ALCOHOL-DEPENDENT MEN AND THEIR SPOUSES: AN ECOSYSTEMIC ANALYSIS OF EMPIRICALLY-DERIVED ALCOHOLIC SUBTYPES

by
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We accept this thesis as conforming to the required standard

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ABSTRACT

This study involved the ecosystemic assessment of empirically-derived alcoholic subtypes in a group of men (n=130) living in intact family situations. Subtypes were derived by cluster analyzing a broad base of alcohol-use related variables. The differential psychological functioning of the alcoholic men and their non-alcoholic wives, grouped according to alcoholic subtypes, was assessed using an ecosystemic framework. Specifically, the individual, marital, family, social and therapeutic levels of the ecosystem were evaluated with respect to (a) the alcoholic subtypes, and, (b) differences between the alcoholic husbands and their non-alcoholic wives.

The cluster analysis resulted in a three-group alcoholic typology. Group One, labelled Severe, Irregular Pattern, was characterized by high levels of lifetime alcoholism, alcohol consumption, alcohol-related consequences, familial alcoholism, and episodic drinking out of the home. Group Two, labelled Moderate, Mixed Pattern, was characterized by lower levels of dependency and consumption, tending to drink mostly at night, in the home, and alone. Group Three, labelled Severe, Steady Pattern, was characterized by severe dependency and high-rate, daily consumption, tending to drink alone and at home. The derived alcoholic typology satisfied criteria for adequacy, showing: homogeneity within subtypes, heterogeneity across subtypes, comprehensiveness, specificity, multidimensionality, utility, and evidence of external validity.
Groups One and Three were similar to the binge/steady distinction reported in the subtyping literature, however, severity of dependency surfaced as an additional subtyping factor and a third subtype emerged.

The ecosystemic analysis of the psychosocial functioning of the subtypes indicated a number of important differences. First, there were strong indications that the nonalcoholic wives were functioning better than the alcoholic husbands. Second, subtype differences existed across the ecosystemic levels. Third, subtype differences varied with person (i.e. alcoholic husbands vs. non-alcoholic wives), especially at the marital and family levels.

The results of the study point to the efficacy of a multidimensional, empirical approach to subtyping. The ecosystemic analysis results are seen as confirming theoretical ideas regarding how families organize themselves differentially and with different degrees of success to various patterns of alcoholism.
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dedicated to the memory of my mother,
Irene Weir (nee Tkachuk)
1929-1993
CHAPTER I: INTRODUCTION

One hundred and forty-three years ago the term "alcoholism" was first used and a description of "chronic alcoholics" was first elaborated (Huss, 1852). Since that time, an exponential accumulation of clinical observations and research data has been altering our views of this condition. These changes in perspective have been neither orderly nor consistent, but have followed many different directions. In 1960, when Jellinek provided a comprehensive overview of those views, he cited more than 200 definitions, conceptualizations and theories of the etiology and treatment of alcoholism. Today, many of those perspectives of alcoholism still claim adherents and to one extent or another continue to influence our research studies and our approaches to treatment (Tolsma, Driol & Hiland, 1992; Ablon, 1984; Orford, 1984; Jacobson, 1989). It may be said that the only consistent feature to the development of our views of alcoholism is that we regard it as more complex the longer we study the problem.

Much time, energy and material resources are devoted to research in the field of alcoholism because it continues to be an enormous problem in the Western world, both for the individuals and families struggling with the problem and for the communities and societies in which they live. The litany of problems associated with alcohol abuse is lengthy and well known, and includes health, employment and psychological problems, marital conflict and divorce, economic difficulties, child abuse and

**Background of the Problem**

This study brings together two interrelated lines of research in the area of alcoholism. The first one follows the relatively small but growing trend of considering the alcoholic in the context of his or her important psychosocial systems. Systemic models of alcoholism represent a shift from a narrow focus on the individual alcoholic to a broader view which includes the alcoholic’s spouse, family and social system and which emphasizes the reciprocal relationship between the alcoholic and the interpersonal contexts in which the drinking behavior is embedded.

The second line of alcoholism research involves the continuing controversy about the nature of alcoholism, that is, whether it is essentially a unitary or multidimensional clinical entity. Even as the growing body of evidence supports the idea that alcoholics make up a heterogenous population (Morey, Skinner & Blashfield, 1984; Babor, Hoffmann, DelBoca, Hesselbrock, Meyer, Dolinsky & Rounsaville, 1992), further questions arise regarding the determination of a taxonomy of alcoholism which is clinically meaningful.

**Alcoholism and the Family**

Traditionally, research on alcoholism has focused itself on
the individual drinker (Steinglass, 1979a). The prevalence of the "disease model" of alcoholism has likely contributed to this emphasis on the individual in that it conceptualizes alcoholism as a medical condition caused by biological/genetic factors beyond the control of the alcoholic or his/her family and friends (Marlatt, 1988). Although there has been a recognition of the impact of alcoholism on the lives of family members since the early 1800s (Longmate, 1982), most of the research interest in families has occurred only in the last forty years.

Despite the enduring tendency in alcoholism research to focus on the individual drinker, there are many reasons to consider alcoholism as a problem best studied contextually. Some of these include: evidence that rates of alcoholism are tied to differences in community, ethnicity and culture (Ablon, 1976); the emergence of the biopsychosocial model of alcoholism (Schwartz, 1982; Peele, 1985; Donovan, 1988); the growing research literature which implicates familial drinking in the cross-generational transmission of alcoholism (Cloninger, Bohman & Sigvardsson, 1981; Cloninger, 1987); the recognition that the majority of problem drinkers live in intact marriages and families (Steinglass, 1992); and the promise shown by systemic approaches to alcoholism treatment (Institute of Medicine, 1992).

There is much evidence that living in a household in which a parent or spouse is abusing alcohol can have a profound effect on a person. As Kaufman asserts:

Regardless of the family system, alcoholism is a major stress on individual members and the total family.
Alcoholism is an economic drain on family resources, which threatens job security. Drinking behavior may interrupt normal family tasks, cause conflict, and demand adaptive, adaptive responses from family members who do not know how to appropriately respond. In brief, alcoholism creates a series of escalating crises in family structure and function, which may bring the family system to an extreme catastrophic state (p.901, 1985).

Clinical reports have been supported by empirical research about how alcoholism can affect wives, the marital system, children of alcoholics and the family as a whole.

As research outcomes failed to support the theory that wives of alcoholics are "disturbed persons" (Jacob & Seilhamer, 1982), the "stress victim" hypothesis was put forward which views the symptomatic behavior and distress of the alcoholic's wife as a reaction to cumulative marital and family stress associated with her husband's alcoholism (Jackson, 1954). Since it was initially posited, much research has been done which supports the idea that wives of alcoholics are subject to severe and long-lasting hardship including economic insecurity, social embarrassment, psychological disturbance, reduction of social contact, failure of the husband to meet role obligations, conflict and arguments, a poor sex life and infidelity, possessiveness and jealousy directed toward the wife, damage to household objects or furniture, and physical violence in the family (Bailey, Haberman & Alksne, 1962; Lemert, 1962; Jackson & Kogan, 1963; Orford, Oppenheimer, Egert, Hensman & Guthrie, 1976; Steinglass, 1981; Moos & Moos, 1984; Burns, 1984; Strube & Babour, 1984; Van Hasselt, Morrison, & Bellack, 1985; Zweben,

Some reviewers have noted, however, that research findings have not consistently supported the "stress victim" theory, that the literature lacks an integrated psychosocial perspective, in general, and that wives of alcoholics should not be considered a homogeneous group (Jacob & Seilhamer, 1982; Orford, 1983; Orford, 1990). Research findings suggest that the effects of living with an alcoholic husband may be mediated by such factors as the wife's coping style, family background, employment situation and personality characteristics (eg. Billings & Moos, 1981; Orford, 1976; Finney, Moos, Cronkite, & Gamble, 1983).

A similar pattern of findings has come out of the research literature investigating alcohol-involved marriages and families, as well as studies examining the effects of parental drinking on children. Empirical results have shown that alcoholic marriages are often characterized by relationship distress and a high rate of marital dissolution, and are plagued by such problems as faulty communication, role confusion and reversals, and negative interaction patterns (eg. Billings, Kessler, Gomberg, & Weiner, 1979; Zweben, 1986; Becker & Miller, 1976; O'Farrell & Birchler, 1987; Nace, 1982). Much of the research on alcohol-involved marriages underscores their complexity and diversity, however, despite the general trends of relationship distress and dysfunction (eg. O'Farrell, Kleinke, & Thompson, 1986; Wiseman, 1980; Steinglass, 1981).

Children of alcoholics are subject to the primary effects of
alcohol on their drinking parent, the secondary effects that arise from alcohol-related problems, and the effects of inadequate role modelling as their drinking parent turns to alcohol abuse as a coping strategy (Seilhamer & Jacob, 1990). Not surprisingly, these children have been shown to demonstrate higher levels of maladaptive behaviors, social adjustment problems, and cognitive difficulties than children of non-alcohol-abusing parents (Seilhamer & Jacob, 1990; Sher, 1987; West & Prinz, 1987). Children of alcoholics more commonly experience a plethora of problems, including low self-esteem (El-Guebaly & Offord, 1977; Hughes, 1977), depressive affect (Rolf, Johnson, Isreal, Baldwin, & Chandra, 1988; Roosa, Sandler, Beals, & Short, 1988), and difficulties with peer relationships (Hughes, 1977). At the same time, a summary of outcome studies shows a wide variation in adjustment amongst children of alcoholics (Clair & Genest, 1987; Jacob & Leonard, 1986; Werner, 1986) with the presence of a number of buffering influences, such as personal resources, temperament, involvement of extended family, and the availability of support from the community (Seilhamer & Jacob, 1990).

Research investigating the effects of alcoholism on the family has found a number of hallmark conditions, including: disturbed communications (e.g. Barry & Fleming, 1990; Moos, Bromet, Tsu, & Moos, 1979; Wilson & Orford, 1978), altered role functioning (Moos & Moos, 1984; Liepman et al., 1989), disrupted family rituals (Wolin, Bennett, & Noonan, 1979; Wolin, Bennett,
Noonan, & Teitelbaum, 1980), and a lack of a sense of togetherness (Paolino, McCrady, & Diamond, 1978; Moos & Moos, 1984; Bate, 1994). Within the general trend of increased dysfunction in alcohol-involved families, however, there are strong indications that families differ widely in the degree to which they are impacted by alcoholic drinking (Moos & Moos, 1984; Jacob, Seilhamer, & Rushe, 1989; Preli & Protinsky, 1988; Vannicelli, Gingerich, & Ryback, 1983; Steinglass, Bennett, Wolin, & Reiss, 1987).

There is a consistent pattern in the research literature pertaining to alcoholism and the family. Two overall conclusions can be derived: 1) family members are at risk of being adversely affected by living with an alcoholic, and 2) wives and children of alcoholics, alcohol-involved marriages, and alcohol-involved families themselves cannot be considered homogeneous groups. Whereas some studies have explored the heterogeneity of wives and children living in alcoholic homes, very little research has looked at alcoholics as a heterogeneous group with respect to the family system. As Leonard (1992) asserts: "[R]esearch progress concerning alcoholism and family processes will require shedding the implicit assumption of homogeneity among alcoholics" (p.280). Outside of the field of alcoholism and the family, however, much work has been done to refute the idea that alcoholics are a homogeneous group, and to differentiate alcoholics into meaningful subtypes.
The Nature of Alcoholism

Although scientific interest in the classification of alcohol abuse dates back at least four decades (McKinlay, 1949), the traditional view has held that alcoholism is a unitary phenomenon, and diagnostic criteria have focused on the classification of an individual as either alcoholic or nonalcoholic (eg., National Council on Alcoholism, 1972). The unitary conception of alcoholism has been extensively criticized (Pattison, Sobell, & Sobell, 1977; Skinner, Glaser, & Annis, 1982), however, and the idea that the alcoholic population is basically heterogeneous in nature is gaining widespread acceptance (Jacobson, 1989). The dissatisfaction with the unitary conception has stimulated the creation of various theoretical and empirically-derived proposals for subtypes among alcoholics, however, some researchers have questioned the utility of these typologies, preferring to focus only on distinctions which have relevance to treatment matching (Jacobson, 1989). Nevertheless, many classification systems continue to be generated, elaborated and explored, and more often than not they differ significantly with respect to their theoretical grounding, structural relationships among subtypes, and means by which these subtypes are identified (Morey, Skinner, & Blashfield, 1984).

One commonly used strategy has been to order subtypes along a dimension, such as a developmental continuum of alcoholism (eg., Jellinek, 1952; McCreery, 1976; Mulford, 1977); other approaches make use of a two-axis model for diagnosing alcohol
problems (eg., Edwards, Gross, Keller, Moser, & Room, 1977); still others have been formulated into categorical models of either discrete types (eg., Jellinek, 1960a; 1960b) or overlapping disorders (eg., DSM-IV, American Psychiatric Association, 1994).

The majority of empirically-derived classification systems are based upon personality differences between subtypes of drinkers, most often using MMPI scores (Morey & Blashfield, 1981). An emerging trend, however, involves differentiating alcohol abusers according to multiple drinking-related factors, and not necessarily with reference to personality traits or psychiatric symptomatology (Jacobson, 1989). These classification approaches tend to utilize such information as when and where drinking typically occurs, drinking frequency, amount typically consumed, number of years of heavy drinking, indications of severity of alcohol-dependence, and number and kind of drinking-related consequences (Morey & Blashfield, 1981).

Within this emerging trend, various aspects of drinking behavior have been focused on by different researchers. Some have focused on global distinctions exclusively such as a binge versus chronic drinking pattern (Tomsovic, 1974; Sanchez-Craig, 1980; Connors, Tarbox & McLaughlin, 1986), whereas others have used instruments which measure alcoholic behavior on a number of dimensions and then employed cluster analysis to identify subtypes (Morey, Blashfield & Skinner, 1983; Snowden, Nelson & Campbell, 1986; Babor et al., 1992).
The research approach utilizing a multidimensional strategy to determine alcoholic sub-types has yet to be fully developed, however, some extremely promising results have been found to date. In a recent review of work in this field, Babor and his colleagues (1992) concluded that the body of research suggests "...that alcoholics differ with respect to at least four important defining characteristics: etiological elements, onset and course, presenting symptoms, and drinking patterns" (Babor et al., 1992, p. 600). Furthermore, the authors noted the convergence between early theoretical typologies (i.e. Bowman & Jellinek, 1941; Jellinek, 1960) and recent classifications deriving from a variety of sources including those from a neurobiological learning model (Cloninger, Bohman, Sigardsson, 1981; Cloninger, 1987), a developmental model (Zucker, 1987) and an extensive alcohol use instrument battery (Morey & Skinner, 1986). Although further investigation in this direction is required, these recent results strongly confirm the superiority of a broad-based empirical approach to deriving alcoholic subtypes.

Alcoholic Subgroups and the Family

Despite the fact that researchers in the field of alcohol abuse and the family have begun to look at wives of alcoholics and children of alcoholics as being heterogeneous groups, there is a paucity of research which examines alcoholics as a heterogeneous group with respect to the families they live in.
Studies which have explored alcoholic subtypes and the family, however small in number, have produced significant and promising results.

From a family systems perspective, Steinglass and his associates have argued that among alcoholic families, alcohol consumption may have an adaptive value to the family (Steinglass, Bennett, Wolin, & Reiss, 1987; Steinglass & Robertson, 1983). The consumption of alcohol may allow the alcoholic and his family to interact in a way in which certain important tasks can be accomplished which otherwise might not be accomplished; hence, an adaptive value accrues to the drinking. As a result, alcohol consumption is reinforced, and the family comes to rely on both sober and intoxicated interactions to maintain family functioning and to solve family problems (Davis, Berenson, Steinglass, & Davis, 1974; Steinglass, Davis, & Berenson, 1977).

Although an alcoholic may cycle between intoxicated and relatively sober periods in the course of a day, a more macroscopic view considers larger drinking phases or more enduring drinking patterns. From this more macroscopic perspective, Steinglass (1979, 1980; Steinglass, Tislenko, & Reiss, 1985) has reported different family interactions as a function of whether the alcoholic was currently in a drinking phase (Wet) or an abstaining phase (Dry), as well as the relative stability of the phase. Steinglass et al. (1985) have interpreted these results to suggest that the onset, severity, and patterning of stresses associated with alcoholism and the differential
impacts of these stresses on family dissolution and family adaptation translate into interaction patterns which differ according to the pattern of alcohol consumption the family is exposed to. To date, the alcohol consumption patterns of interest to Steinglass et al. have been Stable Wet, Stable Dry and Alternator (sometime drinking, sometimes sober) patterns.

Steinglass and associates have examined the connection between these alcoholic subgroups and families' daily routines through direct home observational methods (Steinglass, 1979; Steinglass, 1981b; Steinglass, Tislenko & Reiss, 1985; Steinglass, Bennett & Wolin, 1987). They found strong associations between alcoholic drinking subtypes and home behavior patterns—support for systemic notions of homeostasis and reciprocal influencing (Steinglass, Weiner, & Mendelson, 1971). Based on a program of research investigating alcoholic subgroups and family functioning, these researchers have hypothesized that a "goodness-of-fit" develops between alcoholic drinking patterns and aspects of family regulatory functions (Steinglass, 1992).

Jacob and associates have explored the impact of Episodic and Steady drinking patterns on marital interaction, "a distinction that is similar to but not isomorphic with the Stable Wet-Alternator distinction" (Jacob & Leonard, 1988, p.232). They found important differences between the two alcoholic subtypes in terms of the relationship between marital satisfaction, psychiatric symptomatology and level of alcohol consumption.
(Jacob, Dunn, & Leonard, 1983; Jacob & Leonard, 1988; Dunn, Jacob, Hummon & Seilhamer, 1987). Their research suggests that the relationship patterns in marriages containing Episodic versus Steady-drinking alcoholics are quite different, implying that the family's role in the maintenance of abusive drinking can differ greatly when subgroup status is taken into consideration (Jacob, 1992). As Jacob and Leonard (1988) have stated:

Alcoholics are a very heterogeneous population, and the impact of alcoholism on the family is unlikely to be a constant. The specific demands for family adjustment depend on the specific constellation of behaviors with which they are confronted. Thus, the degree to which the family incorporates alcoholism and the specific adaptations to the alcoholism are likely to vary as a function of the manner in which alcoholism is manifest within the family (p. 232).

Studies investigating alcoholic subtypes and the family are few in number, exploratory in nature, and characterized by small, selective samples that lack comparison groups. Some have been observational studies and many have focused on the interactions of family members around alcohol use. A critical feature of the research, however, is the manner in which the determination of subtypes has been made. A unidimensional rather than a multidimensional approach has been used, employing either a psychometrically inadequate questionnaire (Jacob et al, 1988) or clinical interview material (Steinglass et al., 1985) to determine subtypes. Aside from a lack of sophistication and rigor in determining subtypes, the extant body of research has made little attempt to link the subtypes to other schemas for subtyping alcoholics, even though there is a rich research
literature in this area. Given that the results of research investigating alcoholic subtypes and the family have been promising, it now seems appropriate to proceed with research which utilizes more sophisticated and rigorous subtyping procedures with better links to the substantial research literature which exists on alcoholic subtyping. Ideally, new research in this field would also allow for a fuller exploration of the alcoholic subtypes with respect to the functioning of individuals in the family, of family subsystems and of the family as a whole.

**Purpose of the Study**

This study was one in a series of investigations connected to a large-scale research project entitled The Alcohol Recovery Project (TARP). Carried out over a period of five years, TARP has received funding from the Alcohol and Drug Programs of the British Columbia (B.C.) Ministry of Health (formerly the Ministry of Labour and Consumer Services) and the B.C. Health Research Foundation (Health Services Research Program). Other assistance has been extended to TARP by the University of British Columbia and the Humanities and Social Sciences Research Services. These funds and other forms of assistance enabled the completion of this study, as other completed studies resulting from TARP activities have been so enabled. This body of research has been conducted under the general direction of the Principal Investigator, John D. Friesen, Ph.D., co-investigator Robert F.
Conry, Ph.D., project coordinator and clinical supervisor, Darryl N. Grigg, Ed.D., data collection supervisor, Warren B. Weir, M.A., and project manager, Cheryl A. Bate, M.A.

The purpose of this study was to use a multidimensional approach to empirically determine subtypes within a group of alcoholic men living in intact families. Psychosocial differences associated with the resultant subtypes were explored within the sample of participant families. An ecosystemic frame was used to understand how the subtypes differ in terms of intrapsychic, marital, family and social functioning from the perspective of both the male alcoholic and his sober spouse. Gathering information about multiple levels of the system allowed for the determination of important contrasts and comparisons between the two perspectives, that is, alcoholic husband and nonalcoholic wife.

Rationale for the Research

Research concerning alcoholism and the family has often carried with it the implicit assumption that alcoholics are a homogeneous group which present a uniform set of stresses to the family. Progress in this area will require the acknowledgement that the alcoholic population has a heterogeneous makeup which needs to be explored vis a vis the family. Elsewhere in the field of alcoholism research, however, there already exists a strong tradition of studying the differences between alcoholic subtypes.

Research studies connecting alcoholic subtypes with family
functioning are few in number, however, they have produced provocative results which indicate the importance of this perspective. The present study has approached the subtyping process with more rigor than previous studies in alcoholism and family have employed. A more comprehensive analysis of family functioning with respect to the empirically-derived subtypes is another feature of the present study. This research makes a number of contributions to the field, including the following:

1) Extends previous research using mainly unmarried male alcoholic inpatient samples which has identified distinct alcoholic subtypes using multidimensional, empirical approaches (e.g., Morey et al, 1984; Babor et al, 1992), by applying similar methods to male alcoholics in intact families who are seeking outpatient treatment.

2) Describes empirically-derived alcoholic subtypes more fully in terms of a spectrum of important drinking characteristics relevant to the family, including drinking pattern (Irregular vs. Steady), location (in-home vs. out-of-home), time (day vs. night), and social context (solitary vs. with others) (eg. Steinglass, 1981; Jacob et al., 1983; Dunn et al., 1987; Bate, 1994).

3) Investigates how alcoholic husbands and their wives grouped according to these subtypes differ in terms of
functioning at the individual, marital, family, social and therapeutic levels. This explication of differences sheds some light on how families differentially organize around and respond to alcohol abuse, thus exploring systemic theories regarding the adaptive function that accrues to alcoholic behavior (eg. Steinglass et al., 1971) and how the reciprocal influencing of members of a family system might progress towards a "goodness of fit" between family functioning and alcoholic behavior patterns (eg. Steinglass, 1992).

4) Examines the connections between subtypes and family processes from the perspective of the alcoholic husbands and their wives in order to highlight points of corroboration and points of departure between them. This information contributes to a better understanding of systemic processes in the alcoholic family.

Definition of Terms
Operational definitions of several terms in the study are as follows:

**Alcoholic or alcohol-dependent.** Men scoring 5 or more on the Michigan Alcohol Screening Test (MAST) (Selzer, 1971), a lifetime alcoholism measure, were considered to be alcoholic or alcohol-dependent. Their wives had to score below this cut-off point and were considered non-alcoholic or not alcohol-dependent.
**Alcoholic typology.** The meaning of the term "alcoholic typology" used in the present study follows from its use in the research literature. A current definition is given by Babor et al. (1992): "A typology is a system for the classification and study of individuals who share one or more common characteristics. Accordingly, a typology for the classification of alcoholics is a set of assumptions and rules used to identify homogeneous groups, usually according to biological, psychological or social characteristics" (p. 1415).

**Types of alcoholics and alcoholic subtypes.** Contributors to the literature on alcoholism typologies have tended to treat the words "type" and "subtype" as equivalent terms, as they have "typing" and "subtyping". Although some writers have used the word "type" exclusively (e.g. Tomsovic, 1974; Morey et al., 1984) and others the word "subtype" (e.g. Penick et al., 1984; von Knorring, von Knorring, Smigan, Lindberg & Edholm, 1987), many use both words interchangeably (e.g. Hesselbrock, 1986; Babor et al., 1992) and, generally, there is no distinction made between the two terms in the alcoholism typology literature. The meaning ascribed to both "type" and "subtype" in the literature is congruent with the definition for "type" given in a current dictionary of psychology, as follows: "Generally, a class or group distinguished by possessing or displaying some particular characteristic" (Reber, 1985; p. 796). This definition will apply in the present study, as well, and the words "type" and "subtype"
will be used interchangeably.

