctions, such as Goodman and Goodman's (1960) economic characterization of the separation of "means of livelihood from ways of life". More specifically, it is possible to identify a variety of "components of life space" by designating "activities" or "ways of spending time" such as the following: work (i.e. earning a living), work-related obligations (i.e. travel or commuting), physiological needs (e.g. eating or sleeping), nonwork obligations (e.g. family or community duties), and leisure (i.e. "free time") (Parker, 1971). Much research has operationalized work and nonwork in terms of these dimensions of physical setting, function and activities. Of particular interest in the present study, however, was a fourth dimension which has received less attention, the dimension of interpersonal relationships as they reflect the integration or separation of life spheres. This focus reflects an assumption that the pattern of relationships or "intermediate associations" is among the most powerful mediators between larger social structure and individual functioning and experience (Brennan, 1976; Nisbet, 1953). The remaining part of this introduction addresses two areas of research which are central to the rationale for this study. The first focuses on variations in work/life patterns among different occupational groups. It is in this area that the most direct attention has been given to relationships, and that the rationale for studying professionals is found. The second area is the concept of social network as a means of developing a more powerful and systematic understanding and operationalization of the relationship aspects of work/life interaction.

Occupational Differences in Work/Life Patterns

Numerous sociological studies have considered social characteristics of different social classes and occupational groups. In particular, the work literature has focused on the work/life patterns of industrial or manual workers and white-collar, professional workers (Dubin, 1976b). Blum (1964) hypothesized that "the working classes are less likely to become involved in primary relationships with co-workers and others, because such relationships serve as potential sources of normative conflict with their social networks" (p. 212). In support of this hypothesis, Dubin et al (1976) reviewed two decades of research on the work attachments of industrial workers, concluding that in spite of a strong identification with formal and technical aspects of work, few workers consider the development of close personal relationships an important part of their work lives. In short, "the work place is not congenial to the development of intimate and primary social relationships" (Dubin et al, 1976, p. 282).

In contrast to Dubin's findings, other studies (Bott, 1956; Gerstl, 1961; Orzack, 1959; Salaman, 1974) have shown that members of professional occupations (e.g., nurses, doctors, professors) do tend to form personal relationships with their co-workers, and in so doing embody a kind of "work/life integration".³ An extreme form of this integration of activities and relationships is illustrated in Salaman's (1974) fascinating study of "occupational communities", i.e., networks of people who share an occupation and whose life styles are characterized by the "remarkable intermingling of work and nonwork activities, relationships, values, interests, and identities" (p. 127). Salaman described such "communities" in two occupational groups - one professional (architects) and one non-

professional (railwaymen). However, the non-professionals lived in the same suburban area, and their community was at least partially based on geographic proximity. Comparatively, the professionals were widely distributed geographically and based their community mainly on the shared norms, values, and work/life orientations of its members (Salaman, 1974, p. 113).

Parker and Smith (1976) described three different patterns of connecting work and leisure: the "extension" pattern, in which work is the central life interest, and work and leisure activities are similar and integrated; the "opposition" pattern, in which there is an "intentional dissimilarity of work and leisure and a strong demarcation between the two spheres" (p. 52); and the "neutrality" pattern, in which non-involvement and passivity toward work makes it likely that nonwork will be the central life interest. Parker and Smith suggested occupational differences based on these three patterns:

Certain occupations, because of the work itself and working conditions involved and because of the impact they make on the participants, are associated with each of the three patterns. Social workers (especially the residential kind), successful businessmen (perhaps they are so successful because they have little or no time for leisure), doctors, teachers, and craft workers often exhibit the extension pattern. Unskilled manual workers, assembly-line workers, miners, fishermen, oil-rig workers, tunnelers (the last two being "extreme" occupations both in the sense of high pay and physical working conditions) are typical of the opposition pattern. Routine

clerical and manual workers, and minor professionals other than social workers probably contain more than their fair share of those with the neutrality pattern (1976, p. 53).

Professionals tend to fall into the extension pattern: they tend to work much longer hours/week (Wilensky, 1961; Laumann, 1973), they have autonomy in the work situation; they enjoy extensive use of their skills and abilities in their work; they have a high level of moral involvement (Etzioni, 1961) or commitment; they tend to have colleagues as close friends; and they usually either find little time for leisure, or combine work and leisure activities and relationships. Thus, there are distinct differences between professionals and industrial workers on both patterns of work/life segmentation and central life interests. Recent trends in occupational preferences (Wilensky, 1961) indicate a rise in the proportion of professionals to other occupations in the work force, leading some to say that we are becoming a "professional society" (Lynn, 1965). Also, as noted by Abrahamson (1967) and Cherniss et al (1976), there is an accompanying trend towards bureaucratization in the professions, as more and more professionals move from individual practice to institutional settings. In such settings, professionals usually encounter the difficulties of bureaucratic organization: increased requirements for accountability, complex hierarchies, and potential role conflicts. Thus, professionals may find this personal commitment to human service in conflict with the formalized, "dehumanizing" bureaucratic environment. Cherniss et al (1976) suggested that this situation may produce significant job stress for the human service professional, which in turn might lead to poorer services to clients. Stress and

dissatisfaction associated with work might also lead the human service professional to develop work/life patterns of opposition or neutrality instead of the work-oriented extension pattern.

Because of these issues, professionals are a particularly interesting group in which to study work/life segmentation and its impact on individual functioning. A further rationale for looking at these issues among human service professionals is the possibility that they may have a significant effect on the conditions and quality of helping they provide to large numbers of people.

Social Networks

While the research cited above indicates the value of looking at interpersonal aspects of work/life patterns, the ways in which such relationships have been conceptualized and operationalized are quite limited. This area of study has not yet benefited from the more systematic approach to relationships represented by the concept of social network, an approach which has gained considerable popularity in the past two decades in sociology (Bott, 1957; Laumann, 1973), social anthropology (Mitchell, 1969b, 1974; Whitten and Wolfe, 1974), clinical psychology (Erickson, 1975; Speck & Attneave, 1973), and community psychology (Sarason, 1976; Sarason et al, 1977).⁴ Generally, the social network concept refers to a specified number of persons and the relationship between them. How this set of relationships is defined varies widely throughout the social network literature, including studies of the pattern of relationships of married couples (Bott, 1957), intergroup and interorganizational networks (Sarason et al, 1977), and the patterns of individual and group relationships in an entire city or community

(Craven & Wellman, 1973; Granovetter, 1976).⁵

One specific type of social network that has received considerable attention in the literature is the "personal network" (Erickson, 1975), i.e., a single individual's set of social relationships, including a number of significant others (friends, family, co-workers), their relationships with the focal person, and their relationships with each other.⁶ The "personal network" is the focus of the present study.

Social network analysis has focused on several variables, some related to the form or pattern of relationships in the network, i.e., its "structure", and others referring to specific characteristics of the relationships themselves, i.e., "interactional" dimensions. The two major structural variables are size, i.e., the number of people in a given network, and density, i.e., the number of relationships that exist between them (their "interconnectedness"). Interactional variables refer to the content and intensity of network relationships. Thus, any given relationship can be described in terms of where it is based (home, work, or other setting), what formal or informal roles are involved (e.g., kin, friend, co-worker), how much the relationship includes collaboration (a task-oriented focus) and nurturance (a socio-emotional focus), and its relative intensity (i.e., amount of intimacy, closeness, or personal importance). Finally, relationships have been described as uniplex, i.e., based on a single content dimension, or multiplex, i.e., involving a range of relational qualities and behavior.

Shulman (1976) and Sarason et al (1977), among others, have delineated the considerable advantages of the social network approach as both a conceptual and analytical tool. According to Shulman, the social network

provides "a more complete view of the social environment of the individual, since it can encompass relationships with people drawn from any number of structural categories such as kin, neighbors, or co-workers" (1976, p. 309). Sarason et al pointed out that this unique characteristic of networks provides "a concrete means for the analysis of the influence of the [social] environment, via network structure, on the individual", and concluded that "the mapping and study of total networks of individuals... provide(s) a potential means for developing a wholistic view of the interrelationships of diverse segments of the interpersonal...environment that traditionally are studied in isolation" (1977, p. 153).

