

EMERGENT PROPERTIES IN PERSONAL FAMILY DESCRIPTIONS

by

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ABSTRACT

This 3-part study explored a phenomenological approach to family experience in order to determine whether a meaningful and useful factor structure would emerge from individual family descriptions. In Stage 1, personal descriptions of families were gathered (n=220) to form a family descriptor checklist. In Stage 2, factor analysis of these descriptions (n=158) produced a 4-factor solution with factors tentatively labelled Positive-Evaluative, Tension-Dynamic, Traditional-Conservative and Problem-Oriented. Stage 3 investigated the stability of the original solution over three sample populations (total n=443). All factors showed some degree of stability ranging from a highly stable Positive-Evaluative factor to the least stable Problem-Oriented factor. The meaningfulness of the results is discussed in relation to major dimensions in current family literature, to the semantic differential components and to the polar, hierarchical and dynamic features of descriptive relations in general. The overall usefulness of the findings is yet to be determined. Replication with a larger sample size is necessary to refine and stabilize the factor solution. Investigation of specific hypotheses regarding the

effects of particular sample characteristics as well as social perceptions of these characteristics can then be examined. The most important implications are for researchers attempting to describe the higher levels of the family system hierarchy and for therapists in the clinical situation. Although the unit of analysis and level of reference may vary, the fundamental features of relations in general do not and they thus may be an important basis for developing more adequate ways to describe and assess family interaction.

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INTRODUCTION

Statement of Purpose

The endurance of the family as the basic social unit in the history of mankind has generated a considerable amount of theory and research into its nature and function (Burr, 1979). Numerous disciplines in the social and behavioural sciences have developed frameworks, dimensions and variables to define, describe and classify families and of particular interest here are the fields of history, sociology and psychology. Despite a common frame of overlapping perspectives on which current descriptions of families and their interaction processes are based, researchers in general have not examined the individual's personal and unique experience of his or her family from a phenomenological point of view --that is descriptions of one's family experience without any attempt at explanation. The present study is therefore exploratory in nature and its purpose is two-fold. First, it will gather personal family descriptions from naive subjects (unfamiliar with family

literature) and by means of factor analysis, determine whether or not a meaningful pattern or underlying structure emerges from the data. The second purpose of this study is dependent on the results of the first and will determine their usefulness in developing a framework or measuring instrument to help describe and assess families.

Historical Perspective

The study of the social history of the family is a relatively new phenomenon and the resource materials for these investigations are primarily found in census records, wills, deeds, church records, house plans and tax records as well as other available documents (Broderick, 1973).

The term 'family' as used in census reports usually refers to a group of two or more people related by blood, marriage or adoption and residing together (Eshlevan, 1973). Hareven (1977) places particular emphasis on the distinction between family of origin and family of procreation. Since an individual fulfills a number of roles at any given time and can be simultaneously members of each, this complexity of affiliations may produce overlapping and possibly even conflicting roles which continue to vary with the passage of time. Wrigley (1978) suggests that a venn diagram --using

interconnecting circles to represent different family affiliations would offer a more encompassing or wholistic description of an individual's family structure. He further suggests that the structure of relationships between individuals who share membership of a family is paralleled by a psychological structure within individuals --the result of internalizing the rules by which family and social life is conducted. Wrigley stresses that an attempt to come to grips with this 'mentalite' is as important as to examine more directly measurable aspects of family life.

As family history has developed, the early preoccupation with classification of households and family structure has broadened to a wider range of subjects including the past role of the family, its internal dynamics and interaction with other social processes and institutions (Hareven, 1979). Gordon and Hareven (1973) stress that the social history of the family has outgrown the nuclear vs extended family debate and focuses instead on relationships and processes of interaction and interchange in the family and society such as kinship and migration, changing patterns of parental authority, filial autonomy, patterns of family adjustment to urban life and changing practices and conceptions of social space in family life.

One of the most important contributions which social history investigators have made to date is their emphasis on taking too short a time perspective when looking at social change and the necessity of approaching social questions in their historical context. Miscalculation of the dating of the sexual revolution became evident when historical research on bridal pregnancies and illegitimate children provided data which seriously questioned the Kinsey dating and explanations for such a development (Gordon and Hareven, 1973). The idealized notion that the family had greater stability and conformity in the earlier decades of this century and in past centuries has been found to be untrue (Hareven, 1977). More recently, Cogswell (1979) discusses the 'myth' of the idealized traditional nuclear family and its far-reaching effects on the current legal, social and economic status of numerous variant family forms such as single-parent families, reconstructed families (second, third and fourth marriages of previously divorced or widowed partners), cohabitating couples, open marriages, communes and homosexual unions.

Freeman (1976) claims that the work of sociologists Parson and Bales had a strong influence on the view of the nuclear family as a 2-generational unit and that current frameworks and assessment methods of family functioning have

generally not taken into account the unique and unusual structures of family forms which have developed to allow families to 'get their job done.' Social historians have thus provided substantial evidence that varieties of family experience existed well before the present decades.

Sociological Perspective

Small group research has provided a major foundation for studies of group interaction both in psychology and sociology. Hare (1976) outlines three different traditions represented by Moreno, Lewin and Parsons and Bales, who dominated the field from the 1930s to the 1960s. Moreno's (1960) sociometric approach developed from his psychiatric work in Germany with psychodrama, sociodrama and the spontaneous theatre. Sociometry was the first and most prominent method for gauging group status and esteem and other attributes of group members (Bass, 1981). By means of a pictorial diagram of circles and arrows, each member is asked to list other group members on some criterion e.g. who he or she likes best. The overall choices usually gather around a few members and in this way some idea of the group structure is determined.

Hare attributes the early psychological study of group dynamics to Lewin (1947) who was primarily interested in the life space or total situation of the individual and whose work focused on the influence of authoritarian and democratic leadership as well as conformity in groups. The third tradition --that of small group research-- is associated with Parson, Olds, Zelditch, Slatter and Bales' (1955) investigation of group properties and the 'Interaction Process Analysis' (IPA). This coding system has proved to be the most common instrument for investigating group interaction and the dynamics of group problem-solving. A unit act is defined as a bit of behaviour which provides enough stimulus to elicit a meaningful response. Twelve categories based on four general activity types (positive reaction, negative reaction, problem-solving and questions) are used to classify each unit act. A closely related scheme developed by Bion (1952) and Thelan (1956) scored every statement or action for some element of work and emotional response. The work category focused on statements or actions towards the group goal (high or low) and the emotional response category scored individuals on whether or not they became dependent on the leader, paired with one another or exhibited a fight or flight response.

Hare (1972) has also traced the development and use of coding instruments designed to derive a minimal number of categories or dimensions to describe group interpersonal behaviour and his summary outlines four dimensions which account for most of the variance in small group research. The first dimension labelled DOMINANCE-SUBMISSION developed primarily from Chapple's (1953) work based on only two categories of action and silence. The second dimension labelled POSITIVE-NEGATIVE developed from Leary's (1957) work on the relationship between 16 types of interpersonal behaviour. Bales' (1970) work linking task orientation to conformity provided a SERIOUS-EXPRESSIVE dimension and Couch's (1960) factor analytic work on interpersonal behaviour developed the CONFORMITY-NONCONFORMITY dimension.

Bales (1970a) has also developed a three dimensional schema for social evaluation based on the IPA as well as the work of Couch as follows: UPWARD-DOWNWARD (as in dominant-submissive), POSITIVE-NEGATIVE and FORWARD-BACKWARD (as in task-oriented vs deviant).

Small group research has thus provided a basis for the power (DOMINANT-SUBMISSIVE), support (EXPRESSIVE-INSTRUMENTAL) and evaluative (POSITIVE-NEGATIVE) dimensions as major group properties and their importance is primarily reflected in the extensive use of Bales' IPA as reported by Hare.

In their 1976 edition of Family Measurement Techniques, Straus and Brown presented two major referent axes which they consider to be reflective of an implicit theory underlying family interaction studies. Based on Straus' (1964a) factor analytic work reviewing studies of small group transactions, parent-child relations and personality traits, a love or support axis and an authority or power axis are presented as perpendicular axes within the framework of a circumplex model. These two axes bear a striking similarity to the power and support dimensions derived from small group research.

A number of literature reviews attempting to summarize and evaluate the status of family theory and research in sociology have been presented (Berardo, 1980; Holman and Burr, 1979; Burr, Hill, Nye and Reiss, 1979). Burr et al. presented five categories of theoretical orientations listed as follows: choice and exchange theory, symblic interaction theory, general systems theory, conflict theory and phenomenological theory. Of these, general systems theory and phenomenological theory are of particular importance to the present study as they well illustrate the close affiliation of sociology and psychology in family research.

The phenomenology of family experience has received theoretical attention but little empirical study. From this perspective, 'family' as a phenomena is approached as it appears or is experienced in the consciousness of the individual. McLain and Weigert (1979) stress that an exhaustively complete and adequate description of family is an unending task and that the description need only be adequate for the purpose of the investigation. Once descriptions of family are obtained and somehow classified, the investigator can then proceed to develop second order constructs derived from the living experience of the individuals. These second order constructs can then be subject to interpretive understanding because they are grounded in the individual's awareness of his or her family. McLain et al. stress that this approach steps away from the understanding of family in terms of biography and as a purely social phenomenon in order to gain some understanding of the meanings for the individuals themselves.

Although the study of the individual has often been considered the primary domain of psychology, little systematic work has been undertaken to explore the phenomenology of the individual's family experience.

Ackerman (1958) refers to the central role played by an individual's conception of his or her family:

Each parent, each child has a picture of what the family stands for, its expectations, its standards, its strivings and its value expectations. Family identification is an evolving thing, it emerges out of certain competing representations of identity within the group.

Holland (1970) describes the 'familization process' by which family members develop a universe of meaning relevant to the family and its members. Similar to the more general socialization process, though more affectively based, Holland claims that a shared meaning structure is developed by means of consensual validation and bound by the context of interpersonal relationships within the family.

One program of research on disturbed families reported by Van der Veen (1979), used the 'family concept' which was defined as a heuristic construct for conceptualizing and investigating the individual in relation to his family. Analogous to the self concept, it is described as being a cognitive-emotional schema composed of interrelated perceptions, attitudes, feelings and experiences regarding one's own family unit. It was assumed that the family concept develops over an extended period of time, exerts a potent and lasting influence on behaviour and is subject to change and revision as are other aspects of an individual in relation to his family e.g. the self concept, marital concept and role concepts. In order to obtain a quantifiable

description of the family concept, Van der Veen and his associates developed the 'Family Concept Test' consisting of 80 of an original 200 one-sentence item descriptions of social and emotional aspects of family life e.g. 'We are considerate of each other,' formulated by staff members at a family-oriented child guidance clinic. Studies using this test have mainly focused on global-type variables such as family congruence, satisfaction and adjustment or effectiveness. Although Van der Veen makes no claim as to the comprehensiveness of the test items, a content analysis produced two major second order factors entitled FAMILY INTEGRATION and ADAPTIVE COPING which Van der Veen relates to the expressive-instrumental distinction of Parsons et al. (1955) and the support and power axes proposed by Straus et al. (1976).

Before presenting further dimensions used to describe families, the development and influence of the family therapy perspective will be outlined.

Family Therapy Perspective

The emergence of family therapy as a major field in clinical work and social science research has been traced to its roots in the applied areas of psychiatry, clinical

psychology and social work as well as in the more formal theoretical frameworks of systems and communication theory. (Broderick and Schrader, 1981; Segal and Beavin Bavelas, in press). Historically, the family therapy movement began in a number of different places at once among therapists and researchers --the majority of whom were psychodynamically-trained psychiatrists working with individuals (Guerin, 1976; Broderick and Schrader, 1981). Lack of change and improvement in individual therapy prompted clinicians to begin viewing the individual in his larger social context. The applied roots of family therapy thus began without any well-developed theoretical frameworks in which to view the family context of the identified patient. The practical need for both family theory and assessment methodology prompted the adaptation of systems and communication concepts to family functioning and most schools of family therapy incorporate these principles to a greater or lesser degree (Steinglass, 1978; Boszormenyi-Nagy and Ulrich, 1981). The following discussion will outline the basic contributions and influence of the clinical tradition and the systems and communication perspectives on current methods of investigating and assessing families.

Clinical Tradition

The most fundamental classification in the family therapy literature has been the distinction between the normal or healthy family and the abnormal, unhealthy or pathological family. As a carryover from the individual treatment modality (with strong emphasis on intrapsychic dynamics), the family nosology came to be based on the chief diagnostic label used to identify the patient in a particular family e.g. schizophrenic, delinquent, alcoholic etc.. This classification of families according to individual nosology proved weak and inappropriate for a number of reasons (Doane, 1978; Riskin, 1970). There was often disagreement among clinicians about a particular diagnosis, symptoms and presenting problems changed over time, multiple symptoms were frequently manifest within a family at one time and with the development of family systems theory, the family was coming to be viewed as more than the sum of its parts. An even stronger objection to the individual nosology classifying pathological families was the lack of homogeneity between families with similar diagnoses as well as within the 'normal' control groups with whom they were often compared (Oliveri and Reiss, 1981). In most research studies, the normal or healthy contrast groups are not

selected for optimal health the way that problem families are selected for their disorder and contrast groups more accurately represent various mid-range families with no evidence of being especially healthy or pathological (Skynner, 1981). The problems inherent in this healthy vs unhealthy distinction have been discussed by a number of authors (Jackson, 1977; Riskin, 1970; Bodin, 1981; Stanton, 1981; Beavers, 1977) in terms of the inadequacy of the traditional medical 'health is absence of disease' model and the mutual cancelling effect of the dichotomy.