**Family.** Couples had to be living together, but not necessarily married, for at least two years and had to have at least one child. The child could have been the offspring of the current union or not, thus, blended families were included in the study.

**Marital Distress.** Couples had to be experiencing marital distress as measured by the Dyadic Adjustment Scale (Spanier, 1976). At least one member of the couple had to score below 100 on the total dyadic adjustment score for this scale.
CHAPTER II: REVIEW OF THE LITERATURE

A Biopsychosocial Model of Alcoholism

A major change in the field of alcoholism over the past decade has been a move away from a "reductionistic" or "mechanistic" approach toward the development of more integrative models or theories. Until recently, there has been a tendency to reduce the focus on alcoholism to a single, unidimensional causative factor; this assumed a process involving a single cause and a single effect (Peele & Alexander, 1985; Schwartz, 1982; Schaffer & Milkman, 1985). While having some merit, reductionistic theories tend to be overly narrow and restrictive, failing to account for the total addictive experience (Donovan, 1988).

The biopsychosocial model represents an emergent paradigm within the field of alcoholism. In it, alcoholism is seen as being determined by the interaction of psychological, environmental, and physiological factors. Thus, the total experience of alcoholism involves physiological changes in individuals (many of whom may be genetically and/or psychologically predisposed) as these are interpreted and given meaning by the individual within the sociocultural context in which the alcoholic behavior occurs (Donovan, 1988; Peele, 1985; Zinberg, 1984). The biopsychosocial model views alcoholism in a more holistic way, rather than in a dichotomous, "either-or" fashion. Alcohol dependence is seen as a syndrome made up of
elements which need not all be present or present to the same
degree, and which is continuous in nature, falling along a
dimension of increasing intensity (Donovan, 1988; Rounsaville,
Spitzer, & Williams, 1986).

According to the biopsychosocial model, a number of
physiological factors are thought to be influential. Genetic
predisposition can create vulnerability to the development of
alcoholism, and is manifested in subtle cognitive and attentional
deficits as well as problematic behavior patterns (Goodwin, 1984,
1986). The subjective experience of intoxication varies across
people and less intensely felt responses have been associated
with increased risk of alcoholism (Teasdale, Gabrielli, & Knop,
1986; Schuckit, 1984). Physiological factors related to the
development of tolerance, dependence, and withdrawal contribute
heavily to alcohol addiction (Jaffe, 1985; Tiffany & Baker,
1986), and the negative physical consequences of intoxication, if
sufficiently potent, have been found to cause some individuals to
discontinue drinking (Stall & Biernacki, 1986; Tuchfeld, 1981).

Psychological factors which contribute to alcoholism include
the positive outcome expectancies the individual holds concerning
alcohol consumption (Brown, Goldman, Inn, & Anderson, 1980;
Connors, O'Farrell, Cutter, & Thompson, 1986; Donovan & Marlatt,
1980). Anticipated positive effects are many and varied and
include enhanced positive moods, reduced negative emotional
states, increased social interaction, interpersonal intimacy, and
sexual arousal, increased relaxation, and heightened cognitive
functioning and creativity (Brown et al., 1980; Connors et al., 1986). Other psychological factors are deficits in coping skills (Wills & Shiffman, 1985) and inadequate cognitive coping strategies (DeNelsky & Boat, 1986). These can lead to the belief that one is unable to cope with a particular situation without resorting to the alcoholic behavior.

Social-behavioral factors which contribute to the development of alcoholism involve the individual's level of social competence, made up of those behaviors necessary to cope adequately with a variety of situational demands. These behaviors are related to the individual's cognitive coping strategies mentioned earlier. Included in this category are general social and interpersonal communication skills, assertiveness, decision-making and the ability to take direct action, active avoidance of or withdrawal from problematic situations, the ability to seek out help and social support, the ability to relax, and the ability to gain positive experiences through entertainment or social and leisure activities (Donovan & Chaney, 1985; Donovan, 1988).

A major emphasis of the biopsychosocial model is on multiple systems and the ways in which they interact. The assumption here is that one can gain an understanding of alcoholism by considering the interaction of variables that cut across multiple levels (Schwartz, 1982). This approach calls for a broader assessment of relevant variables than has been traditionally conducted (Donovan, 1988). The biopsychosocial model of
Alcoholism has important implications for both the study of alcoholism and the family, and for the manner in which alcoholic subtypes are determined.

Alcoholism and the Family

This section will give an overview of the literature on alcoholism and the family with a focus on how family members are affected by the active alcoholic behavior of a parent/spouse (usually the father/husband). The overview will be divided into subsections about wives of alcoholics, the marital system, children of alcoholics, and the family system. The substantial literature concerning children of alcoholics will only be briefly considered, as the specific difficulties they experience with respect to parental drinking is beyond the scope of the present study. For the purposes of this research, children's experience of living with an alcoholic parent will be viewed through the "window" of the family system only.

Wives of alcoholics

Wives of alcoholics were initially considered to be "disturbed persons", who needed their husbands to drink in order to satisfy unconscious needs to be dominant, aggressive, punitive, etc. (Lewis, 1937; Futterman, 1953; MacDonald, 1958; Kalashian, 1959). As research outcomes failed to support this theory (Jacob & Seilhamer, 1982), the "stress victim" hypothesis was put forward which views the behavior and personality traits
of the alcoholic's wife as a reaction to cumulative marital and family stress associated with her husband's alcoholism (Jackson, 1954). Since it was initially posited, much research has been done which supports the idea that wives of alcoholics are subject to severe and long-lasting hardship. Some of the hardship reported in the literature includes social embarrassment and isolation, problems with childrearing, a poor sex life, conflict, aggression, damage to household objects or furniture, and physical violence in the family (Jacob & Seilhamer, 1982; Orford, 1983, 1990; Seilhamer, 1991; Jackson, 1954; Strube & Babour, 1984; O'Farrell, Harrison & Cutter, 1981; McCrady, Noel Abrams, Stout, Nelson & Hay, 1986; Zweben, 1986).

Not surprisingly, there is much evidence that wives of alcoholics report high levels of anxiety, depression, alienation, guilt, shame, inadequacy, medication use, somatic symptoms, and other psychiatric symptomatology (Jackson, 1954, 1962; Bailey, 1967; Orford, 1976; Paolino, McCrady, & Kogan, 1978; McCrady, Paolino, Longabough & Rossi, 1979; Steinglass, 1979, 1981; Haberman, 1964; Moos, Finney & Gamble, 1982; Finney, Moos, Cronkite & Gamble, 1983; Jacob, Dunn, Leonard & Davis, 1985). As further support of the "stress victim" view of excessive drinking and marriage, many researchers have found that such symptoms occur more frequently when a woman is living with an actively drinking problem drinker and that they decrease when the drinker stops drinking excessively or when the woman leaves her husband (Bailey, 1967; Bailey, Haberman & Alksne, 1962; Edwards, Harvey &
Although the bulk of the research on wives of alcoholics indicates that they are a high-risk group, a significant portion of the literature emphasizes that not all women are affected to the same degree and that there are numerous mediating factors (Jacob & Seilhamer, 1982; Orford, 1983, 1990). Some of the factors which mediate the adverse effects of living with an alcoholic partner are: wives' coping style (James & Goldman, 1971; Schaffer & Tyler, 1979; Wiseman, 1980; Orford & Guthrie, 1968; Orford, Guthrie, Nicholls, Oppenheimer, Egert, & Hensman, 1975; Billings & Moos, 1981); personality characteristics (Orford, 1976; Clifford, 1960); sociodemographic background (Finney, Moos, Cronkite, & Gamble, 1983; Moos, Finney, & Gamble, 1982); and childhood socialization experiences (Kogan & Jackson, 1965). Indeed, there is much research evidence supporting the idea that wives of alcoholics should not be considered a homogeneous group (Kogan & Jackson, 1965; Bailey, Haberman, & Alksne, 1962; James & Goldman, 1971; Rae, 1972; Rae & Drewery, 1972; Schaffer & Tyler, 1979; Clifford, 1960; Orford & Guthrie, 1968; Wiseman, 1980; Moos & Moos, 1984; Moos, Finney, & Gamble, 1982; Jacob & Seilhamer, 1982).

**Alcohol-involved Marriages**

Marital conflict has been reported so consistently by alcoholics and their spouses that many screening instruments and
diagnostic criteria include questions about marital problems (cf. Michigan Alcohol Screening Test, Selzer, 1971; Alcohol Use Inventory, Wanberg, Horn, & Foster, 1977). Empirical findings have shown that alcoholic marriages are often characterized by relationship distress (Billings, Kessler, Gomberg, & Weiner, 1979; O'Farrell & Birchler, 1987; Zweben, 1986), a greater number of marital problems (McCrad, Paolino, Longabough, & Rossi, 1979), a lack of cohesiveness in the marital dyad (Gorad, 1971; Wilson & Oxford, 1978), social and psychological deviance (Bailey, Haberman, & Alksne, 1962), less marital stability and adjustment (Zweben, Pearlman, & LI, 1988; O'Farrell, Cutter, & Floyd, 1985; McCrad, Noel, Abrams, Stout, Nelson, & Hay, 1986), more marital abuse (Strube & Babour, 1984), a withdrawal or disengagement from the marital bond (Orford, Guthrie, Nicholls, Oppenheimer, Egert, & Hensman, 1975; Wiseman, 1975), and a higher rate of marital dissolution (Nace, 1982; Paolino & McCrad, 1977; Burns, 1984). One review devoted to the statistics on alcoholic marriages, and based on a combined sample of over 20,000 couples concluded that "alcoholics are just as likely to marry but are at least four times more likely to separate and divorce" (Paolino, McCrad, & Diamond, 1978; p. 1291).

Alcoholic marriages are relationships plagued by such problems as faulty communication, role confusion and reversals, and negative interactional patterns. Communication between an alcoholic and his/her spouse is more likely to be punctuated by interruptions (Becker & Miller, 1976), more competition and less
cooperation (Gorad, 1971; Gorad, McCourt, & Cobb, 1971), and contain fewer problem-solving statements, especially those originating from the impaired partner (Billings, Kessler, Gomberg, & Weiner, 1979; Jacob, Ritchey, Cvitkovic, & Blane, 1981). The interaction between the couple is more likely to show extreme behavior, with more negative and hostile acts, and a rigid adherence to a narrow set of response patterns (Kennedy, 1976; Billings et al., 1979; Gorad, 1971; Gorad et al., 1971). There is evidence that alcoholic marriages show a pattern of increased negative affect especially during drinking episodes (Jacob et al., 1981).

A confusion about marital roles and duties (Drewery & Rae, 1969; Rae & Drewery, 1972) seems to occur as the alcoholic fails to perform his socioemotional roles (O'Farrell, Harrison, & Cutter, 1981), avoids responsibility (O'Farrell & Birchler, 1987) and fails to participate in everyday family activities and events (Zweben, 1986). As a result, role reversals tend to occur in which wives change their duties and responsibilities as their husbands become more involved with alcohol (Lemert, 1960; Clifford, 1960; Cork, 1969).

Much of the research on alcoholic marriages underscores the complexity of these relationships. They function in two states, that of inebriation and of relative sobriety, and often show a developmental sequence parallel to the progression of alcoholism. Even within these overarching complications, alcoholic marriages display a marked diversity (Steinglass, 1981; O'Farrell, Kleinke,
Children of Alcoholics

Children of alcoholics are subject to the altered moods, thought processes and behavior of an intoxicated parent and to the financial hardship, marital conflict, social isolation and changes in family roles, routines and interactions often associated with abusive drinking (Tharinger & Koranek, 1988; Seilhamer, 1991). Role instability and a lack of regularity in the home environment can make children of alcoholics less likely to develop adequate confidence and an internal sense of control (Prewitt, Spence & Chaknis, 1981). Despite the methodological limitations in the literature, many reviewers over the past decade have affirmed the assumption of increased risk for children of alcoholics in terms of emotional and behavioral problems (Russell, Henderson & Blume, 1984; West & Prinz, 1987).

At the same time, it has been noted that not all children of alcoholics are destined to have serious adjustment problems (Clair & Genest, 1987; Jacob & Leonard, 1986; Werner, 1986) and many reports, including several critical literature reviews, point to considerable heterogeneity among this population (Burk & Sher, 1988; el-Guebaly & Offord, 1979,1980; Heller, Sher & Benson, 1982; Jacob, Favorini, Meisel & Anderson, 1978; Russell, Henderson, & Blume, 1984; West & Prinz, 1984; Woodside, 1988). Seilhamer (1991) noted that the social and psychological impact of alcoholism on children can be quite variable, depending on
such factors as the age of the child when parental drinking began, the behavior of the parent when intoxicated, the degree to which family life is disrupted, and the psychological state of the nonalcoholic parent.

The Family System

The effects of alcoholism on family functioning is chronicled by a sizeable clinical literature and a more modest empirical literature. Clinicians' impressions, although based on select samples, contain rich descriptions of the emotional and behavioral responses of family members to the alcoholic. A recent example illustrates:

These symptoms [(reactions to the alcoholic)] are manifestations of complex but recognizable maladaptive responses. They may be psychological (denial of problems, depression, anxiety, shame, guilt, etc.), communicational (emotional withdrawal, lack of or ineffective communication, frequent verbal fighting, etc.), behavioral (sexual abuse, physical violence, substance abuse, delinquency, forced pseudo-maturation, perfectionism, etc.), and other symptoms (sleep disorders, etc.).

So long as abusive drinking takes place in the family, affected members of the family will attempt to adapt to it—rarely, however, realistically, and more often detrimentally. The failure to deal with it realistically will often result in the perpetuation of the problem of abusive drinking in the family and will often lead to various serious long-term consequences. Some of these problems may even be handed over to the next generation. Problems associated with so-called 'adult children of alcoholic parents' attest to this. Quite logically, then one reaches the realization that alcoholism may truly be a 'family disease' (Hayashida, 1992; pp.232-233. Italics added).

Empirical study of the effects of alcoholism on the family has largely centred on communication, rules and structure, role
functioning and other aspects of the family environment.
Communication in alcoholic families has been characterized as tense, quarrelsome and conflictual (Wilson & Orford, 1978; Moos, Bromet, Tsu & Moos, 1979; Leonard, Bromet, Parkinson, Day, & Ryan, 1985; Barry & Fleming, 1990; Liepman, Nirenberg, Doolittle, Begin, Broffman, & Babich, 1989), having more family arguments and less congruence of opinion (Moos & Moos, 1984), less effective problem-solving (Steinglass, 1979, 1980, 1981; Liepman et al., 1989) and also less expressiveness (Moos & Moos, 1984; Barry & Fleming, 1990). Interactions among family members have been shown to be poorer in affective responsiveness and involvement, and to have more negative and hostile acts and more social deterioration in general (Burton & Kaplan, 1968; Liepman et al., 1989). Similar to findings of research conducted on alcoholic marriages, alcoholic families have shown altered role functioning (Moos & Moos, 1984; Liepman et al., 1989) with a lack of clear hierarchical structures and evidence of hierarchical reversals in which children are enlisted into inappropriate caretaking positions (Anderson & Henderson, 1983; Preli & Protinsky, 1988) often becoming part of a cross-generational coalition with the nonalcoholic spouse (Gilbert, Christensin & Margolin, 1983; Preli & Protinsky, 1988; Anderson & Henderson, 1983; Grisham & Estes, 1982).

The family environment of alcohol-involved families has been found to have less of an active-recreational orientation (Moos, Bromet, Tsu, & Moos, 1979; Moos & Moos, 1984), poorer behavioral
control and more dysfunction (Paolino, McCrady, & Diamond, 1978; Burton & Kaplan, 1968; Leonard, Bromet, Parkinson, Day, & Ryan, 1985; Liepman et al., 1989), a greater rigidity of boundaries (Anderson & Henderson, 1983; Steinglass, 1975) and disrupted family rituals (Wolin, Bennett, & Noonan, 1979; Wolin, Bennett, Noonan, & Teitelbaum, 1980). A lack of a sense of togetherness or family cohesion has been noted frequently in the research literature on alcoholic families (Paolino, McCrady, & Diamond, 1978; Moos et al., 1979; Moos & Moos, 1984; Steinglass, 1979, 1980, 1981; Barry & Fleming, 1990).

Although there is much empirical evidence of the destructiveness associated with alcohol abuse in a family setting, researchers have also determined that families differ widely in the degree to which they are impacted (Moos et al., 1979; Moos & Moos, 1984; Wolin et al., 1979; Wolin et al., 1980; Bennett & Wolin, 1986; Steinglass, Weiner, & Mendelson, 1971; Steinglass, Davis, & Berenson, 1977; Steinglass, Bennett, Wolin, & Reiss, 1987; Steinglass, 1981; Jacob, Seilhamer, & Rushe, 1989; Barry & Fleming, 1990; Preli & Protinsky, 1988; Vannicelli, Gingerich, & Ryback, 1983; Steinglass, Tislenko, & Reiss, 1985) and that families, like the components that make them up, must be considered as a fairly heterogeneous group.

Summary of Relevant Findings

There is a consistent pattern in the research literature pertaining to alcoholism and the family. For wives of alcoholics,
children of alcoholics and families of alcoholics, research outcomes indicate two overall conclusions: 1) that family members are at risk of being adversely affected, and 2) that wives and children of alcoholics and, indeed, families of alcoholics cannot be considered homogeneous groups. Whereas some research has explored how wives and children living in alcoholic homes respond to and interact with the alcoholic differentially, very little research has looked at alcoholics as a heterogeneous group with respect to the family system. Outside the field of alcoholism and family research, however, much work has been done to refute the idea that alcoholics are a homogeneous group and to differentiate alcoholism into meaningful subtypes.

Alcoholic Subtyping

The following will present an overview of early typological approaches and highlight the major issues in the literature on the classification of alcoholics. This will be followed by a critical review of the more recent empirical approaches to alcoholic typology relevant to this study.

The Heterogeneity of the Alcoholic Population.

The effort to arrive at valid subgroups of alcoholics is a reflection of the idea that the population of alcoholics is a heterogeneous one. Although the concept of alcoholism as a unitary disease has been the general conviction for the past few decades, there is much evidence that persons diagnosed as
alcoholics differ with respect to a variety of defining characteristics (Wanberg & Horn, 1983; Hesselbrock, Hesselbrock, Babor, Meyer, Stabenau & Weidenman, 1984; Hesselbrock, Meyer, & Keener, 1985; Powell, Read, Penick, Miller & Bingham, 1987; Institute of Medicine, 1987; Read, Penick, Powell, Nickel, Bingham & Campbell, 1990). The heterogeneity of the alcoholic population has been noted in terms of the etiology, presenting symptoms and course of alcoholism (Institute of Medicine, 1990). Vaillant and his colleagues described these differences in detail in their longitudinal research of several different populations and concluded that "[e]fforts to fit all alcohol users who are problems to themselves or others into a single, rigid definition will prove procrustean" (Vaillant, Gale & Milofsky, 1982). Recognition of this basic heterogeneity of the population of alcoholics has led to numerous attempts to subtype alcoholics on a variety of characteristics and dimensions.

**Early Typological Approaches.**

Early approaches to the classification of alcoholics, dating from the 19th century, have been largely intuitive in nature, being frequently based on clinical judgement applied to a small number of select cases (Meyer, Babor, & Mirkin, 1983). Rich in clinical description, these typologies often focus on case histories that served as ideal types or exemplars (Babor & Lauerman, 1986; Babor et al., 1992). Such typological attempts have been characterized by a number of conceptual and
methodological inadequacies, including a lack of comprehensiveness, reliance on a single classification criterion, and a tendency not to provide a means to empirically support or refute their theories (Babor & Lauerman, 1986). Other commonalities are noteworthy, however, in that many of these non-empirical approaches tended to classify according to etiology (either hereditary or psychological causes), drinking pattern, dependence criteria and chronicity (Babor & Lauerman, 1986). Indeed, despite their shortcomings, early classification systems provide assumptions which are useful guidelines for current efforts to understand alcoholism and are not unlike those proposed by contemporary theorists (Morey & Blashfield, 1981; Skinner, 1982; Meyer, Babor & Mirkin, 1983; Babor & Lauerman, 1986). These assumptions include: relative homogeneity within subgroups, differences in causal pathways into alcoholism, dissimilar manifestations of alcohol problems and symptoms, differences in onset and course of the alcoholism, and differences in treatment approaches (Babor & Lauerman, 1986).

Bowman and Jellinek (1941) produced what was perhaps the first review of alcoholic typologies, and proposed a synthesis of the 24 typologies they examined. Their classification system involved dividing alcoholics according to drinking pattern, that is, steady versus intermittent, with intermittent being subdivided into irregular and periodic. These groups were subdivided further on the basis of etiology, that is, endogenous versus exogenous, and finally into four distinct subgroups:

1. "Steady" alcoholics, characterized by a consistent and steady pattern of drinking.
2. "Intermittent, Irregular" alcoholics, who drink regularly but with occasional lapses.
3. "Intermittent, Periodic" alcoholics, who have a pattern of drinking that alternates between periods of abstinence and periods of heavy drinking.
4. "Intermittent, Explosive" alcoholics, who have periods of heavy drinking following periods of abstinence.

These subgroups provide a framework for understanding the diversity within the alcoholic population and highlight the importance of considering individual patterns and circumstances in alcohol treatment and research.
(1) steady, endogenous, primary addicts; (2) steady, endogenous, symptomatic drinkers; (3) intermittent (irregular) exogenous Stammtisch drinkers; and (4) intermittent (periodic) endogenous symptomatic drinkers (Bowman & Jellinek, 1941).

Based on this early work, Jellinek (1960a, 1960b) formulated a 5-type classification system which has influenced the typology field up to the present (cf. Babor et al., 1992). His typology was based upon the premise that alcoholism is a generic term of such breadth that drinking and damage are the only elements that all of the various types have in common. Jellinek considered his alcoholic types in terms of etiological elements (eg., psychological and physiological vulnerability), process elements (eg., dependence symptoms, including loss of control and inability to abstain), and damage elements (eg., social and physical consequences). Using the Greek alphabet, he labelled the five types Alpha, Beta, Gamma, Delta and Epsilon.

According to the classic Jellinek typology, Alpha alcoholism was purely psychological dependence upon alcohol to relieve pain without loss of control or inability to abstain. Beta alcoholism involved physiological complications such as polyneuropathy or cirrhosis without physical or psychological dependence or major life problems. Gamma alcoholism involved increased tissue tolerance, physical dependence, and loss of control. Gamma alcoholics would report more frequent intoxication, more severe withdrawal symptoms, and more psychological "escape" reasons for drinking. Delta alcoholism involved an inability to abstain. The
amount of alcohol consumed on any occasion would be controlled, but attempts at abstinence were followed by withdrawal symptoms. Delta alcoholics would manifest greater social and psychological adjustment, and drink with greater frequency, less variability, and more for social reasons. Delta alcoholics were expected to have a better prognosis. Epsilon alcoholics were binge drinkers about whom not enough was known to permit a detailed description. Only the Gammas and Deltas were considered by Jellinek to be true alcoholics (Jellinek, 1960a, 1960b).

One of the main difficulties with Jellinek's taxonomy, and many others which have been promulgated since his classic work, is the lack of empiricism used in developing or validating the typology. Empirically-based procedures for deriving alcoholic subtypes have emerged in the last thirty years. Two such approaches can be identified: one in which alcoholics are grouped according to a priori criteria and then compared empirically on a number of relevant variables (the a priori comparative approach), and one in which statistical procedures are used to identify alcoholic subgroups at the outset (the a posteriori correlational approach) (Meyer, Babor & Mirkin, 1983). The a priori comparative approach has often been used to evaluate the validity of previous intuitive formulations (Babor, et al., 1974). Classification approaches in which statistical procedures are used to derive subtypes (the a posteriori correlational approach) will be reviewed in a later section.

In the main, the a priori comparative approach has used
dichotomies to classify alcoholics. The criteria employed have varied considerably from one formulation to another; this has led to a confusing array of single-domain typologies. They have included gender (Schuckit, Pitts, Reich, King, & Winokur, 1969; Rimmer et al., 1971), nationality (Babor et al., 1974), psychopathology (Winokur et al., 1971), drinking pattern (Tarter et al., 1977; Epstein, Kahler, McCrady, Lewis & Lewis, 1995), drinking history (Cahalan, Cisin, & Crossley, 1969), personality characteristics (Rudie & McGaughran, 1961), childhood minimal brain dysfunction (Tarter et al., 1977), neurological status (O’Leary et al., 1979), and family history of alcoholism (Penick et al., 1948). Although the a priori comparative approach is theory oriented, its specificity in selection of variables has limited its use to the testing of only certain hypotheses. Thus, relationships among existing theories have not been explored (Meyer et al., 1983).

