Eco Maps: A Tool to Bridge the Practice - Research Gap

Rena D. Harold
Michigan State University
School of Social Work
232 Baker Hall
East Lansing, Michigan 48824
(517) 432-3733 office / (313) 665-6716 home

Lucy R. Mercier
Michigan State University

Lisa G. Colarossi
The University of Michigan

Eco Maps: A Tool to Bridge the Practice - Research Gap

Abstract

The social work profession has played host to a continuing dialogue about the interplay between research and practice. Traditionally, practitioners collect data that have real-world usefulness and are relevant to the intervention process with particular clients. Researchers, on the other hand, are skilled in designing and conducting studies that result in data that can be generalized to build the profession's foundation of knowledge. Data collection tools and techniques that are both relevant to practice and germane to knowledge-building are needed. This paper demonstrates the use of the eco map, a common practice tool, to collect and organize data about families, thus bridging a gap between practice and research functions.

Eco Maps: A Tool to Bridge the Practice - Research Gap

For the past two decades, the social work profession has played host to a continuing dialogue about the interplay between research and practice (Fischer, 1981). The ongoing discussion has focused on paradigms around which to construct knowledge about the people and problems encountered by social workers. Often reduced to a dichotomy between qualitative and quantitative methodology, much of this debate has focused on the discontinuity between direct work with clients and research that attempts to explore and explain the issues faced by individuals, families, and communities. Traditionally, social work practitioners collect data which have real-world usefulness and are relevant to the intervention process with particular clients. Social work researchers, on the other hand, are skilled in designing and conducting studies which result in data that can be generalized to build the profession's foundation of knowledge. Because of this controversy, methods of gathering data that are pertinent to both research and practice are of particular interest to social work. Data collection tools and techniques that are both relevant to practice and germane to knowledge-building are needed. Methods that can 'cross over' between research and practice are required for meaningful practice-based research.

A previous article (Harold, Palmiter, Lynch, & Freedman-Doan, 1995) addressed this issue in its discussion of a qualitative data collection and analysis process easily applied to diverse practice settings. The method described was a "story board" used to guide family interviews. The use of story telling as a data collection method was paired with ethnographic content analysis to organize and understand information gathered in face-to-face contacts with parents of school aged children. While originally conceived as part of a research project, this tool was adaptable and easily applied to direct practice settings.

The purpose of this paper is to demonstrate another way that research and practice methods can be merged to produce meaningful, descriptive information about clients and their lives. The research group searched for existing data-collection tools for use in an ongoing qualitative study of family development. The eco map, a common practice tool, was selected to collect and organize information about the families being studied. The eco map was chosen because of its potential to effectively 'cross over', bridging the gap between practice and research functions, and because of its familiarity to many practitioners.

Eco Maps

The eco map was introduced over 20 years ago as an assessment tool for families in the child welfare system (Hartman, 1978). Originally devised as a simulation or model of an ecological system, the eco map highlights the connections between a family and its environment. A family or household is drawn as a genogram within a circle at the center of a page. External systems such as church, professional helpers, and schools are identified and drawn as circles surrounding the household. Different kinds of connecting lines are used to relate information about the nature of the relationships between family members and outside systems. When completed, an eco map is a graphic representation of a family's relationship to the world. Hartman (1978) asserted that the eco map's "primary value is in its visual impact and in its ability to organize and present concurrently not only a great deal of factual information but also the relationships between variables in a situation" (p. 472).

Social work students are frequently instructed about the use of eco maps in their practice courses, and social work practitioners commonly have some experience in using this model of organizing information during an assessment interview. Beyond this, however, little has been written about the specific use of eco maps with special population groups or practice situations. In fact, references to eco

maps in the literature nearly exclusively focus on the map as a tool to organize information gathered during assessment (e.g., Flashman, 1991; Gilgun, 1994; Mattaini, 1990). A notable exception is Valentine's (1993) study which used the eco map as a tool in differentiating types of families within a clinical population and as a planning device for intervention with developmentally disabled children.

This paper attempts to expand the perception of the eco map beyond a static device for organizing assessment information by demonstrating its use as a tool that can combine research and practice in many settings. In addition, suggestions will be made for using the eco map as an instrument for planning and intervention with diverse population groups.