As such, the social network concept should be a highly useful way of operationalizing the relationship dimension of work/life segmentation. Surprisingly, an extensive literature search turned up no studies in the work/nonwork literature using the social network approach to analyze segmentation. Indeed, social relationships as a dimension of work/nonwork differences was used only in the relatively few studies cited above. Conversely, in the social network literature, some studies have begun to focus on "clusters" or sub-groups within social networks (Barnes, 1969; Cubitt, 1973; Kapferer, 1973; Niemeijer, 1973). A cluster is "a set of persons whose links with one another are comparatively dense [i.e., highly interconnected]" (Barnes, 1969, p. 64) in relation to links with persons outside the cluster (Niemeijer, 1973). In addition to this density criteria, Thoden Van Velzen (1973) defined a cluster as a sub-group based on a specific type of social relationship (e.g., ethnic ties or religious affiliations). Niemeijer (1973) described operational techniques for identifying network clusters, while Kapferer (1973) and

Cubitt (1973) reported network data in which separate clusters of co-workers, friends, and kin were identified. Cubitt's study represents the only reported attempt to compare network characteristics of different clusters. Her results indicated that kin and work clusters are significantly denser than friendship clusters.

In spite of the apparent utility of applying network techniques to work/nonwork research, few studies have done so. Indeed, my review of both sets of literature confirms Sarason's comment (quoted above) about traditionally isolated analyses of the interpersonal environment. In the work/nonwork literature, researchers have just begun to look at the interaction of life-space components; studies usually are work-centered, i.e., they focus primarily on relationships at work or the impact of work on family and leisure; and few studies focus on interpersonal relationships (these usually concern only work relationships). In the social network literature, researchers have focused mainly on the family (Bott, 1957; Sussman, 1959), extended kinship relations (Adams, 1967; Litwak & Figueiria, 1970), neighboring (Keller, 1968), and friendships (Paine, 1969), usually including co-workers in the latter category, (e.g., Shulman, 1976; Erickson, 1975; Tolsdorf, 1976; McKinlay, 1973).

Only a few writers (Axelrod, 1956; Blum, 1964; Wellman, 1976) have mentioned co-workers as an important segment of personal networks. Blum's (1964) largely conceptual paper has already been cited above and represents the only attempt to link the work literature with the social network approach. Axelrod (1956) asked a cross-sample of urbanites to note who they interact with most often (at least once a week). The results,

broken down by kind of relationship, were as follows: relatives, 49%; friends, 28%; neighbors, 29%; and co-workers, 12%. Axelrod's data also indicated that people with higher status, income, and education have a higher percentage of interaction with co-workers and friends. Wellman (1976) reported similar data for personal networks (size = 6) of urbanites in which 50.2% of those named as being intimates were kin, 38% were friends, 6.3% were neighbors, and 5.6% were co-workers. (Wellman also noted that six-person networks composed only of kin had higher density than others.) Also, strength of relationship (calculated by averaging rankings of "closeness") was higher for primary kin relationships than for either friends or co-workers.

Aside from the studies cited earlier (Cubitt, 1973; Niemeijer, 1973), these are the only studies in the network literature which include co-workers as a distinct category of a person's range of social relationships.⁷ Most network studies use either individual case studies or larger, stratified, random samples as data sources with a restricted network size (usually three or six). According to the work literature cited above, one would expect to find work relationships to be much more important to certain classes and occupational groups. For example, in answering the question "Who are the most important people in your life?", professionals would be more likely than non-professionals to include a number of co-workers in their network list. In widely-based samples with restricted network sizes, few people would be likely to list co-workers as a primary network member. This would at least partially explain the lack of emphasis on co-workers in network studies.

However, as cited above, the network literature has at least

conceptually identified segmentation (or "clustering") as an important network dimension which can include co-workers as a significant segment. The urban network studies of Chrisman (1970) and Craven & Wellman (1973) are most relevant to the present study in their descriptions of different types of sub-networks and their implications for the focal person. Craven & Wellman (1973) noted that urbanites (in Toronto) seem to develop several personal networks such that they experience "a negative and 'fragmenting' interactional context" (p. 680). Each urbanite must form her/his own unique "personal community" based on diverse network relationships from diverse settings, and thus becomes a member of "multiple communities".⁸ Craven and Wellman describe these networks as constantly evolving and shifting. Clusters (or "new communities") are formed as a new set of relationships (usually uniplex to begin with) are developed in or from a particular setting. Then, over time, the uniplex relationships become multiplex, the network becomes more dense, and connections with other networks become less dense (p. 75).

More to the point, Chrisman (1970) called attention to how an urbanite forms his/her network by drawing on social contacts in different institutional settings in which one "recruits" and "activates" network relationships. Thus, interpersonal relationships at work may form a network "segmented from other areas of the urban dweller's life; that is, there may be little interactional overlap between members of a network activated in a single situation and people whom the city resident sees in other aspects of life" (p. 250). In addition, Chrisman referred to the "instrumental nature of the content of such network relations", i.e., they are "more oriented towards pragmatic ends" and are "specific to the

role relationship" (p. 250). Chrisman also identified "another type" of network based primarily on "affective ties" (i.e., emotional attachments) such as kinship and friendship systems.

While the work network may be segmented from the affective ties of kinship and friendship, the latter are more likely to "overlap" to some extent (Adams, 1967; McKinlay, 1973) due to common relationship content (affective ties) and more frequent social interaction in common settings. Similarly, Gutkind (1966) described two types of sub-networks and their associated functions. "Kin-based" networks are formed mainly in neighborhood and family settings, are more close-knit, and function to help geographically mobile persons adjust to new social environments, while "association based" networks tend to be more "loose-knit", are formed through contacts in more formal organizational and institutional settings, are based mainly on economic and political ties, and provide opportunities for economic and educational mobility.

In short, using the cluster definition, three distinct segments of a personal network can usually be identified: work, family, and friendship networks. The present study was an attempt to identify these three sub-networks in the personal networks of human service professionals in an institutional context and to examine differences between sub-networks on several variables: size, density, collaboration, nurturance, intensity, and multiplexity.

Statement of the Problem and Hypotheses

In general, the purpose of this study was to develop measures of work/life patterns, especially focusing on social network concepts, and to explore these patterns among a diverse group of university human

service professionals. It was assumed that social network measures would facilitate a systematic and complex consideration of relationship aspects of work/nonwork interaction and that human service professionals should be a socially significant and conceptually interesting group for such study. While the development of network measures was of major concern, substantive questions were focused around the following hypotheses:

1. Human service professionals spend most of their waking hours engaged in work-related activities and segregate their work and nonwork activities by setting.
2. In the personal network of professionals, three distinct clusters or sub-networks of work, family, and friendship relationships can be identified as having greater density within than between clusters.
3. Work, family, and friendship sub-networks represent distinctively different "types" of networks, i.e., they are quantitatively different on both structural and interactional network variables (e.g., size, multiplexity, intensity, collaboration, and nurturance).

Method

Setting

The study was conducted at the University of Massachusetts at Amherst, a campus of 25,000 students located in a semi-rural area of western Massachusetts. Participants were drawn from five campus agencies which differed in organizational structure, goals, type of service, and clientele. Briefly, the agencies were: a traditionally-oriented student mental health service; a combination training/service center in the clinical psychology department; a student counseling center; a woman's

counseling center; and a voluntary organization of study affairs staff members.