In a recent study which evaluated some of these common theoretically-based a priori classification schemes, it was determined that they lacked discriminative power and predictive validity (Babor, Dolinsky, Meyer, Hesselbrock, Hofmann, & Tennen, 1992). These typologies were organized into five representative areas of research, namely, gender comparisons, primary vs. secondary psychopathology associated with alcoholism, the gamma/delta distinction, familial alcoholism, and subtyping by different varieties of personality disorder. The five typologies were used to classify a heterogeneous sample of 321 alcoholics. A
comparison was made of the relative ability of these typologies
to differentiate according to natural history, alcohol-related
consequences, response to treatment, and post-treatment
adjustment. Babor et al. (1992) concluded that:

...these simple typological formulations, discussed
extensively in the alcoholism literature, do not
differentiate well among subgroups having different
antecedent (or etiological) characteristics, different
presenting symptoms (other than the domains within
which the typologies are defined), and different
treatment outcomes. These findings suggest the
potential usefulness of synthetic typologies that
combine the discriminating characteristics of
overlapping subtypes across the different domains (p.
1429).

In terms of future directions, these authors asserted that
"...empirical clustering techniques that search for naturally
occurring commonalities among alcoholics may be a better way to
identify homogeneous subtypes" (p. 1415).

Theoretical Underpinnings of Subtyping Approaches.

An acceptance of the heterogeneity of the alcoholic
population and the multidimensional nature of alcoholism means
that classification of individuals must move beyond the
relatively simple dichotomy of alcoholic/non-alcoholic. As
alcohol problems in individuals tend not to be static but change
over time, attempting to establish definitive subtypes may be a
bit like trying to put a fence around something which is
constantly moving. A central question underlying any approach to
alcoholic subtyping is whether the heterogeneity observed in the
population derives from people's movement through various stages
of alcoholism or whether this diversity is due to the existence of discrete categorical differences between subgroups (Morey & Blashfield, 1981; Skinner, 1979, 1982; Morey, Skinner, & Blashfield, 1984). This theoretical issue which contrasts movement along a dimension (or dimensions) against distinct, qualitatively different categories has been addressed in a variety of ways by researchers in the field.

One commonly used strategy has been to order subtypes along a dimension, such as a developmental continuum of alcoholism. Perhaps the best known is Jellinek's (1952) four stages of alcoholism. These stages include the (a) symptomatic (or prealcoholic), (b) prodromal, (c) crucial, and (d) chronic phases, which are differentiated by significant events in the drinking history of the alcoholic. For example, the beginning of the crucial phase is marked by the onset of loss of control over one's drinking (Jellinek, 1952).

Other writers have posited phase or dimensional models of alcoholic typology. According to McCreery's (1976) developmental model, an alcoholic goes through stages of social, dependent, and addictive drinking. Zucker (1987) has posited four kinds of developmental alcoholism which he has labelled antisocial, developmentally cumulative, negative-affect, and developmentally limited. A World Health Organization (WHO) task force (Edwards, Gross, Keller, Moser, & Room, 1977) has proposed a two-dimensional model. The first axis is called "alcohol-related disabilites", and refers to psychological, physical, or social
disorders that arise as a result of excessive drinking. The second axis is labelled "alcohol dependence syndrome", and refers to a core syndrome characterized by impaired control over alcohol intake, tolerance, and severe withdrawal symptoms (Edwards & Gross, 1976). Horn, Wanberg and associates have used a quantitative, multidimensional approach and found that alcoholics may be ordered along several dimensions according to their level of problem severity (Horn, Wanberg, & Foster, 1974).

Examples of the categorical classification of alcoholics include Jellinek's Alpha through Epsilon typology (1960a, 1960b), Levine & Zigler's essential-reactive distinction (1973), Winokur et al.'s primary-secondary typology (1971), and Tomsovic's binge-steady distinction (1974). A neurobiological learning model has been proposed that distinguishes between two genetic subtypes, termed "Milieu-limited or Type I" and "Male-limited or Type II" (Cloninger, 1973; Cloninger, Bohman, & Sigardsson, 1981). According to this typology, Type I alcoholics have a later onset of alcohol problems, show psychological rather than physical dependence, and experience guilt feelings about their alcohol use. In contrast, Type II alcoholics manifest alcohol problems at an early age, exhibit spontaneous alcohol-seeking behavior, and are socially disruptive when drinking (Cloninger, 1973; Cloninger, Bohman, & Sigardsson, 1981).

In a typological model which integrates aspects of both the dimensional and categorical approaches, Morey, Skinner, & Blashfield (1984) have posited a hybrid formulation. In it, early
stage problem drinkers are distinguished from two other groups which are much farther advanced along the alcohol dependence syndrome continuum (Edwards & Gross, 1976). Although these other two groups of alcoholics are more alcohol dependent, they differ in terms of drinking pattern, social orientation, preferred alcoholic beverage, and number of psychological difficulties.

Although the debate between categorical versus dimensional/developmental approaches to alcoholic subtyping has not been resolved, a number of key points favour the categorical approach. In contrast to the categorical approach, the dimensional approach still has its roots in the theoretical assumption of a unitary addictive process which individuals move through as their addiction progresses. Phases or stages along this continuum are seen as different both quantitatively and qualitatively, however, individuals' relative positions on the continuum account for their differences rather than something inherent in themselves. This assumption flies in the face of much empirical research which indicates that there are essential differences between alcoholics (Wanberg & Horn, 1983; Hesselbrock, et al., 1984; Hesselbrock, Meyer, & Keener, 1985; Powell, Read, Penick, Miller & Bingham, 1987; Institute of Medicine, 1987; Read, et al., 1990). Furthermore, there is evidence that supports the categorical approach more directly. Subtypes derived from personality measures such as the Minnesota Multiphasic Personality Inventory (MMPI), have been replicated in a number of studies using a diversity of instruments (Skinner,
Jackson, & Hoffman, 1974; O'Leary, Donovan, Chaney, O'Leary, 1980). As well, a recent empirically-derived categorical typology has shown considerable convergence with a number of other categorical taxonomies (Babor, et al., 1992).

In order for the work on alcoholic subtyping to progress, careful empiricism must be brought to bear on proposed taxonomies. Many reviewers have noted the need for establishing the external validity and clinical relevance of alcoholic typologies (Skinner, 1982; Meyer, Babor & Mirkin, 1983; Morey, Skinner, & Blashfield, 1984; Babor & Lauerman, 1986). In this regard, empiricism favours categorical approaches, in that the typologies themselves can be derived statistically, and the internal and external validity can be assessed directly. Dimensional/developmental typologies are less easily formulated by statistical means and are more difficult to validate empirically. External validation, in particular, often involves determining the value of a typology as an indicator of prognosis and as a guide to choice of treatment (Skinner, 1982; Meyer, Babor, & Mirkin, 1983; Babor & Lauerman, 1986). For reasons of pragmatism and clinical relevance alone, therefore, categorical approaches to alcoholic typology seem more worthwhile of pursuit. At a theoretical level, however, it may be that the most comprehensive typological models are those which combine elements of the dimensional and of the categorical approaches. Examples of such integrated typologies are the hybrid model of Morey et al. (1984) and the differential developmental models of Zucker (1987)
and Cloninger et al. (Cloninger et al., 1981; Cloninger, 1987). In addition, it is important to note that there is no need to adopt an "either/or" stance towards the categorical/dimensional debate as both categories and dimensions likely co-exist within the population of alcoholics, and in terms of research and clinical work in the field each perspective has value.

Empirical Approaches to Alcoholic Subtyping (a posteriori correlational approaches)

In the past 30 years, a number of researchers have attempted to create classifications of alcoholics using a variety of multivariate statistical procedures. Those researchers pursuing categorical models have tended to use cluster analysis techniques while those pursuing dimensional models have tended to use factor analysis techniques (Morey & Skinner, 1986). The research literature reveals that each approach has its merit and use, as well as its concomitant flaws and inadequacies. Both approaches are subject to the dangers of naive empiricism, as most datasets will yield statistical solutions regardless of meaningfullness, and many studies make implicit assumptions about the relative importance of variables (Morey & Blashfield, 1981). The following will provide an overview of these two bodies of research. Particular attention will be paid to recent research which uses a multidimensional approach to categorical typology derivation.
Dimensional Models

This relatively small body of research involves the use of multivariate statistical methods such as factor analysis (Gorsuch, 1974) to identify dimensions that might successfully discriminate differences among alcohol abusers. These dimensional models have varied in scope and include models based upon alcoholic personality characteristics (Nerviano, 1976), social and vocational adjustment (Hart, 1977), self-report measure of alcohol use (Hesselbrock, Babor, Hesselbrock, et al., 1983), and treatment outcome (Foster, Horn, & Wanberg, 1972).

One of the most influential dimensional models to date is based primarily upon stylistic features of alcohol use (Horn & Wanberg, 1969; Wanberg, Horn, & Foster, 1977; Wanberg & Horn, 1983). This model of differential assessment is based on the assumption that problems associated with alcohol are very diverse. Beginning with a compilation of presenting concerns and complaints typically expressed by new admissions to alcohol treatment, a hierarchical model of factors within the domain of alcohol use was developed using factor analytic techniques. The three tiers of this hierarchy include 16 primary factors tapping specific stylistic features of alcohol use, 6 second-order scales, and a general factor representing a broad measure of involvement with alcohol use. From this foundational work, the Alcohol Use Inventory (AUI) was developed (Horn, Wanberg, & Foster, 1977), designed to assess style of alcohol use, negative consequences from drinking and perceived benefits from drinking.
Subsequent evaluation of the AUI has given evidence of its psychometric adequacy (Skinner, & Allen, 1983), and factor-analytic investigation has identified four major syndromes of alcohol abuse within the domain tapped by the AUI (Skinner, 1982).

With the exception of the work of Wanberg, Horn and associates, most dimensional models suffer from an overly narrow selection of variables. Taken together, the research on dimensional models of alcoholism has emphasized the multidimensional nature of alcoholism development and treatment. For the most part, however, this research is largely at a descriptive stage and needs to be integrated in a theoretical framework and with the substantial body of work already conducted on the classification of alcoholism (Skinner, 1982; Morey & Skinner, 1986).

Categorically Models

Researchers attempting to create categorical alcoholic taxonomies have used a variety of cluster analytic techniques. These methods share the purpose of attempting to create homogeneous classes by placing "similar" individuals into the same class. Three critical parameters involved in any cluster analysis are: 1) an operational definition of similarity; 2) an algorithm, or rule, used to assign cases into clusters; and 3) a way of determining the number of clusters considered to be the "best solution" (Morey, Skinner & Blashfield, 1983; Morey &
Skinner, 1986). As such, a large number of cluster analytic solutions are possible for any single dataset. The large number of possible cluster analytic procedures has, in itself, been a difficulty in this area of research.

The majority of cluster analytic attempts to type alcoholics have involved objective personality measures (Skinner, 1982; Morey & Skinner, 1986). Replicable subtypes among alcoholics have been identified, in particular with respect to psychopathology as assessed by the MMPI (Conley, 1981; Nerviano & Gross, 1983; Skinner, 1982). This consistency may be somewhat illusory, however, as a closer inspection has shown that most types obtained in the literature are sample specific, with a high degree of similarity of clusters within studies as opposed to across studies (Morey & Skinner, 1986). On the other hand, one group of alcoholics described as chronic severe distress drinkers (Nerviano & Gross, 1983) is an exception as it has been replicated in nearly every study that has utilized the MMPI (Morey & Skinner, 1986). This type is characterized by a general and severe psychosocial impairment, marked depression, obsessionality and anxiety (Nerviano & Gross, 1983).

A number of limitations exist in the literature on the cluster analysis of alcoholics which affects the generality and interpretability of their findings. Sample composition has been rather homogeneous as most studies used alcoholics in treatment who were male with a mean age of about 45 years (Morey & Skinner, 1986; Babor & Dolinsky, 1988). As well, the selection of
variables used in the cluster analysis has been limited almost entirely to personality variables (Skinner, 1982; Morey, Skinner, & Blashfield, 1984; Morey & Skinner, 1986). This has led to a lack of integration in the field, as most conceptual classifications of alcoholics have been based upon alcohol use behavior. Finally, the use and reporting of cluster analytic techniques in this literature has been generally inadequate (Morey & Skinner, 1986). Most important in this regard has been the lack of adequate validation of the cluster analytic solutions derived (Blashfield, 1980; Morey & Skinner, 1986).

One key consistency found in the cluster analytic literature has been the importance of variables related to the problem drinker’s interpersonal style in determining classification (Morey & Skinner, 1986). Descriptions of these interpersonal style variables range from a single dimension of social inadequacy, introversion and anxiety (Nerviano & Gross, 1973) to a bipolar variable with group dependency and conformity at one extreme and an asocial withdrawal at the other (Lawlis & Rubin, 1971). This variable domain has been identified mainly in studies using instruments such as the 16PF, and the PRF, as opposed to the MMPI, as the basis for classification (Lawlis & Rubin, 1971; Nerviano and Gross, 1973; Finney & Moos, 1979; Morey, Skinner, & Blashfield, 1984). This is not surprising, however, since the standard clinical scales of the MMPI are not sensitive measures of this construct.
Broader-based Empirically-derived Categorical Models

Although many empirically-derived categorical models of alcoholic typology have been based exclusively on personality traits or psychiatric symptomatology, a small but important group of studies has differentiated alcohol abusers according to multiple factors including alcohol use behaviors. As many reviewers have pointed out, the empirical alcoholic typology literature has suffered from not having a broader base of data to analyze and has curiously omitted alcoholic behavior itself (Morey & Blashfield, 1981; Skinner, 1982; Meyer, Babor, & Mirkin, 1983; Morey, Skinner, & Blashfield, 1984; Morey & Skinner, 1986). As a result, the empirical research has not been integrated well with either theory or clinical practice, especially as most conceptual models have focused on alcohol use and alcohol-related problems (Morey, Skinner, & Blashfield, 1984; Babor & Lauerman, 1986). The results of studies using multiple determining factors, however, indicate that this approach shows great promise.

A Classification based on the MAST

Snowden, Nelson, and Campbell (1986) cluster analyzed alcohol use data from 504 male participants convicted of driving while intoxicated. Using the Michigan Alcohol Screening Test (MAST) (Selzer, 1971) to derive their clusters, they also reduced the 24 items to five factors for easier profiling. The five factors were labelled: Hospitalization, Marital-Family Problems, Work-Social Problems, Problem Recognition/Drinking Control, and
Help-Seeking. The cluster analysis identified 7 distinct groups (Type I to Type VII) which were then profiled on the MAST factors and evaluated with external criteria including the MMPI, clinical ratings of reasons for drinking, treatment participation and treatment outcome.

Type I presented a flat, low profile, indicating the absence of significant drinking problems. Type II showed some problem drinking and concern over drinking control. Type III was distinguished by marital and social discord. Type IV was characterized by a triad of problems: marital and family, work and social, and problem recognition and drinking control. Type V identified those who had sought help but largely avoided hospitalization and the most severe consequences of alcoholism. Drinking-related social dysfunction appeared greatest in the marital and family sphere for this group, suggesting that the extensive help-seeking that was reported may have been family-inspired. The average score on the MAST for types II through V gave clear evidence of problem drinking.

Types VI and VII both had highly elevated profiles. The two types were alike in presenting considerable impairment from excessive drinking, but different in their styles of help-seeking. Type VI respondents were more likely to have received treatment based in the hospital, but not in the community; Type VII showed the reverse pattern. The average total score on the MAST for both types gave substantial evidence of problem drinking.
The classification based on the MAST yielded 7 groups, differing in level and pattern of alcohol-related problems. There was evidence that the groups were homogeneous and reliable, and that they were able to discriminate effectively within the external criteria (MMPI, clinical ratings of reasons for drinking and treatment participation and outcome). The MAST classification seemed able to predict alcoholism criteria more powerfully than MAST total scores themselves. Altogether, this research indicated that the psychosocial symptoms of alcoholism could be used to generate a valuable and valid categorical model of alcoholism (Snowden, Nelson, & Campbell, 1986).

A Hybrid Model

A study based on more extensive alcohol use data was conducted by Morey, Skinner, and Blashfield (1984) (Morey & Skinner, 1986). In their systematic, large-scale study they used information derived from the Alcohol Use Inventory (AUI) (Horn, Wanberg, & Foster, 1974), the MAST, and the Lifetime Drinking History scale (LDH) (Skinner, 1977; Skinner & Sheu, 1982) to derive their clusters. In total, 22 variables were drawn from these scales; Table 1 shows the 3 alcohol-use instruments used and the 22 variables derived from them. Data from 725 alcohol treatment center outpatients was used; 79% of the sample was male and about one-third were living in intact marriages or common-law relationships. In the external validation phase of the study, six content domains were examined including psychopathology and life
Table 1

Alcohol-use instruments and variables used in Morey, et al. (1984)

<table>
<thead>
<tr>
<th>Instrument</th>
<th>Variables</th>
</tr>
</thead>
<tbody>
<tr>
<td>Michigan Alcohol Screening Test (MAST)*</td>
<td>1. MAST total score</td>
</tr>
<tr>
<td>Lifetime Drinking History scale (LDH) **</td>
<td>2. Age at which first regular drinking occurred</td>
</tr>
<tr>
<td></td>
<td>3. Frequency of drinking beer</td>
</tr>
<tr>
<td></td>
<td>4. Frequency of drinking wine</td>
</tr>
<tr>
<td></td>
<td>5. Frequency of drinking liquor</td>
</tr>
<tr>
<td></td>
<td>6. Amount of drinking beer</td>
</tr>
<tr>
<td></td>
<td>7. Amount of drinking wine</td>
</tr>
<tr>
<td></td>
<td>8. Amount of drinking liquor</td>
</tr>
<tr>
<td>Alcohol Use Inventory (AUI) ***</td>
<td>Perceived benefits from drinking</td>
</tr>
<tr>
<td></td>
<td>9. Social benefits</td>
</tr>
<tr>
<td></td>
<td>10. Mental benefits</td>
</tr>
<tr>
<td></td>
<td>11. Mood changing</td>
</tr>
<tr>
<td>Style of Alcohol Use</td>
<td>12. Drinking context (eg. gregarious vs. solo)</td>
</tr>
<tr>
<td></td>
<td>13. Obsessive-compulsive drinking</td>
</tr>
<tr>
<td></td>
<td>14. Sustained vs. periodic</td>
</tr>
<tr>
<td></td>
<td>15. Daily quantity of beer, wine, spirits</td>
</tr>
<tr>
<td>Disruptive consequences of drinking</td>
<td>16. Loss of control over drinking</td>
</tr>
<tr>
<td></td>
<td>17. Social role maladaptation</td>
</tr>
<tr>
<td></td>
<td>18. Delirium Tremens (D.T.s)</td>
</tr>
<tr>
<td></td>
<td>19. Hangovers</td>
</tr>
<tr>
<td>Concerns about use</td>
<td>20. Worry, guilt, fear</td>
</tr>
<tr>
<td></td>
<td>21. Prior external help</td>
</tr>
<tr>
<td>Polydrug usage</td>
<td>22. Drug usage</td>
</tr>
</tbody>
</table>

stress, personality functioning, intellectual functioning, sociodemographics, response style, and drinking and treatment history.

The derivation phase of this research involved an extensive and systematic comparison of cluster analytic procedures (Morey, Blashfield, & Skinner, 1983). In the end, a three-cluster solution yielded by Ward's (1963) method of cluster analysis was selected as the most valid. The general trend in the differences between Type A (early stage problem drinkers), Type B (affiliative), and Type C (isolative) was one of elevation in the standard scores used for the 22 variables, with Type A showing the lowest scores, Type C the highest and Type B in between. Measures that seemed to discriminate best among the three types included the MAST total score, and AUI variables such as loss of control over drinking, social role maladaptation, presence of symptoms associated with withdrawal (D.T.'s, hangovers), and drinking in an obsessive-compulsive fashion. Other important differences had to do with Types B and C only; Type B drinkers tended to prefer beer, to drink in larger quantities, to drink in a more gregarious fashion and more continuously, whereas Type C drinkers tended to prefer wine or liquor and to engage in more solitary drinking in binges.

In the external validation phase of this research the three groups were compared with respect to six content domains and many critical differences were found. Type A drinkers were a fairly heterogeneous group showing the lowest levels of
psychopathological distress and cognitive impairment, fewer stressful life events, less impulsivity, and more social stability. This group was the most defensive when response styles of denial and social desirability were considered, however, and were the least convinced of the necessity for abstinence from alcohol. Type B drinkers were more gregarious and socially oriented, had more psychopathological distress, life stress and state anxiety, and some cognitive impairment. Type C drinkers were more socially withdrawn, less socially stable, had lost more jobs, were less employed and more likely to be maritally separated or divorced. They tended to come from larger families and were less educated. This group had the most psychopathological distress and state anxiety, had more somatic complaints, were the least defensive in terms of response style, but showed the most aggression. Type C drinkers tended to have higher consumption levels and reported regular drinking at an earlier age.

Morey et al. (1984) noted that a number of the variables which differentiated the three types resembled the alcohol dependence syndrome first identified by Edwards and Gross (1976) (eg. MAST, loss of control over drinking, withdrawal symptoms). This led them to interpret their findings in terms of a hybrid model which incorporated elements of categorical and dimensional approaches. In the hybrid model, early stage problem drinkers (Type A) become differentiated as they move along the alcohol dependence syndrome continuum. At a more advanced level of
alcohol dependence, they may become Affiliative (Type B) alcoholics who are more gregarious and socially oriented, tending to prefer beer and to drink in a sustained manner. In contrast, they may develop into Schizoid or Isolative (Type C) alcoholics, who are more socially withdrawn and schizoid, preferring to drink wine or liquor, and tending to drink in binges. The interpersonal functioning of an individual seemed to be critical in determining which type of alcoholic he or she might become. Thus, according to the hybrid model, a developmental process occurs with the onset of alcohol-related problems followed by a progressive increase in the severity of alcohol dependence and a movement into one of two types of alcoholic determined by interpersonal style (see Appendix A).

A Biopsychosocial Classification Model

The most comprehensive empirical classification model to date has come out of a program of research conducted by Babor and his associates (Babor, Dolinsky, Rounsaville, & Jaffe, 1988; Babor et al, 1992). These researchers utilized the cumulative alcoholism typology literature to postulate a set of assumptions characterized by a biopsychosocial approach to subtyping. Their primary theoretical position was that alcoholism is multidetermined, that "... the heterogeneity among alcoholics is attributable to a complex interaction among genetic, biological, psychological, and socio-cultural factors" (p. 599). Several assumptions followed from this position, including:
1) no single characteristic will differentiate alcoholics from nonalcoholics;

2) no single defining characteristic will separate homogeneous subtypes;

3) although certain subtypes may have singular defining characteristics such as an antisocial personality, binge drinking pattern or family history of alcoholism, in many cases these characteristics will overlap and be found in the same alcoholics;

4) the range and diversity of single-domain subtypes, each of which has limited supporting evidence, suggests that pure types may be difficult to identify;

5) alcoholics differ with respect to at least four important defining characteristics: etiological elements, onset and course, presenting symptoms, and drinking patterns; and

6) previous studies have failed to capture the complexity of subtype characteristics by focusing on a limited range of variables that derive from a priori assumptions. Therefore, an empirical clustering approach based on a broad range of alcoholism-defining characteristics will provide better identification of naturally occurring subgroups (Babor et al, 1992).

Data was collected from 321 alcoholic participants who were in residential treatment programs; less than one-third of the sample were women and 30% were married. Variables used to derive the subtypes through cluster analysis were chosen to represent a broad spectrum of theoretically relevant indicators of
Table 2

Variables Used for the Derivation of Clusters in a Biopsychosocial Classification Model (Babor et al., 1992).