The lack of systematic work on normal families which characterized early family research resulted from the minimal operational criterion of no problem coming to attention (Framo, 1981). This is the first of four perspectives from which to view health or normalcy outlined by Offer and Sabshin (1966) --that is the absence of an emotionally disturbed member. The second is that of optimal functioning determined by a theoretical system and the third is statistical --the average or normative range of behaviour in a population. From this viewpoint, optimal or healthy families are as deviant from the average as the severely disturbed families at the other extreme. Offer and Sabshin's fourth perspective is that of a process view of health --viewing growth adaptation and change over time as health promoting.

The concept of family functioning on continuum dimensions ranging from severely dysfunctional to optimal, is reflected in a number of studies investigating non-clinical families (Steinglass, 1979; Lewis et al. 1976; Riskin, 1976; Cliveri and Reiss, 1981) and directs attention towards the theoretical contributions to the understanding of family interaction. Before discussing the systems and communication perspectives, brief mention will be made of the developmental life cycle approach to the family which has also developed from the individual emphasis rooted in the clinical tradition.

Family Life Cycle Perspective

A number of reviews of family therapy have placed varying degrees of emphasis on the role of family history and the utility of historical reconstruction for treatment purposes (Foley, 1974; Guerin, 1976; Gurman, 1978). The developmental life cycle of the family --with its reliance on historical information has become an increasingly important paradigm in both research and clinical work (Barnhill and Longo, 1978; Solomon, 1981). This framework was originally developed by the sociologists Duvall and Hill and later revised by incorporating Erickson's concepts of developmental tasks.

Each stage is based on nodal events relating to shifts in family membership e.g. marriage, birth, raising and departure of children, retirement and death. Life cycle events that are predictable (marriage, birth of a child) and unpredictable (untimely death, illness and war) are contrasted with transgenerational stresses or family myths and patterns which are transmitted down through generations in a family with the consequence that an emotional system of three generations may be operational at any given time (Carter and McGoldrick, 1980).

A primary distinction is made between the sociological approach which views a nodal event as automatically shifting a family from one stage to the next and the family therapy approach whereby these shifts may not occur automatically because the emotional patterning of the family does not permit the move to the next stage (Carter et al., 1980). Solomon (1973) for example, has proposed a 5-stage clinically-oriented system which relates certain types of family pathology to inadequate completion of developmental tasks.

Systems Perspective

General systems theory evolved in response to the need for a body of concepts and theory which would provide a common framework and language for interdisciplinary communication in all fields of science (Bertrand, 1972). The major promotor was Von Bertalanffy -a theoretical biologist, who was later joined by Boulding -an economist, Miller -a psychologist and psychiatrist, Ashley -a bacteriologist and Rapaport -a mathematician (Berrien, 1968). The principles and sets of related definitions which evolved were descriptions of isomorphic (analogous) processes in biological, chemical, mechanical and social systems although the various fields differ greatly in their concepts and operational definitions of basic terms (Miller, 1978). Social systems theory in particular --whose influence has been felt in all areas targeting human social organizations -is considered to be more ambiguous than other fields (Miller, 1978; Berrien, 1968). Because family systems theory was initially developed by clinicians who adapted systems concepts directly to dysfunctional family situations, the intermediate conceptual step through social systems theory did not receive as much attention as it has in community and organizational psychology.

Systemic properties are the organized aspects or regulatory processes of any ongoing system and as such are difficult to observe or measure. They have, however, been clinically inferred in family systems by observing the structure and process of repeated sequences and patterns of interaction between family members.

Miller (1978) defines structure as the arrangement of a system's component parts in 3-dimensional space at a given moment in time. Buckley (1967) argues that a very fluid and thin conceptual line exists between the structure and process of any social system and as an abstract concept, structure is not distinct from the ongoing processes of interaction. It is the way in which moving reality is translated for the observer at one point in time. At a concrete level, the structure may refer to the seating arrangement of family members at mealtime which is relatively stable over a long period and thus fairly easy to observe. At a more abstract level, the structure of mealtime conversation would reflect the family norms and rules which are responsible for the repeated patterns of conversation.

The change over time of energy or information is the process of communication. It is the patterned sequences and ways of relating to each other which occur regularly.

Process refers to the communication, both verbal and nonverbal, between family members. The norms, rules and role relationships thus provide the structure within which the processes occur.

It has been argued that individual and systems thinking are two distinctly different ways of conceptualizing human behaviour and that attempts to mix them reflect a failure to appreciate their true differences (Kerr, 1981). Most distinctions between individuals and systems however, are arbitrary and probably even artificial in that from the view of general systems theory, individuals are a subsystem of the family system and these subsystems themselves contain subsystems e.g. levels of awareness such as conscious and unconscious experience (Duhl and Duhl, 1981; Gurman and Kniskern, 1981). A more useful distinction is that within the family therapy perspective, the psychodynamic approach of an individual is a comparatively weak system when confronted by the multigenerational organization of the family system and the power of its commitment to the status quo (Robinson, 1979). This misconception towards levels of analysis is further stressed by Segal and Beavin Bavelas (in press) who note the repeated pairing of family systems theory with general systems theory and re-emphasize Bowen's (1976) declaration that the former fits into the broader framework of the latter.

This concept of hierarchy not only places family systems theory within the broader framework of general systems theory, it also provides an introduction to the structural organization of any system in general. Each level or unit at a particular level represents both a wholistic system at that level as well as part of a larger, more complex system at the next level (Tomm, 1980). Each new or higher level of a family system is defined by the emergent property which does not exist at the preceding level. The defining parameter or boundary of any particular subsystem within the family is described as the rules or norms within which a range of behaviour is limited. These rules act as invisible lines which define the degree of openness to anything outside the subsystem and are more often implicitly than explicitly stated. The rules regarding a child's relationship to his or her parents for example, may range from the extreme rigidity and control of a harsh and over critical father to the blurred and diffuse boundary which may characterize an overly intense mother-son relationship.

Closely related to the concept of boundary or rules is the steady-state or homeostatic process of maintaining balance within the system. This steady-state status is maintained by feedback processes which determine the manner in which information is received, interpreted and

transmitted between the subsystem boundary and the environment. It is referred to as the input - throughput - output model of goal-directed functioning. Rather than operating by means of linear causality only, the system has a circular state of functioning so that any point in the sequence may be fed back into the system in a circular loop --resulting in a highly complex and purposeful relatedness. Negative feedback refers to the homeostatic mechanism whereby stability is maintained e.g. parents may repeatedly force a child to clean his plate at mealtime despite his feeling ill. Positive feedback occurs when output is re-introduced as new information to the system with the result that there is a loss of stability or equilibrium --thus leading to change e.g. a child is excused from dinner when she is not feeling well.

Bowen's (1978) description of the 'emotional triangle' as the basic building block in a family homeostatic system is one example of a complex abstracted level in the family system hierarchy. When a certain level of emotional intensity is reached between parents for example, a third member is needed --most often a child-- on whom attention is focused in order to maintain the balance in the spousal relationship. The child may therefore become the scapegoat or focus for parental concerns and thus relieves the pressure on the marital relations.

The principle termed 'equifinality' asserts that the same results can be determined by different causes since the systemic parameters predominate over the initial conditions. In the family system, rather than focus on the antecedent conditions or what has been labelled as the cause of the family problems, focus is placed on the communication process between all family members.

Communication Perspective

Investigators focusing on the relational dynamics between individuals and within families have placed a heavy emphasis on the process of communication rather than the content. This emphasis is similar to the structure/process distinction in that the content of communication is the structure for the communication process. Although this distinction is crucial, there is some evidence that content alone can lead to relationship inferences (Chovil, 1980).

Three major contributions to the understanding of communication processes are Heider's balance theory (1958), the double-bind theory (Bateson et al. 1956) and the levels theory of communication (Watzlawick et al., 1967). Balance theory provided a framework for viewing relationships in terms of their being positive or negative in value and led

to the development of dyad typologies which differentiate between symmetrical, complementary and parallel relationships (Watzlawick et al., 1967; Lederer and Jackson, 1968; Sluzki and Beavin, 1977). The significance of the number of family members in determining the total number and size of relationships possible e.g. dyadic, triadic, etc. has also been investigated (Lindsay, 1976). Taylor (1970) proposed that relatively few of the total possible relationship combinations in families are actually used and that one deviant (scapegoat) individual may maximize the mean proportion of positive dyads --what he terms 'the average emotional income' for other group members.

The double-bind theory provided a major impetus to the development of family therapy and demonstrated its fundamental grounding in communication and systems theory. Clearly demonstrating the simultaneous and contradictory messages often experienced by schizophrenic patients, the five conditions necessary for a double-bind situation are as follows: 1) two or more individuals; 2) a repeated pattern of experience; 3) a primary negative injunction enforced with punishment; 4) a secondary conflicting injunction also enforced with punishment; 5) a tertiary negative injunction which prohibits escaping the field.

Watzlawick et al. (1967) outlined a major framework for investigating the unspoken processes involved in human communication. The emphasis on different levels is demonstrated in their three axioms --the first of which states that a person cannot not communicate when in interaction with another even though there may not be verbal interchange. The second axiom states that there is both a report and command aspect to any verbal communication. The report aspect pertains to the content of the message and the command aspect pertains to the relationship between the two persons involved. The third axiom states that a sequence of interchanges between two persons becomes punctuated so that over a period of time, it is implicitly understood that one member becomes the initiator, is dominant or always has the last word. On the first level therefore, some kind of content statement is made. On the next level, the command aspect reveals the relationship between the two individuals and on the third level, from a broader view of the sequence of interchanges, details of punctuation or patterns of relation can be observed. The strength and complexity of these unspoken levels of communication processing and patterning have provided major implications for family interaction studies.

Family Interaction Research

The hallmark of both marital and family therapy is treating problems within a relationship context (Olsen, 1980) and the major means of investigating families for either treatment or research purposes has been observation of family interaction. Riskin and Faunce (1972) provide a comprehensive review of family interaction research encompassing variables, coding strategies and levels of analysis ranging from minute, direct measures of objective data to higher-order abstractions and constructs more global in nature. The overall target of analysis may vary from the individual or couple (spouse, sibling or parent-child pair) to a partial or whole family group. The unit of analysis may range from specific unit acts e.g. length of speech, to ideas, themes and sequential analyses of content or action outcomes as well as overall style of communication. The situation may vary from observing a natural situation to a task oriented situation such as problem-solving, game-playing, planning something or drawing.

A thorough review of the variables and dimensions assessed in family interaction studies could quickly become a matter of juggling with existing categories and a mass of variables. Fisher (1982) outlines the initial problem of

terminology where a term or terms may have one meaning in one context and different meanings in another context and the resultant confusion in levels of reference. The outcome of this confusion is a contradiction whereby families are being conceptualized in what Fisher calls transactional terms and assessed with individual or relational methods. In transactions for example, the individuals do not exist outside of their relational definition e.g. a marriage, and are so interrelated that cause and effect can be isolated only out of context. In interactions on the other hand, individuals are connected to each other but do not depend on each other for definition and exist separately from the relationship e.g. a dyad. Fisher stresses the importance of developing more adequate measures of the higher abstracted levels of the family system processes rather than inferring transactions from relational or individual data.

Freeman (1976) notes the assumptions and myths about family systems with which both clinicians and researchers are identified and the resultant difficulty in separating the personal point of view from what actually exists. Because personal experience is often the frame of reference for viewing others, awareness of this possible source of bias is crucial in both self and observer reporting of subjective or behavioural measures. Mischler and Waxler

(1965) noted that when a relationship is described from an observer stance, messages which appear to be incongruent may carry implicit meanings which allow the message to be congruent to the participants. A number of problems of this sort which are inherent in observer assessment of interaction are discussed in Olsen's (1972) review of the double-bind hypothesis which, he concludes, lacks empirical validation despite its conceptual elegance.

A notable issue in current family interaction literature is whether any particular study is research or clinically oriented (Hill, 1970; Riskin and Faunce, 1972; Bodin, 1981). Although treatment implications do determine the framework within which family interaction is assessed to some extent, the number and description of primary dimensions found in major reviews of family interaction research are not as different as might be expected. In a review of direct observation studies of family interaction, Jacobs (1975) looked at four categories of variables entitled dominance, conflict, affect and communication clarity. Doane (1978) also reviewed family interaction studies with a particular emphasis on finding dimensions to differentiate between disturbed and normal families. Of the two major categories found, the first was labelled conflict and dominance and included pure process variables such as structure, harmony,

coalition patterns and flexible vs rigid boundaries. The second category was labelled communication deviance and included such variables as acknowledgement, clarity, conflict and the corrective parent. Two family constructs of prominence (power and control) and interpersonal distance (coalitions, disengagements, enmeshments and fusion) have also been shown to be valid dimensions for describing families (Klopper, Tittler, Friedman and Hughes).