METHODS

History of the Project

This study was an outgrowth of a larger, longitudinal study (Eccles & Blumenfield, 1984; Eccles, Blumenfield, Harold & Wigfield, 1990) that was designed to assess the development of self perception, academic achievement, and activity choices of school children. The original study involved approximately 900 children and began when they were in kindergarten, first and third grades. The children attended 12 schools located in four Midwestern school districts in primarily white, lower-middle to middle class communities surrounding a large metropolitan center. In addition to student participation, parents and teachers were also involved in completing questionnaires and interviews. This study has continued to follow these children who are now in ninth, tenth, and twelfth grades, using a combination of surveys and interviews for data collection.

In the third year of the project, a subset of the original sample was developed by adding the siblings of some of the original subjects to the group being studied. These siblings were limited to brothers and sisters of the original children who were

also in elementary school, but were not included in the original project because they were not in the targeted grades. The siblings were added in order to facilitate the study of family development, family characteristics, and similarities/differences between family members. This project resulted in the development of a story board that guided the interview process as well as the analysis of the data collected in the interviews (Harold, et al., 1995). This paper uses data collected from the second contact made by the researchers with these "sibling families". The purpose of this study was to explore the changes experienced by families as children develop into adolescents. Data were collected using both quantitative and qualitative methods.

Sample

Families with more than one child who had been targeted as part of the larger project were contacted and asked to participate in a study regarding child and adolescent development and the roles that families play. Fifty-five families with two or three children participated in this sub-study. Of these, 95 parents completed interviews: 40 parental couples responded along with 15 additional mothers whose current or ex-partners chose not to participate. In the 55 families, 45 couples were married to the same partner as they had been during previous contact with the research group, three were remarried, six were divorced and currently single, and one had remained single. The mean age of the mothers in the sample was 40 years old while the mean age of the fathers was 46. A total of 103 adolescents participated. There were 53 boys and 50 girls, ages 13 - 18.

The average education level of the mothers in the sample was "some college". The average level of fathers was "completion of a college degree". During the earlier study (Harold et al., 1995), many of the parents talked about their educational preparation for the work force and the subsequent dilemma of having children and working (i.e., whether to work and how much?). Several women, in particular, talked about changing or beginning work when their children got older.

It is not surprising then, that of the 55 mothers who were interviewed, 29 (52%) now worked full-time. Another 17 (30%) worked half or "part"-time, while 9 (18%) reported that they did not work for pay. All of the fathers reported working full-time. In terms of religion, almost half of the sample identified themselves as Catholic, another third as some denomination of Protestantism, and the rest indicated no preference. A tie with religion was an important feature in some of the eco maps.

Some families who were identified as subjects did not participate in the study. Five of the families with siblings had moved out of the area and were unable to be interviewed. Seventeen indicated that family illness or other circumstances prohibited their participation. In all, 71 % of the originally-identified sample who participated in the qualitative, i.e., story board, study were included in this follow up study.

Procedures

Letters were sent to identified families asking parents and adolescents to participate in the study and indicating that they would be contacted by phone to request interviews. The families were then called to schedule in-person interviews in their homes. Whenever possible, all targeted members of the family were encouraged to participate in the interviews (e.g., both parents and two or three siblings). Interviews were scheduled to accommodate the families' schedules as much as possible, with many of the interviews occurring in the evening so that working parents and teens who were involved in outside activities could participate.

Prior to meeting with the families, interviewers completed a training program designed to maximize the qualitative nature of the data collected. Interviewers were encouraged to use clinical and communication skills to obtain accurate and in-depth information about the families being studied. Interviewers

were trained to distinguish between the goals of interviewing for research purposes and interviewing for clinical intervention and to be cognizant of the potential for subjects to reveal information which might require follow-up with a helping professional. Although some of the interviewers had substantial practice backgrounds and all interviewers used clinical skills in collecting information, the data-gathering interviews were quite different from assessments typically conducted in practice settings. For example, no effort was made to elicit deep emotion during the interviews, nor was any attempt made to create change during the relatively brief encounter between interviewer and subject.