Premorbid Risk Factors
1. Familial Alcoholism
2. Childhood Disorder (e.g., hyperactivity, conduct disorder)
3. Bipolar Character Dimensions (e.g., impulsivity)
4. Age of Onset of Problem Drinking

Pathological Use of Alcohol and Other Substances
5. Ounces of Alcohol Consumed per Day
6. Relief Drinking (due to withdrawal, mental distress)
7. Severity of Alcohol Dependence
8. Frequency of Benzodiazepine Use
9. Polydrug Use

Chronicity and Consequences of Drinking
10. Medical Conditions (alcohol-related physical illnesses)
11. Physical Consequences (cognitive confusion, impotence)
12. Social Consequences (e.g., job trouble, spouse left)
13. Lifetime Severity (MAST)
14. Number of Years of Heavy Drinking

Psychiatric Symptoms
15. Depressive Symptom Count
16. Antisocial Personality Symptom Count
17. Anxiety Severity

alcoholism. In total, 17 variables were selected from the following domains: premorbid risk factors, pathological use of alcohol and other substances, chronicity and consequences of drinking, and psychiatric symptoms. Table 2 lists the variables used in the derivation phase of this research.

Cluster analyses were conducted separately for men and
women; two-, three-, and four-group solutions were specified for each. It was determined that the two-cluster solution produced the best statistical separation of subgroups and provided the most theoretically relevant solution in terms of typologies proposed in the literature. Discriminant validity of the two-group solution was assessed by comparing the groups with respect to external criteria not used in the original derivation. The external criteria included sociodemographic characteristics, personality measures, alcohol-related consequences, drinking history and clinical ratings of motivation and prognosis. Of these groups of variables, sociodemographic characteristics, personality tendencies and drinking history data differentiated between the two groups.

Follow-up at one and three years was done in order to assess the predictive validity of the two-group classification. At the 12-month follow-up evaluation, the two groups differed significantly on symptoms of pathological drinking, measures of alcohol consumed on drinking days, alcohol-related social and occupational problems, average distress experienced in association with different life events, average MMPI elevation, and frequency of drug use. At the 3-year follow-up evaluation, the two groups again differed on the same measures except amount of alcohol consumed per drinking day. In all of these comparisons, Type B alcoholics indicated more drinking problems, greater alcohol-related impairment and a faster rate of return to heavy drinking. By the 3-year follow-up, 9% of the Type B group
had died in comparison to 3% of the Type A group. There was much evidence, therefore, of empirical support for the validity of the two-group classification.

The Type A alcoholics were characterized by a later onset, fewer childhood risk factors, less severe dependence, fewer alcohol-related physical and social consequences, less previous treatment for alcohol problems, less psychopathological dysfunction, and less distress in the areas of work and family. In contrast, the Type B group were characterized by more childhood and familial risk factors, earlier onset, greater severity of dependence, polydrug use, more serious alcohol-related consequences, a more chronic treatment history (despite their younger age), greater psychopathological dysfunction (current and lifetime), and more life stress.

Babor et al. (1992) found much convergence between their two-group classification and numerous other alcoholic subtypes postulated by typology theorists over the past 60 years. In particular, the Type A alcoholic had many features of the reactive alcoholic (Knight, 1938); Stammtisch drinkers (Bowman & Jellinek, 1941), the delta type (Jellinek, 1960), continuous drinkers (Tomsovic, 1974), nonfamilial alcoholics (Goodwin, 1979), affiliative alcoholics (Morey & Skinner, 1986), primary alcoholics (Schuckit, 1985), developmentally cumulative alcoholics (Zucker, 1987), and late onset, milieu-limited, type I alcoholics (Cloninger, 1987; von Knorring et al., 1987). Similarly, the Type B alcoholics resembled subtypes labeled
essential alcoholics (Knight, 1938), symptomatic drinkers (Bowman & Jellinek, 1941), gamma alcoholics (Jellinek, 1960), binge drinkers (Tomsovic, 1974), familial alcoholics (Goodwin, 1979), schizoid drinkers (Morey & Skinner, 1986), secondary alcoholics (Schuckit, 1985), antisocial alcoholics (Zucker, 1987), and early onset, male-limited, type II alcoholics (Cloninger, 1987; von Knorring et al., 1987). As this group of previously proposed subtypes had been identified through a variety of methods including clinical observation and empirical clustering, this convergence was considered strong evidence of the construct validation of the two-group classification.

Guidelines for Subtyping Alcoholics

A number of reviewers and researchers in the field of alcoholism subtyping have proposed guidelines, made suggestions and proposed future directions for the field (Babor & Dolinsky, 1988; Babor & Lauerman, 1986; Babor & Meyer, 1986; Morey & Blashfield, 1981; Shelly & Goldstein, 1976; Skinner, 1982). The following is a synopsis of these recommendations. A useful classification system should have the following characteristics:

1) Homogeneity within categories;
2) Heterogeneity between categories;
3) Stability -- the defining characteristics should remain stable over time;
4) Comprehensiveness and Specificity -- a typology should account for most, if not all, cases in a representative sample of
alcoholics. The defining characteristics should be closely related to alcoholism;

5) Multidimensionality -- a typological classification should be capable of differentiating alcoholics along a variety of alcohol-related dimensions (e.g., behaviors, symptoms, physical conditions, and social consequences);

6) Utility -- typological formulations should be capable of serving a variety of useful purposes; and

7) Validity -- a typological classification should permit external validation.

Reviewers have noted that most typology research has curiously avoided a direct focus on alcohol use patterns and alcohol-related behavior and call for a broader base of data to analyze in determining subtypes (Skinner, 1982; Morey & Blashfield, 1981; Babor & Meyer, 1986). The need for a more careful selection of subjects, clustering techniques and variables has been emphasized, with the suggestion that outpatients be employed as opposed to hospitalized alcoholics (Morey & Blashfield, 1981). The importance of including variables more diagnostic of interpersonal style has been emphasized, as well as a general need for researchers to integrate their results with results of previous studies (Morey & Blashfield, 1981).

Summary of Relevant Findings

The field of alcoholic typological classification has had a long history, and has moved from intuitive armchair approaches
to methodologically sophisticated empirical derivations. The early approaches employed clinical judgement and are characterized by conceptual and methodological inadequacies. They have, however, provided important guideposts for contemporary researchers attempting to classify alcoholics, such as the notion of relative homogeneity within subgroups, the differences between subgroups in terms of causal pathways into alcoholism, alcohol-related problems and symptoms, and the need for different treatment approaches.

Unfortunately, the content of this early work has made little contribution to the field as it is today. Many theory-based a priori classification schemes have been found to lack discriminative power and predictive validity, and have been too narrow in scope. Narrowness of scope has also been a shortcoming of more recent typologies which, although more methodologically sophisticated, have focused solely on the personality or psychiatric profiles of alcoholics. As Babor and Meyer (1986) have commented:

Typology theorists have tended to work in a time warp, independent of one another and independent of the work of their predecessors. Their failures are evident. With the notable exception of Jellinek’s typological synthesis, very little of the past has been recognized by contemporary researchers, theorists, or clinicians as a significant contribution to the understanding or treatment of alcoholism. Although the verdict is not yet in, a similar indictment can be made about the recent past of typology research, which has been so heavily dominated by abnormal personality theory and the Minnesota Multiphasic Personality Inventory(p.107).

Perhaps the most significant contribution from the abnormal personality theory approach has been the indication that
interpersonal style is an important differentiating dimension.

Using cluster analytic techniques and a broader base from which to derive subgroups is a classification approach which has shown the most promise. In particular, variables derived from information about alcoholic behavior and alcohol-related consequences have produced classifications which have exhibited considerable reliability, external validity and predictive validity. Employing a still broader group of variables within a biopsychosocial model, Babor et al. (1992) have produced a typology which has demonstrated reliability, discriminant validity, and predictive validity, as well as construct validity in that the resulting classification converges with a number of other subtyping schemes arrived at by a variety of methods.

To conclude, the cumulative alcoholism typology literature indicates that the most profitable approach to alcoholic subtyping involves the use of a broad base of information directly related to alcoholism combined with appropriate empirical derivation and validation methods. In particular, variables reflecting etiology, onset and course, presenting symptoms and drinking patterns are most relevant for the derivation phase; cluster analysis appears to be the preferred derivation technique. Finally, the empirical evaluation of the reliability and validity must be conducted, as well as an integration of the results with previous research.
Alcoholic Subtypes and the Family

This section will review the small but important group of studies which have considered functioning in the alcoholic family in terms of qualitatively different kinds of drinking behavior. These studies have classified the alcoholics in families into meaningfully distinct subgroups in order to investigate family differences associated with the subgroups.

The Work of Steinglass and Associates

Steinglass's work on alcoholic families began during the late 1960s with a series of experimental studies that included observations of inpatient alcoholics during an experimental drinking phase and a subsequent withdrawal (non-drinking) period (Steinglass, 1975). These early drinking studies suggested that acute intoxication could have various effects on the role relationships and interactional behaviors of the involved members; in particular, that affective and structural characteristics of relationships could be dramatically altered during periods of drinking. For Steinglass, these observations confirmed the significance of reciprocal effects involving alcohol and interpersonal interaction. A model of alcoholism based on family systems theory was created, suggesting that abusive drinking could have the adaptive function of maintaining and stabilizing the family unit by providing a temporary solution to a conflictual or stressful family process. In different family contexts, the immediate consequences of drinking might be as
different as the controlled release of aggression versus ritualized sexual activity, however, the adaptive function would be the same, that is, the stabilization of an otherwise unstable and/or chaotic family system (Steinglass, Weiner, & Mendelson, 1971; Steinglass, Davis, & Berenson, 1977).

A number of important distinctions were made about the alcoholic family in this program of research, including the following: 1) alcoholism has a chronicity—a long-term course; 2) alcohol is a psychoactive drug that has both transient stimulant and subsequent depressant effects, as well as disruptive effects on memory function, mood, cognition, sleep and verbal interactional behavior; 3) alcoholic drinking patterns are dual-state patterns, with cyclical periods of intoxication and relative sobriety; 4) intoxicated behavior can become highly patterned and therefore predictable; and 5) interactions among family members are different when the alcoholic member is intoxicated as compared to when he is sober (Steinglass, Bennett, Wolin, & Reiss, 1987).

In a laboratory interaction study, both parents (one alcoholic) and one of their adolescent children participated in a structured problem-solving task requiring family members to work individually and jointly on a series of pattern-recognition card-sorts (Steinglass, 1979). Three sorts were conducted: the first and third were done individually and the second allowed the family to work together through auditory contact only. The families were classified into Dry and Wet categories based on the
current drinking status of the alcoholic. Steinglass found that members of Wet families tended to behave in a relatively independent manner, nevertheless managing to maintain effective problem-solving. Dry families, by contrast, appeared to emphasize togetherness, agreement, and family solidarity and used a uniform approach to problem-solving. As Steinglass (1979) comments:

[For the Dry families], the emphasis was on togetherness, solidarity, and uniformity, perhaps a reflection of a relative rigidity of interactional behavior. This rigidity in turn produced some deterioration in problem-solving effectiveness...[For the Wet group], family members appeared freed up to behave differentially, a freedom which actually improved their overall problem-solving effectiveness. Another way of putting it is that [for the Wet group], family members appeared to be free to ignore each other behaviorally, but still seemed capable of learning from each other and of mastering a task effectively (pp. 434-435).

The results of this study strongly suggested that the consumption of alcohol actually facilitated interactional functioning.

In a study based on the assumption that as families become organized around chronic alcoholism, a reciprocal fit develops between the alcoholic’s type of drinking pattern and the family’s temperamental style, Steinglass (1981) focused explicitly on the relationship between alcohol use and daily routines (as a kind of family regulatory behavior). Family temperamental style was assessed via direct observation of home behavior, especially how the family organized its use of time and space during routine times at home. Thirty-one alcoholic families were observed in their homes over a six-month period and their family interactions were examined. Observers charted a variety of characteristics
including the presence and/or consumption of alcohol, the location in the home of the family members, the presence of other family members and their distance from one another, verbal interactions between the family members, and the content and outcome of the interactions. Observations were made on nine different occasions, including both weekday evenings and weekend afternoons.

Alcoholic families were divided into three drinking pattern groups: Stable Wet (alcoholic was engaged in an active, highly predictable pattern of daily or weekend drinking throughout the six months of the study), Stable Dry (alcoholic was abstinent throughout the study), and Transitional or Alternator (alcoholic was engaged in episodic, unpredictable binge drinking throughout the study). The results indicated that Stable Wet families scored highest on distance regulation (members dispersed around the house, spent more time alone), Stable Dry families were intermediate on distance regulation and Alternator families were the lowest on distance regulation (were close together). The Stable Dry families were seen as having the most flexible style with respect to distance regulation, whereas the Stable Wet and Alternator families were, each in their own way, more rigid. As
Steinglass (1981) comments:

Distance regulation...represent[s] a complex and subtle patterning of contacts between family members in which the key element is their predilection to share space as well as verbal contact with each other. The most flexible pattern of behavior along this dimension would most likely be represented by a midrange factor score, in which family members are spending periods of time in the same rooms together but also having times of independent activity. Both the high and low extremes along this factor would seem to represent rigid, although stylistically quite different, patterns of behavior (p. 584).

The other dimension of family regulatory behavior which differentiated between the three groups was content variability or "a measure of the extent to which decision-making behavior and variability of affect associated with verbal interaction was characteristic of the family" (Steinglass, Tislenko, & Reiss, 1985, p. 368). Stable Dry families had a higher mean score than the other two groups with Alternator families having the lowest score on content variability (showing a narrow range of content, affect, and outcome of interactions). In the case of this variable, Steinglass considered higher values to be indicative of the more flexible pattern and lower values to be associated with rigidity (Steinglass, 1981).

Results from a discriminant function analysis further strengthened the contention that family regulatory functions were importantly related to differences across the three groups. The first of two statistical functions derived had heaviest loadings on structural variability, content variability, and distance regulation, producing a sharp differentiation between the Stable
Wet and Stable Dry groups. The second function had significant loadings on distance regulation and content variability and most clearly differentiated Transitional or Alternator families from Stable Wet and Stable Dry families. The two discriminant functions predicted the group status of each family at a correct classification rate of 74.2%, indicating the importance of interaction patterns in differentiating the three groups and in predicting group status (Steinglass, 1981).

The Stable Wet families, then, were "associated with a style of interactional behavior characterized by a tendency of family members to disperse in the house, physically interacting only when they intend to talk with one another for some purposeful reason. On the other hand, their verbal interactions, when they do occur, have a midrange degree of variability regarding content, purpose, and affective level" (Steinglass, 1981, p. 581).

The Stable Dry families, by way of contrast, showed "high content variability combined with midrange...distance regulation. The SD families, therefore, have relatively high rates of decision-making behavior and greater affective display, especially in the direction of allowing disagreements to be expressed" (Steinglass, 1981, pp. 581-582).

The Alternator or Transitional families, on the other hand, showed much lower distance regulation and lower content variability. "The TR families might be accurately described as manifesting physical closeness (defined concretely in terms of
interactional distance) to a degree that gives them the appearance of huddling together for warmth and protection. In terms of content variability, TR families demonstrated the narrowest range of task, affect, and outcome of the three alcohol-phase groups" (Steinglass, 1981, p. 582).

A subsequent two-year follow-up study was conducted on the same group of 31 families in order to assess the course of alcoholism and the degree of marital stability (Steinglass, Tislenko, & Reiss, 1985). Two important differences were found with respect to the Stable Wet and Alternator families. First, there was a difference between the groups on marital stability, with the Stable Wet group showing less stability over the two years than the Alternator group. Second, marital stability was inversely related to the family regulatory behavior called intrafamily engagement which is considered to be closely allied to the concept of family cohesion. This inverse relationship was found for the Stable Wet group only; for the Alternator group there was no relationship between intrafamily engagement and marital stability.

Based on these results, Steinglass (Steinglass et al., 1985) presented hypotheses about the differences between the Stable Wet and Alternator pattern families. The Alternator families react to very high levels of stress early in the illness and either dissolve or exclude the identified patient, forming a disengaged system. Stresses in Stable Wet families develop more slowly, however, giving the family time to accommodate. If they do
accommodate poorly, individual distress is high and the family is less cohesive and separates. It is important to note that a more traditional label for the Alternator drinker would be binge or episodic and for the Stable Wet drinker a label of chronic or steady drinker would apply. As most of the literature on alcoholic families has been devoted to these two types of drinkers without any such distinctions being made (Kaufman, 1985), this research and the differentiation of families into drinking patterns is all the more valuable.

The other important aspect of this program of research was the application of systemic theory to the complexity of interactions in a family with an alcoholic member. The idea of reciprocal interactions which, over time, may amount to a mutual accommodation between important aspects of drinking behavior and family behavior is a powerful frame for understanding the life course of alcoholic families. As Steinglass (1992) concludes about these interconnected studies:

Taken together, these data support the idea that family regulatory functions reflected in dimensions of daily routines--such as distance regulation and affective expressiveness--differ systematically in conjunction with drinking subtype. This is in essence the 'goodness of fit' model we have alluded to...[previously]. Another way of describing this process is that alcoholic drinking patterns and family regulatory responses accommodate to each other over a long period of time in the family's history, resulting in a particular family 'culture' which exerts considerable influence on the pervasiveness of the alcoholism (p. 160).
The Work of Jacob and Associates

A second program of research which investigated alcoholic subtypes and family functioning was that conducted by Jacob and associates (Jacob, Dunn, & Leonard, 1983; Dunn, 1985; Dunn, Jacob, Hummon, & Seilhamer, 1987; Jacob & Leonard, 1988). Primarily interested in alcohol abuse and family interaction, this group of researchers discovered the importance of identifying and assessing homogeneous subgroups in order to understand the complex, multidimensional nature of this phenomenon.

The first research finding of interest was that alcoholic husbands who had consumed relatively large versus small amounts of alcohol in the past month tended to obtain low scores on various MMPI scales and to report high marital satisfaction. These heavier drinking husbands had wives who (1) obtained relatively low scores on the MMPI and the Beck Depression Inventory (Beck & Steer, 1987), and (2) reported relatively greater marital satisfaction on the Locke-Wallace Test (Locke & Wallace, 1959) and Dyadic Adjustment Scale (Spanier, 1976) (Jacob et al., 1983). The strength of these relationships was quite different in two subgroups of alcoholics, categorized as Binge and Steady drinkers according to information given in a section of the Marlatt Drinking Profile (Marlatt, 1976). The relationship between heavier alcohol consumption and relatively lower symptomatology and higher marital satisfaction fell to nonsignificance for Binge drinkers and became highly significant.
and consistent for Steady drinkers. By way of explanation of the results, these researchers hypothesized that in Steady drinkers’ homes:

...marital and family relationships are more satisfying during high versus low consumption periods, and these consequences serve to maintain or perpetuate drinking to the extent that (a) the alcoholic husband’s behavior is more predictable when he is consuming alcohol at a high rate that when he is not drinking; (b) the experience of stress in family life is minimized during periods of high consumption; and (c) the family has adapted to and incorporated high-rate drinking into its family life (Jacob & Seilhamer, 1987, p.571).

The second research finding of interest had to do with an intensive day-to-day analysis of data pertaining to drinking, psychiatric symptoms and marital satisfaction in a small group of Steady drinking pattern families (Dunn, 1985; Dunn, Jacob, Hummon, & Seilhamer, 1987). Because drinking location (in-home versus out-of-home) was previously found to be correlated with the Binge-Steady categorization (Jacob et al., 1983), the sample was selected so that half of the Steady group were in-home drinkers and half drank outside of the home. The results of the time-series analysis were striking: all of the out-of-home Steady pattern families exhibited a negative relationship between the husbands’ alcohol consumption and the wives’ marital satisfaction (i.e., drinking was associated with a decrease in marital satisfaction), whereas most of the in-home Steady pattern families exhibited a positive relationship between these two variables (i.e., the husbands’ drinking was associated with an increase in marital satisfaction). Clearly, the family’s response
to the alcoholic’s drinking was quite different depending on the subgroups assessed (Jacob, et al., 1987).

In a subsequent study, the interactions of 49 couples (alcoholic men and their wives) were assessed in sessions when alcohol was consumed and in nondrinking sessions (Jacob & Leonard, 1988). As before, the couples were categorized according to the Episodic (Binge) or Steady drinking pattern of the alcoholic member using a section of the Marlatt Drinking Profile (Marlatt, 1976). Episodic husbands and wives exhibited similar levels of negativity on non-drinking nights, as did Steady husbands and their wives. On drinking nights, however, Episodic husbands displayed significantly more negative behaviors than did their wives. In contrast, Steady alcoholics displayed significantly less negativity than their wives did in the drinking sessions. The problem-solving behavior of the two types of couples was also markedly different. Episodic couples problem-solving behaviors decreased from the no-drink to the drink situation, whereas the Steady couples problem-solving behaviors increased in the drink situation.

The results of this study led the researchers to conclude that Episodic and Steady alcoholics manifest different patterns of marital interaction and that these differences were discernible primarily during the drinking sessions. They hypothesized that among Episodic alcoholics, a shift in the power in the relationship takes place when drinking occurs. This shift may be brought about by the increased hostility on the part of
the alcoholic husband and may reflect a coercive control process. For the Steady couples, however, problem-solving activities become energized when the husband has been drinking (Jacob & Leonard, 1988; Leonard, 1990; Jacob, 1992).

**Related Studies**

Two other studies support the idea that differences in functioning in alcoholic families are meaningfully associated with different homogeneous subgroups of alcoholics classified in terms of their alcoholic characteristics. Wiseman (1980), in an intensive interview study, found that different patterns of sobriety were associated with different attitudes and behaviors in both alcoholic husbands and their wives. Although this research was qualitative in nature, and the three categories of length of sobriety used to organize the sample were not discrete, the study illustrated two relevant points: 1) that the alcoholic population can be meaningfully subgrouped; and 2) that families subgrouped according to the length of sobriety of the alcoholic report differential functioning.

The second study of interest investigated the drinking pattern of the alcoholic family member with respect to family functioning as perceived by the children in the family (Bate, 1994). The drinking pattern of a sample of 61 alcoholic fathers was determined by three trained coders using information regarding drinking quantity, frequency and other characteristics. The drinking patterns identified initially were Episodic, Steady,
Regular Weekly (weekend or days off drinking), and Combination (a steady pattern with some binges). Due to an uneven distribution, Binge, Regular Weekly, and Combination patterns were collapsed into a category called Irregular; the Steady group was retained intact. Using self-report inventories, the children of the alcoholics (n=110, mean age=13) provided information regarding family environment, parent-child communication, family adaptability and cohesion, social support from the family and family satisfaction.

Highly significant differences in family functioning were found between the Irregular and the Steady families as perceived by the children. In particular, the children in Irregular pattern homes reported less family cohesion, organization, togetherness, satisfaction, social support from the family, and open communication than did the children in Steady pattern homes. In addition, the children of Irregular pattern drinkers experienced more chaos, control, and conflict that did their counterparts. Multiple regression analysis determined that four variables accounted for most of the variance, namely, family adaptability (rule-boundedness), control, expressiveness and satisfaction. Interestingly, the Irregular and Steady drinkers differed in terms of other drinking style characteristics such as day-time versus night-time drinking, drinking in-home versus out-of-home and drinking alone or with others (Bate, 1994).
Summary of Relevant Findings

There are a number of key points arising out of the literature on alcoholic subtypes and the family. They can be stated as follows:

1) the use of alcohol can have an adaptive function in the family system;

2) in alcoholic families, members are exposed to two distinctly different states in the alcoholic—one of intoxication and one of relative sobriety;

3) family functioning may differ in each of those two states;

4) families grouped according to alcoholic subtypes may differ with respect to how they function;

5) some of the distinctions found to be important in terms of subgrouping families are pattern of drinking (Stable Wet/Stable Dry/Alternator; Episodic/Steady) and drinking style characteristics such as location (in-home/out-of-home), time (day/night), and social context (alone/with others);

6) a reciprocal fit can develop between the alcoholic’s drinking style and the family’s temperament as manifested by family regulatory functions.

The research efforts of Steinglass and Jacob and their associates is characterized by originality, creativity, and for the most part, methodological sophistication. It is ironic, therefore, that the most methodologically weak aspect of these
two programs of research has been in the determination of the alcoholic subgroups. First, the classification systems used have been narrowly defined in terms of drinking pattern alone. Second, assignment to groups has been based on a meagre amount of information. From the perspective of the current trends in alcoholic subtyping, the subtyping approaches used in these studies of family functioning are quite inadequate.