Three major research programs directed towards assessing families with direct treatment implications are the circumplex model, the McMaster Model and the Timberlawn Research Project (Olsen, Russell and Sprenkle, 1979, 1980; Epstein and Bishop, 1981; Lewis et al., 1976).

The most useful of these is the circumplex model. Three dimensions entitled cohesiveness, adaptability and communication emerged from the conceptual clustering of concepts from six social science fields. The cohesive and adaptability dimensions, placed at right angles to each other in a circumplex model, identify 16 types of marital and family systems ranging from enmeshed to disengaged at the extremes of the cohesive dimension and from chaotic to rigid at the extremes of the adaptability dimensions. Olsen et al. claim that the potency of their model lies in its ability to diagnose the type of family system in operation

rather than focus on the presenting problem. In a study of four families with an alcoholic member, for example, each family had a different system diagnosis and consequently, different implications for treatment.

Both the McMaster model and the Timberlawn project developed six areas of differentiation although not the same six. The McMaster model describes families in terms of strengths and difficulties encountered on each of six dimensions entitled problem-solving, communication, roles, affective responsiveness, affective involvement and behaviour control. The Timberlawn Research Project differentiated families in terms of types of disorder, power structure, differentiation of members, communication, relationship, reality sense, affect and attitude to change.

A comprehensive review of existing family classifications has been presented by Fisher (1979) who organized a large variety of schemas derived from clinical and research data into five categories differentiated on the basis of their general approach to the family. The groupings are made on a purely descriptive level and illustrate the influence of the clinical tradition and the systems and communication perspectives on the frameworks used to describe and assess families. Most family studies clearly fit into one or another of Fisher's groupings.

His first category is labelled 'STYLE of ADAPTATION' and is defined as the family's general approach to the world and its patterns of dealing with stress and crisis both internal and external to the family. This category includes Gehrke and Kirschenbaum's (1967) description of the repressive, delinquent and suicidal family types. In the repressive family, expression of feeling is threatening and experienced as tension with the result that children tend to manifest internalized aggressive symptoms. In the delinquent family, the identified patient acts out the unexpressed impulses of a spouse and in the suicidal family, family role boundaries are blurred, conflict is eliminated with disqualified interaction and communication and unless the family remains whole, no member can survive. A second study by Richter (1974) contrasted disturbed families characterized either by a symptom neurosis in which a family member drains off tension by becoming 'sick' or a character neurosis which occurs when the family as a group creates and maintains distorted perceptions and ideas.

The third study in this category, by Reiss (1971abc), related family interaction to individual thinking and presents family types based on a shared view of the environment and three principles of interaction which he terms problem-solving efficacy, coordination and closure.

The environment-sensitive family sees the world as predictable, manageable and understandable while the consensus-sensitive family sees the world as unorganized and threatening.

Fisher's second category is labelled DEVELOPMENTAL FAMILY STAGE and includes both the developmental stage of the family in its life cycle as well as the developmental level of the individual. This approach has been mentioned previously and need not be discussed further.

Fisher labels his third category 'THE PRESENTING PROBLEM OR DIAGNOSIS OF THE IDENTIFIED PATIENT' and classifies families on some aspect of the identified patient. Three schemas are presented based on descriptions of adolescent behaviour which serves to keep the family stabilized. The first distinguishes four groups differentiated in terms of infantile, childish, juvenile and preadolescent maladjustment reactions to the parental relationship (Serrano, McDonald and Goolishian, 1962). The second schema is based on internal or external locus of conflict and overt or covert activity (Goldstein et al., 1968). The third differentiates four groups on variables such as power structure, mythology, goal-directed negotiation, autonomy and family affect. In addition, Riskin and Faunce's (1970) 5-grouping schema based on severity and number of presenting

problems ranges from severe multi-problem families to normal or well-functioning families.

Fisher's fourth category is labelled 'FAMILY THEME OR DIMENSION'. Examples here include studies by Ackerman (1958) and Ackerman and Behrens (1956) who developed seven family types on the basis of clinical data. The externally isolated and extremely integrated families are differentiated on boundary or directional issues, the internally unintegrated and disintegrated or regressed families are differentiated in terms of family organization and structure, and the unintended, immature and deviant families are differentiated in terms of parental maturity, egocentrism and conflict. Fallding (1961) used the dimension of external or internal focus to distinguish between adaptation, identification and false-identification family types. Voiland (1962) was concerned with psychosocial family dysfunction based on individual, socially based dynamic factors and identifies the perfectionist, inadequate, egocentric and unsocial family types with varying prognostic indications. Markowitz and Kadis (1964) distinguished between father-centered, mother-centered, child-centered and family-centered families in terms of the person around whom the family revolves.

Also included in this category are Wertheim's (1973) eight family types based on the response to family treatment on three dimensions labelled morphostasis (stability promoting), morphogenesis (change promoting) and family systems which refers to open and closed systems both within and outside the family.

Ford and Barrick (1974) distinguished five types of families on the basis of unstated family rules which reflect the overriding life style of the family and the manner in which it approaches the world as follows: children come first; two against the world; share and share alike; every man for himself; and until death do us part.

Finally, Minuchin (1974) used the disengaged vs enmeshed dimension to describe the boundary features or rules of entire families or parts of families.

A scheme which Fisher does not mention is provided by Moos and Moos (1976) who presented a cluster of eight family types based on the family's social environment. Using relationship, personal growth and system maintenance dimensions. Moos and Moos described the following family types: experience oriented, structure oriented, independence oriented, achievement oriented, moral/religious oriented and conflict oriented.

Fisher's fifth major category labelled 'TYPES OF MARITAL RELATIONSHIPS' is divided into three groupings under the headings individual dynamics, conflict and power and normal couples. The focus is on schemas attempting to classify the marriage relationship alone without reference to the broader family issues and systems.

From the forgoing schemas, Fisher derived six family subtypes or clusters based purely on descriptive similarities between the various schemas. The constricted family types are characterized by excessive restriction of emotional expression and affect is internalized into anxiety, depression or somatic complaints. The internalized family types tend to view the world with fear and hostility and thus have a well-defined role structure and strong family loyalties. Object-focused families are characterized by excessive reliance on children, the outside community or the self. Impulsive family types display adolescent delinquency and anti-social aggressive behaviour. Child-like family types are differentiated by needy, dependent adults who have never thoroughly separated from their family of origin. Chaotic family types are characterized by chronic psychosis and delinquency of particular members and the families in general are poorly structured and decompensating.

Related Area of Research

The task of defining variables and dimensions used to classify families in a comprehensive manner is remarkably similar to the massive amount of theory and research directed towards personality assessment. Three methods of research which developed descriptive constructs or dimensions by quite different means are Cattell's (1965) trait factor-analytic approach, Kelly's (1955) personal construct theory and repertory grid technique and Osgood, Suci and Tannerbaum's (1957) semantic differential technique. Brief mention of these methods is warranted as they bear relevance to the procedures selected for use in the present study.

Cattell's (1965) approach used personality traits as the major conceptual unit and his initial research began by collecting over 4000 words used to describe behaviour which were then reduced to less than 200 by the elimination of synonyms. Further analysis of subject ratings of these words uncovered 42 bi-polar variables which were then rated by a large subject sample. Factor analysis produced 12 bi-polar factors which appeared to account for most of the original behaviours listed.

Kelly's (1955) view of man as a scientist with a capacity to represent his environment rather than merely respond to it is reflected in his use of the construct as the key structural concept. Kelly defined a personal construct as the way an individual constructs or defines his world and maintained that all constructs are dichotomous --each having a similarity and contrast pole. Of the three elements necessary to form a construct such as fat-slim, two must be perceived as similar to each other e.g. Jim and John are fat, and the third must be perceived as different than these two, e.g. Jeff is slim. Kelly noted that people rated others more extremely on constructs elicited by themselves as opposed to constructs supplied by the investigator and that inferences made about others revealed more about the perceiver than the stimulus person. Kelly also maintained that regularities in references made by various perceivers indicate a shared implicit personality theory.

Osgood, Suci and Tannerbaum (1957) demonstrated that there is a limited number of dimensions of meaning underlying descriptive data and that evaluation, activity and potency are the three most stable factors or dimensions of meaning which people use in their perceptions and descriptions. Studies using the semantic differential technique usually employ bi-polar adjective pairs supplied

by the investigator e.g. pleasant-unpleasant, active-passive and strong-weak, to represent the evaluative, activity and potency dimensions respectively. Factor analysis of semantic differential data consistently demonstrates the existence of these three major factors on which a wide variety of scales are loaded (Burns, 1976) as well as other factors which appear with particular types of rating scales and concepts (Osgood, 1962). Osgood et al. also noted that the greater the emotional or attitudinal loading of a set of concepts, the greater is the tendency for the semantic differential to collapse into a single combined dimension.

In an overview of 20 years of research with the semantic differential technique, Osgood (1976) claimed that the universality of evaluation, potency and activity as the dominant affective features of meaning for humans is well demonstrated and that because the semantic differential technique literally forces metaphorical usage of terms defining bi-polar qualifier scales, it amplifies more affective features at the expense of denotative features. Osgood's more recent development of the semantic interaction technique is based on the rules of usage e.g. suitability and acceptability of words in syntactic combination and he claims it has greater application to semantic domains than the semantic differential technique.

Both Cattell and Osgood et al. as well as numerous other investigators used factor analysis to substantially reduce and simplify a large amount of descriptive data. It is particularly suited to a programatic series of investigations rather than a one-shot deal as it allows the investigator to redefine and stabilize the factor structure as well as assess its reliability and validity (Gorsuch, 1974). This technique seems well suited to the purposes of the present study as it makes sense to see what, if any, structure may appear in the data gathered from individuals about their families.

Summary

Empirical investigations of the phenomenological approach to an individual's family experience have generally not been well represented in the social history, sociological and family therapy literature on the family. Current family classifications are primarily based on distinctions and concepts derived from the clinical tradition as well as general systems and communication theories and the major method of investigating families has thus been observation of family processes in action from a systems orientation.

The focus of attention in the present study is not family interaction but family as it is experienced by the individual. Although the content features of the interaction processes have not been entirely neglected, no systematic investigations have focused on the content features of personal family descriptions. A number of research methods involved in personality assessment provide a framework for exploring the subjective nature of one's own family experience in terms of obtaining a large quantity of unique descriptive information and, by means of factor analysis, determining what underlying dimensions may emerge from it.

Geerstma (1980) outlines accumulating evidence that variables such as sex and age of child and family social class have an effect on family interaction and emphasizes the importance of considering demographic variables as well as religious, social, community and educational pursuits when examining experimental vs control groups of families. Controlling for such effects is absolutely crucial when investigating specific hypotheses. However, at this exploratory stage, empirically establishing the existence of global types of variables or dimensions from spontaneous personal descriptions of family experience is the initial task at hand and subjects will therefore be asked to self-define their families. In keeping with Van der Veen's (1979)

rationale to avoid the complexity in assessing every possible relationship structure in the family, it is assumed that the qualities most salient for each individual will receive most emphasis in his or her description of the family as a whole.

METHOD AND RESULTS

Stage One

The initial stage consisted of a survey-type questionnaire administered on a voluntary basis to students enrolled in Introductory Psychology at the University of Victoria. The students were asked to use up to 10 words or phrases to describe their own family and, if possible, to cite an example of the particular word or words used (see Appendix A). In response to concerns regarding descriptions of family of origin or present family, students were advised to make their own choice. 220 questionnaires were obtained and subjects' mean age was 20.2 years (ranging from 17-40 years). The information was collated to yield a 245 word-item list (see Table 1) which was reduced to 152 word-items by elimination of one of a pair of obvious synonyms e.g. industrious-hardworking, and single frequency idiosyncratic words e.g. backstabbers, late and short.