Interviewers were also trained regarding the specific goals of the study as reflected in the interview questions and the eco map as an interview tool. The interview itself was developed with a semi-structured set of questions and a series of sub-questions, or probes, to assist the participants in focusing on the research questions. Interviewers were encouraged to develop familiarity with the interview process through practice interviews during role-playing exercises but were reminded that the participants' unsolicited comments would be recorded as a valuable part of the qualitative study as well. The interview process was also modified during this period after receiving feedback from the interviewers about their experiences with the protocol during the training exercises.

Most interviewers worked in teams while conducting the face-to-face interviews. Each participating member of the target family met with a trained interviewer in the home. Participants were asked to sign consent forms that explained the rationale for the study, parameters of confidentiality, and the voluntary nature of the interview. Permission to tape record the interviews was obtained. Parent and child interviews were slightly different but both were guided by an interview protocol which included the completion of an eco map and focused

on the transition from childhood to adolescence and subsequent changes in the structure and the quality of the relationships within the family.

During the interview, participants were shown a blank diagram of an eco map (see Figure 1) containing a central oval surrounded by several additional ovals labeled with the names of institutions, relationships, and systems that might be present in the participants' lives and might offer social support. Participants were asked to help the interviewer complete the eco map by describing the nature of the relationships between family members and between the family and systems outside of the family. Starting with the central oval that represented the household, participants were asked to name members of the family and to represent the nature of the relationships by choosing a type of line to symbolize the interaction between the family members. As shown on the sample eco map, five types of relationships were symbolized by the lines: non-interactive, strong-positive, stressful-negative, tenuous-strained, and changed relationships.

Insert Figure 1 About Here

After diagramming the intra-family relationships, participants were asked to identify systems outside the family and to choose lines to represent relationships between the household and the social systems. Some ovals were labeled to suggest potential sources of extra-family relationships (e.g., extended family, work, school) while others were left blank and could be filled in with any person, system, or institution suggested by the participant. For each oval, participants were asked to identify a line that best described the relationship between the participant and the outside oval. Then participants were also asked to identify a line which best described the relationship between the whole family and the outside oval, thus completed eco maps had two lines between the central oval and each surrounding oval.

While working on the eco maps, participants were encouraged to discuss the diagrammed relationships in greater detail. Interviewers asked open-ended questions to probe for additional information about the quality and history of the relationships. Many of the probes were also intended to elicit information about the availability of resources during the children's transition into adolescence. Other questions explored specific sources of stress and/or support for the family. Interviewers wrote pertinent, additional information on the eco maps as indicated by the participants and as space allowed.

After each interview was completed, interviewers were asked to reflect on the experience and to give feedback to the research team on the process. Regular meetings were scheduled to encourage the interviewers to discuss their experiences with each other and to modify the interview protocol, if necessary. Interview techniques that resulted in rich, descriptive data were encouraged while questions/probes which yielded sparse information were discontinued. Following the collection of data in the form of audio-taped interviews and completed eco maps, the research team met to develop methods for analyzing and interpreting the data.

RESULTS

A preliminary assessment of the eco maps revealed the exceptional quantity and quality of data recorded on the diagrams completed with the interview participants. As a result of this abundance of data, the research team spent considerable time further organizing, encoding, and systematizing the information presented. A primary consideration in the process was that the richness and individual nature of the information not be 'lost' in the research process or by reductionistic data analysis techniques. Further, the research team hoped to make

the data more coherent by organizing the material in such a way that it was easily understood and useful in making inferences about the families being studied.

An initial coding scheme was developed for the central, i.e., household, oval in which the type and frequency of relationship lines were recorded for each eco map. In addition, key issues were identified using an emic approach, and the presence or absence of these themes were recorded. A refinement of that process yielded the code sheet illustrated in Figure 2. One sheet was used per family unit to record each family member's reported themes and each person's assessment, i.e., line choice, of intra-familial relationships. Using this coding method, it was possible to easily visually identify 1) developmental themes that were important to different members in the family, 2) relationship dynamics between the members such as alliances, conflicts, unspoken tensions, and cut-offs, as well as individual and familial patterns of presenting the relationships within the family, e.g., some members chose a strong positive line to represent every relationship regardless of their verbally reported appraisal of the relationship.