To conclude, there is ample evidence that a strong connection exists between family functioning and characteristics of the alcoholic which are observable and readily, if perhaps crudely, determined. At this juncture it appears that drinking characteristics strongly associated with differential family functioning are features of recent empirically-derived alcoholic subtypes. That is, drinking pattern, found to be related to family functioning, has also been found to be a common feature of recent empirically-derived subtypes. It remains for further research to refine, clarify, and elaborate the connection between empirically-derived alcoholic subtypes and family functioning.

The Clinical Relevance of Alcoholic Subtypes

As the above review has indicated, there is strong evidence that alcoholic subtypes are important in investigating the relationship between alcoholism and the functioning of family members. Another major domain in which alcoholic subtypes are important is in the area of alcoholism treatment. As two prominent researchers in the subtyping field have commented:
"Virtually every researcher in this area has said that a primary goal of classifying alcoholics by type is to indicate optimal treatment for each type, thus identifying a clinically significant type by treatment interaction" (Morey & Blashfield, 1981; p. 934). One way of approaching the type by treatment issue has been to compare the progress of multiple subtypes on a single treatment format. Although the "matching hypothesis" is a popular one among researchers in the field, few studies have been conducted which test for this interaction.

Studies which look for the type by treatment interaction must not only adequately classify the alcoholic sample, but also must determine which treatments are most likely to obtain interaction effects. Finney and Moos (1979), for example, found no interaction effects, however, the variables they used to create a typology had little relation to those used in most other cluster-analytic studies, and the treatments employed were not distinct (Morey & Blashfield, 1981). Despite these difficulties, a small number of recent studies have produced promising results in the form of either a type by treatment interaction or a differential prognosis for subtypes (Litt et al., 1992; Morey et al., 1984; Snowden et al., 1986; O'Leary, Donovan, Chaney, & O'Leary, 1980; von Knorring, Palm, & Andersson, 1985).

Recent interest has focused on the interpersonal style variables which have been found to be important in many typology studies (Morey & Blashfield, 1981; Morey, Skinner, & Blashfield, 1984). Beutler et al. (1994), for example, have focused on an
externalizer/internalizer distinction, in which the externalizing subtype is characterized by more impulsive, aggressive, and sociopathic behaviors, and whose close relationships are characterized by negativity and coercive controlling.

**Therapeutic Alliance**

Basic to the definition of the therapeutic alliance for most researchers are the common ingredients of mutuality, engagement, and collaboration, whereby both therapist and client have the capacity to participate in the therapeutic contract (Frieswyk et al., 1986; Horvath & Symonds, 1991; Luborsky, 1976; Marziali, 1984). Consistent is the assumption that "the work of therapy cannot proceed in the absence of a constructive therapeutic alliance" (Marziali, Marmar, & Krupnick, 1981, p. 361). Bordin (1979), whose landmark operationalizing of the construct has been widely received, defined the therapeutic alliance in terms of the agreement that exists between client and counsellor on the goals and tasks of therapy. In addition, he specified a bonds component representing the affective, experiential elements in the counsellor-client relationship.

Clinicians and researchers alike share the belief that if the therapeutic alliance is not the mechanism for change, it is at least a necessary pre-condition for change (Tichenor & Hill, 1989). Others go further, claiming that the alliance may be the main vehicle of change, the primary mediating variable or vehicle of success determining the outcome of therapy and, consequently,
the primary task of therapy (Bordin, 1979; Horwitz, 1974; Pinsof & Catherall, 1986). Bordin (1980) emphasizes that the alliance is not therapeutic in and of itself; rather, collaboration provides clients with the opportunity to benefit from a therapist’s intervention (Horvath & Marx, 1990). The therapeutic alliance contain concepts that are strong common elements in nearly all therapeutic approaches, for every therapist attempts to build and maintain some sort of relationship with clients (Horvath & Symonds, 1991).

Subjects in this study entered treatment shortly after providing the information necessary for the bulk of this research. At midtreatment, after approximately 7 to 10 weeks of therapy, they completed a measure of the therapeutic alliance they had formed with their counsellor (Therapeutic Alliance Scale, Pinsof & Catherall, 1986). This measure was used to more directly evaluate the clinical relevance of the subtypes derived in the study.

**The Ecosystemic Model**

In order to effect a comprehensive assessment of the differences between the subtypes derived, an ecological systems or ecosystemic framework was employed in the study.

An ecological-systems or ecosystemic framework incorporates a comprehensive view of individuals in their psychosocial context with the idea that the relationship between person and environment is characterized by mutual influencing. The
ecosystemic model has its roots in the ecological model of human
development elaborated by Bronfenbrenner (1977, 1979) and the
theory of systems formulated by such writers as von Bertalanffy
(1950; 1968) and Bateson (1972; 1979). Ecosystemic thought has
been greatly influenced by the clinical practice of pioneer
family therapists, such as Selvini-Palazzoli et al. (1973), Bowen

Bronfenbrenner (1977, 1979) constructed a theoretical schema
which consisted of four basic systems nested one inside the
other; the microsystem, the mesosystem, the exosystem, and the
macrosystem. The microsystem is composed of complex dyadic
interactions between the developing person and the immediate
setting containing the person. The mesosystem is composed of the
interactions between the major microsystems operating at any
particular point in the person's life. The exosystem is an
extension of the mesosystem involving both formal and informal
social structures which have an external influence on the
developing person, while the macrosystem is made up of the
cultural belief system, ideologies and mores in operation within
the person's societal context. These systems are also connected
by interaction patterns which extend beyond the system out into
the immediate setting. Bronfenbrenner identified other
developmental features in his theory. First, the developing
individual is viewed as a growing dynamic entity who has an
impact on the environment. Second, the environment also has an
influence on the person, and therefore a process of mutual
accommodation is enacted. Further, he believed that the individual’s perception of the environment is more important than the actual environment in terms of the individuals’ behavior and development.

Von Bertalanffy is responsible for the original formulation of ‘General Systems Theory’ (1950; 1968). A central idea in General Systems Theory is that of recursive causation. Considering usual notions of causation as simplistic and inadequate, von Bertalanffy noted that living organisms share the characteristic of purposiveness, by which they act upon stimuli rather than simply responding to stimuli in a unilinear manner. He saw causation as occurring in terms of circular configurations (referred to by Bateson [1979] as ‘recursive’), whereby the goals of the system (including the maintenance of the system itself) are achieved through resisting stimuli which are not directed toward the system’s goals and through promoting and encouraging stimuli which serves the system’s goals. These ideas also inform the ecosystemic perspective. As Cooper & Upton write:

The ecosystemic approach to human behavior is founded on the notion that the origins and purposes of human behavior are essentially interactional. Human beings are neither wholly free, in an existential sense, to behave as they choose, nor is their behavior wholly determined by environmental forces. Human beings exist as strands in a social web that can be likened to a biological ecosystem in which individual organisms’ behavior and development is both constrained by and a constraining force upon the behavior and development of other organisms, interaction with whom is essential for fulfillment of survival needs. From an ecosystemic viewpoint, human behavior is the product of
ongoing interaction between environmental influences and internal motivations which derive from prior (mainly social) experience (p. 302, 1990).

An important corollary of the ecosystemic perspective is that due to the interconnectedness of elements, change in any one part of the system will have a ripple effect throughout the entire system.

The ecosystemic approach has been gaining popularity and interest as a conceptual and research framework applicable to a wide variety of concerns. Some of the areas and topics which have had the ecosystemic model applied to them include social work practice (Allen-Meares & Lane, 1987), educational psychology (Power & Bartholomew, 1987; Cooper & Upton, 1990), clinical assessment (Keeney, 1979; Jasnoski, 1984; Jasnoski & Schwartz, 1985), family counseling (Friesen, 1983), family violence (Flemons, 1989), families of the physically handicapped (Bubolz & Whiren, 1984), anorexia nervosa (Sheppy, Friesen & Hakstian, 1988), and alcoholism treatment (Gacic, 1986; Grigg, 1994).

The present study utilized a modification of an ecosystemic assessment model elaborated by Conger (1981) and adapted for research use by Sheppy et al. (1988). Psychological functioning in the individual, marital, family and social domains were assessed from the perspective of both the male alcoholic and his wife. The individual level of analysis yielded information about cognitive functioning, clinical characteristics and self-concept qualities; the marital level of analysis yielded information about dyadic adjustment, marital complaints, marital intimacy and
interactional qualities; information about family structure, style, satisfaction, social-environmental characteristics and perceived support were determined at the family level of analysis; perceived social support from friends was determined at the social level of analysis; and the therapeutic level of analysis yielded information about the therapeutic alliance.

The study was predicated on the notion that alcohol-involved families have to cope with different types of alcoholics. Since there are strong indications that both the population of wives of alcoholics and the population of children of alcoholics are heterogeneous, it follows that alcoholic families would also be a heterogeneous group. There is, however, theoretical support for the idea that differences in drinkers are associated with differences in families, as well.

An ecosystemic perspective is concerned with the reciprocally influencing relationships between the elements which make up the ecosystem. The activities of one person cannot avoid having a direct or indirect influence on other people in the family, and through feedback loops, on the first person again at some other time. As Bowen (1974) notes: "...all important people in the family unit play a part in the way family members function in relation to each other and in the way the symptom finally erupts" (p.30). If alcoholic drinking by one person in the family is a significant behavior for other members of the family, then the drinking will have an influence on the family member's behavior which, in turn, will have an influence on the behavior
of the drinker.

For example, a man expresses anger towards his family when he drinks. In turn, the family resents his behavior and resists complying with his demands. He may feel increased frustration and anger as a result, and may increase his drinking. Since abusive drinking can have a profound impact on other family members, differences in the nature of the drinking behavior may impact on family members accordingly. Night-time binge drinking conducted outside of the home may have a different impact on family members than does daytime steady drinking conducted in the home. Members of these respective families, in turn, will behave and influence the drinkers in ways which derive from the original differences in drinking behavior, and so on. Differences in family functioning associated with alcoholic subtypes may be determined in a cross-sectional study such as the present one, and may be better understood by examining multiple levels of the ecosystem.

Steinglass and his colleagues (Steinglass et al, 1987; Steinglass, 1992) have used the explanation of reciprocally influencing relationships to interpret their research findings, as follows:

[T]he family’s response to alcoholism is both a reactive and a proactive one. That is, the family tends both to accommodate its behavior to the exigencies of alcoholism and to attempt to shape and delimit the effects of drinking to preserve important family functions...[I]t is surely the case that a fine-tuning process occurs in which alcoholism parameters and family temperamental characteristics mutually influence one another and induce those subtle alterations that make for the stable fit
between family behavior and the alcoholism behavior we observed in our study (p. 218, 1987).

Although Steinglass and his colleagues have not used an explicit ecosystemic approach in their work, they have long used systems theory to understand alcoholism in family contexts (e.g. Steinglass, Weiner, & Mendelson, 1971; Davis, Berenson, Steinglass & Davis, 1974).

**Hypotheses**

In a sample of men who have presented themselves for treatment of problem drinking, and who are in intact families yet acknowledge marital distress, alcohol use information was gathered prior to the beginning of treatment. At the same time, information was collected regarding psychological functioning at the individual, marital, family and social levels from both the male alcoholic and his nonalcoholic spouse. Information regarding the strength of the therapeutic alliance was obtained at a midtreatment point from the alcoholics and a subset of the wives. This data-set was used to address the following hypotheses:

**Hypothesis #1**

The first hypothesis of this study is focused on the validity and utility of the derivation of an alcoholic typology using an empirical, multidimensional measurement approach. It asserts that:
An empirically-derived typology of alcoholism, based on a multidimensional measurement approach, will demonstrate statistical adequacy, conceptual meaningfulness, and relevance in terms of previous subtyping research.

Hypothesis #2

The second hypothesis has to do with the ecosystemic assessment of the derived alcoholic typology. It asserts that:

Alcoholic men and their nonalcoholic spouses grouped according to the derived subtypes will differ in terms of their psychological functioning at the intrapsychic, marital, family, social and therapeutic levels.

These two hypotheses are further elaborated and operationalized in terms of the measurement instruments and variables used in this study. They are articulated at the end of the following chapter (Chapter III: METHODOLOGY).
CHAPTER III: METHODOLOGY

Context of the Research

This study was one in a series of investigations resulting from a large-scale research program entitled The Alcohol Recovery Project (TARP). The main thrust of TARP has been to evaluate different treatment methods and modalities with respect to the problem of alcoholism. Carried out over a period of five years, TARP has received funding from the British Columbia Alcohol and Drug Program (now part of the B.C. Ministry of Health) and from the British Columbia Health Research Foundation (Health Services Research Programme). Other assistance has been extended by the University of British Columbia and the Humanities and Social Sciences Research Services.

The larger research program, TARP, involved recruiting families in which the male head of the household was experiencing alcohol-dependency. At screening, each family was randomly assigned to one of three treatment conditions, namely, Experiential Systemic Therapy—Individual format (ExST-I), Experiential Systemic Therapy—Couples format (ExST-C), and Supported Feedback Therapy (SFT). Participants were also randomly assigned to one of the 12 therapists that were involved in the provision of the treatments. Data collection for TARP occurred at five separate occasions: Screening, Pre-treatment, Mid-treatment, Post-treatment and Followup. The data utilized in this study derived from the Screening and Pre-treatment occasions only, with
the exception of the Therapeutic Alliance Scales (see below) which were collected at Mid-treatment. A more detailed description of the treatment outcome portion of TARP is given by Grigg (1994).

Research Design

Alcohol use related information was gathered from the alcoholic men prior to their treatment. Information regarding the psychosocial functioning of the men and their nonalcoholic wives was also collected primarily at pretreatment occasions. Selected alcohol use variables were used to empirically derive alcoholic subtypes. These subtypes were then examined with respect to the psychological functioning of the alcoholics and their spouses.

Thus, the design of the study can be categorized as ex post facto research employing a classification approach (Borg & Gall, 1989). It is strongly descriptive in that the assessment of alcoholism characteristics and psychosocial functioning is extensive. The study is primarily one of exploration, in that empirically-derived alcoholic subtypes have not been previously examined with respect to psychosocial functioning. On the other hand, elements of a confirmatory approach can be seen in the following respects: (i) previous studies in alcoholic subtyping have converged on identifiable subtypes, and (ii) previous research in the area of alcoholism and the family has associated differential family functioning with features of alcoholic subtypes.
Participant Characteristics

The population of interest for the study is adult male alcoholics and their families who are experiencing marital distress. The men in the study sample elected to begin a course of treatment aimed at changing their relationship to alcohol; therefore, they were at a point of transition with respect to their drinking. One hundred and fifty couples were recruited through two B.C. alcohol and drug treatment centres; they had agreed to participate in a research project involving individual or marital counselling.

Each family screened in for the research met the following inclusion criteria:

(i) The husband was struggling against a dependency to alcohol, and had consumed alcohol within the previous three months.  
(ii) The wife had experienced no alcohol dependency problems within the five previous years.  
(iii) The couple was experiencing marital distress, but still living together and desiring to preserve the relationship.  
(iv) The couple had been living together for at least one year (married or common-law).  
(v) The couple was ready and willing to participate in either individual therapy for the husband or couples therapy.  
(vi) Each family included one or more children who lived at home, or were in regular contact with the family.  
(vii) Families could be remarried or blended, and the children could be of either parent.
Families that met the above criteria were excluded at point of screening if one or more of the following exclusion criteria were evident:

(i) The husband’s problem with alcohol was not severe enough for him to exceed the critical cut-off score of five on the Michigan Alcoholism Screening Test (MAST; Selzer, 1971).

(ii) The wife’s use of alcohol was severe enough for her to exceed the cut-off score of four on the MAST.

(iii) Both husband and wife scored above 99 on the Dyadic Adjustment Scale (Spanier, 1976) indicating negligible marital distress.

(iv) Wife or husband scored exceptionally high on either the psychiatric or depression subscales of the Symptom Checklist 90-Revised (Derogatis, 1983), indicating a severe psychiatric disturbance.

Subject recruitment and screening

Participating families were recruited by a variety of means including advertising through print media, local community television and radio, agency referrals and regular intake at the two alcohol and drug treatment clinics involved in the study. Prescreening occurred over the telephone and a final screening interview with the couple was conducted on site. When the couple did not meet the eligibility criteria, they were streamed into the usual clinic servicing process.

Men participating in the study completed questionnaires
regarding their drinking, their intrapsychic functioning and their perceptions about marital, family, social and therapeutic functioning. Their spouses completed the criterion alcohol use measure only and all questionnaires regarding individual, marital, family, and social functioning. Only those wives involved in conjoint therapy (i.e. ExST-C) completed the therapeutic functioning measure.

A portion of the largely self-report instrument battery was completed on site, incorporating some structured interview schedules. The remainder of the battery was completed at home and returned later to the Clinic site. The questionnaires were completed privately at the Clinic site and the couples were instructed to do likewise at home and to treat their responses as confidential. The aim here was to promote the honest, unbiased answering of the questionnaires. All data was collected prior to the beginning of treatment for the alcoholic, with the exception of the therapeutic alliance measure, which the alcoholic completed at midtreatment (after 7 to 10 weeks of treatment).

Description of the Treatments Used

Experiential Systemic Therapy (ExST)

Experiential Systemic Therapy (ExST) (Friesen, Grigg, Newman & Peel, 1989) is a model of therapy developed as an integrative treatment approach that synthesizes individual and family therapy concepts and techniques. By attending to the multiple layers of human experience and affirming the interconnectedness of people,
ExST provides a unified set of assumptions and concepts that can be equally applied to individuals, couples, families and groups.

The ExST model emphasizes the importance of relationship in understanding and influencing human beings, extending the defining characteristics to include relationships to intrapsychic parts, to activities, and even to objects such as "the bottle". Problems are understood by ExST as relational difficulties which are characterized as rigid, repetitive, and restrictive patterns of interaction that dominate people’s lives. The process of change is seen as a process of perturbing these problematic relational patterns to allow for more flexible, holistic relationships to be established.

ExST is an active, experiential form of therapy which emphasizes the engagement of the entire being of the client in therapy. It can be conducted in many different treatment modalities, however, in the TARP research, it was used in individual and marital modes only and conducted weekly or biweekly.

Supported Feedback Therapy (SFT)

Supported Feedback Therapy (SFT) (Grigg, Friesen, Weir, & Bate, 1989) was developed specifically for use in TARP. The SFT model was built upon a caring, warm, non-judgemental and supportive therapeutic relationship which was based on the work of Rogers (1951, 1961). SFT coupled a process of weekly self-monitoring with regular (weekly or biweekly) meetings with the
therapist. Wall charts were employed to chart the monitored behaviors (e.g. alcohol consumed) and self assessments regarding satisfaction and change experienced with regards to self, marriage, family, friends, and work. The focus of the therapeutic work was on charting the previous week(s) and examining and learning from the feedback that was available in the charts. As a result, the therapy was task-focused, present- and near-past oriented, and accented the client's responsibility for recovery.

It should be noted that for the purposes of this study, the three treatments formats, that is, ExST-I, ExST-C, and SFT were considered to be essentially equivalent. Previous research confirmed that there were no differences in terms of treatment outcome (Grigg, 1994) or therapeutic alliance (Olson, 1993) between the treatments. Hence, no investigation of differential treatment effects with regard to alcohol subtypes or cluster groups was pursued in this study.

Instrumentation

The study employed an ecosystemic framework in order to address the research questions. Husband and wife completed an extensive battery of self-report inventories designed to assess various aspects of drinking behavior, and intrapsychic, marital, family and social functioning prior to the beginning of the alcoholic's treatment. Instruments were chosen for conceptual fit, psychometric adequacy and because, in many cases, they had proven useful in related research endeavours. The instruments
that were selected for the investigation tap important aspects of the systemic domains specified by the ecological assessment model. The array of instruments chosen to operationalize the ecological approach had to satisfy all of the following criteria: (1) The tests had to measure specific qualities, characteristics and/or behaviors that were central to the biopsychosocial approach to the assessment of alcoholism; (2) Instruments considered for the study had to display adequate psychometric properties, (3) Instruments had to have been used in previous alcoholism research and have demonstrated utility in previous studies. In addition to the instruments used in the ecological assessment battery, several other instruments were selected for specific pragmatic purposes of the study such as screening and the collection of sociodemographic information. The battery of instruments used in the study were drawn from the central group of instruments employed in the research field of alcoholism and the family.

Preceding the assembly of the final TARP instrument array, a more extensive test battery was piloted and some instruments were dropped as a result of the pilot test analysis. The instruments included in this study are a sub-set of the original test battery employed in the overarching research program (TARP).

The instrument package employed in this study has been subdivided in terms of the ecological assessment level to which the instrument belonged: (1) alcohol measures, (2) intrapsychic measures, (3) marital measures, (4) family measures, (5) social
measures, and (6) therapeutic relationship measures. In the interest of brevity, a copy of the instrument package has not been included in this report, however, one is available upon request from the author. A description of all measures follows in sections below.

A Note on the Accuracy of Self-Reported Alcohol Use Measurement

In this study, all of the instruments used to measure alcohol consumption were of a self-report format. Concern has been expressed by some researchers over the validity of self-report measures of alcohol consumption. Alcoholics are regarded by these researchers as people prone to obscure and under-report their consumption rates (Guze, Tuason, Stewart, & Picken, 1963; Miller, Crawford, & Taylor, 1979; Midanik, 1982). Research probing the question of the accuracy of alcoholics' self-reported use has greatly reduced these concerns. Studies have demonstrated a high level of consistency (about 90%) between self-reported alcohol use and that reported by collaterals (Maisto, Sobell, & Sobell, 1979; Bowers & Al-Redha, 1990). Similarly, independent primary sources of alcohol use information, such as arrest records and similar accounts, have also been consistent with self-reports (Sobell, Sobell, & Samuels, 1974; Sobell & Sobell, 1975; Sobell, Sobell, Riley, Schuller, Pavan, Cancilla, Klajner, & Leo, 1987). These findings support the utilization of self-reported measures of alcoholic drinking as a reliable and valid method of determining subjects' drinking quantity, frequency and
pattern.

Description of Alcohol Measures

Alcohol Dependence and Treatment History (ADTH)

The Alcohol Dependence and Treatment History (ADTH) questionnaire was designed for the current study. In 17-items, this instrument gathers information about aspects of alcohol dependency, treatment history, AA involvement and familial problem drinking.

Binge/Chronic Differentiation Scale (BCDS)

The Binge/Chronic Differentiation Scale (BCDS) was constructed for use in this study from a section of the Marlatt Drinking Profile (Marlatt, 1976) designed to assess the regularity of one's alcohol consumption. The BCDS was used in a series of studies by Jacob and his associates (Jacob et al., 1983; Jacob & Leonard, 1988; Jacob & Krahn, 1988) to classify drinkers into binge (episodic) and chronic (steady) drinking patterns. The questionnaire was used for similar purposes in the present study. For example, it determines the quantity and frequency of alcohol consumption, which days of the week drinking typically occurs on, and the number of drinking bouts per year.

Michigan Alcohol Screening Test (MAST)

The Michigan Alcohol Screening Test (MAST) was developed by Selzer (1971) to provide a consistent, quantifiable measure for
the detection of alcoholism. It is considered a measure of lifetime alcoholism as many of its 25 items ask "Have you ever...". The MAST is scored with item-weighting resulting in a total scale range of 0 to 53. A score of 5 or greater indicates a diagnosis of alcoholism. In this study, the MAST was used to identify the husbands as alcoholics and the wives as non-alcoholics (or not practicing alcoholics). The MAST was also included as one of the alcohol variables used in the cluster analysis.

The MAST is widely accepted as a measure of alcoholism among researchers and clinicians. It has been used with many different subject groups including: alcoholics, people with impaired driving convictions, social and problem drinkers, drug abusers, pregnant women, hospital personnel, general medical patients, convicted felons, and college students (Hedlund & Vieweg, 1984). Although reported evidence of its psychometric reliability is slight considering its widespread use (Gibbs, 1983), reported internal consistency estimates (Cronbach's alpha) from 6 studies reviewed by Hedlund and Vieweg (1984) ranged from .83 to .95. Test-retest reliability coefficients reported in those studies ranged from .85 to .97 for intervals of less than one week. Skinner and Sheu (1982) reported a reliability coefficient of .84 for 91 acute psychiatric admissions with an average interval of 4.8 months from test to retest.