TABLE 1

Original 245 Word-Item List

accepting	fragmented	prejudiced
achievers	friction	private
acting	friendly	proper
active	firm	proud
admirable	funny	quarrelsome
adventurous	generous	quiet
affectionate	gregarious	relaxed
ambitious	grown-up	reliable
animal-oriented	happy	religious
antagonistic	hard-working	reserved
apathetic	harmcrucis	resourceful
argumentative	healthy	respectful
anxious	helpful	responsible
backstabbers	high expectaticns	receptive
bigoted	high hopes	restless
booky	high standards	rural
business-minded	history-oriented	sad
busy	honest	sarcastic
brilliant	hostile	secure
caring	humorous	self-centered
changing	important	selfish
charitable	incomplete	sensitive
christian	independent	separated
close	industrious	sexist
close-minded	inquisitive	sharing
cohesive	intelligent	short
cold	intense	favouritism
comfortable	interesting	shy
communicative	introverted	simple
compatible	inventive	sincere
competitive	inverted	single-parent
concerned	isolated	sackers
conflicted	jealous	snobbish
confusing	just	stern
congenial	kind	socialist
conservative	lacks direction	socialite
considerate	large	special needs
content	late	spiritual
cooperative	lateblowers	split
crazy	lazy	sportsminded
creative	liberal	spread-out
critical	literate	stable
crustling	lonely	stiffling
culturally diverse	loving	stingy
demanding	loud	stressful
1 parent dominated	loyal	strict
democratic	male	strong
dependent	male-dominated	stubborn
deviated	nature	suburban
dichotomized	medium	successful
different	mobile	supportive
disjointed	social	surviving
diverging	modern	sympathetic
diverse	motherless	talkative
divided	musical	tenacious
divorced	naive	tense
disciplined	noisy	thoughtful
distant-emotionally	non-existent	tired
distant-physically	non-verbal	tolerant
drinkers	nostalgic	traditional
dynamics	not close	in transition
easy-going	not out-going	trusting
eats together	old	typical
egotistic	old-fashioned	understanding
emotional	open	unhappy
encouraging	opinionated	unhealthy
energetic	optimistic	unique
excitable	original	unorthodox
exciting	outdoor-oriented	unpredictable
expectations	overprotective	unreliable
expensive tastes	patient	unresponsible
extended	peaceful	up-and-coming
extroverted	penny-pinching	uptight
family-oriented	perfectionists	volatile
farmers	petisive	war
female-dominated	pessimistic	wealthy
financially not OK	ricky	well-read
financially OK	politically active	well-travelled
firm	poor	wise
fit	powerful	women-oriented
forgetful	practical	worry-warts
		young

Stage Two

The 152 word-item list was then alphabetized and administered as an item check-list to the same psychology class. On this occasion, students were asked to check word-items which best described their family and no limit was imposed on the number of items to be checked (see Appendix B). 158 check-lists were obtained which matched the subjects involved in stage 1 and Table 2 presents the resultant word-items in order of frequency. The data were then run through the Statistics Library Factor Analysis Program at the University of Victoria.

TABLE 2

152 word-items by frequency

caring (125)	emotional (51)	distant-
concerned (118)	optimistic (51)	physically (20)
financially ck (114)	patient (53)	strict (20)
intelligent (113)	proud (55)	gregarious (21)
accepting (109)	strong (49)	worrywarts (19)
humorous (105)	modern (48)	different (18)
healthy (101)	musical (47)	rural (18)
close (99)	excitable (43)	mobile (18)
affectionate (98)	animal-oriented (46)	dynamic (18)
honest (98)	disciplined (46)	tense (17)
encouraging (97)	opinionated (44)	transition (16)
responsible (97)	traditional (44)	dependent (15)
friendly (95)	democratic (42)	emot. distant (13)
supportive (95)	firm (41)	intense (15)
comfortable (90)	diverse (40)	non-verbal (11)
reliable (90)	business-minded (40)	spiritual (14)
active (89)	suburban (40)	single parent (14)
considerate (89)	stubborn (39)	unpredictable (14)
communicative (87)	adventurous (39)	wealthy (14)
fun (85)	competitive (38)	close-minded (14)
happy (85)	just (37)	antagonistic (13)
generous (81)	critical (35)	shy (13)
sociable (80)	private (37)	divorced (12)
helpful (78)	outdoor-oriented (36)	forgetful (12)
warm (78)	inquisitive (36)	late bloomers (11)
family-oriented (77)	critical (35)	polit. active (11)
respectful (77)	male-dominated (34)	conflicted (10)
cooperative (76)	peaceful (34)	pessimistic (10)
successful (72)	religious (34)	jealous (9)
sincere (72)	scholar (33)	incomplete (9)
ambitious (69)	cohesive (33)	inverted (9)
loyal (67)	demanding (33)	extended (9)
well-travelled (66)	liberal (32)	tired (9)
independent (65)	large (32)	apathetic (8)
sympathetic (65)	over-protective (32)	powerful (8)
easy-going (65)	crazy (31)	restless (8)
compatible (65)	small (29)	suffocating (8)
content (63)	exciting (29)	fragmented (7)
argumentative (66)	extroverted (28)	volatile (6)
conservative (61)	stressful (28)	sexist (6)
stable (61)	female-dominated (27)	crumbling (5)
grown-up (59)	wise (26)	isolated (5)
open (50)	sarcastic (25)	lazy (5)
sports-minded (59)	smokers (29)	lonely (5)
well-read (58)	loud (25)	unorthodox (5)
harmless (57)	reserved (24)	lacks direction (4)
mature (57)	anxious (23)	unhealthy (4)
moral (56)	young (22)	sad (4)
resourceful (56)	original (21)	poor (2)
creative (55)	quiet (21)	cold (2)
industrious (55)		snobbish (2)
energetic (55)		unreliable (1)

The initial principle component analysis retained 10 factors (eigenvalue=1) and the unrotated solution provided a more meaningful 4-factor structure than the rotated solution. The results are presented in Table 3.

Factor 1 accounted for 13% of the variance and was labelled POSITIVE-EVALUATIVE because of the highly positive and desirable nature of all its items e.g. fun, cooperative and warm. Factor 2 added 5% to the variance accounted for and was labelled TENSION-DYNAMIC because of the quality of strained relations characterizing the highest loading items e.g. tense, anxious and critical. Factor 3 added 4% to the total variance and was labelled TRADITIONAL-CONSERVATIVE as the items suggested a traditional and authoritarian quality e.g. reserved, firm and emotionally-distant. One item (suffocating) appeared to load significantly on both Factors 2 and 3. Factor 4 added 3% to the variance and was labelled PROBLEM-ORIENTED because of the distressful nature of most of its items e.g. sad, crumbling and unhappy.

In order to see if factor analyzing items with a reasonable mean could tighten up the overall factor structure, items with a mean of .3 or more were extracted. Only 58 word-items met this criterion and 57 of the 58 were

TABLE 3

Stage Two: Factors and Item-Loadings (n=158)

Factor 1	Item-Loading	Factor 2	Item-Loading
fun	.71	tense	.52
cooperative	.71	anxious	.50
comfortable	.68	critical	.50
considerate	.67	stressful	.49
happy	.67	demanding	.46
sincere	.67	opinionated	.46
warm	.66	argumentative	.45
friendly	.65	suffocating	.44
content	.64	excitable	.43
honest	.63	intense	.43
loyal	.62		
encouraging	.62		
affectionate	.62		
energetic	.61		
helpful	.61		
Factor 3	Item-Loading	Factor 4	Item-Loading
conservative	.47	single-parent	-.57
reserved	.45	lonely	-.55
traditional	.44	crumbling	-.51
quiet	.41	sad	-.49
firm	.38	unhealthy	-.41
introverted	.37	female-dominated	-.37
moral	.35	conflicted	-.36
suffocating	.35	fragmented	-.30
distant-emotionally	.34		
strict	.30		

highly positive (the one exception being 'argumentative').
The analysis was therefore not performed.

In order to determine if the number of factors retained would affect the resultant structure, three more analyses were performed retaining 20, 4 and 3 factors respectively. The results in these analyses were identical to those in the original solution and are therefore not presented.

Stage Three

In an attempt to determine the stability of the original 4-factor solution, 32 bi-polar pairs of adjectives were derived by taking eight of the highest loading items for each of the four factors and naming its polar opposite e.g. friendly-unfriendly. A 5-point Likert-type rating scale was then developed between each of the paired opposites and the order and direction of scales were alternated so that no two items from the same factor appeared next to each other (see Appendix C). This form was then administered to the original psychology class (matched ORIG sample n=106) as well as three more samples consisting of additional psychology students from the original class (combined sample n=213), a third year psychology class (3rd-yr sample n=85) and university open-house guests (O-H sample n=145) totalling 443 subjects in all. Subjects were asked to rate their families as a whole on each of the 5-point scales which were then scored so that the original factor item rated 1 and its bipolar opposite rated 5. The data from each of the samples were then factor analyzed. To avoid confusing factors with items, factors will be labelled by Roman numerals and items will be labelled as positive, traditional, dynamic and problem-oriented to represent the original factors. Item loadings less than .3 are listed in parentheses in order to indicate the general trend of the lower loadings.

Table 4 presents the unrotated factor solution for the matched ORIG sample. Factor I --the Positive-Evaluative factor proved highly stable in that the eight original positive items emerged as the highest loading items on this factor. Nine negative items from a mixture of all factors also loaded highly on this first factor making it bipolar as well. Factors II, III and IV did not prove as stable as Factor I. Factor II was most highly loaded with traditional items and Factor III appeared as a mixed bi-polar factor with both dynamic and conservative items. Factor IV appeared mixed and bi-polar as well with a mixture of each of the four factor items.

The factor solutions for the combined sample are presented in Table 5. Factor I again proved stable, Factor II appeared as stable with conservative items, Factor III proved bipolar and mixed and Factor IV proved mixed as well.

In the 3rd-yr sample solution (see Table 6), Factor I appeared stable, Factor II was fairly stable with mostly conservative items, Factor III proved to be bi-polar with both dynamic and conservative items and Factor IV appeared as mixed with both conservative and dynamic items. The mean age for this sample was 26.3 years (ranging from 19 to 52 years).

TABLE 4

ORIG Sample (n=106) Unrotated Factor Structure

Factor	Item-Loading	Factor 2	Item-Loading
encouraging	-.73	traditional	-.62
warm	-.74	firm	-.55
considerate	-.72	strict	-.53
happy	-.71	conservative	-.50
comfortable	-.71	reserved	-.50
loyal	-.65	suffocating	-.48
sincere	-.62	introverted	-.44
friendly	-.53	demanding	-.40
emotionally			
distant	.78		
lonely	.71		
conflicted	.67		
intense	.58		
sad	.56		
anxious	.55		
crumbling	.55		
fragmented	.54		
unhealthy	.53		
Factor 3	Item-Loading	Factor 4	Item-Loading
reserved	-.60	female dominated	.71
quiet	-.56	traditional	.25
introverted	-.50	warm	.24
unhealthy	-.30		
argumentative	.59	tense	-.38
opinionated	.40	considerate	-.33
critical	.38	intense	-.30
(traditional	.23)	(introverted	-.29)
(demanding	.23)	(anxious	-.23)

TABLE 5

Combined Sample Factors and Item-Loadings (n=213)

Factor 1	Item-Loading	Factor 2	Item-Loading
comfortable	.75	traditional	.64
encouraging	.74	strict	.61
happy	.73	firm	.65
warm	.72	conservative	.50
considerate	.72	quiet	.49
sincere	.59	suffocating	.47
loyal	.59	reserved	.46
friendly	.55	introverted	.45
Factor 3	Item-Loading	Factor 4	Item-Loading
argumentative	-.50	female	
demanding	-.50	dominated	.70
intense	-.42	single-parent	.45
critical	-.41	friendly	.34
traditional	-.30	sad	.33
		(warm	.27)
		(quiet	.22)
quiet	.50		
reserved	.36		
introverted	.30		
(fragmented	.27)		

TABLE 6

3rd-Yr Sample Factors and Item-Loadings (n=85)

Factor 1	Item-Loading	Factor 2	Item-Loading
happy	.88	conservative	-.75
warm	.82	traditional	-.63
comfortable	.70	strict	-.60
considerate	.64	firm	-.42
friendly	.62	emotionally-	
		distant	-.30
encouraging	.59	(opinionated	-.29)
sincere	.55	(critical	-.20)
loyal	.55		
Factor 3	Item-Loading	Factor 4	Item-Loading
quiet	-.68	demanding	.48
introverted	-.50	critical	.46
reserved	-.45	intense	.40
firm	-.45	strict	.38
		introverted	.38
		(reserved	.29)
argumentative	.68		
intense	.43		
opinionated	.37		
conflicted	.34		
(critical	.22)		

In the O-H sample solution (see Table 7), Factor I again proved to be stable, Factors II and III were bi-polar and mixed and Factor IV appeared mixed. Subjects' mean age was 28.4 years (ranging from 11-65 years).

In the total sample solution (see Table 8), Factor I appeared stable with positive items, Factor II appeared stable with conservative items, Factor III appeared with mostly dynamic items and Factor IV was mixed. The mean age of the total sample population was 25.1 years (ranging from 11-65 years).

Although the Positive-Evaluative factor proved to be most stable across all samples, the total sample solution appeared to be closest to the original structure with the exception that the Tension-Dynamic and Traditional-Conservative factors had switched places. In order to examine the possibility that Factors II and III reversed order in Stage 3, a second-order factor analysis was performed on the factor loadings of the 32 word-items of the original solution as well as the 32 bipolar scales of the five sample solutions of Stage 3. The results are presented in Table 9.