Insert Figure 2 About Here

Another type of coding involved looking at the consistency between the type of lines that family members chose to describe relationships and the words that they used in talking about those same relationships (Harold, Colarossi, & Mercier, 1996). Examining line choices and subjects' verbal descriptions yielded three categories of consistency. The first, "high consistency", can be illustrated by the mother who chose a conflictual line to depict the father - son relationship and described it as follows: "Relationships between them have always been stressful. There's not too much in common. It never seems like anything is good enough for his father. [Son] tries his best to make his dad happy, but his expectations are too high. [Dad] can't accept him for who he is."

The second category, "low consistency", is shown in this quote from a mother who depicted the parental relationship with a strong positive line and then said, "We've been married 22 years. We tolerate each other. If he were home more often, it would be more stressful, we'd probably be divorced."

"Ambiguous/mixed consistency" describes the third category where subjects chose a line that represented their feelings some of the time, but clearly did not encompass the total relationship. For example, one teen who indicated a strong positive line, said about his sibling, "We do things together, but it is stressful with petty arguments."

Yet another type of coding that can be done involves looking at the verbal and graphic descriptions of relationships between the subject, the family, and the outer systems. It is interesting to look at which systems individuals feel impact their lives, how they describe the relationships with these systems, and the similarity or difference among family members' views. Comparison of the eco maps within a family also exposes family secrets. For example, in one family, all but the youngest member talked about the family's involvement in counseling, and indicated that the youngest did not know about it. Indeed, the counseling oval was left blank on the youngest child's form, either because she truly did not know, or because she knew she was not supposed to know. This child's statement regarding counseling was, "not that I know of".

DISCUSSION

In this study, eco maps were used for enhancing the way in which data were gathered from and about the families being interviewed. Eco maps lend themselves easily to the task of gathering information in both practice and research settings. Hartman (1978), in her introduction of the eco map as a practice tool, suggested that the eco map was developed primarily to assist in concisely presenting complex data.

This study demonstrated that the eco map also lends itself to applications in the research field, and in fact, can provide a bridge for the practice-research gap.

Interviewers were impressed with the amount of information gathered within the time constraints of a typical interview. The eco map information took less than an hour to collect. The eco map provided both a guide for the interview and a convenient outline on which to note important information about the individual and her/his family. In addition, because of its standardized format, the information gathered was easily relayed from the interviewers to others who interpreted the data. There are several articles published on the use of diagrammatic techniques for clinical and research-based assessments (e.g., Beck, 1987; Congress, 1994; Mc Phatter, 1991; Van Treuren, 1986).

The remainder of the article will review some ways in which the eco map can facilitate clinical practice and examples of how to apply this technique to different modes of research. Social workers who use eco maps for clinical assessment are sometimes faced with the dilemma of having collected significant material but having little knowledge of what to do with the information after the data-gathering session. In the practice setting, such eco maps may be discarded as too cumbersome to be useful. The process of analysis and of interpretation that is presented above highlights the importance of this tool. The eco map has value for the social worker in his/her understanding of individual and family perceptions, dynamics, patterns, and themes, and enables the worker to present a summary picture to a supervisor or consultant who can also examine the data and either corroborate or challenge the worker's assessment. Additionally, the worker can use the map to visually feedback findings to the family/client. As a metaphor for the ambiance of a particular family environment, the eco map provides a graphic tool for the family.

Comparison of eco maps within a family can assist the family in recognizing the different perceptions and experiences of its members. Such awareness naturally

leads to interventions that assist families with improved communication and more realistic expectations of its members. The use of eco maps as a tool for family members to relay information to each other is particularly applicable to non-traditional clients and those who are less verbally descriptive by virtue of age, ability, ethnicity/culture or personality. For example, our study interviewed teenagers who are often prone to verbal responses such as, "I dunno" and shrugging shoulders. The eco maps offered them another from of expression that provided some structure and guidance without reducing their thoughts to answers on a scale or to yes and no responses.