Participants

Each agency had 15 to 20 staff members, making the pool of participants approximately 90. Of these, 40 volunteered to participate in this study. While no effort was made to select a representative group, the participant group did match fairly closely with the larger population on several demographic variables. Of the final group, 60% were female; the average age was 32.8 (ranging from 23 to 50); average tenure (time on the job) was 3.8 years; 56% were full-time staff professionals; and 44% were part-time staff.⁹

Procedure

Data for the study were collected at each agency during a two-hour staff meeting at which work/life segmentation and social network concepts were presented, participants completed the work/life questionnaire (see below and Appendix 1), and a discussion was held on the relevance of network approaches to the participant's professional work and life.¹⁰ This procedure was chosen for several reasons: (a) the group format made the data-collection easier; (b) our presence during the questionnaire completion helped standardize both conceptual definitions and procedural directions; and (c) collecting data in the context of a staff workshop reflected an assumption that the process of research should be as useful to the participants as the outcome is to the researchers.

Measures

Data were collected using a six-page "work/life questionnaire" (see Appendix 1) consisting of two parts: an activities/setting matrix and a

social network listing. In the first part, participants merely estimated the number of hours per week (excluding eating and sleeping) spent on work and nonwork activities in both work and nonwork settings (a two-by-two matrix). In each case, "work" was defined as involvement in the primary professional role (e.g., clinical psychologist) at the primary work setting (e.g., at the university), and "nonwork" referred to all other activities (e.g., socializing, family interaction, recreation) in settings other than the primary work setting.

The social network section was completed in two steps. First, participants were asked to list (on a "networksheet") "people who are in some important way present in your [the participant's] life", i.e., people with whom one has an ongoing interactive relationship (excluding people one used to know or to whom one is not known).¹¹ To facilitate this listing, the "networksheet" included space for several typical network categories: co-worker (i.e., colleagues in the primary work setting), primary friends, family/kin, and "other".¹² On a second sheet, participants were asked to list the most important (limited to approximately thirty, see below) of their network members, noting each person's name or initial, their relationship(s) to the participant, their relationship to others on the list (who knows who?)¹³, and ratings of how much each relationship involved work-related "collaboration" and/or social-emotional "nurturance".

These parts of the questionnaire were designed to operationalize several key social network dimensions. Barnes (1972) and Mitchell (1974) provide the most complete descriptions of the range of variables typically used in social network analysis. They divide crucial dimensions into two categories: structural (or "morphological") variables relating to the

"shape of the individual's network" (Mitchell, 1969b, p. 2); and interactional variables, which refer to specific characteristics of the interpersonal relationships involved. In the present study, structural variables were: size, density, and clusters, and the interactional variables were: content and intensity.¹⁴

Size. In most network studies, size has been either ignored or restricted. As Barnes (1972) noted, this is usually because of methodological difficulties with large (over 20) networks, both with regard to data collection and data analysis. The two major research programs on networks in North America have consistently used data with restricted network sizes: Laumann (1973) used the focal person's three best friends, while Wellman, Craven and their colleagues at the University of Toronto restricted network size to the person's six closest friends (Craven & Wellman, 1973; Shulman, 1976; Wellman, 1976; Wellman et al, 1973). While five or six intimates may well represent the primary zone of relationships (and hence the most significant zone for some network analyses), network analysts cannot draw such a conclusion until after careful analyses of networks of varying size.¹⁵ In addition, the present study required a larger network size in order to look at patterns of relationship in several spheres of life and so that sub-networks or clusters might be identified.

In addition to the need for a larger size, the general guideline of thirty was decided on for several reasons. Mitchell (1969b), while noting the lack (at that time) of empirical evidence, suggested 30 as the probable "limit of people with whom an individual might be in direct and regular contact" (p. 20). The few studies reporting size data have

initially confirmed Mitchell's intuition: Cubitt (1973) reported data on 35 networks ranging in size from 18 to 47, and Tolsdorf (1976) reported data on 20 networks with an average size of 33.8. Finally, in a pilot study of the questionnaire used in the present study, a procedure with no restrictions on size resulted in networks of up to 80 people, but interaction ratings indicated that moderate to high intensity relations rarely exceeded 25 in number.

Density. Put most simply, density refers to the extent of interconnectedness of the network, i.e., "the extent to which people who all know one person also happen to know one another" (Mitchell, 1974, p. 288). Density was the first and most widely used dimension in the network literature (Barnes, 1969; Shulman, 1976). Operationally, density refers to the actual links between "significant others" in a person's network, expressed as "the ratio of actual existing links to the total number of possible links" (Mitchell, 1974, p. 288).¹⁶ Most research on density has focused on "loose knit" (relatively unconnected) and "close knit" (highly interconnected) networks (Bott, 1957; Kapferer, 1969; Wellman et al, 1973). Similarly, Laumann (1973) used the terms "radial" and "interlocking", referring to the appearance of networks in which people are connected to the focal person but not each other (radial or loose knit) and networks in which people are highly interconnected. Used in this way, density has been related to network size (Neimeijer, 1973), conjugal roles (Bott, 1957), and the composition, durability, and content of the network (Shulman, 1976).

Reported studies using empirical measures of density have been somewhat contradictory. Neimeijer (1973) reported a direct relationship between

density and network size, and Boissevain (1973) reported on two very large extended networks of 1752 and 639 members each, with densities of 23.8 and 5.7 respectively. In contrast, Craven and Wellman (1973), suggested "that relatively dense networks are generally small and the linkages among the members quite strong", while "loosely-knit networks... tend to be large, and their members less deeply involved with each other" (pp. 73-74), suggesting an inverse relationship between size and density. As Mitchell pointed out, these differences are probably at least partially due to the "discrepancy between a relatively sophisticated conceptual framework and inadequate data reporting" (1974, p. 289). Also, these and other network studies vary widely in methodology, measurement technique, population, and network size, or as Whitten and Wolfe (1974) put it, while density may be the most "talked about" network variable, it is not always measured well (p. 729). Such wide methodological differences make substantive comparisons of network variables difficult, if not impossible.

In the present study, density was measured using techniques suggested by Barnes (1969) and Kapferer (1969). Barnes used the following formula to calculate density: $200a/n(n-1)$, where a refers to the number of actual links between network members (excluding links to the focal person) and n refers to the total number of network members (again excluding the focal person). Since the network data here represents only people who have a link with the focal person, Kapferer's (1969) technique of excluding such links in calculating density was used.

Density scores were calculated for each cluster: co-workers, friends, and kin, for connections between the clusters -- "intercluster density",

and for the total network. Intercluster density has also been called "cross-linkage" (Kapferer, 1973) or "boundary density" (Neimeijer, 1973), and refers to the relative interconnectedness of clusters. Thus, intercluster density may be considered as an operational definition of the relationship dimension of work/life segmentation. High intercluster density would indicate relative overlap of work and nonwork networks, while low intercluster density would indicate network segmentation.

Content. Like density, the specific meaning, nature, or "content" of network relationships have been defined in various ways. Mitchell (1969) referred to general role categories as examples of content: e.g., kinship, obligation, or friendship. Chrisman (1970), Boissevain (1973), and Shulman (1976) developed more specific criteria for specifying the content of network links, including the setting in which the relationships were "recruited" (e.g., work or family setting), their basis for continued existence (e.g., economic benefit, enjoyment), behavioral exchange (e.g., service or emotional support), and specific ascribed role relations (e.g., friend, co-worker, kin).¹⁷

In the present study, content was based on a combination of these factors: setting, role relationship, and the specific nature of the relationship (see procedure section). Clusters were defined initially by the setting in which various social relationships are likely to be located, e.g., the primary work place, home and neighborhood, and friendship settings. Secondly, each network member was described in terms of a role relationship, e.g., co-worker, friend, kin, or some combination of roles. Finally, each relationship was rated on two dimensions: collaboration and nurturance. Collaboration was defined as referring to how much

the relationship involved work-related matters -- e.g., working on projects, sharing resources, etc. Nurturance was defined as interaction of a primarily social, personal, or friendly nature -- e.g., giving/receiving personal advice or support, confiding, relaxing, or having fun together, etc. A five-point scale was used for the ratings on each dimension, ranging from "0" (no collaboration/nurturance) to "4" (constant collaboration/nurturance).