As expected, the first second-order factor to emerge was the Positive-Evaluative factor. The next second-order factor

TABLE 7

O-H Sample Factors and Item-Loadings (n=145)

Factor 1	Item-Loading	Factor 2	Item-Loading
happy	.83	intense	.62
warm	.71	opinionated	.54
considerate	.63	female-	
sincere	.59	dominated	.36
encouraging	.58	conflicted	.35
friendly	.55	demanding	.32
comfortable	.55		
loyal	.54	quiet	-.61
		reserved	-.51
		introverted	-.46
		conservative	-.40
		(crumbling	-.26)
Factor 3	Item-Loading	Factor 4	Item-Loading
traditional	-.68	female-	
strict	-.59	dominated	.47
demanding	-.54	single-parent	.44
conservative	-.54	strict	.37
loyal	-.34	lonely	.36
critical	-.31	sad	.34
suffocating	-.31		
(firm	-.27)		
single-parent	.48		
female-			
(dominated	.24)		
(crumbling	.18)		
(fragmented	.17)		
emotionally-			
(distant	.15)		
(unhealthy	.11)		

TABLE 8

Total Sample Factors and Item Loadings (n=443)

Factor 1	Item-Loading	Factor 2	Item-Loading
happy	-.80	conservative	.61
warm	-.75	traditional	.60
comfortable	-.67	strict	.54
considerate	-.67	firm	.48
encouraging	-.66	quiet	.47
sincere	-.57	reserved	.42
friendly	-.57	introverted	.39
loyal	-.56	suffocating	.31
Factor 3	Item-Loading	Factor 4	Item-Loading
demanding	.54	female-	
argumentative	.52	dominated	-.54
intense	.44	single-parent	-.44
strict	.35	demanding	-.36
traditional	.33	quiet	-.34
opinionated	.31	(reserved	-.26)
loyal	.30	(sad	-.26)
		(warm	-.24)

TABLE 9

Second-Order Unrotated Factor Matrix

Sample by Factor		Factor I	Factor II Loadings	Factor III	Factor IV
ORIGINAL	1	.90	-.29	.00	-.11
ORIG	1	-.97	.21	.04	.02
Combined	1	.96	-.25	-.03	-.07
3rd-yr	1	.94	-.29	.04	-.05
O-H	1	.94	-.27	-.01	-.04
Total	1	-.95	.29	.01	.06
Original	2	-.67	.26	-.47	.19
ORIG	2	-.27	-.85	-.07	-.26
Combined	2	.30	.84	-.16	.13
3rd-yr	2	-.27	-.81	-.21	-.02
O-H	2	-.14	-.62	.71	-.01
Total	2	.26	.89	-.24	.03
Original	3	.21	.86	-.31	.13
ORIG	3	.03	-.04	.90	-.04
Combined	3	-.09	-.02	-.92	-.26
3rd-yr	3	-.11	-.26	.88	-.12
O-H	3	-.33	-.62	-.52	-.30
Total	3	.12	.04	.96	.21
Original	4	.48	.53	.46	-.04
ORIG	4	-.03	-.18	-.24	.40
Combined	4	.01	-.45	-.24	.76
3rd-yr	4	.21	.11	.21	.62
O-H	4	.00	-.33	-.15	.66
Total	4	-.05	.39	.30	-.74

loaded most highly on the Traditional-Conservative factor of the ORIG sample as well as for all other Stage 3 samples. The third second-order factor loaded most highly on the Tension-Dynamic factor of all samples in Stage 3 except the open-house sample. The final second-order factor to emerge loaded on the Problem-Oriented factor for 4 out of the 5 samples in Stage 3.

This second-order factor analysis produces a clearer picture of the stability of the original factor solution. The evaluative factor is unquestionably the most stable and strongest; the Traditional-Conservative factor emerges more prominently as the second factor in Stage 3 and the Tension-Dynamic and Problem-Oriented factors emerge as well although with less strength and consistency.

DISCUSSION

General Findings

The highly stable first factor suggests that individuals in these populations generally describe their families on a strongly evaluative dimension. The strength and prominence of this dimension supports Osgood's first component of the semantic differential as well as the positive-negative dimension found in small group research and the healthy-unhealthy distinction characteristic of the clinical tradition. It is also similar to Straus and Brown's love or support axis which they found to be characteristic of family interaction research in general.

The second factor to emerge with general stability was the Traditional-Conservative factor. The power and authoritarian quality of most of its items is similar to the power or dominant-submissive dimensions found in small group research and the family interaction literature.

The third Tension-Dynamic factor indicates that individuals view their families with some awareness of the

dynamic-relationship aspects of their functioning. This factor relates strongly to the process types of variables in the relationship and communication dimensions of the family assessment literature and to a lesser extent to the activity component of the semantic differential. Although not as stable as the first two factors, its emergence in third place is similar to the order of the three components of the semantic differential.

The fourth Problem-Oriented factor indicates that some individuals do view their families in distressful terms and it thus appears to be the inverse of Factor I. This reinforces the negative pole of the positive-negative distinction found in small group research, the healthy-unhealthy distinction in the clinical tradition and the dysfunctional end of the dimensions discussed from the systems and communication perspectives.

Of particular interest is the presence of two demographic variables appearing with mostly distressful items. Although the overall frequency of these two items is not high (single-parent (14) and female-dominant (27)), their appearance directs attention towards the possible significance of these properties in current family situations. Any causal inference would be premature at this exploratory stage and a number of possible explanations

present themselves. First, individuals in these situations may be more willing to reveal distressful experience than those considered to be from structurally more intact families. Second, a broader view of the context within which these families are found may reveal what Cogswell (1979) calls the effects of the 'myth' of the idealized traditional nuclear family on the social, legal and economic status of variant family forms. Third, an ideal family stereotype may underly individual conceptions of what a family is or should be. Social perceptions of separated and divorced couples, voluntary and involuntary childlessness as well as family size might influence family descriptions. Any deviation from an ideal family situation could thus determine to some extent the distressful nature of the fourth factor.

In general, the most striking feature of the 4-factor solution is the polarity inherent within and across factors. The positive-negative distinction seems to cut across all factors in that each one implies its opposite. The first three factors also bear a resemblance to the three components of the semantic differential although the general quality of Factors II and III is not as clear as that found in the potency and activity components. The findings also give overall support to Osgood et al.'s claim that the greater the emotional or attitudinal loading of the concept

being judged, the greater is the tendency for the semantic differential to collapse into a single, combined and in this case, polar dimension. The strength of this implied polarity directs closer attention to its possible significance in descriptive language in general.

Relation To Linguistics

Linguists have shown the positive-negative distinction to be a pervasive phenomenon in human language and a number of authors have offered explanations regarding its function. Osgood and Richards (1973) suggest that the distinction should be considered not only in terms of evaluation, but as a polarity between two forces --the positive and the negative --which may reflect basic characteristics of human cognitive processes i.e. cognition is organized along bipolar dimensions in which one of the poles is always psychologically positive and the other is psychologically negative. Osgood et al. suggest that in the early development of human cognitive processes, the positive category can be considered the original unity which becomes differentiated into positive and negative parts.

Deese (1971) also maintains that a positive-negative affective component is inherent in human cognitive processes and is reflected in language. He illustrates this feature at

both the word and conceptual level. Greenberg (1966) discusses the lexical marking feature of words i.e. happy-unhappy, whereby the positive form is marked in some way (usually by the addition of the affix 'un' or not) to create the negative or opposite form. The unmarked item (happy) is identified by the fact that it provides the nominal form of the distinction, came into the language at an earlier date, is the first to be used by children and is generally used more frequently.

Asch's (1958) work on spatial configurations and affective features illustrates the affective component in conceptual categories. If, as Asch suggests, abstractions are considered to be hierarchical representations i.e. spatial metaphors, affectivity is present if the higher levels are seen to dominate the lower levels. Deese concludes that such semantic relations are psychological rather than linguistic in nature.

Deese (1978) also reports the strong hierarchical feature in naturally occurring language (discourse) and it is of interest that this seems to be a further way of characterizing the implied opposite nature of the 4-factor solution. The hierarchical feature may thus be seen as a secondary fundamental to be distinguished from the more primary positive-negative polarity.

To carry this analogy further, one aspect of the Tension-Dynamic factor is its qualitative description of a relationship. It can therefore be viewed as a more fluid process type variable to be distinguished from the secondary hierarchical feature.

Seen from the linguistic perspective, the polar, hierarchical and to a lesser extent dynamic features characterize the fundamental ways in which individuals relate to their families. By extension, these features may also characterize the basic nature of relations in general --be they between objects, concepts, people or systems. If this is the case, it may not necessarily be new information, but it does draw attention to the manner in which researchers and clinicians approach families. What is suggested is a re-examination of the significance of these polar, hierarchical and dynamic features at every level of analysis rather than neglect their existence or dismiss their importance.

Implications for Researchers and Therapists

Current family literature has placed a major emphasis on viewing family functioning on a number of continuous dimensions in order to avoid the healthy-unhealthy dichotomy. However, the over-riding polarity found in the

present study indicates that this positive-negative distinction may be even more fundamental than the healthy-unhealthy dichotomy and is possibly the basis from which both the dichotomy and continuum models are derived. Rather than discount the importance of this polarity, researchers and clinicians may well be advised to recognize that these features are salient aspects of distinction in the individual's family experience. It would make sense then to explore the meaning and consequences of this possibly global bias not only for target family members but for family investigators as well.

If these features describe the inherent nature of relations in general and therefore undercut any personal perceptions, assumptions and myths about what actually exists in families, they may provide a useful orienting framework for differentiation both within and between any level of system analysis.

The operational distinctions made at the most basic sound/silence level for example, could incorporate these features i.e. silence can be positive, strong or tense. At each higher level, these features may be useful in describing the emergent quality which is inherently more powerful than the sum of its component parts. Bowen's use of a spatial metaphor --the emotional triangle--is one example

which incorporates all three features in the image it evokes and the framework it provides for organizing a highly abstract level of family functioning. Without claiming that these features are responsible for the effectiveness of the metaphor, it is possible to note their utility at this level of complexity.

An important implication can be seen in relation to Fisher's discussion of the contradiction involved in conceptualizing families in transactional terms and assessing families with individual or relational methods. The present findings indicate that this contradiction may, to some extent, be a further misconception towards levels of analysis (Duhl et al., 1981; Gurman et al., 1981; Robinson, 1979). If we are basically dealing with a hierarchy of levels in the family system whereby individual and relational subsystems are relatively weak in comparison to the powerful organization of the family system, the fundamental features found in the present study may provide a common source and basis for distinction within and between all levels of analysis --no matter how complex. The unit of analysis and level of reference will vary but not the relations between the units or between the levels. This deemphasizes the differences between individual, relational and transactional conceptions towards the family system

hierarchy and stresses the shared fundamental bases for description and distinction of relations in general.

These features may also be useful in the clinical situation as an orienting framework for both therapist and family members. By asking each member what he or she likes or dislikes most about the family or where they see themselves in relation to the family power structure, the basis and direction may be seen for assessing and intervening in the more complex systemic aspects of family functioning. The specific content of each situation will differ but the fundamental relationship features will not. The adaptation or translation of these features to the immediate situation may thus provide a useful orienting framework to help define the unspoken and powerful rules of family interaction.

Directions for Future Research

A major strength of the present study is that its data base is grounded in individual descriptions of family experience. The method of data gathering is relatively simple and inexpensive and thus allows easy access to large numbers of subjects. Replication using a much larger sample size at the level of Stage 2 would thus be the primary means of stabilizing and refining the original solution. This

would also provide the basis from which a number of hypotheses can be formulated regarding the degree to which certain sample characteristics e.g. family form and size, developmental stage or clinical and systems diagnostic category, may affect the ways individuals relate to and describe their own families as well as social perceptions of families in general.

A second means of refining the 4-factor solution would entail the insertion of items representing Osgood's semantic differential components to serve as anchors for three of the four factors. This would also provide the means to pull apart the Positive-Evaluative factor which seems to cover a number of dimensions e.g. warmth, expressiveness and cohesiveness. Asch's (1946) distinction between central (warm and cold) and peripheral or less influential traits might be useful here as well as the linguistic feature of markedness to investigate the content of these descriptions more thoroughly.

An interesting offshoot would involve the investigation of the ratio of positive to negative words as has been examined in terms of the golden section ratio. This ratio (.62 : .38) has played an important role in aesthetic theory and its presence has been illustrated in the formal structure of works of art, plant, animal and human forms

(Berlyne, 1971). More recently, its presence has been found in interpersonal judgements whereby the ratio of positive to negative judgements in person perception has been found to equal the golden section ratio (Benjafield and Green, 1978; Benjafield and Adams-Webber, 1979). Although not a focus of attention in the present study, exploration of this proportion may further our understanding of the significance of the polarity feature specifically and the nature of relations in general.

As in most areas of the social sciences, methodological concerns present numerous limitations when considering precision of measurement. A brief overview of the factor analytic procedure is therefore warranted in light of this exploratory research.