Eco maps reveal patterns of behavior and relationships that can inform intervention on many levels. Using one set of relationships as a symbolic representation of the family's characteristic method of giving/receiving support can help members of a family to work on identified problems. Imber-Black (1988) describes graphically representing an isolated family who overuses intra-family support. This visual representation could help family members gain insight into the family dynamic or pattern as well as help them identify outer systems of support that may be available to them. Such graphic representations of functional and dysfunctional modes of coping may be enough to induce a desire for change in families. If not, practitioners may use the evidence of patterns to focus and design interventions.

Much has been written in the social service literature about the multi-problem family. Practitioners confronted with clients who are experiencing difficulties in every sphere of their lives may become overwhelmed and ineffective. In a similar way, clients who exist in chaotic and hostile environments may approach intervention with pessimism. In such situations, using the eco map to focus on a single relationship or situation may present a more manageable picture.

Such an approach is more likely to result in positive change which can then be generalized to other relationships or situations.

According to systems theory, change in one part of the eco map should result in a shift in all other relationships on the map (Bronfenbrenner, 1979). This concept is central to diverse philosophies of change, including most family therapy work (Gray, Duhl, & Rizzo, 1969). Using eco maps developed by the family members themselves, practitioners can strategize about the relationships most amenable to change when constructing service plans. Focus on the most effective arena for change should work to lower frustration, decrease length of treatment, and increase positive outcomes in practice.

In addition to its use as an assessment and intervention tool, the eco map can assist in developing relationships between interviewers and subjects (Hartman, 1978). In this study, collaborative relationships were quickly built when eco maps were used as devices for study participants to "introduce themselves" to the interviewers. Similar situations, in which a relatively unknown interviewer seeks detailed information from a service recipient, are common in the practice field, especially in agency settings in which a worker is assigned to intake and assessment for purposes of streamlining, triage, or other systemic needs. Also, solution-focused and strength-based practice rely on "exceptions" in clients' lives for initiating resolution to presenting problems. Looking for strengths illustrated on the eco map may result in changed perceptions about the client's or family's relationship skills, social supports, or patterns of communicating.

For research purposes, the eco map has several applications. It can be used to produce in-depth case studies of individuals within a family system to broaden knowledge about individual emotional and behavioral symptoms and how they affect and are affected by family systems. Mapping can be done to test out existing developmental theory as well as to generate hypotheses (Mauzey & Erdman, 1995).

Similarly, eco maps provide the opportunity to compare and analyze relationship patterns or themes and issues over time and/or within certain populations, across many families. By using a coding scheme similar to the one presented in this paper, frequencies can be obtained across many subjects, providing systematic information for descriptive research studies based on qualitative data. For example, in this study's sample, ten percent of families reported high levels of conflict when the child became an adolescent. Using a simple t-test and correlations, the data suggested that these families also were more likely to have teens with behavior problems in school and problems with depression. Research findings such as this can help practitioners develop treatment strategies based on an understanding of factors that contribute to individual and social problems. Eco map data could also be used to analyze which aspects of the social system, outside the family, when impoverished are associated with what kinds of child difficulties, allowing social workers to focus treatment, case management, and/or social policy efforts on these systems.

As an evaluation tool, a worker could use eco maps as a pre- and post-treatment measure by assessing relationships or comparing intra-family perceptions at the beginning of treatment and upon termination. Using a standardized eco map procedure, the practitioner could monitor or evaluate her/his practice and perhaps share findings with the client through visual presentation and comparison of maps. The social worker and client can see how individuals and systems change over time with the use of different treatment modalities, e.g., family therapy, individual therapy, intervention with outside systems. A worker can use the maps as part of a single system design with one family or individual, or compare data across families and individuals to assess the differential impact of treatment modalities on similar social problems.

Lastly, the eco map can be used as a qualitative research tool for developing theoretical knowledge across a large sample of clients. For example, once the information were encoded on the standardized code sheets for each family in this study, Harold et al. (1996) used eco map data to examine what changes parents and teens themselves described as important experiences during the shift from childhood to adolescence. Conflict and stress between teenagers and parents has long been portrayed as a characteristic of the transition from childhood to adolescence. Although past research described these parent-child interactions has focused on linear effects, emerging theories are postulating that parents and teens are part of a larger, more complex and reciprocal family system, as can be depicted using the eco map methodology. Contrary to the storm and stress model of adolescence and research on struggles between parents and children over independence, more parents and teens who commented on parent-child relationships reported improved relationships with the onset of adolescence. Changes in sibling relationships were also reported as being more positive than negative. Maturation seems to lead to more tolerance for differences in personality and interests, although some stated that the sibs no longer engaged in activities together and this was seen as negative.