Relationship content has also been described as being uniplex, i.e., based on a single content dimension, or multiplex, i.e., based on several content dimensions. In the present study, multiplexity was analyzed in two ways: (a) the number of times each subject listed two or more role relationships for each member of his/her network and (b) the number of network members whose ratings were "2" or higher on both collaboration and nurturance.

Intensity. Another frequently used interactional dimension is the intensity of network relationships. Mitchell (1969) defined intensity as "the degree to which individuals are prepared to honour obligations, or feel free to exercise the rights implied in their link to some other person" (p. 27). Barnes (1972) also defined intensity as being some function of a strictly defined role relationship, i.e., "the extent to which an individual is ready to respond to appeals for support" (p. 17). As with density, measures of intensity have varied widely, with some writers simply using subjects' perceptions of "closeness" (Shulman, 1976; Wellman, 1976) and others using frequency of interaction. However, as Barnes (1972, p. 18) and Mitchell (1969, p. 29) have pointed out, frequency of contact is not necessarily a good measure of intensity or

importance of the relationship. For example, Mayer (1961, 1962) concluded that relations with kin "may be perceived as so morally binding that they remain valid despite infrequent communication" (p. 17).

In this study, intensity was considered to be related to the relative importance of the relationship (psychologically or behaviorally) and thus was based on subjective ratings of involvement. Specifically, intensity scores were calculated by adding together the collaboration and nurturance ratings, so that relationships could range in intensity from 0 to 8.

Results

Three sets of data were collected for all participants in the study: demographic information, work/nonwork activities, and social network data. The results section is divided into three parts: preliminary analysis of demographic data and variable intercorrelations, analysis of work/nonwork activities data, and analysis of the social network data. The last two analyses include tests of the three major hypotheses of the study -- Hypothesis One is tested in the analysis of work/nonwork activities, and Hypotheses Two and Three are tested in the social network analysis.

Preliminary Analysis

Demographic differences. Since the participants in this study were not randomly selected, it was necessary to examine demographic differences to detect any systematic biases prior to testing specific hypotheses. Age was the most important demographic variable, correlating highly with tenure ($r = .58$, $p < .01$) and with several network variables: density ($r = .32$, $p < .05$), number of uniplex collaborative relationships

($r = .40$, $p < .05$), nurturance ($r = -.34$, $p < .05$), and intensity ($r = -.38$, $p < .05$). Full time participants were significantly older ($\bar{X} = 36.27$) than part-timers ($\bar{X} = 28.35$; $t = 4.07$, $p < .001$), and males ($\bar{X} = 35.13$) were older than females ($\bar{X} = 31.22$), though not significantly ($t = 1.72$, $p < .10$). The only significant sex differences were for tenure ($\bar{X}_m = 4.94$; $\bar{X}_f = 3.00$; $t = 2.82$, $p < .01$) and for amount of work in nonwork settings (males: $\bar{X} = 16.27$; females: $\bar{X} = 27.09$; $t = 2.68$, $p < .05$). While an equal number (11) of males and females were full-time, only 5 males were part-time compared to 12 part-time females. A chi-square test of this distribution was not statistically significant ($\chi^2 = 0.92$, $p < .50$), so job appeared to be the main demographic difference.

Significant differences between part-time and full-time participants are summarized in Table 1. In addition to the expected differences in

 Insert Table 1 About Here

work/nonwork activities, several network variables were significant. Part-time professionals had significantly higher ratings for collaboration, intensity, and ratio of collaboration to nurturance. Looking at the breakdown of these differences by sub-network it is obvious that they are primarily due to the higher collaboration ratings for both co-workers and friends of part-time participants. Table 1 also lists the correlation ratios for each variable with age. Since for the majority of the significant job differences, age correlated significantly with the variable in question, it can be assumed that age and job are highly related,

and that there are systematic differences in network variables as a result of age and job variations. Also, age correlated highly with several other demographic variables as noted above. Therefore, age was used as a covariate in each of the network analyses.

Network correlations. An initial analysis was conducted by computing a correlation matrix for all network variables. Significant correlations were broken down by total or sub-network (co-worker, friend, kin) and by type of network variable (structural or interactional). These matrices are included in the appendix and only significant correlations will be reported here. For the variable network size, larger networks tended to have higher ratings for nurturance ($r = .53$, $p < .01$), more multiplex relationships ($r = .44$, $p < .01$), more uniplex nurturant relationships ($r = .52$, $p < .01$), and fewer interpersonal links between co-worker and family sub-networks ($r = -.40$, $p < .05$). In contrast to the results of previously reported network studies (Neimeijer, 1973; Craven & Wellman, 1973), network size did not correlate significantly with density ($r = -.21$). However, this lack of a relationship is apparently due to differences between sub-networks: total network size did correlate significantly with density of the co-worker network ($r = -.39$, $p < .05$), not at all with friend network density ($r = -.07$), and only slightly with family network density ($r = .24$). Based on these results, one might assume that a study based mainly on co-workers would produce the negative relationship between size and density hypothesized by Craven & Wellman (1973), while in networks consisting mainly of kin and friends, the size-density correlation might be zero or slightly positive (as found by Neimeijer, 1973). In fact, within each sub-network, size and density

correlated negatively for both co-workers ($r = -.43$, $p < .05$) and friends ($r = -.36$, $p < .05$) and positively for family ($r = .22$, $p < .20$). In either case, these results lend initial credence to the proposition that the sub-networks are quantitatively different.

Size also correlated negatively with collaboration in the family network ($r = -.37$, $p < .05$) and positively with nurturance in the friend network ($r = .42$, $p < .01$), indicating that people with larger networks overall tend to work less with kin and share more nurturant relationships with friends than people in smaller networks. Finally, total size was also significantly related to the number of multiplex relationships among co-workers ($r = .37$, $p < .05$) and friends ($r = .42$, $p < .01$).

As a further preliminary analysis of the relationships between network variables, correlations were also calculated between sub-network variables. The only significant variations from the pattern in the total network occurred for correlations with density in the co-worker network. While in the total network, density was not related to any other non-density variable, in the co-worker network it was related to: nurturance ($r = -.36$, $p < .05$), intensity ($r = -.37$, $p < .05$), multiplexity ($r = -.40$, $p < .05$), and size ($r = -.43$, $p < .01$). In other words, denser co-worker networks were smaller in size, with relationships which were less intense, less nurturant, and not as likely to be multiplex as in less dense co-worker networks. In the friendship network, density was also negatively related to size ($r = -.36$, $p < .05$), but was positively related to collaboration ($r = .35$, $p < .05$). In the family network, as in the total network, density was not significantly related to any other non-density variable. With these few exceptions, the pattern of correlations between

network variables was essentially the same for the total network and each of the sub-networks.

Work/Nonwork Activities

Hypothesis One stated that "Human service professionals spend most of their working hours engaged in work-related activities and segregate their work and nonwork activities by setting". Table 2 summarizes the participants' estimated distribution of hours per week spent at work and nonwork activities in work and nonwork settings. A two-way analysis of

 Insert Table 2 About Here

variance with hours as the dependent variable showed significant effects for both activity ($F = 12.08, p < .001$) and setting ($F = 12.81, p < .001$). While more hours were spent in nonwork settings (54.86) and the appropriate activity (work or nonwork) dominated time spent at each setting, more total hours were spent at work activities ($\bar{X} = 57.13$) than at nonwork activities ($\bar{X} = 39.53$). This difference resulted in a significant interaction effect of work by setting ($F = 125.06, p < .001$), due to the difference between the large amount of work in nonwork settings ($\bar{X} = 21.53$) and the relatively small amount of nonwork in the primary work setting ($\bar{X} = 6.20$). Thus, Hypothesis One was supported.