Sampling of both subjects and variables is an important consideration in any factor analytic stage. In Stage 1, a predetermined number of words (variables) was unable to be randomly sampled from the original 245 word list since much of the unique information sought would have been lost. At the same time it was necessary to reduce the original list of words in order to obtain data that could be subject to a statistical procedure. The elimination of synonyms and single frequency idiosyncratic words seemed to be the best way to reduce the number of variables as well as minimize the loss of unique information.

Ideally, subjects are also randomly sampled from a defined population. Ten subjects per variable is the generally accepted rule-of-thumb ratio in factor analytic studies. The relatively small sample size used in Stage 2 limits any solid inferences to be made to the population sampled from and indicates that further refining and stabilizing of the original factor structure must take place with a larger sample size at the level of Stage 2.

Factor analysis begins with a data matrix and each variable has a mean, standard deviation and distribution. Gorsuch (1974) and Comrey (1978) stress that variation in any of these will affect the factor structure and describe the distortion which becomes apparent especially when using dichotomous data. Ideally, factor analysis would employ continuous variables with normal distributions. However, if dichotomous variables are used, the correlation matrix can be distorted in two possible ways. Depending on the split of the yes/no responses, any single correlation can be artificially limited or grossly inflated and thus lead to spurious factors. In the first instance, if one item has a 50-50 marginal split and a second item has a 95-5 split, the maximum possible correlation between the two is limited to .23. In the second instance, if out of 200 cases, 199 Ss did not check two

items and one S did check the same two items, the correlation between the two items would be 1.0 because of one deviant individual. Had this one person not checked the same two items, the correlation would then become 0.0. For this reason 5-7 choice items or scales are promoted as best in substantially reducing the possibility of gross distortions. However, this holds true only if 5 or 7 discriminable points can be made by subjects and this was obviously not the case in Stage 2.

The next major issue is the method of factor extraction. Rummel (1978) describes the eigen-value-one (EV-1) procedure which assumes the principal components account for all the variance and therefore places a 1.0 in the diagonals. Each variable has 1.0 as its potential communality after all possible factors are extracted whether or not the variable has little or great common variance. The resultant inappropriately high common factor variance for certain variables is likely to occur in 2-choice items since unreliable variables often have low correlations with each other.

The major means of correcting this distortion is by iterating the communalities which at a conceptual level assumes that no two tests or items can correlate perfectly with themselves because they are not identical and thus there is always error variance to consider. Principle

components analysis assumes that unique variance does not need to be accounted for and factor analysis deals with both unique and common variance by reinserting the accumulated communalities for the initial number of factors at EV-1. The process is repeated until the communalities eventually converge. However, there is no guarantee that they will converge or that more error is not introduced. In the present study, the dichotomous nature of the variables allows for perfect correlation with each other in theory but on a practical level, ensures artificial distortions due to the splits of the yes/no responses. Despite these distorting influences, a meaningful structure did emerge and further refining and stabilizing of the original solution over a number of samples would provide the means to eliminate as much error variance as possible.

The issues of naming and number of factors to be retained is of primary concern in any factor analytic study. Successive analyses retaining 20, 10, 4 and 3 factors respectively ensured stability of the solution within the present program. The issue of naming factors is not so readily resolved however, and always somewhat arbitrary. Replication of both Stages 1 and 2 would help clarify the exact nature of Factors II, III and IV and help to establish more reliable criteria for the labelling process.

The question of precision of measurement is also important in Stage 3 where originally dichotomous data was doubly transformed into 5-point bipolar scales. Scale choice items have more discriminating power than dichotomous items and are generally considered to be psychometrically more manageable. However, two aspects of concern present themselves. Only 19 of the 32 word-items had readily available marked opposites and the remainder were selected by the author. A future study could better manage this process by asking subjects to name the opposite in a manner similar to Kelly's (1955) method of eliciting personal constructs.

The second aspect is addressed in Burn's (1976) discussion of the concept-scale interaction problem frequently encountered when factor analyzing 3-dimensional data e.g. subjects/concepts/scales. When one of the dimensions is collapsed to provide a score for a concept e.g. a scale score is summed, the procedure tends to blur changes in scale factor weightings. Scales with high factor loadings therefore ought to carry more weight in the summation process than those carrying lower factor loadings. Clark and Kevick (1967) suggest that straight summation is permissible only if the factor weightings are equal. This problem again points to the necessity of replicating Stage 2

with a larger sample in order to derive more homogeneous items --which can then be weighted appropriately in developing the bipolar scales.

Summary and Conclusions

This study has explored a phenomenological approach to family experience in order to determine whether a meaningful and useful factor structure would emerge from individual family descriptions. The 4-factor solution obtained has been shown to relate meaningfully to current dimensions in family literature and to the linguistic perspective on the polar, hierarchical and dynamic features of descriptive relations in general.

The overall usefulness of the findings is yet to be determined. Replication with a larger sample size is necessary to refine and stabilize the factor solution. This would then permit investigation of specific hypotheses regarding the effects of particular sample characteristics (family size, form and developmental stage) as well as social perceptions of these characteristics to be examined.

The most important implications are for researchers attempting to describe the highly complex and abstract levels of the family system hierarchy and for therapists in

the clinical situation. Although the unit of analysis and level of reference may vary, the fundamental nature of relations in general does not. The polar, hierarchical and dynamic features may therefore be important links to developing more adequate measures of the complex levels of family interaction.

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Appendix A

ORIGINAL FAMILY DESCRIPTOR QUESTIONNAIRE

Psychology - Family Study

Name: _____

Age: _____

Sex: _____

Student No. _____

In the boxes below, please put a word or term that you believe is a good description of your family as you know it. If possible, illustrate your descriptions with a specific example. Fill in as many boxes as you can, using any categories of description you believe are relevant.

Appendix B

FAMILY STUDY CHECKLIST

FAMILY STUDY

Age: _____
 Sex: _____
 Student No. _____

1. Please fill in the computer answer sheet, specifically your age, sex and student number.
2. Below you will find a list of words which could be used to describe your family. If you feel the word is appropriate in describing your own family, circle the number and place a mark under A on the corresponding number of your answer sheet. If the word is not suitable, leave the corresponding number on the answer sheet blank.

- | | | |
|-------------------|----------------------|---------------------|
| 1. accepting | 51. few-dominated | 101. poor |
| 2. ambitious | 52. financially ok | 102. powerful |
| 3. active | 53. firm | 103. private |
| 4. adventurous | 54. fragmented | 104. proud |
| 5. affectionate | 55. friendly | 105. quiet |
| 6. anxious | 56. fun | 106. reliable |
| 7. apathetic | 57. gregarious | 107. religious |
| 8. anim. oriented | 58. generous | 108. reserved |
| 9. argumentative | 59. grown-up | 109. resourceful |
| 10. antagonistic | 60. happy | 110. respectful |
| 11. bus. minded | 61. harmonious | 111. responsible |
| 12. caring | 62. healthy | 112. restless |
| 13. close | 63. helpful | 113. rural |
| 14. close-minded | 64. honest | 114. scholar |
| 15. cohesive | 65. humorous | 115. smokers |
| 16. cold | 66. incomplete | 116. sarcastic |
| 17. communicative | 67. independent | 117. sexist |
| 18. competitive | 68. industrious | 118. shy |
| 19. concerned | 69. inquisitive | 119. sincere |
| 20. conflicted | 70. intelligent | 120. small |
| 21. comfortable | 71. intense | 121. snobbish |
| 22. compatible | 72. introverted | 122. sociable |
| 23. conservative | 73. isolated | 123. sports-minded |
| 24. considerate | 74. jealous | 124. stable |
| 25. content | 75. just | 125. stressful |
| 26. cooperative | 76. lacks direction | 126. strict |
| 27. crazy | 77. large | 127. strong |
| 28. creative | 78. late bloomers | 128. stubborn |
| 29. critical | 79. lazy | 129. spiritual |
| 30. crumbling | 80. liberal | 130. successful |
| 31. demanding | 81. lonely | 131. suburban |
| 32. democratic | 82. loud | 132. suffocating |
| 33. dependent | 83. loyal | 133. supportive |
| 34. different | 84. mature | 134. sympathetic |
| 35. disciplined | 85. male dominated | 135. single parent |
| 36. phys. distant | 86. mobile | 136. sad |
| 37. emot. distant | 87. modern | 137. tense |
| 38. diverse | 88. moral | 138. tired |
| 39. divorced | 89. musical | 139. traditional |
| 40. dynamic | 90. non-verbal | 140. in transition |
| 41. easy-going | 91. original | 141. unorthodox |
| 42. emotional | 92. open | 142. unhealthy |
| 43. encouraging | 93. opinionated | 143. unpredictable |
| 44. energetic | 94. optimistic | 144. unreliable |
| 45. excitable | 95. over-protective | 145. volatile |
| 46. exciting | 96. outdoor-oriented | 146. wealthy |
| 47. extroverted | 97. patient | 147. warm |
| 48. extended | 98. peaceful | 148. well-read |
| 49. forgetful | 99. pessimistic | 149. well-travelled |
| 50. fam. oriented | 100. polit. active | 150. wise |
| | | 151. worry warts |
| | | 152. young |

Appendix C

87

FAMILY DESCRIPTION SURVEY

1. Please fill in the following.

Age ___ Sex ___
No. of children in family _____

2. Place a mark on the line to indicate to what degree you would describe your family on the following dimensions.

i.e.

large X ----- small
very fairly medium fairly very

friendly	-----	unfriendly
developing	-----	crumbling
demanding	-----	undemanding
changing	-----	firm
female-dominated	-----	male-dominated
relaxed	-----	tense
traditional	-----	unconventional
sincere	-----	insincere
uncomfortable	-----	comfortable
together	-----	fragmented
intense	-----	subdued
emotionally close	-----	emotionally distant
sad	-----	not sad
independent	-----	suffocating
inconsiderate	-----	considerate
well	-----	unhealthy
strict	-----	permissive
uncritical	-----	critical
conservative	-----	progressive
warm	-----	cold
lonely	-----	not lonely
loud	-----	quiet
anxious	-----	confident
happy	-----	unhappy
conflicted	-----	unconflicted
outgoing	-----	reserved
argumentative	-----	agreeable
opinionated	-----	open-minded
loyal	-----	disloyal
two-parent	-----	single-parent
introverted	-----	extroverted
encouraging	-----	discouraging

Appendix D

STAGE 2: UNROTATED FACTOR MATRIX

VARIABLE	COMMUNITY	FACTORS			
		1	2	3	4
VAR001	0.33994	0.51514	-0.11989	-0.13043	-0.11194
VAR002	0.38980	0.26381	0.21752	0.00011	0.16326
VAR003	0.36772	0.40939	0.02039	-0.11948	0.15030
VAR004	0.32770	0.31385	0.13521	-0.25143	0.11527
VAR005	0.43665	0.52015	0.04930	0.01158	-0.07601
VAR006	0.41473	0.18294	0.50315	0.05478	-0.00082
VAR007	0.33153	0.03869	0.16398	0.17934	-0.01595
VAR008	0.28674	0.13780	0.27842	-0.12223	-0.24448
VAR009	0.40279	-0.01953	0.45484	-0.04395	0.29102
VAR010	0.20448	-0.18517	0.27957	-0.13121	0.00326
VAR011	0.44958	0.25783	0.26764	0.11221	0.15544
VAR012	0.53272	0.55752	-0.07775	0.13845	-0.10478
VAR013	0.54676	0.60138	-0.19618	-0.09255	-0.01319
VAR014	0.30833	-0.03201	0.18896	0.22734	0.20095
VAR015	0.37147	0.42153	0.04305	0.01198	-0.06649
VAR016	0.36771	-0.14883	0.06681	0.14991	0.14037
VAR017	0.46989	0.57529	-0.09110	-0.30690	0.09535
VAR018	0.33973	0.15452	0.28110	-0.10289	0.19734
VAR019	0.29578	0.44007	0.09714	0.03764	-0.07094
VAR020	0.47635	-0.14564	0.31344	-0.12809	-0.36426
VAR021	0.53512	0.67915	-0.00954	0.04925	-0.10922
VAR022	0.37021	0.57547	-0.12183	0.03043	-0.04668
VAR023	0.34539	0.68959	0.10697	0.47446	0.02385
VAR024	0.53270	0.67034	-0.11357	0.02734	-0.18672
VAR025	0.51450	0.64600	-0.16110	0.14912	-0.04354
VAR026	0.62069	0.71102	-0.09813	0.05502	-0.20657
VAR027	0.25689	0.12793	0.16924	-0.38813	0.02462
VAR028	0.28736	0.34152	0.14371	-0.17301	-0.03002
VAR029	0.46758	-0.23251	0.50315	0.21564	0.16753
VAR030	0.44023	-0.22532	0.04353	-0.05480	-0.50846
VAR031	0.37457	0.08108	0.45478	0.03108	0.26231
VAR032	0.33629	0.43624	0.05589	0.00746	0.08981
VAR033	0.20567	0.11536	0.38350	-0.13622	0.05096
VAR034	0.28243	0.58142	0.23253	-0.38421	0.06524
VAR035	0.42998	0.38292	0.06033	0.31221	0.05427
VAR036	0.29364	-0.12332	0.24960	0.09529	-0.07693
VAR037	0.39361	-0.25533	0.42305	0.33813	0.07866
VAR038	0.38716	0.22351	0.22140	-0.38714	0.22724
VAR039	0.25194	-0.02103	0.13001	-0.23716	-0.16078
VAR040	0.33774	0.23011	0.13952	-0.22392	0.25301
VAR041	0.39233	0.50555	-0.10550	-0.11295	0.00121
VAR042	0.31026	0.21105	0.30264	-0.23751	-0.12104
VAR043	0.47257	0.52025	-0.15484	0.04110	-0.02582
VAR044	0.47611	0.61385	0.10840	-0.11378	0.12052
VAR045	0.41568	0.29400	0.42903	-0.00102	0.00318
VAR046	0.42477	0.51912	0.08783	-0.18704	0.17586
VAR047	0.37758	0.31029	0.18358	-0.40075	-0.08543
VAR048	0.22664	0.15509	0.21242	-0.24414	0.01680
VAR049	0.30050	-0.00761	0.25057	-0.01290	-0.00454
VAR050	0.52180	0.57251	-0.05314	0.12926	0.05573
VAR051	0.32525	0.18457	0.11593	-0.06046	-0.37052
VAR052	0.24877	0.33025	0.19000	0.14594	0.20447
VAR053	0.33877	0.31695	0.25425	0.37791	0.11938