The validity of the instrument was originally assessed by linking MAST classifications with respondents' driving and
criminal records (Selzer, 1971). Five different groups participated in the validation study: a control group, persons convicted of drunk and disorderly conduct, drivers convicted of driving under the influence of alcohol, hospitalized alcoholics, and drivers who had incurred a high number of penalty points for traffic violations and accidents over a 2-year period. This study established that the MAST could be used to classify alcoholics and nonalcoholics even when distortion or minimization of the problem could be expected. MAST total scores have also been found to be significantly correlated to a variety of related instruments including the MacAndrews Alcoholism Scale (Friedrich & Loftsgard, 1978), the Alcohol Volume Index and the Alcohol Pattern Index (Sodal, Miller, & Debanne, 1981), and the General Alcoholism Factor of the Alcohol Use Inventory (Skinner, 1979).

Factor analytic studies probing the factor structure of the instrument reported by Zung (1980a; 1980; 1982) found that a single factor interpreted as "General Alcoholic Impairment" accounted for 49 to 78 percent of all common variance. Factors that have been noted as reasonably consistent across other studies include: marital discord, recognition of alcohol problems, help seeking, and legal, work and social problems related to alcoholism (Hedlund & Vieweg, 1984).

**Inventory of Drinking Situations -- Short Version (IDS-42)**

The Inventory of Drinking Situations (IDS-42) was developed by Annis, Graham, & Davis (1987) to assess situations, including
internal states, which have been associated with heavy drinking for the respondent. The drinking situations assessed by the questionnaire are based upon earlier work by Marlatt and his associates (Marlatt, 1978; 1979; Marlatt & Gordon, 1980) who found that high risk drinking situations could be grouped into two overarching categories, namely, personal states or situations involving other people. For the construction of the IDS, eight situation categories were identified from interviews with clinicians and alcoholic clients, and from an extensive review of parallel instruments. These eight categories are organized into two groups as follows: Personal States includes the 5 subscales Unpleasant Emotions, Physical Discomfort, Pleasant Emotions, Testing Personal Control, and Urges and Temptations; and Situations Involving Other People includes the 3 subscales Conflict with Others, Social Pressure to Drink and Pleasant Times with Others.

The IDS-42 asks the respondent to consider 42 situations in which heavy drinking may have taken place in the previous three months. Problem Index scores for each of the eight subscales are determined by dividing the obtained subscale score by the maximum possible subscale score and multiplying by 100. The manual provides interpretative ranges for the Problem Index scores based on normative samples of 134 female and 202 male respondents. The subscale score range of 0-100 is divided into four levels of risk regarding the likelihood of heavy drinking in the situation categories. A subscale score of 0 indicates no heavy drinking in
that particular situation category and so is considered "Low Risk". A subscale score of 1-33 indicates "Moderate Risk", 34-60 is considered a "High Risk" level, with a "Very High Risk" being a score of 67-100.

The IDS-42 is a shortened version of the original 100 item instrument. Subscale correlations were found to be high between the IDS-42 and the IDS-100, ranging from .78 to .93 (Annis, Graham, & Davis, 1987). Likewise, the internal consistency reliability estimates (alpha) for the shortened scales ranged from .80 to .92; these are only marginally lower than those found for the 100-item version's subscale alpha estimates which ranged from .87 to .96.

Annis et al. (1987) have reported that the questionnaire shows strong content validity as confirmed through the process of having three raters sort the 100 items of the original instrument into the eight categories. The resulting interrater reliability was between 92-99%, suggesting that the construct of each subscale was being accurately reflected in the substance of the questions. Other research has shown that the subscales load onto one higher order dimension (Isenhart, 1992).

Regarding external validity, the full length version of the IDS was correlated to both situation-specific drinking patterns and instances of heavy drinking in a sample of 247 alcoholics (Annis et al., 1987). It was found that a relationship existed between the amount of alcohol consumed and scores on the IDS, that is, increased levels of heavy drinking bouts were related to
higher scores on the IDS. The full version of the IDS was also compared to the Alcohol Dependence Scale (Skinner & Horn, 1984). Moderate positive correlations were found between the IDS subscale scores and the Alcohol Dependence Scale total scores, indicating that more frequent heavy drinking was related to signs of increased alcohol dependency. Finally, IDS subscale scores correlated significantly with drinkers' reports of their social context when drinking and with the number of years of problem drinking. The authors concluded that this convergent validity evidence supports the claim that the IDS not only measures frequency of heavy drinking, but is also sensitive to situation-specific patterns of heavy alcohol consumption.

**Drinking Pattern Assessment Scale (DPAS)**

The Drinking Pattern Assessment Scale (DPAS) is a 19-item questionnaire which was constructed for the present study from subsections of existing alcohol measurement questionnaires. The DPAS was utilized in the current study to gather detailed information about husbands' drinking characteristics. The questionnaire was designed to assess factors such as the length of time drinking had been a problem, the typical amount consumed on drinking days, and the specific types of personal, family, legal, and work difficulties resulting from excessive alcohol consumption.
Alcohol Dependence Data (ADD)

The Alcohol Dependence Data questionnaire (ADD) was developed by Raistrick, Dunbar & Davidson (1983) as an instrument to measure the severity of alcohol dependence as described by Edwards and Gross (1976). The ADD is used to measure the range of present state alcohol dependence as distinct from lifetime dependency. The instrument was constructed to reflect the full range of dependency and to be sensitive to change in dependency level over time.

The ADD is made up of 39 items using 4-point Likert type response scales ranging from "Never" (0) to "Nearly Always" (3), giving a total score range of 0-117. The ADD has no subscales and the total scale score it generates has been stratified by the authors into four levels of dependency severity. While a score of 0 indicates "No Dependency", 1-30 is considered the "Mild Dependence" range, 31-60 is considered the "Moderate Dependence" range and 61-117 is considered the "Severe Dependence" range.

A 15-item shortened version of the ADD has been created with the correlation between the full-length questionnaire and the shortened version reported as highly significant (r=.92). Split-half reliability estimates based on the shortened form was high (r=.87). Further evidence of the internal consistency reliability of the instrument is based on Spearman Rank correlations between items and total scores with significance levels ranging from p<0.03 to p<0.001.

Studies probing the validity of the instrument have been
based on the shortened version of the questionnaire (Davidson & Raistrick, 1986; Davidson, Bunting & Raistrick, 1990). The construct validity of the instrument is closely tied to the validity of the Edwards and Gross (1976) notion that dependence is a unidimensional phenomenon. The results of three factor analytic studies conducted by the authors of the instrument confirmed that there is a strong commonality amongst the items. One strong first factor represents all but one of the items. Attempts to identify a clear and consistent second factor which might underlie the instrument have not been successful. Consequently, the authors assert the validity of the dependency construct is supported by factor analysis.

Concurrent validity of the instrument has been assessed by comparing the test scores with a variety of other measures related to aspects of alcohol dependency including: liver function tests, semi-structured clinical interviews and other recognized tests of alcohol dependency. The results from 3 separate studies reported in Davidson and Raistrick (1986) support claims of concurrent validity.

Situation Confidence Questionnaire (SCQ-39)

The Situation Confidence Questionnaire (SCQ-39) was developed by Annis & Graham (1988) to measure the level of confidence experienced by clients with regards to their ability to resist the urge to consume alcohol. The SCQ-39 is grounded conceptually in the work of Marlatt and his associates (Marlatt,
1978; 1979; Marlatt & Gordon, 1980) in that, similar to the IDS, eight subscales are organized into two overarching categories, namely Personal States and Social Situations. The eight subscales are: Unpleasant Emotions/Frustrations, Physical Discomfort, Pleasant Emotions, Testing Personal Control, Urges and Temptations, Social Problems at Work, Social Tensions, and Positive Social Situations. Respondents consider each item as applying to their sense of confidence regarding resisting drinking at the present time; they use a response scale which ranges from "Not at all Confident" (0) to "Very Confident" (100) with twenty point increments in between.

The internal structure of the SCQ-39 was evaluated using a series of factor analytic procedures including exploratory and confirmatory factor analysis. Confirmatory factor analysis allows for the specification of hypothetical factor structures which are then tested with an observed data matrix; the adequacy of the fit between the model and actual data is assessed. As a result of their findings using this procedure, the authors of the SCQ-39 dropped three of the original 42 items from the test thus arriving at the 39-item measure.

Evidence of the reliability of the SCQ-39 has been based on item-total correlations and internal consistency (alpha) estimates. While the item-total score correlations for each of the subscales were acceptable (they ranged from .59 to .91), the internal consistency reliability of each subscale was high with alpha values ranging from .81 to .97.
The SCQ-39 allows for normative comparisons based on a group of men who were entering treatment for a variety of alcohol-related problems. In addition, the values are interpreted as indicating the percentage of confidence on individual has that he/she will not drink heavily in the subscale category (e.g., score 40 = 40% confident).

The SCQ-39 is theoretically linked with the construct of self-efficacy as conceptualized by Bandura (1977). It is concerned with respondents' confidence in their abilities to resist the urge to drink and to subjectively identify situations in which they are confident they will not drink heavily. The construct validity of the instrument was assessed by correlating subscale scores with measures of actual alcohol consumption, social context of drinking, and measures reflective of the construct of self-efficacy. With regards to actual drinking, the relationship between SCQ-39 subscales and consumption was found to be generally low, but in the main, significant and in the predicted direction. In addition, correlational patterns with measures relevant to the self-efficacy construct conformed to patterns predicted by theoretical association.

The SCQ-39 has been shown to demonstrate good criterion-related validity. Miller, Ross, Emmerson and Todt (1987) showed that the instrument could correctly classify 92% of long term abstainers and 65% of new clients entering an alcohol treatment centre. The measure has also demonstrated predictive validity with Solomon and Annis (1988) finding that SCQ-39 score obtained
at intake to treatment predicted average consumption on drinking days of clients who drank following treatment discharge. While the instrument failed to predict both the occurrence and the frequency of drinking occasions during follow-up, it was a strong predictor of quantity consumed when clients relapsed.

Description of Intrapsychic Measures

**Shipley Institute of Living Scale (SILS)**

The Shipley Institute of Living Scale (SILS) (Zachary, 1986) was designed to measure general intellectual functioning in adults and adolescents using Vocabulary and Abstraction subscales. The SILS was used in two ways in this study: (1) to screen out potential participants with English literacy levels not adequate to answer the extensive questionnaire battery or whose cognitive functioning was too low to benefit from some of the treatments offered; and (2) as a part of the ecological battery used to determine differences between alcoholic subgroups.

The SILS is a speeded instrument consisting of a 40-item Vocabulary subtest and a 20-item Abstraction subtest. The Vocabulary subtest employs a multiple-choice response format while the Abstraction subtest makes use of a completion format. The present study uses the summary scores derived from the two subtests.

The SILS appears to be a reliable instrument. Split-half reliability corrected correlation coefficients were 0.87 for
Vocabulary and .89 for Abstraction (Zachary, 1986). The test-retest reliability estimates across seven studies reported by Zachary (1986) had a mean average of reliability coefficient of .69 for Abstraction and .60 for Vocabulary for a mean average test-retest interval of 9.7 weeks.

The SILS has been found to be highly correlated with a number of other indices of intelligence. The correlation between the SILS and the Wechsler-Bellview ranged from .68 to .79. Similarly, correlations between the SILS and the WAIS and WAIS-R were high, .73 to .90 with the WAIS and .74 with WAIS-R (Zachary, 1986). Construct validation work on the SILS has also included correlating the instrument with other measures of intelligence and academic achievement including the Slosson Intelligence Test, the Army General Classification Test, the Raven Progressive Matrices, the Quick Word Test, the Wide Range Vocabulary Test, and the California Short-Form Test of Mental Maturity. All correlations between these measures and the SILS reached statistical levels of significance in the predicted direction.

**Symptom Checklist-Revised (SCL-90-R)**

The Symptom Checklist-Revised (SCL-90-R) was developed by Derogatis (1983) to measure present-time psychological distress. The SCL-90-R is a 90-item self-report inventory which taps nine primary symptom dimensions and generates an additional three global indices of distress. The nine subscales include: (1) Somatization; (2) Obsessive/Compulsive"; (3) Interpersonal
Sensitivity: (4) Depression; (5) Anxiety; (6) Hostility; (7) Phobic Anxiety; (8) Paranoid Ideation; and (9) Psychoticism. The three global scores provide an overall assessment of a respondent's psychological symptom status and include: (1) Global Severity Index (GSI); (2) Positive Symptom Distress Index (PSDI); and (3) Positive Symptom Total (PST). The instrument uses a five-point Likert scale ranging from "Not at all" (0) to "Extremely" (4). The SCL-90-R is a popular self-report symptom inventory and has been widely used as a measure for clinical assessment across a wide number of areas including: substance abuse, sexual disorders, stress, depression, pregnancy, heart disease and schizophrenia.

The concurrent validity of the SCL-90-R has been assessed by correlating it with a number of instruments and their subscales, including: (1) the Hamilton Depression Scale and the Social Adjustment Scale (Weissman, Sholmskas, Pottenger, Prusoff & Lock, 1977); (2) the Cancer Inventory of Problem Situations (Schag, Heinrich & Ganz, 1983); (3) the Maudsley Obsessional-Compulsive Inventory (Sternberger & Leonard, 1990); and the MMPI (Derogatis, Rickels & Rock, 1976). In all of these studies, the pattern of correlations between the SCL-90-R and the other instruments and subscales were significant and in the predicted directions.

Internal consistency reliability estimates (alpha) for the nine subscales ranged from .77 to .90, while test-retest reliability estimates ranged from .78 to .90.

While the internal consistency of the subscales seems
strong, there is some ambiguity concerning the independence of the nine subscales of the SCL-90-R in that the results from factor analytic studies have been mixed. Brophy, Novell, and Kiluk (1988) identified six of the nine dimensions as being relatively stable and homogeneous factors, however, their principal component analysis determined that the first factor accounted for a large percentage of the variance; this suggested that the instrument mainly taps one general dimension of psychopathology. In another study, which was based on data from 295 psychiatric inpatients and 177 industrially injured workers, Cyr, Doxey and Vigna (1988) reported finding only four of the nine dimensions being reproduced. In contrast to these two studies, Derogatis and Cleary (1977) reported convincing factor analytic support for the nine dimensions based on data from 1,002 psychiatric outpatients.

**Structural Analysis of Social Behavior-Introject Scale (SASB-Intro)**

The Structural Analysis of Social Behavior (SASB) is a set of instruments based on a circumplex model of psychosocial behavior and self-concept (Benjamin, 1974, 1984). The SASB model derives from the interpersonal theory of Sullivan (1953) and prior circumplex models by Leary (1957) and Schaffer (1965).

The SASB model is a system for conceptualizing and analyzing interpersonal relations and self-concept. SASB reduces the interpersonal and intrapsychic domains to three essential
variables: Focus, Affiliation, and Autonomy (Interdependence).

The Focus aspect breaks into three circumplex surfaces involving either Transitive Action directed from one person to another, reaction (Intransitive State) resulting from being acted upon, or introjected action (Action Inward) of a person toward him or herself. Each of the three circumplex surfaces are bisected by two orthogonal axes, Affiliation (the horizontal one) and Autonomy (the vertical one).

The Affiliation axis goes from Friendly on the positive end to Hostile on the negative end, and is consistent across the three surfaces. The anchor words for the Autonomy dimension vary somewhat for each of the three Focus surfaces. For the Transitive Action surface, Autonomy goes from Gives Autonomy at the positive end to Controls at the negative end. For the Intransitive State surface the anchors are Be Separate (i.e. takes own autonomy) versus Submits (i.e. gives up autonomy). For the Action Inward surface the Autonomy anchors are Lets Self "Be" (i.e. gives self autonomy) versus Controls Self.

The SASB instrument used in this study at the intrapsychic level is the SASB-Introject (SASB-Intro), which gives the Action Inward Focus surface. It consists of 36 items which use a Likert-type response format ranging from 0 (Never, Not at all) to 100 (Always, Perfectly). Examples of items are the following: "#12. I ignore and don’t bother to know my real self", and "#27. I comfortably look after my own interests and protect myself". Computer scoring programs are required and can generate numerous
indices. For the purposes of this study, however, summary Affiliation and Autonomy scores only were used, which have a theoretical range of minus 200 to plus 200. Information regarding the psychometric properties of the SASB can be found in the section describing marital measures (see SASB-Interpersonal).

Description of Marital Measures

Edmonds Marriage Conventionality Scale (EMCS)

The Edmonds Marriage Conventionality Scale (EMCS) (Edmonds, 1967) was designed to determine a respondents tendency to respond with a socially desirable bias regarding marriage conventionality. This instrument employs statements regarding one's relationship and uses a true or false response format. As an example, item #4 asserts: "If my mate has any faults, I am not aware of them". The 15 items of the EMCS are intended to be used in conjunction with other items in order to obscure to the intention of the instrument to measure social desirability. In the present study, the EMCS items were mixed together with 5 items selected from the Marital Status Inventory (Weiss & Cerreto, 1980) (see below).

The EMCS was developed from a 50-item instrument which was administered to 100 randomly selected married university (Edmonds, 1967). The most discriminating 15 items were chosen to comprise the final version of the instrument, which employs an item-weighting scheme. The item weights range from 4 to 10 for each item responded to in a conventional fashion, giving a total
score range of 0-89. The correlation between the short weighted version of the instrument and the original long form was very high (r=.99); likewise, the reported internal consistency reliability estimates ranged from .80 to .93 (Zweben, Pearlman & Li, 1988).

The EMCS is based on the conception that people with higher levels of marriage conventionality bias are less likely to give accurate assessments of the marital relationship on other self-report marital measures. Marriage conventionality had been found to be an important factor in alcoholics’ assessment of their marriages (Rychtarik, Tarnowski & St. Lawrence, 1989) and has been demonstrated to play a statistically significant role in the couples scores on both the Lock-Wallace Scale of Marital Adjustment (Edmonds, Withers & DiBatista, 1972) and the Relationship Inventory (Schumm, Bollman & Jurich, 1980). In this study, the measure was used to assess the extent of response bias resulting from this type of social desirability.

Edmonds and others (Edmonds, 1967; Edmonds, et al., 1972; Rychtarik et al., 1989) have suggested that the EMCS be used to screen out respondents with strong social desirability response sets; a critical cut-off value of 20 has been given. This strategy was not used in this study, however, due to the fact that no work to date has verified the appropriateness of this cut-off score value. In fact, the processes involved in social desirability response sets are themselves not clearly understood. Paulhus (1984), for example, has proposed a two-component model
that makes a distinction between impression management (in which the person consciously attempts to distort his/her true assessment) and self-deception (in which the person actually believes his/her overly positive reports). The need to screen out subjects or to control for their response sets may depend upon the type of social desirability being manifested. Until a method of determining the underlying processes involved in marriage conventionality has been determined, it seems most appropriate to simply include EMCS results as part of the descriptive data of the sample and to modify interpretations accordingly.

Marital Status Questions

The marital status questions used in this study have been derived from items of the Marital Status Inventory (MSI) which was developed by Weiss and Cerreto (1980) to assess thoughts and actions toward divorce. The MSI is a 14-item, True/False, Guttman-type instrument measuring a progression along a continuum, with no thoughts of divorce as one extreme and filing for or being divorced at the other.

In this study, five items from the MSI were adapted for use in order to achieve two goals. First, additional marital-related items were required to be interleaved with those of the EMCS, as suggested by its authors (see above). Second, information regarding marital stability status was needed as part of the ecosystemic assessment battery. Because many of the items of the MSI were not relevant to this sample and for the sake of brevity,
only five key questions from the MSI were asked of the respondents. These questions, somewhat altered from their original form but answered True or False, were as follows:

#1. Thoughts of separation occur to me very frequently, as often as once a week or more.

#2. I have discussed the idea of separation with my spouse recently.

#3. I have recently filed for, and am proceeding with, legal separation or divorce.

#4. I do not plan to separate or get a divorce from my spouse (false means you do plan to).

#5. I have contacted a lawyer recently regarding divorce.

These five questions were chosen so as to cover a portion of the continuum of progression toward separation and divorce. Specifically, thoughts about separation, deciding to separate, actions such as discussing separation with the spouse, contacting a lawyer and filing for divorce are reflected in the items. For the purposes of this study, the responses to these items were not weighted, but summed and analyzed as a single score reflecting the tendency toward marital dissolution.

Dyadic Adjustment Scale (DAS)

The Dyadic Adjustment Scale (DAS) was developed by Spanier (1976) and is a widely used self-report instrument for assessing marital satisfaction. The 32-item measure taps 4 dimension of the marital relationship including: (1) Dyadic Consensus (the degree
to which couples agree on matters important to the relationship), (2) Dyadic Satisfaction (the degree to which the couple is satisfied with the present state of the relationship and is committed to its continuance), (3) Affectional Expression (the degree to which the couple is satisfied with the expression of affection and sex in the marriage), and (4) Dyadic Cohesion (the degree to which the couple experiences a sense of togetherness). In addition, to subscale scores, the DAS generates a total score ranging from 0 to 151 which represents the overall marital adjustment of the couple (Spanier & Filsinger, 1983).

Spanier (1976) reports a total-test internal consistency estimate (Cronbach’s alpha) of .96 and a range of estimates for the subscales. Affectional Expression had the lowest estimate at .73, Dyadic Cohesion had .86, Dyadic Consensus had .90 and Dyadic Satisfaction had .94.

Initially, factor analysis was used to establish the validity of the subscale structure (Spanier, 1976); subsequent confirmatory studies have provided additional support (Spanier & Thompson, 1982; Antill & Cotton, 1982). These factor analytic studies have also identified a strong single principle factor of "adjustment" that underlies the instrument (Antill & Cotton, 1982; Sharpley & Cross, 1982; Kazak, Jarmas & Snitzer, 1988) and justifies the use of a DAS total score.

Evidence of concurrent validity for the DAS is found in correlations of the instrument with an array of other instruments measuring similar qualities of marital relationship including:
the Georgia Marriage Q-sort, the Marital Satisfaction Scale, the Marital Adjustment Scale and the Intimate Relationship Scale. In all cases the DAS was correlated significantly and in the expected direction. Strong predictive validity for the DAS has been demonstrated by using it to reliably discriminate between married and divorced couples (Spanier, 1976; Spanier & Thompson, 1982). Spanier (1976) reported norms for married and divorced couples based on mean total scores of 114.8 and 70.7 respectively, however, Spanier & Filsinger (1983) have warned that the norm for divorced couples may be low.

The DAS was used in two ways in this study: (1) as a screening device, and (2) as part of the ecological assessment. Because the larger study (TARP) required maritally-distressed couples, a cut-off value of 100 (total DAS score) was used as suggested by Burger & Jacobson (1979). Specifically, at least one of the partners in each couple had to score below 100 on overall marital satisfaction in order to be accepted into the study.

**Areas of Change Questionnaire (AC)**

The Areas of Change questionnaire (AC) was designed by Weiss and Birchler (1975) to assess aspects of the change in marital behaviors wished for by each member of a couple. Desired change focuses on what changes partner A desires of partner B and perceived change focuses on what partner A imagines partner B wants in terms partner A's changes. The AC consists of 34 items.
that identify specific behavioral areas of concern like money management, sexuality, parenting and housekeeping. In Part I of the AC, these 34 items follow the item stem "I want my partner to ..." and in Part II, the same items follow the item stem "It would please my partner if I...". The response format used is a 7-point Likert scale ranging from "Much Less" (minus 3) to "Much More" (plus 3), with the midpoint response being "OK" (0).

The AC yields a number of scores that can be calculated for husbands, wives and couples. The instrument can be scored in two ways, one of which focuses on the perceptual accuracy dimension of the AC and the other which focuses on the overall numbers of items regardless of the signed value. The first type of scoring is straightforward summation procedure that generates separate overall change scores for each of Parts I and II. Desired Change is the summary score derived from this process for Part I and Perceived Change is the summary score associated with Part II. A global Perceptual Accuracy measure is generated by comparing the Perceived Change score from one partner with the Desired Change score from the other.

The second scoring procedure for the AC takes into account the perceptual accuracy by identifying instances in which responses reflect either agreement or disagreement on the desirability of changing particular behaviors. Agreements are scored when partner A wants to change on an item and partner B is both aware of the desired change and correctly indicates the direction in which the change is requested (i.e. much less or
much more). Disagreements are scored either when partner A wants a change and partner B does not recognize this, or when partner B thinks a change is desired when it is not identified as such by partner A.