Social Network Analysis

The major predictions of this study were that: (a) specific sub-networks of work, friend, and family could be identified as "clusters", i.e., having more density within than between (Hypothesis Two), and (b) these sub-networks would be substantially different on a number of

network variables (Hypothesis Three). These predictions were tested in two major ways. First, various measures of network density were calculated to analyze the relative interconnectedness of people and sub-networks in the total network. Second, an analysis of variance was conducted for each network variable across all three sub-networks. Significant differences would indicate that the sub-networks were quantitatively different "types" of social networks.

Density analysis. While density has typically been used to analyze connections between people in a total network, in this study it was necessary to also consider degrees of connectedness within and between sub-networks. Specifically, it was hypothesized (Hypothesis Two) that work, friendship, and family networks would have greater density within and fewer connections between them, i.e., a network member would be more likely to know people in their primary sub-network category than to know people in other sub-networks. Using the density formula described above (number of actual links/number of possible links), several density measures were calculated. These were divided into density within and density between the sub-networks (i.e., work-friend, work-family, and family-friend links). Three other density scores were calculated for the total network: total density within all sub-networks, i.e., internal density ($\bar{X} = 68.19$); total density between sub-networks, i.e., overlap density ($\bar{X} = 15.63$); and density in the entire network, i.e., total density ($\bar{X} = 33.19$).

Correlations between the density scores are presented in Table 3. Several significant correlations explained variations in total density in this sample. First, density in the friend network obviously played an

important role: total within density varied primarily with the density of the friend network ($r = .55$, $p < .001$). Also, while the number of

 Insert Table 3 About Here

links between co-workers and friends varied with the density of the friends network ($r = .35$), family density was negatively associated with co-worker links ($r = -.43$, $p < .05$). While direction of causality cannot be concluded from these results, they do indicate that integration of the work and friendship spheres tends to be positively associated with friends who know each other, while co-worker links to the family are associated with less dense family networks. Also, the density of the friendship network was significantly correlated with total network density ($r = .48$, $p < .01$), while other within network densities were not. Total overlap density was primarily affected by co-worker-family ($r = .41$, $p < .01$) and family-friend ($r = .44$, $p < .01$) links. To summarize, the correlational data showed that within network density depended mainly on density of the friendship network, while overlap density was mediated by links to the family from both co-workers and friends.

Table 4 summarizes scores for each of the density measures. The amount of clustering of the sub-networks was tested in two ways: differences between overlap density and the total within and between densities, and through assessing each sub-network as a "cluster".

 Insert Table 4 About Here

Overlap density ($\bar{X} = 15.63$) was significantly different than both within density ($\bar{X} = 68.19$, $t = 31.20$, $p < .001$) and total density ($\bar{X} = 33.19$, $t = 14.05$, $p < .001$). Clustering was assessed for each sub-network independently, using van Velzen's definition of cluster: greater density within than without. For each sub-network, a boundary density score was calculated, i.e., the density of links between the sub-network and the other two networks (e.g., for the work network, boundary density would be the combination of work-family and work-friend links). A sub-network would thus be operationally defined as a cluster if internal density was significantly higher than boundary density.

Table 5 summarizes tests of clustering for the sub-networks. For each of the three networks, boundary density was significantly less than internal density ($p < .001$), indicating that the sub-networks do tend to

 Insert Table 5 About Here

approximate network "clusters". Nevertheless, it is interesting to note the significantly lower density of the friend network and the significantly higher proportion of links between it and the family network ($\bar{X} = 30.26$).

Finally, one other significant set of relationships should be mentioned. Of all the density scores, only the between-network scores correlated significantly with other network variables, and even then only with the family network. These correlations are presented in Table 6.

 Insert Table 6 About Here

Connections between co-workers and friends correlated negatively with nurturance ($r = .37, p < .05$), total intensity ($r = -.40, p < .05$), and multiplexity ($r = -.33, p < .05$) in the family network. Perhaps more importantly, the correlations in Table 6 represent significant relationships between family network variables and that network's links to co-workers and to friends. People whose networks included more links between family and co-workers/friends tended to have smaller family networks ($r = -.42, p < .05$), in which relationships were more collaborative ($r = .68, p < .01$), and intense ($r = .60, p < .01$) and less uniplex nurturant ($r = -.39, p < .05$). In other words, overlap or integration of relationships between these sub-networks correlated highly with family network patterns which were different from the model pattern in this sample. These last results were perhaps the most interesting since they demonstrated the only direct relationship between inter-cluster links and sub-network characteristics in this study.

Sub-network differences. Hypothesis Three predicted that sub-networks would be quantitatively different on a number of network variables. Table 7 presents the average scores on all network variables for the total network and each of the three sub-networks. The total network averaged 29.60 in

 Insert Table 7 About Here

size, with a density of 33.19, a figure somewhat greater than the density scores (8.5 to 22.5) reported by Cubitt (1973) but lower than those reported by Tolsdorf (53.8 and 64; 1976) for comparably sized networks. Interactional ratings indicated a moderate amount of nurturance ($\bar{X} = 1.95$)

and collaboration ($\bar{X} = 1.32$) in the total network, and about half of all relationships were either uniplex nurturant ($\bar{X} = 9.90$) or multiplex ($\bar{X} = 7.63$). There were few uniplex collaborative relationships ($\bar{X} = 2.30$).

Explanations for these results were derived by comparing sub-network scores with a one-way analysis of variance for repeated measures. As shown in Table 7, sub-networks were significantly different on all variables except intensity. Co-worker networks were substantially larger ($\bar{X} = 11.35$) than either friends ($\bar{X} = 10.05$) or family networks ($\bar{X} = 8.20$; $F = 7.24$, $p < .001$). Density was higher in both family ($\bar{X} = 83.15$) and co-worker ($\bar{X} = 76.00$) networks than among friends ($\bar{X} = 36.17$; $F = 37.38$, $p < .001$). The significant differences for collaboration and nurturance (and the lack of a significant difference for intensity) are accounted for by the emphasis on collaborative relationships with co-workers ($\bar{X} = 2.17$) and the contrasting emphasis on nurturant relationships with friends ($\bar{X} = 2.19$) and family ($\bar{X} = 2.43$). As expected, there was a somewhat higher amount of nurturance with co-workers than collaboration with friends or kin, and this segregation of relationship content into appropriate sub-networks produced essentially equal intensity scores between them. Also, segregation of relationship content by category is further indicated by the distribution of multiplex and uniplex relations: multiplex relationships occurred most often in the co-worker network, while friend and family network relationships tended to be almost totally uniplex.

Discussion

This section will consider three aspects of the present study:

(a) its significance, (b) its limitations, and (c) its implications for future research.

Significance of the Study

The primary goal of this study was to operationalize the concept of work/life segmentation in human service professionals by demonstrating that they (a) separate work and nonwork activities by setting, and (b) have segmented social networks, i.e., relatively separate "clusters" of work, friend, and family relationships. The results for both activities and social networks clearly demonstrated this work/life segmentation.

Activities/setting. The activities/settings data clearly demonstrated two qualities consistent with expectations about human service professionals (as stated in Hypothesis One): (a) work activities fill considerably more than a "normal" forty-hour week (averaging almost sixty hours per week in the total sample), and (b) work and nonwork activities are segregated by setting. This segmentation persists in spite of the relatively high extension of work activities into nonwork settings, due to the very small amount of nonwork activities reported in the work setting. The lack of nonwork activities in the work setting may be somewhat misleading, since the social network results suggest that work relationships include a wider range of content dimensions (co-workers tend also to be friends) and thus may be less easily differentiated into work and nonwork activity categories.

Two other methodological issues relate to the significance of the activities/settings data. First, some participants had difficulty distinguishing between work and nonwork. We initially gave the general definitions noted in the methods section, but several participants used somewhat different distinctions. In particular, some women included housework and child-care duties as work, and in one group, the work/non-work distinction was criticized as being artificial. In any case, work

and nonwork obviously have different meanings for different people and future research should be sensitive to those differences.¹⁸ Second, the data showed no major relationship between the activities/settings data and the social network data. This is most likely due to the relative homogeneity of the sample with regard to the distribution of activities and settings -- they all had work/life segmentation to some extent. Thus, network differences should be seen as variations within one general temporal and physical pattern of work/life interaction. Nevertheless, as expected, it was clearly demonstrated that activities were distributed across settings in a "work/life segmentation" pattern, thus supporting Hypothesis One.