In sum, the eco map can produce data which are deep and real in the lives of those being interviewed. As suggested in the literature, the eco map is particularly suited to social work assessment in various practice settings. However, this paper has also explored ways in which data provided by the use of eco maps can inform practice and knowledge development. Eco maps are a tool that can 'cross over' and be useful for both research and practice applications.

References

Beck, R. L. (1987). The genogram as process. The American Journal of Family Therapy, 15, 343-351.

Bronfenbrenner, U. (1979). The ecology of human development: Experiments by nature and design. Cambridge, MA: Harvard University Press.

Congress, E. (1994). The use of culturagrams to assess and empower culturally diverse families. Families in Society, 75, 531-539.

Eccles, J. S. and Blumenfeld, P. C. (1984). Psychological predictors of competence development. (Grant No. 1 R01 HD17553-01). Bethesda, Maryland: National Institute of Child Health and Human Development.

Eccles, J. S., Blumenfeld, P. C., Harold, R. D., & Wigfield, A. L. (1990). Ontogeny of self and task concepts and activity choice. (Grant No. 2 R01 HD17553-06). Bethesda, Maryland: National Institute of Child Health and Human Development.

Fischer, J. (1981). The social work revolution. Social Work, (May), 199-207.

Flashman, M. (1991). Training social workers in public welfare: Some useful family concepts. Journal of Independent Social Work, 5, 53-68.

Gilgun, J. (1994). An ecosystemic approach to assessment. In B. Compton & B. Galway, Social work processes (pp. 380-393). Pacific Grove, CA: Brooks/Cole Publishing.

Gray, W., Duhl, F. J., & Rizzo, N. D. (1969). General systems theory and psychiatry. Boston: Little, Brown.

Harold, R. D., Colarossi, L. G., & Mercier, L. R. (1996, March). A picture of the parent-teen relationship within the family context. Paper presented at the Biennial Meeting of the Society for Research on Adolescence, Boston, Massachusetts.

Harold, R. D., Palmiter, M. L., Lynch, S. A., & Freedman-Doan, C. R. (1995). Life stories: A practice-based research technique. Journal of Sociology and Social Welfare, 22, 23-44.

Hartman, A. (1978). Diagrammatic assessment of family relationships. Social Casework, 59, 465-476.

Imber-Black, E. (1988). Families and larger systems. New York: Guilford Press.

Mattaini, M. (1990). Contextual behavior analysis in the assessment process. Families in Society, 71, 236-245.