Research has supported the validity of the first scoring procedure (Margolin et al., 1983), however, the validity of the perceptually-based scores is less certain. Despite the fact that this second method of scoring is very popular (Mead, Vatcher, Wyne & Roberts, 1990), Margolin et al. (1983) were unable to demonstrate that these perceptually-based scores could discriminate between distressed and nondistressed couples. In fact, they concluded that there appeared to be essentially no association between perceptually-based scores and overall marital satisfaction. Nevertheless, a Total Change score can be generated by summing the spousal agreements and disagreements on the desirability of changing specific behaviours. A ratio of Agreement to Disagreement is the final score generated by the AC and it is taken to be a direction of the change desired (Margolin, Talovic & Weinstein, 1983).

The validity of the AC has been explored in a number of studies. The assumption that couples and individuals with a greater numbers of complaints (derived through the first scoring procedures) are less well adjusted in their marriage has received empirical support. The AC has been shown to discriminate well between distressed and non-distressed couples (Birchler & Webb, 1977; Margolin et al., 1983; Margolin & Wampold, 1981). The
instrument has also been found to be moderately negatively correlated with measures of marital adjustment as found by Weiss et al. (1973) \( (r = \text{minus .71}) \) and others (Margolin et al., 1983; Rabin et al., 1986). It has also been found that the AC is not able to discriminate between couples in which the husband is an alcoholic and couples who are in conflict, but does discriminate both of these types of couples from nonconflicted couples (O'Farrell & Birchler, 1987). Limited normative information has been provided by Margolin et al. (1983).

The AC has shown evidence of a high level of internal consistency with an alpha of .89 (Weiss et al., 1973). The instrument has been found to be sensitive to change in therapy outcome studies (Margolin & Weiss, 1978; Bavcom, 1982), however, no stability studies exploring test-retest reliability have been reported to date. Both methods of scoring were used in the present study at the marital level of the ecosystemic analysis.

**Psychosocial Intimacy Questionnaire (PIQ)**

This measure was designed to assess the level of intimacy experienced by adolescents and adults in their relationships (Tesch, 1985). It may be used to evaluate psychosocial intimacy in friendship, dating or marital relationships.

The psychometric properties of the PIQ were explored by Tesch (1985) in three studies using college-age samples. In terms of construct validity, the author reports that the instrument correlates as predicted with measures of similar and dissimilar
constructs. The author reports an internal-consistency reliability estimate (Cronbach's alpha) of .98 and a test-retest reliability estimate of .84 for a three-week interval.

A factor analytic study of the PIQ suggested that psychosocial intimacy as measured is a function of three factors (Tesch, 1985). These factors are described as (1) Romantic Love (items pertaining to emotional expression and love, physical intimacy, and interdependence), (2) Supportiveness (items pertaining to helpfulness, acceptance, and respect), and (3) Communication Ease (items pertaining to communicating, "being oneself", and a lack of ambivalence about the relationship). These factors form the three subscales of the PIQ.

In this study, three items from the original version were dropped (i.e. #25, #34, and #60) because they were deemed inappropriate to the couples in the study who had been in long-term relationships. A six-point Likert-type scale ranging from 1, "Strongly Disagree" to 6, "Strongly Agree" is used as a response format for the PIQ. Normative data is not available for this instrument.

Structural Analysis of Social Behavior—Interpersonal Scale (SASB-Inter)

The SASB model (Benjamin, 1974, 1984, 1987, 1993) has been outlined above in the section describing intrapsychic measures (see SASB-Introject). This study uses the SASB-Interpersonal form (SASB-Inter) to measure spousal views on a range of interpersonal
behaviors in the marital system. The SASB-Interpersonal scales are comprised of two Focus surfaces, Transitive Action and Intransitive State, which describe proactive and reactive behaviors in terms of the dimensions Affiliation and Autonomy. Scales associated with each surface have 36 items rated from 0 (Never, Not at all) to 100 (Always, Perfectly).

Each man in the study completed items making up four surfaces, which reflected his own Transitive Action (I Initiate) and Intransitive State (I Respond), as well as his perception of his spouse's Transitive Action (Other Initiates) and Intransitive State (Other Responds). Each set of 36 items were used to derive summary Affiliation and Autonomy scores associated with that surface. Similarly, each woman completed items making up four surfaces, which reflected her own Transitive Action (I Initiate) and Intransitive State (I Respond), as well as her perception of her spouse's Transitive Action (Other Initiates) and Intransitive State (Other Responds). Summary Affiliation and Autonomy scores were determined for each of the four surfaces.

The item content of the SASB model was developed in a multistep iterative process involving item generation and selection. Several clinical and normal samples provided data that was subjected to autocorrelation, circumplex analysis, and factor analysis. Results were highly consistent across samples and individuals. Psychometric evaluation of the final form of the SASB has shown a consistent circumplex ordering of variables, with coefficients of internal consistency in the .90 range and a
test-retest reliability estimate of .87 (Benjamin, 1974).

The SASB has been well-accepted and used widely for research purposes. Wiggins (1982), in his review of existing circumplex models of interpersonal behavior, stated: "The recent circumplex model of interpersonal behavior presented by Benjamin...is the most detailed, clinically rich, ambitious, and conceptually-demanding of all contemporary models" (p. 193). Alpher (1988), in his critique of the SASB concluded: "SASB is a dynamic and engaging tool in the hands of both researcher and practitioner [and] has added new rigor and precision to concepts that have previously been regarded as ... untestable. The SASB self-report questionnaires are at the leading edge of interpersonal measurement technology and perform well" (p. 554).

Description of Family Measures

Family Demographics Form (FDF)

The Family Demographics Form (FDF) was created for the study by adapting sections of the Family Assessment Device (Epstein, Baldwin, & Bishop, 1983). The FDF gives the basic descriptive information about the family including family members' names, ages, roles, and gender, and basic information about medical, school and psychiatric problems. It also asks which family members are currently living within the household and which are residing outside the family home. In addition, the FDF yields a comprehensive range of family information including employment status, occupation, racial/cultural background, marital history,
Family Adaptability and Cohesion Evaluation Scale (FACES-III)

The Family Adaptability and Cohesion Evaluation Scale-III (Olson, Partner & Lavee, 1985; Olson, 1986) is the third version in series of FACES instruments intended to assess the qualities of family togetherness and family flexibility. The FACES-III derives from the Circumplex model, developed by Olson and associates, which conceptualizes family functioning in terms of the core orthogonal dimensions of Adaptability and Cohesion. The revisions of the FACES have been undertaken in order to strengthen the measure's psychometric properties and increase clinical utility; consequently, FACES-III is an instrument that has resulted from considerable work in the area of family measurement.

Olson et al. (1985) assert that the health of a family is reflected in the balance the family maintains between a receptivity to change and an ability to retain a sense of continuity and family identity. Adaptability is the construct which measures a family's openness to accommodating new ideas and practices (Olson, 1989). Typically, these new attitudes and behaviours are presented to the family by the children and by the larger community. The concepts tapped to measure this dimension are family power (assertiveness, control, discipline), negotiation styles, role relationships and relational rules. The
continuum of the Adaptability dimension was originally conceived of as ranging from the extremes of rigid to chaotic with structured and flexible filling the middle positions. Olson et al. (1985) postulated that the moderate levels of Adaptability (structured and flexible) are more optimal or conducive to healthy family functioning, while the two extreme levels of are associated with problematic family organizations.

Cohesion is the construct used to measure a family's sense of togetherness and belonging (Olson, 1989). The specific concepts that are employed in the instrument to reflect family togetherness are: emotional bonding, boundaries, coalitions, time, space, friends, decision-making, and interests and recreation. The Cohesion dimension is similarly subdivided into four categories, namely: disengaged, separate, connected and enmeshed. Once again, Olson et al. (1985) suggested that optimally functioning families will score in the separate and connected ranges of the dimension while disturbed families will report extreme levels of the Cohesion dimension falling at either the disengaged or enmeshed ranges of the instrument.

Concerns regarding the concepts of chaotic on the Adaptability dimension and enmeshment on the Cohesion dimension have resulted in a modification to the interpretation of high subscale scores. It is now recommended that high scores for Adaptability be viewed as indicating that families are very flexible, whereas high scores for Cohesion be associated with very connected families (Olson, 1991). Hence, the instrument is
now being interpreted in a more linear fashion such that high scores on the Adaptability and Cohesion subscales reflect high levels of those constructs measured.

The FACES-III is composed of 10 Adaptability items and 10 Cohesion items. The correlation between the two subscales is very low ($r = .03$), supporting the claim that the two constructs are orthogonal. Olson et al. (1983) reported that factor analysis of the items resulted in a two-factor solution consistent with the underlying concepts of the instrument. Both the convergent and discriminant validity of FACES-III have been reported by Edman, Cole, and Howard (1990) and, Perosa and Perosa (1990). With respect to dependent alcoholics and their families, the original FACES measure was shown to discriminate between these distressed families and a non-distressed family comparison group (Olson & Killorin, 1985; Killorin & Olson, 1984).

The reliability of the FACES-III was determined using a sample of over 2,000 respondents. The alpha value for the Adaptability subscales was .62 and for the Cohesion subscale, .77 (Olson et al., 1985). There are no test-retest reliability estimates provided for FACES-III, however, that of an earlier version of the instrument was very good. FACES-II was used in a test-retest time interval of 4-5 weeks and resulted in reliability estimates of .80 for Adaptability and .83 for Cohesion. Furthermore, Olson et al. (1985) assert that FACES-III demonstrates very good face and content validity. Other researchers (Edman, Cole, & Howard, 1990) have reported that the
instrument also demonstrates good convergent validity.

**Family Environment Scale (FES)**

The Family Environment Scale (FES) was designed by Moos and Moos (1981) to measure the social-environmental characteristics of families. It has been widely employed to study families affected by alcoholism (Filstead, 1979; Filstead, Anderson & McElfresh, 1989; Bromet & Moos, 1977; Moos, Bromet, Tsu, & Moos, 1989; Finney & Moos, 1979; Christensen, 1977; Abbott, 1976; Bader, 1976; Barry & Fleming, 1990). The FES is comprised of 10 subscales, however, for the purpose of this study, 6 subscales were chosen to measure salient qualities of the family environment. The subscales selected include all the subscales of both the Relationship and System Maintenance dimensions and one of the Personal Growth dimension subscales. Specifically, the subscales employed in this research included:

1. **Organization** or the degree of importance of clear lines of authority and structure in planning family activities and responsibilities.

2. **Expressiveness** or the extent to which family members are encouraged to act openly and to share their feelings in a direct fashion.

3. **Control** or the extent to which set rules and procedures are adhered to and employed to direct family life.

4. **Cohesion** or the degree of commitment, help and support family members provide for one another.
5. **Independence** or the extent to which family members are assertive or self-sufficient and empowered with the ability to make their own decisions.

6. **Conflict** or the amount of tension or openly expressed anger, aggression and hostility among family members. Each subscale score is derived from responses on 9 items per subscale, bringing the total number of FES items used in this study to a total of 54.

Item development for the FES was conducted in a thorough manner. Structured interviews with members of different types of families yielded an information base from which items were constructed. Additional items were adapted from Social Climate Scales (Moos, 1974). Several forms of the instrument were pilot-tested leading to a 200-item form of the FES.

This initial version was then administered to over a sample of 1,000 people in 285 families representing a wide variety of types of families. Item reduction was based on various psychometric criteria. In order to avoid items that were characteristic of only unusual families, only items close to a 50/50 yes/no split were chosen. Items were required to correlate more closely with their own subscale than with any other subscale. In addition, the subscales were required to have low to moderate intercorrelations and each item needed to discriminate among families. These item criteria were met for all items in a variety of subsamples, including Caucasian, ethnic minorities, and distressed families. These procedures resulted in a 90-item
instrument which required respondents to answer yes or no as to whether or not the family statement in each item applied to their own family.

Norms have been developed for the FES for both normal and distressed families. While the normal family norms were based on 1125 families from across the United States, the distressed family norms were established on the responses of 500 families involved in a variety of clinical settings, including psychiatrically-oriented family clinics, probation and parole departments, alcoholic treatment centers, psychiatric hospitals, etc.

The internal consistency estimates for all six FES subscales employed in this study are acceptable. The Cronbach’s alpha levels range from .61, .67 and .69 (for Independence, Control, and Expressiveness, respectively), to .78, .75, and .76, (for Cohesion, Conflict and Organization, respectively). Test-retest reliabilities of the subscales were based on a sample of 47 family members in nine families who completed the instrument twice at eight-week intervals after responding to the questionnaire. The two-month test-retest reliability for the subscales are all acceptable, ranging form .68 for the Independence subscale to .86 for the Cohesion subscale. The four-month test-retest stability estimates are also acceptable, ranging from .54 for Independence to .78 for the Control subscale.
Family Satisfaction (FS)

The Family Satisfaction scale (FS) was developed by Olson and Wilson (1982) to measure the extent to which family members are satisfied with their family's functioning. Specifically, the authors of the FS were interested in measuring family satisfaction along the same dimensions as the FACES-III, that is, Adaptability and Cohesion (see above). An important underlying assumption to the FS is that while a family might have extreme scores in either direction on the FACES-III subscales, the family members may still report being satisfied with those conditions (Olson, 1986). Thus, the FS provides an important complement to the interpretative frame of the FACES-III in that it allows for a subjective assessment of overall contentment with family functioning.

The FS is a 14-item scale which utilizes a 5-point Likert scale, with responses ranging from "Dissatisfied" to "Extremely Satisfied". The mid-point response indicates "Generally Satisfied" and divides the scale into satisfied and dissatisfied response fields. Items are grouped into the Adaptability and Cohesion subscales, with the former tapping domains such as family assertiveness, control, discipline, negation, roles and rules and the latter focusing on topics such as, family emotional bonding, coalitions, time and space, decision-making, interests and recreation.

The FS was designed to assess one's level of satisfaction in a valid and reliable manner. A pilot instrument consisting of 28
items was subjected to a factor analysis. Varimax rotation was utilized on the principal factors, and only items that loaded more than .50 were retained, resulting in the 14-item version.

Internal consistency reliability, as estimated by the Cronbach's alpha coefficient, was found to be .91 for a sample of 1,026 couples drawn from across the life cycle. Test-retest trials, conducted over a five-week period on 106 subjects, resulted in a Pearson correlation coefficient of .75. (Olson & Wilson, 1982).

In order to examine the concurrent validity of the FS, Caron and Olson (1984) compared the discrepancy between two administrations of FACES-II with the FS measure. The discrepancy scores were derived from establishing the difference between two FACES-II administrations, the first measuring perceived family and the second assessing respondents' views of an ideal family. A high negative correlation between the FS and the ideal-perceived discrepancy was hypothesized and confirmed with the correlation on the Cohesion dimension ($r=$ minus.58) and on the Adaptability dimension ($r=$ minus .64) conforming to predicted relationships.

Norms for the FS have been established on 2,056 adults and 412 adolescent children sampled in the United States. With scores potentially ranging from as low as 14 to as high as 70, the score of 47.0 for parents and 45.0 for adolescents was established in the normative sample as the 50th percentile values.
Perceived Social Support from Family (PSS-Fa)

The Perceived Social Support from Family (PSS-Fs) scale was developed by Procidano and Heller (1983) to explore the mediating role that networks of relationships play in mitigating the negative effects of stress. The PSS-Fa reflects the extent to which individuals believe they will receive support, nurturance and positive feedback from family members. The concept of perceived social support is unique in that it addresses the importance of the sense of support that the individual experiences as opposed to the sheer presence and structure of a social network (Procidano & Heller, 1983). The PSS-Fa assesses the extent to which individuals feel that their needs for assistance and understanding will be met by their family.

The PSS-Fa scale has demonstrated high test-retest reliability (r=.83 over a 1-month interval), and a high internal consistency reliability (alpha=.90). In a subsequent validation study, Lyons, Perrotta and Hancher-Kvam (1988) found the PSS-Fa to be reliable, valid, and generalizeable. Validation studies of the instrument have shown evidence of good content and construct validity (Procidano & Heller, 1983).

The PSS-Fa is composed of 20 items using a 7-point, Likert-type response scale to give a single total score with a theoretical range of 20 to 140.
Description of Social Measure

Perceived Social Support from Friends (PSS-Fr)

The Perceived Social Support from Friends (PSS-Fr) scale (Procidano & Heller, 1983) is a parallel version of the PSS-Fa (see above). This instrument measures the same construct of perceived social support, however, as experienced from outside of the family. Specifically, it measures the impact a network of friends has on an individual, and how much support the individual experiences. The PSS-Fr was used in this study to assess the perceptions of the men and women regarding the extent to which they believed they will receive support, nurturance and positive feedback from their friends.

The PSS-Fr scale has demonstrated high test-retest reliability (r=.83 over a 1-month interval), and a high internal consistency reliability (alpha=.88). In a subsequent validation study, Lyons, Perrotta and Hancher-Kvam (1988) found the PSS-Fr to be reliable, valid, and generalizeable. Validation studies of the instrument have shown evidence of good content and construct validity (Procidano & Heller, 1983).

The PSS-Fr is composed of 20 items using a 7-point, Likert-type response scale to give a single total score with a theoretical range of 20 to 140.

Description of the Therapeutic Measure

Therapeutic Alliance Scales-Revised (TAS-rev)

Pinsof and Catherall (1986) designed the Therapeutic
Alliance Scale (TAS) to be a self-report measure of the experience a client has of the therapeutic alliance. They defined the therapeutic alliance as "...that aspect of the relationship between the therapist system and the patient system that pertains to their capacity to mutually invest in, and collaborate on, the therapy" (p.139). Two dimensions of the TAS are used to operationalize this definition -- Content and Interpersonal System. The Content dimension is represented by three subscales originally conceived of by Bordin (1979) as bonds, tasks, and goals. The Interpersonal System dimension is composed of items reflecting the multiple relationships possible in the therapeutic milieu such as self-therapist, other-therapist, and group-therapist. Three versions of the TAS have been constructed to allow for assessment in individual, marital and family modes of therapy.

In this study, two versions of the TAS were used, namely, the Individual Therapeutic Alliance Scale (ITAS) and the Couple Therapeutic Alliance Scale (CTAS). This was done in order to use the scales in their original form with subjects in individual and couples treatment. In order to provide a statistical comparison between the two treatment modes, the two scales were revised so as to render them alike (Olson, 1993). A brief description of this process is given below: The ITAS (25 items) and the CTAS (29 items) were scanned and found to have 11 identical items and an additional 12 items which corresponded conceptually but with slightly different wording (e.g., ITAS: "The therapist cares
about my important relationships"; CTAS: "The therapist cares about the relationship between my partner and myself"). The remaining three ITAS items and six CTAS items were eliminated. An index of comparability was established statistically for each of the 12 items and 9 were chosen as acceptable. Further details of this conversion process are given by Olson (1993).

The resultant 20-item scales, the ITAS-rev and the CTAS-rev, had acceptable levels of internal consistency reliability: alpha values were .94 and .95 respectively. Correlations between the original versions and their revised counterparts were high; in the two individual treatment modes, .99 and 1.00; in the couples treatment mode, .98 for the men and .99 for the women. Given the strength of this data, it was assumed that the two revised versions could be treated as comparable instruments. In this study, the revised TAS scales were used to examine differences between the cluster groups at the mid-treatment point in the families involvement in therapy.

Determination of Drinking Pattern

Through interviews and questionnaires, efforts were made to gather as much information as possible about the alcoholic men's drinking pattern, including how many days of the week drinking took place, how many bouts of intensive drinking occurred in a year, and how much alcohol was consumed on a typical drinking day. In addition to completing the BCDS (see below), the alcoholic husbands described their typical drinking routine in
their own words in a semi-structured interview. Four categories emerged: steady, episodic, regular weekly, and combination drinking patterns.

Steady drinkers were men who consumed roughly the same amounts of alcohol on a daily or near daily basis. This group corresponded to the steady drinkers in studies by Jacob and associates, as well as to continuous drinkers identified in work by Connors and associates (Connors et al., 1986). Episodic drinkers tended to drink in heavy bouts with little or no drinking in between. Regular Weekly drinkers did not typically drink through their work week but drank heavily on weekends. Combination drinkers would drink on a steady basis punctuated by episodic heavier drinking bouts.

For the purposes of creating a dichotomous drinking pattern variable which could be used in the cluster analysis, an overarching category was established called Irregular, which subsumed the Episodic, Regular Weekly, and Combination patterns. This made sense conceptually and allowed all the cases in the sample to be classified and used in the analysis. The Steady drinking category was retained as a distinct group.

In order to bring increased rigour to the actual classification of the participant alcoholics, three trained raters working independently were used to assign the men to either a Steady drinking pattern or an Irregular drinking pattern. The raters used all available information in order to make their assignments. The inter-rater reliability was assessed
to be strong, with an average inter-correlation of .90 achieved.

Data Analysis

Empirical determination of subtypes

The determination of alcoholic subtypes was accomplished by following previous work conducted by Morey, Blashfield & Skinner (1983). In their careful and exhaustive study, they compared 23 different methods of hierarchical cluster analysis of alcohol use variables generated by 725 alcoholics in a four-stage sequential validation design. Varying many of the major parameters of a cluster analytic study, such as the clustering algorithm and similarity measure used and the determination of the number of clusters present in the data set, they concluded that the solution given by Ward's method (Ward, 1963) was particularly powerful in comparison to the other solutions used. With this method, Ward's algorithm is applied to a proximity matrix of Euclidean distances and is designed to minimize the variance within clusters at each stage of grouping. The approach proceeds by merging those single cases or groups of cases that result in the least increase in the within-groups error sum of squares. In other words, Ward's method organizes the classification structure in a strictly nested hierarchical fashion, where clusters are progressively formed on the principle of minimization of variance (Ward, 1963).

Ward's method has been widely used in the behavioral sciences since the 1960s, and is generally recognized as being
one of the most effective methods for recovering underlying structure (Borgen & Barnett, 1987; Milligan & Cooper, 1987; Aldenderfer & Blashfield, 1984). One source of bias in the method, however, is its propensity to produce clusters that are heavily influenced by level differences. This bias can be avoided by standardizing the cluster variables prior to the application of Ward's method (Borgen & Barnett, 1987).

The selection of alcohol use variables employed in the cluster analysis was informed by the work of Morey and associates (Morey et al., 1983; Morey et al., 1984) and by the more recent research efforts of Babor and associates (Babor et al., 1992) (compare Table 3 with Table 1 and 2). A multidimensional approach was employed which used information concerning premorbid risk factors, the pathological use of alcohol and other substances, and the chronicity and consequences of drinking. In particular, the Michigan Alcohol Screening Test (MAST), the Alcohol Dependence Data questionnaire (ADD), the Alcohol Dependence and Treatment History form (ADTH), the Drinking Pattern Assessment Scale (DPAS), the Binge/Chronic Differentiation Scale (BCDS), and the Inventory of Drinking Situations (IDS-42) were used to generate the following standardized variables: lifetime drinking dependency (MAST), current drinking dependency (ADD), family alcoholism index (AlcFam), amount of alcohol consumed on a typical drinking day (TotalSDU) (see Appendix B), number of alcohol-related problems (AlcProbs), drinking pattern (DrnkPatt), extent of heavy drinking due to personal states (unpleasant
Table 3

Variables Used for the Derivation of Clusters in this Study

Premorbid Risk Factors

1. Familial Alcoholism Index (AlcFam)— [ADTH]

Pathological Use of Alcohol and Other Substances

1. Standard Drink Units consumed per Drinking Day (TotalSDU) -- [DPAS]

2. Severity of Alcohol Dependence (ADD) -- [ADD]

3. Heavy Drinking due to Personal States including:
   - Unpleasant Emotions
   - Physical Discomfort
   - Pleasant Emotions
   - Testing Personal Control
   - Urges and Temptations (IDS-42-One) -- [IDS-42]

4. Heavy Drinking due to Situations with Others including:
   - Conflict with Others
   - Social Pressure to Drink
   - Pleasant Times with Others (IDS-42-Two) -- [IDS-42]

Chronicity and Consequences of Drinking

1. Alcohol-Related Problems including:
   - Medical
   - Social
   - Legal
   - Employment (AlcProbs) -- [DPAS]

2. Lifetime Alcoholism Severity (MAST) -- [MAST]

3. Drinking Pattern (DrnkPatt) -- [BCDS]

Note 1: Variable label is in round parentheses.
Note 2: Abbreviated instrument name is in square parentheses.
Note 3: Compare with Tables 1 and 2.

emotions, physical discomfort, pleasant emotions, testing personal control urges and temptations) (IDS-42-One), and extent
of heavy drinking due to situations with others (conflict with others, social pressure to drink, and pleasant times with others) (IDS-42-Two). Table 3 lists the variables used in the derivation phase of the study.