Social network segmentation. Data for participants' social networks also clearly illustrated a pattern of segmentation: work, friend, and family relationships were divided into distinct sub-networks (support for Hypothesis Two) which were quantitatively different on a number of network variables (support for Hypothesis Three). These differences can be illustrated by characterizing each sub-network as a network "type". Compared to the other two networks, the work network is larger, relatively dense, and characterized by multiplex relationships of both collaborative and nurturant content. In contrast, the family network is smaller, more dense than either the work network or the friend network, with largely uniplex, nurturant relationships. The friend network is also characterized by uniplex, nurturant relationships but is much less dense than either work or family networks. The lack of significant differences for intensity indicates that (for networks of this size) all three sub-networks contain important relationships, but as would be expected, the relative emphasis

on nurturance or collaboration was reversed in the work and friend/kin sectors. Briefly, then, as in the functional separation of work/nonwork activities by setting, network relationships are divided into sub-groups by functional distinctions of both role and content: nurturance primarily associated with nonwork (family and friends) and collaboration associated only with work relationships.

Clustering. While the above comparisons show the sub-networks to be functionally different, analysis of the density scores clearly illustrates a "clustering" effect in the total network. This is demonstrated by the social network data in two ways. First, total density within sub-networks ($\bar{X} = 68.19$) is substantially larger than density in the total network ($\bar{X} = 33.19$), and both total density and within density are significantly larger than density between the sub-networks ($\bar{X} = 15.63$). Second, using the boundary density measure, each sub-network could be statistically defined as a "cluster". Boundary density for each sub-network essentially means the extent to which it is integrated into the total network. The data show that the relative interconnectedness of the family and friend networks contributes to larger boundary densities for these two networks than for the work network. The latter is relatively unconnected to other sub-networks, has high internal density, and thus is the most distinct "cluster". These results substantiate previously reported studies (Adams, 1967; McKinlay, 1973) showing connections between family and friend networks, and they emphasize the distinct separation of the work network from other social relationships -- a clear illustration of work/life segmentation.

Finally, the significant correlations between inter-cluster density

scores and family network variables represent potentially important findings relevant to Bott's (1957) study of social networks and conjugal role separation. Her results indicated that differentiated marital roles are correlated with dense social networks while similar marital roles are more likely to be found between couples who have loose-knit networks. By comparison, the results of this study indicate that family networks which are connected to other sub-networks are likely to be smaller, denser, and more collaborative, and hence have more multiplex family relationships. This suggests that segmentation and integration of the total network is directly related to the form and functioning of the family network.

Limitations of the Study

Two significant limitations of this study are the limited generalizability of the results and the subjective nature of the data.

Generalizability. Obviously, since participation in this study was voluntary, the sample's representativeness of the overall population could not be assured. While the demographic variables showed that the sample was essentially representative, generalizations should be confined to human service workers in large institutional settings. It is entirely possible (perhaps even likely) that independent professionals or those in smaller organizations or communities may well have substantially different work/life patterns. However, as stated at the outset, human service professionals represent an increasingly important segment of society, and the choice of that group and especially the choice of an institutional setting was expected to be a fruitful situation for studying work/life segmentation. A second limitation on generalizability involves the geographic location of the study. While the participants may not have been native

New Englanders, they do all live in southern New England, and network patterns here may differ from those elsewhere.

Subjectivity. Another potential limitation relates to the method of data collection: all of the data were based solely on the personal reports of the participants. Numerous network analysts (Bott, 1957; Mitchell, 1969; Barnes, 1972; and others) have strongly suggested that the reliability of subjective network data should be checked out by contacting each network member and corroborating the reported relationship. While some studies have attempted to do this on a limited basis (Shulman, 1976; Tolsdorf, 1976), it is quite a difficult task with larger networks, and the issue of "informant accuracy" has been directly addressed in only one reported study (Killworth & Bernard, 1976). The authors of that study found an extreme lack of accuracy in reports of patterns of teletype communication among a network of deaf people. In any case, since a long-range goal of the research reported here is to investigate the relationships between psychological and network variables, the present study assumed that it would be valuable to demonstrate network relationships within a "subjective network" (Stebbens, 1969). As Brim (1974) noted, corroborated data should be collected whenever possible, but "self-reported information on social networks is potentially valuable in and of itself" (p. 433).

Implications for Future Research

For the future, network research should be carried on in several important ways, including (a) the further development of network concepts and methodology, (b) continued comparative research on different occupational and socio-economic groups, and (c) the continued development of the

social network approach as an important component of community psychology.

Network research. As Mitchell (1974) stated, while network research has increased dramatically, there has been considerable theoretical and methodological confusion in the field. Future research should begin to focus both network concepts and research approaches. The present study emphasizes the need for studies of networks of varying size and composition, as suggested by Shulman (1976) and Chrisman (1976). In doing so, network analysts should carefully define and operationalize their concepts, and be careful to communicate how they collected and analyzed their data.

Other special analyses suggested by the present study include further analysis of clustering within networks. For example, the total network data could be re-analyzed using more sophisticated statistical techniques such as "cluster analysis" (Bailey, 1975) to see if network members cluster the same way without prior categorization. Another useful analysis would involve identifying extreme network patterns (e.g., people with extremely dense or sparse networks) and to investigate differences between them on both psychological and network variables. The network literature is replete with studies of "loose-knit" and "close knit" networks, and the introduction of psychological variables into their comparison could be of great value (cf., Brim, 1974).

Finally, it would be important to continue to develop and refine network data-collection methods. Research efforts here could proceed in at least two directions: (a) further investigation of "informant accuracy" in personal network data and (b) careful investigation of the validity and reliability of network questionnaires like the one used in this study.

Demographic differences. Certainly, the information generated in the present study for professionals should be replicated with other occupational groups and social classes. One of the distinctions drawn at the outset was between the work/life patterns of professionals versus those of industrial workers. The present study represents an application of the network approach to professionals, but the comparative study of other groups could be of value, especially when correlated with economic differences. Gutkind (1966) pointed out the distinction between networks which provide support and nurturance and the more loose-knit networks which facilitate access to economic and educational mobility. By investigating such network patterns across occupational groups, network analysts could help operationally define the "barriers" to social mobility for many economically and educationally deprived groups in our society.

Also, research on human service professionals should continue. As previously noted, the professional and service sectors of society are growing, and the job demands of professional life can create potentially debilitating occupational stress (Cherniss et al, 1976). The network approach can be useful by not only increasing our understanding of the social stresses of such roles, but also by helping people in them cope with those stresses by building network support systems (Caplan, 1974; Collins & Pancoast, 1976; Todd et al, 1976) and "occupational communities" (Salaman, 1974).

Community psychology. Finally, this study was essentially intended to be exploratory -- the beginning of an attempt to integrate relatively diverse and "traditionally isolated" fields of inquiry. Within sociology,

it drew on the long-established work literature and the relatively new field of network analysis. The underlying perspective, though, was drawn from the even newer field of community psychology (Rappaport, 1977), and was based on an interest in the impact of social environments on the individual. Many community psychologists, because of their interest in promoting psychological well-being and developmental competencies in individuals and communities, have focused on the "interface between the individual and society" (Neff, 1975). It is in this interface that we can find the utility of the network approach.

In one way, the personal network specifies the immediate social environment of an individual, an environment whose structure and functioning may transcend the impact of specific primary groups. As such, it provides a useful basis for analyzing the psychological impact of an individual's diverse pattern of ties to the social world. Perhaps more importantly, though, the social network may be thought of as a mediating construct between "micro" (individual and small group) and "macro" (institutional and societal) levels of analysis. As Granovetter (1973) put it, "it is through these networks that small-scale interaction becomes translated into large-scale patterns" (p. 1360). Used in this way, the social network approach can help community psychologists investigate relationships between psychological well-being and a wide range of social structures and processes, e.g., organizations, communities, social policy, and large-scale behavior patterns like migration.