Mauzey, E., & Erdman, P. (1995). Let the genogram speak. Journal of Family Psychotherapy, 6, 1-11.
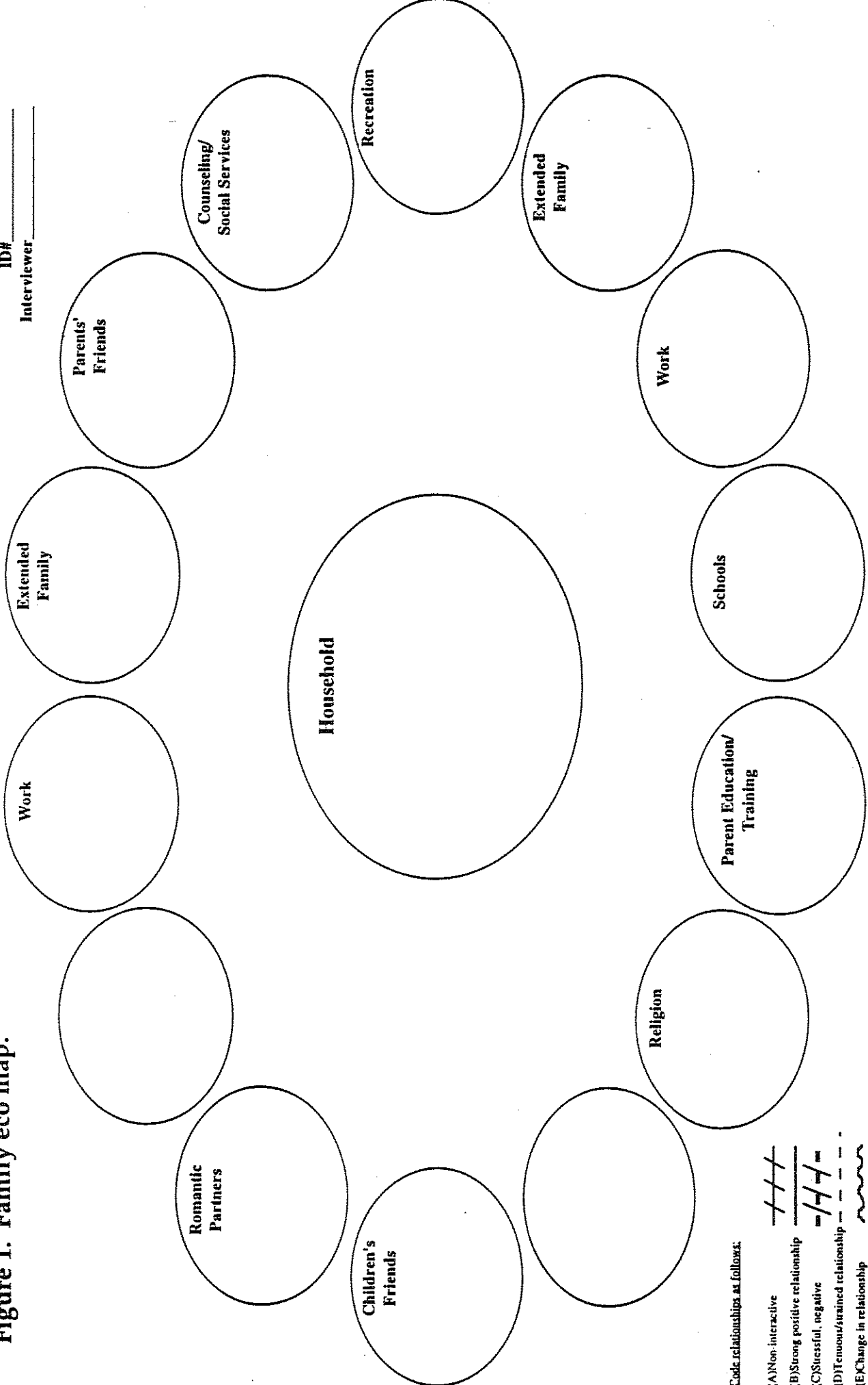
McPhatter, A. R. (1991). Assessment revisited: A comprehensive approach to understanding family dynamics. Families in Society, 72, 11-22.

Valentine, D. (1993). Children with special needs: Sources of support and stress for families. Journal of Social Work and Human Sexuality, 8, 107-121.

Van Treuren, R. R. (1986). Self-perception in family systems: A diagrammatic technique. Social Casework, May, 67, 299-305.

Figure 1. Family eco map.

Recreation

Counselling/
Social Services

Extended
Family

Parents'
Friends

Work

Extended
Family

Schools

Household

Work

Parent Education/
Training

Religion

Romantic
Partners

Children's
Friends

Code relationships as follows:
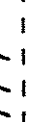
(A)Non-interactive

(B)Strong positive relationship

(C)Stressful, negative

(D)Tenuous/strained relationship

(E)Change in relationship

Figure 2. Eco map coding sheet for intra-family relationships.

Family ID:	Mother	Father	Oldest	Second	Third
parent-parent relationship better					
parent-parent relationship worse					
parent-parent relationship - no change					
parent-child relationship better					
parent-child relationship worse					
parent-child relationship - no change					
sibling relationship better					
sibling relationship worse					
sibing relationship - no change					
child pushes limits/does not like rules					
child is more independent					
parent-child talk about problems					
Perception of family relationships:					
Mother and Father					
Mother and Oldest					
Mother and Second					
Mother and Third					
Father and Oldest					
Father and Second					
Father and Third					
Oldest and Second					
Oldest and Third					
Second and Third					