Appendix D cont'd

VARBLE	COMMUNITY	FACTORS			
		1	2	3	4
VAR054	0.36069	-0.15523	0.00017	-0.18952	-0.30099
VAR055	0.47217	0.64760	-0.02985	-0.13691	-0.03661
VAR056	0.58306	0.71977	-0.07949	-0.11802	-0.04185
VAR057	0.33012	0.16696	0.10723	-0.32153	-0.04012
VAR058	0.42562	0.58552	0.10392	0.08732	-0.17016
VAR059	0.33385	0.26470	0.26427	0.23598	-0.07892
VAR060	0.54090	0.66697	-0.23892	0.09604	-0.06284
VAR061	0.53163	0.67319	-0.12360	0.19041	-0.10190
VAR062	0.38726	0.55316	0.03341	0.00931	0.11402
VAR063	0.42999	0.61142	-0.08617	-0.05166	-0.17744
VAR064	0.42330	0.63029	-0.00979	-0.03057	-0.04519
VAR065	0.37329	0.52041	0.01402	-0.06616	-0.03488
VAR066	0.32966	-0.00943	0.33823	-0.14614	-0.14809
VAR067	0.14105	0.17762	-0.07053	-0.17662	0.06073
VAR068	0.39195	0.50811	0.11414	0.00615	0.07699
VAR069	0.33431	0.35177	0.29742	-0.20268	-0.07548
VAR070	0.28785	0.35265	0.24153	-0.05145	0.10846
VAR071	0.35306	-0.09711	0.42552	-0.23098	-0.09798
VAR072	0.28520	-0.14335	0.15553	0.37436	-0.12516
VAR073	0.49855	-0.10584	0.34988	0.23435	-0.05860
VAR074	0.32271	-0.15893	0.32499	-0.23684	-0.06206
VAR075	0.36111	0.47928	0.13507	0.03531	-0.15535
VAR076	0.28408	-0.08644	0.20432	0.09380	-0.27033
VAR077	0.28351	0.17232	0.08856	-0.23767	0.09553
VAR078	0.30431	-0.15018	0.28695	0.08722	-0.04140
VAR079	0.28510	-0.05718	0.23737	-0.05989	-0.08006
VAR080	0.25589	0.18584	-0.00029	-0.25929	0.00705
VAR081	0.41039	-0.15133	0.33428	-0.16387	-0.54667
VAR082	0.50434	0.24452	0.34576	-0.32416	0.24542
VAR083	0.47629	0.61688	0.08001	-0.06139	-0.08812
VAR084	0.49272	0.49805	0.01031	0.28233	-0.24678
VAR085	0.21233	-0.05771	0.21880	0.03507	0.16067
VAR086	0.29494	0.19259	0.16652	0.07560	0.15158
VAR087	0.35143	0.36294	-0.06198	-0.14540	0.03796
VAR088	0.43563	0.37634	0.09640	0.35107	-0.13388
VAR089	0.32625	0.20363	0.04650	-0.05717	-0.07706
VAR090	0.28283	-0.20066	0.13525	0.15353	-0.21113
VAR091	0.23532	0.19110	0.04991	-0.24428	0.12427
VAR092	0.44667	0.51664	-0.12693	-0.24899	0.12779
VAR093	0.36199	-0.01905	0.46535	-0.11336	-0.17298
VAR094	0.48900	0.50933	0.11610	-0.00324	-0.06380
VAR095	0.38557	-0.04697	0.19751	0.14631	0.11733
VAR096	0.24246	0.17921	0.03967	-0.09617	-0.09952
VAR097	0.46244	0.56011	-0.22670	0.17031	-0.18554
VAR098	0.45983	0.58381	-0.07375	0.25537	-0.08886
VAR099	0.40748	-0.14615	0.32625	0.11577	-0.05740
VAR100	0.20719	0.04994	0.07035	0.14758	0.02401
VAR101	0.42198	-0.12113	0.04215	0.08508	0.06091
VAR102	0.33306	0.13501	0.22564	0.08342	0.24802
VAR103	0.45452	-0.00573	0.32042	0.25643	-0.04170
VAR104	0.29114	0.34348	0.23952	0.10093	0.07867
VAR105	0.30421	0.10196	0.00078	0.41375	-0.17090
VAR106	0.39497	0.57393	-0.05800	0.17755	-0.02958

Appendix D cont'd

VARIABLE	COMMUNITY	FACTORS			
		1	2	3	4
VAR107	0.32087	0.11133	0.05776	0.16624	-0.13421
VAR108	0.42079	-0.04595	0.25350	0.45395	0.00261
VAR109	0.31147	0.39113	0.27046	-0.01806	0.12965
VAR110	0.46825	0.54845	0.13414	0.28438	-0.07262
VAR111	0.32558	0.45998	0.10342	0.06533	-0.07160
VAR112	0.36343	-0.05464	0.27163	-0.08171	-0.40417
VAR113	0.27613	0.14683	0.15828	0.10106	-0.15740
VAR114	0.18795	0.17786	0.18011	0.30272	0.04389
VAR115	0.32568	-0.04763	0.18130	-0.03649	-0.10026
VAR116	0.32925	-0.09498	0.28472	-0.26203	0.19706
VAR117	0.45217	-0.12859	0.14235	0.19406	0.11692
VAR118	0.40341	-0.15294	0.12340	0.23614	0.07930
VAR119	0.49599	0.67397	0.03775	0.08571	0.01790
VAR120	0.27908	0.01875	0.21906	-0.02995	-0.02576
VAR121	0.18568	-0.07443	0.10760	0.23879	0.03416
VAR122	0.22034	0.32781	-0.03619	-0.22888	-0.10649
VAR123	0.26094	0.25224	0.03274	-0.05967	0.20678
VAR124	0.42081	0.60145	-0.02207	0.18707	-0.00092
VAR125	0.36203	-0.14413	0.48512	-0.04536	-0.24742
VAR126	0.29898	0.03171	0.23115	0.30303	0.30323
VAR127	0.37749	0.46616	0.13881	-0.12320	0.07085
VAR128	0.33941	-0.06551	0.41909	-0.15363	0.13874
VAR129	0.39356	0.26248	0.10863	0.03786	-0.15848
VAR130	0.36455	0.47110	0.02294	0.12638	0.07559
VAR131	0.18305	0.25955	0.02227	0.15083	-0.00608
VAR132	0.46985	-0.08712	0.44008	0.35134	-0.02043
VAR133	0.46799	0.58947	-0.09390	-0.09546	-0.23055
VAR134	0.39870	0.60382	0.04058	0.03738	-0.10606
VAR135	0.44491	-0.03285	0.19357	-0.14194	-0.56944
VAR136	0.52974	-0.08542	0.37317	-0.03033	-0.48576
VAR137	0.42479	-0.10422	0.52151	-0.06294	-0.18600
VAR138	0.48304	-0.13223	0.42363	-0.12495	-0.08937
VAR139	0.28675	0.08269	0.10079	0.43706	-0.05874
VAR140	0.12788	-0.03958	0.08962	-0.14613	-0.02412
VAR141	0.32492	-0.07739	0.42479	-0.21261	0.01372
VAR142	0.32100	-0.09950	0.05495	-0.02074	-0.41020
VAR143	0.25198	-0.07433	0.26529	-0.06717	0.23933
VAR144	0.45675	-0.04853	0.22919	0.24364	0.10477
VAR145	0.19811	-0.07620	0.08381	-0.26757	0.20077
VAR146	0.55137	0.19785	0.27296	0.19754	0.32207
VAR147	0.46950	0.56149	-0.11960	-0.03844	-0.04212
VAR148	0.48228	0.36914	0.15546	-0.05677	0.00512
VAR149	0.28836	0.22820	0.14395	0.00681	0.23984
VAR150	0.29606	0.31801	0.07793	0.21670	0.09314
VAR151	0.29240	-0.03932	0.29134	0.29438	-0.10840
VAR152	0.26258	0.29546	0.12790	-0.16048	0.23742
COMMUNITY		19.15789	7.43261	5.53594	4.44877

Appendix E

STAGE 2: FACTOR MATRIX

VARBLE	COMMUNTY	FACTORS			
		1	2	3	4
VAR001	0.55742	-0.53526	0.14840	0.01898	0.14360
VAR002	0.62939	0.55198	0.15930	-0.06286	0.20095
VAR003	0.65125	0.09201	-0.39722	0.22953	-0.16444
VAR004	0.70640	-0.01871	-0.55255	0.10300	0.22692
VAR005	0.78998	-0.02042	0.06823	-0.06863	0.71646
VAR006	0.65466	0.58007	0.14734	0.07534	-0.37989
VAR007	0.56274	-0.14359	-0.61842	0.22978	0.25238
VAR008	0.58861	-0.62034	0.12309	0.02960	-0.19472
VAR009	0.62209	-0.71050	-0.07716	-0.09558	-0.09657
VAR010	0.74244	0.53752	0.10236	-0.19857	-0.01327
VAR011	0.60854	0.25169	0.08878	0.18552	-0.29002
VAR012	0.67252	0.77636	0.00234	0.05047	0.08406
VAR013	0.55386	0.56701	0.09528	-0.02285	0.00574
VAR014	0.69523	0.34740	-0.48251	-0.17647	0.17576
VAR015	0.68070	-0.72345	-0.04446	-0.07361	-0.32458
VAR016	0.72313	0.53458	-0.09318	-0.29952	0.01601
VAR017	0.64088	0.10169	-0.53147	0.12573	0.13838
VAR018	0.75615	0.46454	-0.33012	0.37859	-0.31310
VAR019	0.62002	0.11459	-0.50216	0.00218	-0.00256
VAR020	0.71844	-0.73488	0.00607	-0.02483	0.23961
VAR021	0.58464	0.71068	0.15201	0.02873	0.13866
VAR022	0.69637	0.03853	-0.32313	-0.55468	0.07241
VAR023	0.68003	0.55474	0.01774	-0.09174	-0.22757
VAR024	0.68639	-0.71568	-0.09777	0.19054	-0.07824
VAR025	0.61455	0.67158	0.11626	0.21069	0.00299
VAR026	0.77302	0.27931	-0.49948	-0.59774	-0.15808
VAR027	0.62885	0.39675	-0.21095	0.58540	-0.06277
VAR028	0.62135	0.47048	-0.21327	0.40152	0.14563
VAR029	0.60804	-0.65239	-0.33112	0.18473	0.01176
VAR030	0.60698	0.28544	0.42740	-0.17074	0.15473
VAR031	0.67338	0.19117	-0.44063	-0.49791	-0.28723
VAR032	0.60769	-0.73357	-0.00562	-0.02150	-0.09262
COMMUNALITY		8.14891	2.83185	2.07435	1.55827