Conclusion: Segmentation or Integration?

The results of this study clearly demonstrate that work/life segmentation exists in the social networks of human service professionals,

and a review of related literature indicates that this is probably not an unusual network pattern in our society. Left unanswered is the larger question of what this segmentation means for the individual. Interestingly enough only sociologists and a few psychologists have investigated this question. Parker (1971) cites several writers who see work/life segmentation as a natural and healthy adjustment to the increasingly fragmented modern world (cf., Toffler, 1970). But many critics of modern society¹⁹ bemoan the psychological impact of segmentation:

Putting work, society, and politics into one pigeonhole, and family, leisure, and enjoyment into another creates a compartmentalization that is in continual danger of collapsing. Or, put more precisely, such a division of life into nonoverlapping spheres merely creates new psychological strain, the almost impossible strain of artificially maintaining a continually split outlook (Keniston, 1965).

As Parker (1971) noted, the task of integrating these spheres is a very difficult one in light of the predominant cultural patterns and social institutions which maintain separate working and living settings, separate work and leisure activities.

We have no set of social institutions and corresponding cultural patterns which represent an integration of work and leisure -- we have, at most, the behaviour and attitudes of a comparatively few individuals sharing certain patterns of living which indicate what integration could be (p. 124).

It will be important, then, to not only examine patterns of work/life interaction in the mainstream of society, but also to investigate the

patterns of alternative life styles like those described by Miller & Sjoberg (1973) and those in the many communes and cooperatives that have sprung up around the country in recent years. The research task will be not only to find psychological correlates of work/life segmentation, but also to discover the patterns and potentialities of work/life integration in a fragmented society.

Footnotes

¹The family, in particular, has been a central focus of sociological study: cf., Bott, 1957; Farber, 1964; Hill & Konig, 1970; Leslie, 1967.

²See Parker and Smith, 1976, for a review and Brennan, 1976, for one conceptual analysis.

³Other kinds of work/life integration could occur in family businesses, small communities, cooperatives, or communes (cf., Kanter, 1972; Melville, 1972). Miller and Sjoberg (1973) described certain counter-cultural groups in Texas whose life styles represent an integration of work, kinship/friendship, and leisure activities.

⁴Other useful reviews of social network literature include: Barnes (1972). In addition, the Wellman & Whitaker (1974) compiled an annotated bibliography of major network-related studies to that date.

⁵Also, see Wolfe (1970) for a proposed "typology" of social networks.

⁶This type of network has also been termed the "personal community" (Henry, 1958) and the "ego-centered" network (Barnes, 1972).

⁷Numerous studies in other fields, of course, have focused on work relationships, although not in a social network context. Most relevant are the recent applications of the sociometric techniques to the analysis of informal organizational structures (Payne & Pheysey, 1970; Rice and Mitchell, 1973).

⁸In a previous paper (Brennan, 1976), I developed an analysis of how the dissolution of the functional significance of integrative institutions (like family and religion) has left this "integrative" task up to the individual, a task made all the more difficult by the typically diverse social settings of modern life (see Discussion section).

⁹Most of the part-time staff were also graduate students in clinical psychology.

¹⁰Groups were led by the author and a colleague, David Todd.

¹¹The general guideline was to include people interacted with at least once a month. However, all instructions were stressed as "guidelines", and participants were urged to use their own discretion in selecting people for the list. The important criterion was that each relationship had some psychological importance to them.

¹²Some people on the list fell into more than one of these categories. In such cases, participants were instructed to place them initially in the primary category to which they belong; they could then note the multiple nature of the relationship on the second part of the network list.

¹³"Knowing" here was defined in the same way as used for the initial network listing, i.e., the two people have an interactive relationship (interact at least once a month).

¹⁴Other network variables which have been used include: connection, reachability, and span (structural), and directedness, durability, and frequency (interactional) (Mitchell, 1974). The variables listed above were chosen for this study because they have been used most in network studies, and because they were most relevant to the purposes of this study.

¹⁵Specifically, a valuable contribution would be to empirically identify size correlates of different zones of closeness ("intimate", "effective", and "extended") as conceptualized by Boissevain (1973) and Epstein (1961). A re-analysis (in preparation) of the data from this study represents an attempt to move in that direction.

¹⁶In calculating density, Kephart (1950) included links to the focal person, but in the present study, density was based only on links between everyone else in the network. It was assumed that, since everyone in a personal network is connected to the focal person, inclusion of such links would artificially increase any relationship between density and size. The formula used for calculating density is the one proposed by Barnes (1969): $200a/n(n-1)$, where a refers to the number of actual links between network members (excluding links to the focal person) and n refers to the total number of network members. The function $n(n-1)$ is thus the total number of possible links in the network, and the formula produces a density score in the form of a percentage of actual links among those possible.

¹⁷Brim (1974), using factor analysis, developed five content dimensions relevant to the nature of interpersonal ties in networks: assistance, value similarity, concern, trust, and desired interaction, the first three of which were shown to be significantly related to avowed happiness.

¹⁸While the work/nonwork distinction was at least of heuristic value in the present study, a more fruitful approach might be to use a more complete listing of different types of activities and settings as in the study by Berger and Wuescher (1975).

¹⁹See Brennan (1976) for a review of some of these writers.

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APPENDIX I

WORK/LIFE QUESTIONNAIRE

Name: _____

Agency: _____

WORK/LIFE QUESTIONNAIRE

This questionnaire deals with three major aspects of your living/working situation: what you do, where, and with whom. The questionnaire is divided into two parts. The first section concerns your major activities and the settings you live and work in. The second part asks you to describe your social network of interpersonal relationships, i.e., all the people you know and how many of them know each other.

Each section has both a set of instructions and a table to be filled in. For each section, be sure to carefully read all the instructions first, then complete the table by following the step-by-step instructions.

Please try to respond as honestly and in as much detail as you can, within your own time constraints. Rest assured that your responses will be kept strictly confidential.

I. Activities and Settings

Instructions:

1. Down the left side of Table 1 (on the next page), list the kinds of major activities you engage in on a regular basis (e.g., weekly). Note that I have divided potential activities into two categories -- activities that are work-related (i.e., involved with your work life), and activities that are non-work-related (e.g., family interaction, support groups, recreation, etc.). You may wish to ignore these categories or to add some, as you like.
2. After you have listed the activities, please list across the top of the table the major settings (or places) in which you spend most of your time. Be as specific as possible in describing each setting, but list a setting only if it is somehow important to you and/or involves a major amount of your time.
- 3.. Finally, fill in the rest of the table by estimating the number of hours per week you spend on each activity in each setting.

Ia. Activities/Settings
(Short Version)

Most of us spend our working hours in one major organizational setting, e.g., an agency in the university, and we spend most our non-work time in other settings, e.g., home, clubs, neighborhood, etc.. As an initial way of looking at how you distribute your work/non-work time across different settings, fill in the chart below with an estimate of the total number of hours per week you spend on each kind of activity in work or non-work settings (defined by their major function).

Note -- As a guide to summarizing your hours, remember the following figures: One week = 168 hours. If you sleep 56 hours per week (an average of 8 hours per night) and spend approximately 21 hours eating and relaxing around meals (an average of 3 hours per day), then that leaves 91 hours for the major part of your activities. (This estimate may be adjusted if your eating/sleeping times are substantially different from these estimates). Given this total available time, how do you distribute it?