Appendix F

STAGE 3: ORIG SAMPLE FACTOR MATRIX

VARBLE	COMMUNTY	FACTORS			
		1	2	3	4
VAR001	0.55742	-0.53526	0.14840	0.01898	0.14360
VAR002	0.62939	0.55198	0.15930	-0.06286	0.20095
VAR003	0.65125	0.09201	-0.39722	0.22953	-0.16444
VAR004	0.70640	-0.01871	-0.55255	0.10300	0.22692
VAR005	0.78998	-0.02042	0.06823	-0.06963	0.71646
VAR006	0.65466	0.58007	0.14734	0.07534	-0.37989
VAR007	0.56274	-0.14359	-0.61842	0.22978	0.25238
VAR008	0.58861	-0.62034	0.12309	0.02960	-0.19472
VAR009	0.62209	-0.71050	-0.07716	-0.09558	-0.09657
VAR010	0.74244	0.53752	0.10236	-0.19857	-0.01327
VAR011	0.60854	0.25169	0.08878	0.18552	-0.29002
VAR012	0.67252	0.77636	0.00234	0.05047	0.08406
VAR013	0.55386	0.56701	0.09528	-0.02285	0.00574
VAR014	0.69523	0.34740	-0.48251	-0.17647	0.17576
VAR015	0.68070	-0.72345	-0.04446	-0.07361	-0.32458
VAR016	0.72313	0.53458	-0.09318	-0.29952	0.01601
VAR017	0.64088	0.10169	-0.53147	0.12573	0.13838
VAR018	0.75615	0.46454	-0.33012	0.37859	-0.31310
VAR019	0.62002	0.11459	-0.50216	0.00218	-0.00256
VAR020	0.71844	-0.73488	0.00607	-0.02483	0.23961
VAR021	0.58464	0.71068	0.15201	0.02873	0.13866
VAR022	0.69637	0.03853	-0.32313	-0.55468	0.07241
VAR023	0.68003	0.55474	0.01774	-0.09174	-0.22757
VAR024	0.68639	-0.71568	-0.09777	0.19054	-0.07824
VAR025	0.61455	0.67158	0.11626	0.21069	0.00299
VAR026	0.77302	0.27931	-0.49448	-0.59774	-0.15808
VAR027	0.62885	0.39675	-0.21095	0.58540	-0.06277
VAR028	0.62135	0.47048	-0.21327	0.40152	0.14563
VAR029	0.60804	-0.65239	-0.33112	0.18473	0.01176
VAR030	0.60698	0.28544	0.42740	-0.17074	0.15473
VAR031	0.67338	0.19117	-0.44063	-0.49791	-0.28723
VAR032	0.60769	-0.73357	-0.00562	-0.02150	-0.09262
COMMUNALITY		8.14891	2.83185	2.07435	1.55827

Appendix G

STAGE 3: COMBINED SAMPLE FACTOR MATRIX

VARBLE	COMMUNLTY	FACTORS			
		1	2	3	4
VAR001	0.57394	0.55454	0.02862	0.00367	0.33878
VAR002	0.47219	-0.49819	0.03142	0.18458	-0.09144
VAR003	0.58852	-0.24168	0.21282	-0.49244	0.19209
VAR004	0.73240	0.01585	0.56058	-0.09521	-0.10331
VAR005	0.66840	-0.02489	-0.16624	-0.02072	0.69395
VAR006	0.61392	-0.64442	-0.14065	-0.13428	-0.17090
VAR007	0.62013	0.05399	0.63584	-0.30214	0.11373
VAR008	0.41578	0.59015	0.06709	-0.02570	0.12537
VAR009	0.59031	0.74977	0.10995	0.06687	0.02333
VAR010	0.54370	-0.59282	-0.07525	0.26775	-0.00825
VAR011	0.63581	-0.18787	-0.23215	-0.41563	-0.05310
VAR012	0.67115	-0.73431	-0.04547	0.15674	-0.19776
VAR013	0.55739	-0.62038	-0.14705	-0.06500	0.32965
VAR014	0.66072	-0.41982	0.47364	0.00608	0.00987
VAR015	0.61479	0.71468	0.15307	0.02439	-0.00312
VAR016	0.60086	-0.50821	0.04354	0.20534	-0.08408
VAR017	0.51487	-0.19036	0.60966	-0.24243	0.19132
VAR018	0.51104	-0.40520	0.16893	-0.41178	-0.19578
VAR019	0.56418	-0.18948	0.50077	-0.16198	-0.01152
VAR020	0.64213	0.72378	-0.00644	-0.03017	0.27372
VAR021	0.55505	-0.66521	-0.04762	0.07461	0.06441
VAR022	0.66553	-0.02994	0.48642	0.49337	0.19751
VAR023	0.45755	-0.61119	-0.04241	0.10228	-0.00662
VAR024	0.63482	0.73027	0.14976	-0.05536	-0.17018
VAR025	0.54553	-0.66655	-0.13722	-0.19403	0.09860
VAR026	0.74505	-0.44144	0.45999	0.35843	-0.01528
VAR027	0.71186	-0.44324	-0.08579	-0.50268	-0.10163
VAR028	0.53308	-0.48820	0.11893	-0.22024	0.21860
VAR029	0.49858	0.58575	0.15877	-0.25572	-0.07107
VAR030	0.55966	-0.20457	-0.39774	0.00680	0.45305
VAR031	0.64307	-0.39255	0.44684	0.29864	0.15019
VAR032	0.60480	0.74244	-0.06162	0.03242	-0.17248
COMMUNALITY		8.47436	2.71547	1.85754	1.42139

Appendix B

STAGE 3: 3RD-YR SAMPLE FACTOR MATRIX

VARBLE	COMMUNLTY	FACTORS			
		1	2	3	4
VAR001	0.66924	0.61757	0.06447	0.21176	0.17871
VAR002	0.72774	-0.74082	-0.00811	0.03533	-0.26753
VAR003	0.69988	-0.00089	-0.09991	0.26087	0.48259
VAR004	0.54667	-0.32859	-0.42263	-0.44417	-0.15143
VAR005	0.76148	-0.08814	0.39101	-0.08769	0.26457
VAR006	0.67908	-0.72143	0.25638	0.05459	0.23874
VAR007	0.76778	0.05104	-0.63349	0.04551	0.00901
VAR008	0.68455	0.54845	0.09927	-0.01710	0.02355
VAR009	0.71094	0.70382	0.01773	-0.08382	0.02723
VAR010	0.74865	-0.71053	0.08813	0.09917	-0.22694
VAR011	0.81692	-0.17815	0.29692	0.43034	0.39888
VAR012	0.69035	-0.59395	-0.29478	-0.07482	-0.33551
VAR013	0.68004	-0.79514	0.13530	0.04368	-0.00460
VAR014	0.76941	-0.43630	0.03095	0.12276	0.18195
VAR015	0.63776	0.63697	-0.13459	-0.12938	0.24911
VAR016	0.61608	-0.54777	0.26454	-0.04807	-0.13485
VAR017	0.65719	-0.30005	-0.59612	0.05289	0.37990
VAR018	0.65665	-0.50858	-0.19010	0.22007	0.46241
VAR019	0.74810	-0.26501	-0.75324	-0.04393	0.07912
VAR020	0.72986	0.81620	0.12432	0.10269	0.09747
VAR021	0.67510	-0.71858	0.22056	-0.22831	0.10737
VAR022	0.76585	0.00646	-0.01077	-0.67954	0.13533
VAR023	0.64265	-0.64123	0.10777	0.12499	0.02894
VAR024	0.84542	0.87904	-0.06644	0.06657	0.04963
VAR025	0.74714	-0.73844	0.05340	0.33688	0.07235
VAR026	0.72519	-0.59258	-0.02253	-0.44587	0.28705
VAR027	0.73542	-0.36435	-0.03149	0.68336	-0.11108
VAR028	0.63102	-0.54763	-0.28874	0.37279	-0.04539
VAR029	0.61888	0.55334	-0.02232	0.01046	0.22514
VAR030	0.71576	-0.23751	0.57625	-0.20264	-0.01100
VAR031	0.78239	-0.54617	0.05141	-0.50448	0.37458
VAR032	0.64642	0.59022	0.06003	0.16431	-0.10802
COMMUNALITY		9.90661	2.57876	2.40671	1.63611

Appendix I

STAGE 3: O-H SAMPLE FACTOR MATRIX

VARBLE	COMMUNLTY	FACTORS 1	2	3	4
VAR001	0.63101	0.54648	-0.31453	-0.12820	0.13955
VAR002	0.60054	-0.52405	-0.25787	0.17599	0.17368
VAR003	0.62603	-0.07080	0.32053	-0.53707	0.16479
VAR004	0.66445	-0.28232	-0.15032	-0.27265	-0.23066
VAR005	0.53674	-0.08919	0.36304	0.24080	0.46887
VAR006	0.61331	-0.50177	0.23365	-0.21770	-0.35266
VAR007	0.64292	-0.00923	-0.22105	-0.67995	0.21197
VAR008	0.53166	0.58606	-0.13928	-0.06128	0.22057
VAR009	0.43183	0.54643	-0.10372	0.03872	-0.05432
VAR010	0.53049	-0.59847	0.11890	0.16868	-0.21078
VAR011	0.58832	0.07152	0.62257	-0.17751	-0.05821
VAR012	0.63764	-0.65165	-0.13879	0.15391	-0.23298
VAR013	0.69741	-0.65172	0.13116	-0.11999	0.33888
VAR014	0.69186	-0.33543	-0.08557	-0.30877	-0.14415
VAR015	0.62427	0.62712	-0.04479	-0.17835	-0.13670
VAR016	0.60771	-0.46799	0.10292	0.10538	0.00435
VAR017	0.67099	-0.16492	-0.13591	-0.59436	0.37222
VAR018	0.79070	-0.23575	0.15327	-0.31873	-0.28086
VAR019	0.72252	-0.22398	-0.40308	-0.53565	0.27716
VAR020	0.72071	0.70519	0.22653	-0.11875	0.11211
VAR021	0.70877	-0.67007	-0.09027	-0.05929	0.36329
VAR022	0.65027	0.15863	-0.60474	-0.06642	0.07211
VAR023	0.55633	-0.51669	0.28160	-0.10443	-0.01709
VAR024	0.72662	0.82540	-0.03672	-0.07401	0.03549
VAR025	0.58785	-0.62523	0.34754	-0.15843	-0.02598
VAR026	0.55820	-0.29600	-0.51305	-0.07584	-0.15925
VAR027	0.65409	-0.42203	0.54040	-0.16479	-0.04292
VAR028	0.67419	-0.52505	0.17796	-0.13956	0.00944
VAR029	0.69289	0.54360	0.18741	-0.34158	-0.17744
VAR030	0.61827	-0.12365	0.17759	0.48300	0.44402
VAR031	0.63914	-0.33364	-0.45746	-0.06573	-0.15291
VAR032	0.61225	0.57598	0.27603	-0.19475	-0.14887
COMMUNALITY		7.27927	2.78438	2.46933	1.57486

Appendix J

STAGE 3: TOTAL SAMPLE FACTOR MATRIX

VARBLE	COMMUNLTY	FACTORS			
		1	2	3	4
VAR001	0.43443	0.56498	0.06741	0.17969	-0.12361
VAR002	0.50192	0.55820	0.03431	-0.21059	0.16194
VAR003	0.48620	0.13477	0.10988	0.54109	-0.36374
VAR004	0.62398	0.16211	0.48071	0.01057	0.05621
VAR005	0.56314	0.52417	-0.31252	-0.01493	-0.54105
VAR006	0.57554	0.60805	-0.11935	0.15197	-0.12790
VAR007	0.60444	-0.02247	0.60344	0.33442	-0.01220
VAR008	0.40787	-0.57429	0.07537	-0.00533	-0.12783
VAR009	0.49600	-0.65727	0.09095	-0.07396	0.01294
VAR010	0.44246	0.62087	-0.12029	-0.13185	0.07934
VAR011	0.62876	0.10306	-0.30595	0.43923	-0.20747
VAR012	0.59287	0.67941	0.03368	-0.15541	0.29477
VAR013	0.56914	0.67093	-0.10543	0.07419	-0.26073
VAR014	0.52077	0.40644	0.30921	0.09818	-0.14154
VAR015	0.55450	-0.66324	0.18355	0.01262	-0.13962
VAR016	0.65686	0.49998	-0.07717	-0.11379	-0.09725
VAR017	0.56311	0.21064	0.53840	0.34654	-0.14397
VAR018	0.49154	0.37502	0.13648	0.38345	0.04798
VAR019	0.54799	0.22684	0.60525	0.19291	0.08010
VAR020	0.63090	-0.73693	-0.06655	0.11596	-0.23498
VAR021	0.55787	0.67823	0.06690	-0.11016	-0.14303
VAR022	0.59479	-0.03414	0.46967	-0.45367	-0.33943
VAR023	0.42231	0.58291	-0.11512	0.07509	-0.08375
VAR024	0.66252	-0.79125	0.10521	0.06255	0.05356
VAR025	0.54412	0.66855	-0.16300	0.24667	-0.06543
VAR026	0.64480	0.43568	0.41577	-0.30834	-0.25988
VAR027	0.56662	0.42379	-0.20720	0.52326	0.15231
VAR028	0.45990	0.50912	0.03696	0.30990	0.16464
VAR029	0.52360	-0.55754	0.12582	0.29498	-0.15402
VAR030	0.57039	0.17010	-0.44216	-0.19155	-0.44281
VAR031	0.62537	0.40790	0.38664	-0.30627	-0.25454
VAR032	0.48574	-0.65819	-0.05758	0.11053	0.03629
COMMUNALITY		8.20690	2.52655	2.07366	1.39416

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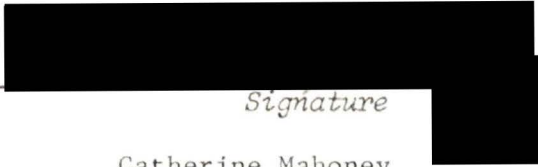
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