SETTINGS:

ACTIVITIES:

	WORK	NON-WORK	
WORK:			TOTAL WORKING HOURS: _____
NON-WORK:			TOTAL NON-WORKING HOURS: _____
TOTALS:	_____	_____	

Table 1
Activities and Settings

Settings:

	1.	2.	3.	4.	5.
ities: <u>related</u>					
<u>work-</u> <u>ted</u>					

II. Social Network

Instructions for preliminary listing:

Using the "networksheet" on the following page, list people who are in some important way present in your life. This list should be limited to those people you know -- i.e., with whom you have an interactive relationship. It should not include people you know but who do not know you, and it should not include people you once knew but with whom you have lost contact. A general guideline would be to include only those people with whom you interact at least once a month. Use your discretion in selecting people for the list; the important criterion is that each relationship has some psychological significance for you.

To facilitate your listing, the networksheet is divided into typical relationship categories. List people by these groups as follows: (1) Immediate co-workers: people in your agency or department; (2) Other co-workers: includes colleagues elsewhere in the university and those outside the university; (3) Primary friends: people you consider to be your "close friends"; (4) Other friends: acquaintances, neighbors, etc., people with whom you have a more casual friendship than those above; (5) Family/kin/co-habitants: relatives and/or people you live with; (6) Others: any other significant people you can think of.

List as many people as you can (using the back of the page if you need more space), then go on to the next set of instructions.

NOTE: There may be some people who fall into more than one category. Since these categories are mainly reminders to help you list people, it's okay for now to put such people in only one category (the primary one). You will be able to note the multiple nature of that relationship later in the social network table.

Immediate co-workers:

Primary friends:

Family/kin/co-habitants:

Other co-workers:

Other friends:

Others:

II. Social Network (continued)

Instructions for Table 2:

1. Take each name (or initial) from the networksheet and enter it along the left side of Table 2 (on the next page). It's easier to leave the names in the groupings from the networksheet. You might leave a space or two at the end of each group, in case you remember someone else later.
2. In column 2, briefly note the nature of the relationship you have with each person (e.g., father, close friend, co-worker, boss, etc.). Be sure to note here if the relationship is mutiplex, e.g., the person is both a co-worker and a friend.
3. In column 3, note for each person which other people they know on your list (by number). Use the same definition of "knowing" that was used in making your own list, i.e., the two people have an interactive relationship. Since many people in the groupings often know each other, this can be facilitated by noting, for example, that #1 knows #2 -- #10, or that 1 through 10 all know each other.
4. In column 4, rate how much time you spend with each person on work-related matters -- working together on a task, asking or giving advice about work, planning projects, sharing resources, etc.. Use the following "collaboration" scale to make these ratings:
 - 0 = No Collaboration.
 - 1 = Some Collaboration.
 - 2 = Moderate Amount of Collaboration.
 - 3 = A Great Deal of Collaboration.
 - 4 = Constant Collaboration.
5. In column 5, rate the amount of time you spend interacting with each person on a primarily social, personal, or friendship basis -- giving/receiving personal advice or support, confiding, relaxing, having fun, etc.. Use the following "nurturance" scale to make these ratings:
 - 0 = No Nurturance.
 - 1 = Some Nurturance.
 - 2 = Moderate Amount of Nurturance.
 - 3 = A Great Deal of Nurturance.
 - 4 = Constant Nurturance.

Table 1

Means for Part- and Full-Time Professionals on
Age, Activities/Settings, and Network Variables

Variable	Job		t-value	Correlation with Age
	Full-time (n=22)	Part-Time (n=17)		
Age	36.27	28.35	4.07**	-
Tenure	4.63	2.71	2.83**	.53**
Work at Work Setting	41.38	32.28	3.21***	.43**
Nonwork at Non- Work Setting	34.32	34.89	0.13	-.03
Work at Nonwork Setting	18.98	25.78	1.72	-.30
Nonwork at Work Setting	5.33	8.07	1.43	-.08
Collaboration with Co-Workers	1.95	2.41	2.64*	-.31
Collaboration with Friends	0.66	1.18	2.37*	-.35
Collaboration with Family	0.69	0.66	0.09	.30
Total Collaboration	1.12	1.57	2.89**	-.27
Intensity in Work Network	3.19	4.00	2.52**	-.37*
Intensity in Friend Network	2.71	3.55	2.46**	-.41**
Intensity in Family Network	3.35	2.77	1.14	.21
Total Intensity	3.00	3.60	2.26*	-.38*

*p .05

** p .01

*** p .001

ns = not significant

Table 2

Distribution of Work & Nonwork Activities by Setting*

<u>Activity</u>	<u>Setting</u>		<u>Totals</u>
	<u>Work</u>	<u>Nonwork</u>	
<u>Work</u>	35.60	21.53	57.13
<u>Nonwork</u>	6.20	33.33	39.53
<u>Totals</u>	41.80	54.86	96.66

*Number of hours per week

Table 3

Correlations Between Density Measures

	Density Within Sub-Networks				Density Between Sub-Networks				Density in Total Network
	Work	Friend	Family	Total (internal density)	Work- Friend	Work- Family	Family- Friend	Total (overlap density)	
Within Density:	-								
Work	-	.05	-.04	.17	-.13	-.04	.04	.19	.26
Friend	-	-	-.12	.55**	.37*	.07	.14	.22	.48**
Family	-	-	-	.12	.14	-.43**	-.15	-.02	-.02
Total (internal density)	-	-	-	-	.35*	-.08	.06	.18	.67***
Between Density:	-								
Work- Friend	-	-	-	-	-	-.11	-.05	.22	.34**
Work- Family	-	-	-	-	-	-	.61***	.41**	.31
Family- Friend	-	-	-	-	-	-	-	.44**	.42**
Total (overlap density)	-	-	-	-	-	-	-	-	.81***

*p .05

**p .01

***p .001

Table 4

Means and Standard Deviations for Network Density Measures

Measure	Network	\bar{X} Density	Standard Deviation
Within Density	Work	76.00	24.24
	Friend	36.17	27.38
	Family	83.15	29.44
	Total Within (Internal Density)	68.19	23.41
Between Density	Work-Friend	10.97	14.69
	Work-Family	10.69	17.31
	Family-Friend	30.26	22.80
	Total Between (Overlap Density)	15.63	12.86
Boundary Density	Work	10.83	15.32
	Friend	20.62	18.72
	Family	20.48	19.20

Table 5

Cluster-Tests for Work, Friend, and Family Sub-Networks

Sub-network	Internal Density	Boundary Density	t value	sub
Work	76.00 (SD=24.24)	10.83 (SD=16.00)	13.41	.001
Friend	36.17 (SD=27.38)	20.62 (SD=18.74)	3.62	.001
Family	83.15 (SD=29.44)	20.48 (SD=20.06)	9.04	.001

Table 6

Correlation Ratios Between Family Network Variables
and Overlap Density Scores

Family Network Variable	Between-Network Density Score		
	Friend	Work-Family	Family-Friend
Density	.14	-.43**	-.15
Size	.01	-.42**	-.44**
Coll	-.31	.68**	.66**
Nurt	-.37*	.31	.45**
Intensity	-.40*	.60**	.67**
Multiplexity	-.33*	.04	.10
Collaborative-Uniplex	-.11	-.07	.01
Nurturant-Uniplex	.28	-.39*	-.42*

* p .05

** p .01

Table 7

Average Scores and Analysis of Variance for Network

Variables by Sub-Network and Total Network

Network Dimensions	Network				Anova*	
	Co-workers	Friends	Family	Total	F	Prob. level
Size (n)	11.35	10.05	8.20	24.60	7.24	.001
Density (%)	76.00	36.17	83.15	33.19	37.38	.000
Collab (\bar{X})	2.17	0.89	0.67	1.32	12.77	.000
Nurturance (\bar{X})	1.41	2.19	2.43	1.95	23.76	.000
Intensity (\bar{X})	3.58	3.08	3.10	3.27	2.17	.122
Multiplex (n)	4.10	2.39	1.33	7.63	7.02	.002
Uniplex-Collab (n)	2.10	0.18	0.06	2.30	12.77	.000
Uniplex-Nurturance (n)	0.18	4.72	5.75	9.90	23.76	.000

*All analyses were done with age as covariate