A series of cluster analyses was conducted in order to determine the solution which was both the most statistically parsimonious and the most meaningful. In the first cluster analysis, seven continuous variables were used, namely, MAST, ADD, TotalSDU, AlcProbs, AlcFam, IDS-42-One, and IDS-42-Two. The results indicated that the contributions of IDS-42-One and IDS-42-Two were nearly identical; therefore they were combined and the total IDS-42 score was used. The second cluster analysis then utilized six continuous variables, including IDS-42 (total score). A third cluster analysis was conducted which utilized the six continuous variables with the addition of a single dichotomous variable reflecting drinking pattern (DrnkPatt). These last two cluster analyses were compared and the best solution was chosen and further evaluated.

Evaluation of Cluster Solution

Several means were employed to evaluate the derived typology with respect to its adequacy and usefulness. Initially, a MANOVA was conducted with the 6 continuous cluster variables by the three groups found in the cluster solution. Group differences at the univariate test level for all of these variables and their component variables was also explored (e.g. TotalSDU was examined
at the univariate level as was the variables representing amount of beer, wine and liquor consumed on a typical drinking day). The breakdown of the categorical variable DrnkPatt across the 3 groups was also examined for meaning and utility.

Following this, a replication of the cluster solution was conducted involving Discriminant Function Analysis (DFA), a statistical analysis in which mathematical functions are derived and used to predict group membership. In this particular application, 30 cases were randomly sampled and removed from the total sample; their original cluster membership was noted. The remaining 100 cases were then used in a replication cluster analysis using the same seven alcohol use variables. This cluster analysis was compared to the original cluster solution. Next, a DFA was conducted on the 100 cases and functions were derived which could be used to predict group membership. The actual and predicted group membership of the 100 cases was then evaluated in terms of the percentage of cases correctly classified. Finally, the derived functions were used to classify the 30 randomly sampled cases; their actual group membership (from the original cluster analysis) was then compared to their predicted group membership.

External validity was evaluated by comparing the subtypes on external criteria such as measures of the degree of perceived self-control over drinking and drinking style characteristics. Specifically, a MANOVA was conducted examining the three cluster groups on the eight subscales of the SCQ-39, which measure the
confidence drinkers have about refraining from heavy drinking in a variety of difficult situations. Table 4 lists the subscales of the SCQ-39. Although the three groups were also profiled on all remaining drinking characteristics, drinking style characteristics which have been associated with differential family distress and with subtypes identified in previous research (eg. Steinglass et al., 1987; Jacob et al., 1988; Bate, 1994) were used as external criteria in a series of chi-square tests. The five variables involved were place of drinking, time of drinking, nonspecific polydrug use, tendency to drink until intoxicated, and tendency to drink alone. These variables and the instruments from which they were drawn are listed in Table 4.

Ecosystemic Assessment of Alcoholic husbands and Nonalcoholic wives by Cluster Group

The ecosystemic model of assessment used in this study dictated that the cluster groups be evaluated in each of the following domains: 1) Intrapsychic; 2) Marital; 3) Family; 4) Social; and 5) Therapeutic. Table 5 shows the measures used to tap each of these ecosystemic levels. Instruments were analyzed by themselves if they had subscales and in some instances were grouped together if they did not. This was done in order to provide a comprehensive evaluation of the cluster groups and so as to enhance the interpretability of the results, even if some redundancy of measurement occurred. Typically, an instrument was analyzed in three ways: by examining the cluster groups for men only, for women only, and then for men and women together. In
Table 4

Alcohol Variables used as Criteria for External Validation of the Derived Clusters

Perceived Self-Control over Urges to Drink due to:

1. Unpleasant Emotions/Frustrations -- (SCQ-39)
2. Physical Discomfort -- (SCQ-39)
3. Pleasant Emotions -- (SCQ-39)
4. Testing Personal Control -- (SCQ-39)
5. Urges and Temptations -- (SCQ-39)
7. Social Tensions -- (SCQ-39)
8. Positive Social Situations -- (SCQ-39)

Drinking Style Characteristics:

1. Time of Drinking (Day/Night) -- (DPAS)
2. Drinking Location (In-home/Out-of-Home) -- (DPAS)
3. Tendency to Drink Alone -- (DPAS)
4. Tendency to Drink until Intoxicated -- (DPAS)
5. Polydrug Use -- (DPAS)

Note: Abbreviated instrument name is in parentheses.

circumstances where the item referents were different for the men and the women, the joint MANOVA was not conducted, for example with the AC which asked the respondent to base responses on one’s partner rather than on the marriage.

Statistically, this translated into two kinds of MANOVAs. In the case of men only or women only by cluster group, the MANOVA was essentially a multivariate oneway analysis of variance: multiple measures by the single factor of cluster group membership. With men and women together, the MANOVA became a multivariate repeated measures analysis. This type of MANOVA was multivariate in two senses: multiple variables were measured on
Table 5

Instruments used to Determine Ecosystemic Functioning with Respect to Derived Clusters in the Study

Individual (Intrapsychic) Measures:
1. Shipley Institute of Living Scale
2. Symptom Checklist-90-Revised
3. Structural Analysis of Social Behavior-Introject Scale

Marital Measures:
1. Marital Status Questions
2. Dyadic Adjustment Scale
3. Areas of Change Questionnaire
4. Psychosocial Intimacy Questionnaire
5. Structural Analysis of Social Behavior-Interpersonal Scale

Family Measures:
1. Family Adaptability and Cohesion Scale
2. Family Satisfaction
3. Family Environment Scale
4. Perceived Social Support from Family

Social Measure:
1. Perceived Social Support from Friends

Therapeutic Measure:
1. Therapeutic Alliance Scales-revised

multiple "occasions", with the "occasions" being husband and wife (the repeated measures). This type of MANOVA allowed for three significance tests, namely, one for overall cluster group differences, one for person differences and one for the interaction effects of cluster group and person (Tabachnick &
Fidell, 1983). Since this study was exploratory in nature, the probability value of $p<.10$ was considered acceptable and trends toward significance were noted. In general, overall patterns of differences were given more credence than specific, perhaps even anomalous significant differences. It should be noted that the groups were also compared in terms of sociodemographic characteristics at the outset of analysis. The comparability of the groups in terms of family composition, structure and resources was determined through ANOVAs and chi-square tests.

Operationalization of the Research Hypotheses

The first hypothesis of this study states: An empirically-derived typology of alcoholism, based on a multidimensional measurement approach, will demonstrate statistical adequacy, conceptual meaningfulness, and relevance in terms of previous subtyping research. The part of this hypothesis which is empirically testable has to do with the statistical adequacy of the resultant alcoholic typology. Therefore, only this aspect of the hypothesis will be operationalized; the aspects of conceptual meaning and relevance to previous research will be addressed in the discussion chapter (Chapter V). Thus, the operationalized version of the first hypothesis breaks down into two parts as follows:

(1a) The solution resulting from the cluster analysis using
alcohol-use-related variables (i.e. MAST, ADD, TotalSDU, AlcProbs, AlcFam, IDS-42, and DrnkPatt) will give indications of reliability in a replication procedure utilizing Discriminant Function Analysis.

(1b) The cluster solution will give indications of external validity by showing significant differences on external criteria, including: the subscales of the SCQ-39, variables reflecting drinking style characteristics (i.e. usual time and place of drinking, polydrug use, tendency to drink until intoxicated and tendency to drink alone), and other alcohol drinking characteristics.

The second hypothesis states: Alcoholic men and their nonalcoholic spouses grouped according to the derived subtypes will differ in terms of their psychological functioning at the intrapsychic, marital, family, social and therapeutic levels.

This hypothesis will be operationalized by first being broken down into five sub-hypotheses, as follows:

(2a) The alcoholic men and their nonalcoholic spouses grouped according to the empirically-derived subtypes will differ in their psychological functioning at the intrapsychic level. More specifically, they will differ in their:
(i) general intellectual functioning as measured by the subscales of the SILS;
(ii) present-time psychological distress as measured by the subscales of the SCL-90-R;
(iii) relationship to self as measured by the subscales of the SASB-Introject.

(2b) The alcoholic men and their nonalcoholic spouses grouped according to the empirically-derived subtypes will differ in their psychological functioning at the marital level. More specifically, they will differ in their:

(i) movement toward marital separation as measured by the MSQ.
(ii) marital satisfaction as measured by the subscales of the DAS.
(iii) desire for behavior change in their marriage as measured by the subscales of the AC.
(iv) level of marital intimacy as measured by the subscales of the PIQ.
(iv) views of the interpersonal behavior in their marriage as measured by the subscales of the SASB-Interpersonal.

(2c) The alcoholic men and their nonalcoholic spouses grouped according to the empirically-derived subtypes will differ in
their psychological functioning at the family level.

More specifically, they will differ in their:

(i) family togetherness and family flexibility as measured by the subscales of the FACES-III.
(ii) familial socio-environmental characteristics as measured by the subscales of the FES.
(iii) satisfaction with family functioning as measured by the FS.
(iv) perceived social support from the family as measured by the PSS-Fam.

(2d) The alcoholic men and their nonalcoholic spouses grouped according to empirically-derived subtypes will differ in their psychological functioning at the social level. More specifically, they will differ in their perceived social support from friends as measured by the PSS-Pr.

(2e) The alcoholic men and their nonalcoholic spouses grouped according to empirically-derived subtypes will differ in their psychological functioning at the therapeutic level. More specifically, they will differ in their experience of the therapeutic alliance as measured by the TAS-revised.
CHAPTER IV: RESULTS

In this chapter the results of the data analysis are reported. The chapter is divided into four main sections which correspond to the four phases of the data analysis outlined earlier, namely: (1) preliminary analyses, which focused on the characteristics of the sample as a whole; (2) cluster analyses, which were used to determine the alcoholic typology for the sample; (3) confirmation of the cluster solution, which involved examining the indications of reliability and validity of the cluster solution; (4) ecosystemic analyses, which considered the derived subtypes in terms of the different levels of the system for the alcoholic husbands and nonalcoholic wives. This section also includes an examination of "person" differences, that is between the alcoholic men as a group and the nonalcoholic women as a group, as well as interactions between person and subtype.

Preliminary Analysis

Instrument Overview and Description of Participant Sample

Means, standard deviations, frequency counts, distribution characteristics and internal-consistency reliability estimates (Cronbach's alpha) were determined on data collected at screening, pre-treatment, and for one measure, at mid-treatment. The results are presented below in Tables 7-12. Kolmogorov-Smirnov (K-S) tests of normality were conducted for each
instrument, subscale and variable, when appropriate. The majority of the variables passed the K-S test of normality, showing distributions of acceptable kurtosis and skewness. Exceptions will be noted throughout this section. A brief description of the sample is provided for each level in the ecological assessment scheme.

**Sociodemographics**

The 130 men in this study were living in intact family situations. They were predominantly Caucasian (96.9%) with English as a first language (93.8%), and reported their ethnicity to be mostly North American (60.9%) or Western European (29.6%). The mean age of the men was 40.81 years (SD=9.31) with a range of 24 to 71 years. The level of education was measured in terms of the number of years of schooling; the mean for the men was 12.31 years (SD=2.42) with a range of 7 to 20 years. Most of the men were employed full-time (71.8%) with 18.5% being unemployed. The majority of the men were in their first marriage (63.8%).

The 130 spouses of the men were also predominantly Caucasian (97.6%) with English as a first language (93.1%), and reported their ethnicity to be mostly North American (64.7%) or Western European (25.9%). The mean age of the women was 38.22 years (SD=9.02) with a range of 22 to 66 years. Their mean number of years of education was 12.88 (SD=1.96) with a range of 8 to 18 years. Less than half of the women worked full-time (47.7%), with 27.3% working part-time and 18.8% being unemployed. The majority
of the women were in their first marriage (69.8%).

The couples in the study had been together for an average of 11.98 years (SD=8.54) with a range of 2 to 45 years. Most of them reported being married (78.9%) with the remainder describing their relationship as common-law.

The families in the study had an average of 2.38 children in them, including step-children and adult children. The mean age of the entire group of 310 children was 13.22 years (SD=9.53) with a range of 1 to 45 years. The average number of years of education for the children was 6.63 (SD=5.10) with a range of 0 to 18 years. The majority of the families lived in an urban setting (77.7%), with the remainder residing in a rural town (22.3%). About 68.0% of the families reported a total household income of between $30,000 and $59,000 per year.

The families had been randomly assigned to treatment groups at the beginning of the study, however, 20 families either dropped out or provided insufficient data. Even with this attrition, the remaining 130 families were divided reasonably evenly among the three treatment conditions: 40 (30.8%) were in ExST-Individual, 47 (36.2%) were in ExST-Couples, and 43 (33.1%) were in SFT.

**Alcohol Drinking Assessment Level**

As shown in Table 6, the men in this study clearly scored well above the suggested cut-off value (5) indicating alcoholism on the MAST (x̄=32.20). For the ADD, the group scored at the high
Table 6

Means, Standard Deviations (SD) and Reliability Estimates (Cronbach's alpha) of Alcohol Measures for Alcoholic Husbands.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Scale/subscale</th>
<th>Mean</th>
<th>SD</th>
<th>Alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAST</td>
<td>Total score</td>
<td>32.20</td>
<td>10.46</td>
<td>--</td>
</tr>
<tr>
<td>ADD</td>
<td>Total score</td>
<td>54.44</td>
<td>18.80</td>
<td>.97</td>
</tr>
<tr>
<td>TotalSDU</td>
<td>Total standard drink units per typical drinking session</td>
<td>20.44</td>
<td>9.89</td>
<td>--</td>
</tr>
<tr>
<td>AlcFam</td>
<td>Alcoholism positive family index</td>
<td>38.41</td>
<td>24.20</td>
<td>--</td>
</tr>
<tr>
<td>AlcProbs</td>
<td>Alcohol-related problems</td>
<td>8.06</td>
<td>5.34</td>
<td>--</td>
</tr>
<tr>
<td>IDS-42</td>
<td>Unpleasant emotions</td>
<td>6.43</td>
<td>3.09</td>
<td>.83</td>
</tr>
<tr>
<td></td>
<td>Physical discomfort</td>
<td>3.30</td>
<td>2.92</td>
<td>.80</td>
</tr>
<tr>
<td></td>
<td>Pleasant emotions</td>
<td>7.00</td>
<td>2.92</td>
<td>.84</td>
</tr>
<tr>
<td></td>
<td>Personal control</td>
<td>5.49</td>
<td>3.57</td>
<td>.87</td>
</tr>
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<td></td>
<td>Urges/temptations</td>
<td>5.95</td>
<td>3.08</td>
<td>.75</td>
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<td></td>
<td>Conflict with others</td>
<td>14.53</td>
<td>8.07</td>
<td>.92</td>
</tr>
<tr>
<td></td>
<td>Social pressure</td>
<td>7.13</td>
<td>3.52</td>
<td>.85</td>
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<td></td>
<td>Pleasant emotions</td>
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<td>Personal states</td>
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<td></td>
<td>Situations with others</td>
<td>52.55</td>
<td>22.58</td>
<td>.94</td>
</tr>
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<td>SCQ-39</td>
<td>Total score</td>
<td>49.16</td>
<td>19.74</td>
<td>.96</td>
</tr>
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<td></td>
<td>Unpleasant emotions</td>
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<td>Physical discomfort</td>
<td>80.81</td>
<td>20.68</td>
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<td></td>
<td>Pleasant emotions</td>
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<td>Testing personal control</td>
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<td></td>
<td>Urges and temptations</td>
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<td></td>
<td>Social problems at work</td>
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<td></td>
<td>Social tensions</td>
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<td>21.77</td>
<td>.91</td>
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<td></td>
<td>Positive social situations</td>
<td>54.79</td>
<td>30.35</td>
<td>.97</td>
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</table>
end of the moderate dependency range between 31 and 60 (x=54.44). A score of 61 and above indicates severe dependence for this instrument. To allow for comparison among types of beverages, alcoholic drinks were converted to Standard Drink Units, that is, 1/2 oz. or 15 ml. of absolute alcohol. As a group, the mean total number of Standard Drink Units per typical drinking session (TotalSDU) was high (20.44), which is approximately 17 bottles (12 oz.) of beer, 20 standard glasses (4 oz.) of wine, or 26 shots (1 oz.) of liquor.

The men in this study scored in the high risk range on all subscales of the IDS-42, with the exception of the subscale Physical Discomfort, for which the sample mean fell into the moderate risk range. Referenced to normative data, the mean subscale scores on the IDS-42 ranged from the 68th percentile on Physical Discomfort to the 98th percentile on Pleasant Times with Others. The men in this study, therefore, were more likely to drink heavily in a variety of situations and states than the majority of alcoholics making up the normative group.

In terms of the SCQ-39, which measures the confidence one has in avoiding heavy drinking in a variety of situations, the group means ranged from the 39th percentile for the subscale Positive Social Situations to the 51st percentile for the subscale Social Tensions. This puts the men as a group at a relatively low level of confidence regarding avoiding heavy drinking, even in comparison to the normative sample who were also men entering treatment for alcohol-related problems. The
means and standard deviations are given in Table 6.

The mean "alcoholism positive family index" (AlcFam) was 38.41, which is the average percentage of alcoholic family members for the group. The means, standard deviations and reliability estimates for the above alcohol measures and others are reported in Table 6.

**Intrapsychic Assessment Level**

The mean scores on the SILS subscale Vocabulary for the men and women in the sample were 31.37 and 30.98, respectively. On the Abstraction subscale their means were 28.74 and 31.05, respectively. Translated into percentile ranks, the men were at the 50th percentile for Vocabulary and between the 57th and 58th percentile for Abstraction. The women’s means put them between the 50th and 51st percentile on Vocabulary and the 58th percentile on Abstraction. It is reasonable to conclude, therefore, that the participants were well within the normal range in terms of their verbal and mental abilities. The means and standard deviations for the SILS subscales are given in Table 7.

Scores on the SCL-90-R were converted to T-scores for normative comparisons. The mean husband and wife scores on the nine subscales and on the global distress indice of the SCL-90-R show that the participants, as a group, were very distressed in terms of psychological symptomatology. The mean scores exceeded
Table 7.

Means, Standard Deviations (SD) and Reliability Estimates (Cronbach’s alpha) of Intrapsychic Measures for the Alcoholic Husbands and Nonalcoholic Wives.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Scale/ subscale</th>
<th>Husbands</th>
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<th></th>
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<th></th>
<th>Alpha</th>
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<tr>
<td></td>
<td></td>
<td>Mean</td>
<td>SD</td>
<td>Mean</td>
<td>SD</td>
<td>Alpha</td>
<td></td>
</tr>
<tr>
<td>SCL-90-R (t-scores)</td>
<td>Somatization</td>
<td>61.33</td>
<td>16.39</td>
<td>61.45</td>
<td>15.92</td>
<td>.83</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Obsessive-compulsive</td>
<td>70.91</td>
<td>16.71</td>
<td>69.80</td>
<td>16.64</td>
<td>.86</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Interpersonal sensitivity</td>
<td>73.95</td>
<td>19.31</td>
<td>68.88</td>
<td>18.22</td>
<td>.86</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Depression</td>
<td>75.83</td>
<td>18.82</td>
<td>78.18</td>
<td>18.75</td>
<td>.89</td>
<td></td>
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<td></td>
<td>Anxiety</td>
<td>72.55</td>
<td>20.01</td>
<td>69.58</td>
<td>21.00</td>
<td>.89</td>
<td></td>
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<td></td>
<td>Hostility</td>
<td>73.38</td>
<td>21.73</td>
<td>72.09</td>
<td>21.07</td>
<td>.84</td>
<td></td>
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<td></td>
<td>Phobic Anxiety</td>
<td>58.44</td>
<td>17.15</td>
<td>54.85</td>
<td>17.43</td>
<td>.80</td>
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<tr>
<td></td>
<td>Paranoid ideation</td>
<td>69.20</td>
<td>17.19</td>
<td>64.47</td>
<td>17.39</td>
<td>.78</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Psychoticism</td>
<td>76.81</td>
<td>23.73</td>
<td>67.65</td>
<td>21.45</td>
<td>.79</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Global severity index</td>
<td>76.16</td>
<td>18.66</td>
<td>73.07</td>
<td>19.09</td>
<td>.97</td>
<td></td>
</tr>
<tr>
<td>SILS</td>
<td>Vocabulary</td>
<td>31.37</td>
<td>4.98</td>
<td>30.98</td>
<td>4.82</td>
<td>--</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Abstract</td>
<td>28.74</td>
<td>7.14</td>
<td>31.05</td>
<td>5.70</td>
<td>--</td>
<td></td>
</tr>
<tr>
<td>SASB-Introject</td>
<td>Affiliation</td>
<td>22.55</td>
<td>68.30</td>
<td>57.09</td>
<td>64.16</td>
<td>--</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Autonomy</td>
<td>-17.44</td>
<td>41.75</td>
<td>-34.87</td>
<td>35.60</td>
<td>--</td>
<td></td>
</tr>
</tbody>
</table>

husbands and wives with the exception of the Phobic Anxiety subscale. This subscale was not used further in the study, however, due to its extreme skewness of distribution for both the men and women. The mean Global Severity Index (GSI) for the men was 76.16 (SD=18.66) and for the women was 73.07 (SD=19.09). Table 7 gives all means, standard deviations and reliability
estimates for the SCL-90-R.

The SASB-Introject subscales Affiliation and Autonomy (Interdependence) are orthogonal axes which range in value from minus 200 to plus 200. The mean subscale scores can be interpreted separately in terms of the particular continuum, or jointly as defining a point in two-dimensional space. The men’s mean Affiliation score was 22.55 (SD=68.30) which put them somewhat toward a Friendly rather than Hostile self-regard, while their mean Autonomy score was minus 17.44 (SD=41.75) which placed them more toward Self-Control as opposed to Letting Self "Be". Considered together, these mean scores place the men in the quadrant described as Managing, Cultivating Self. The women’s mean Affiliation score was much higher at 57.09 (SD=64.16) which positioned them farther along the continuum toward a Friendly rather than Hostile self-regard, while their mean Autonomy score was more negative at minus 34.87 (SD=35.60), indicating a greater tendency toward Self-Control rather than Letting Self "Be". Considered together, the women’s mean scores also placed them in the Managing, Cultivating Self quadrant. The magnitude of the standard deviations (SDs) for each of the mean dimensional scores should be noted well as they provide an enhanced sense of the distribution of scores for the men and women. For example, although the men’s mean Affiliation score was 22.55, theoretically, 68% of the group scores lay between minus 45.75 and plus 90.85 (mean plus or minus one SD), indicating that a sizeable portion of the group scores fell more towards a Hostile
self-regard than a Friendly one.

**Marital Assessment Level**

The means, standard deviations and reliability estimates of the marital measures for alcoholic husbands and nonalcoholic wives appear in Table 8; those for couples appear in Table 9. As indicated in Table 8, the mean EMCS value for alcoholic husbands was 14.90 and for nonalcoholic wives was 5.96, a difference which was highly significant (p<.0001). While the instrument was not used to screen out participants (using a cutoff value of 20 or greater as indicative of an unacceptable level of social desirability regarding marriage conventionality), these mean scores suggest that the tendency to misrepresent the marriage in an overly positive fashion was not happening for a majority of the alcoholic husbands and almost all of their wives.

The means for the Marital Status Questions (MSQ) were based on five items scored true or false. Higher scores were associated with a greater tendency toward dissolution of the marriage. The mean for the alcoholic husbands was 2.06 (SD=0.92) and, somewhat higher for the nonalcoholic wives at 2.31 (SD=0.93). These means reflect that, on average, just more than two of the five questions were answered affirmatively regarding movement toward marital dissolution and that, on average, the women were farther along the continuum. The MSQ was used primarily with respect to cluster group comparisons (see below).

Scores for the DAS are reported in Table 8, broken down into
Table 8.

Means, Standard Deviations (SD), and Reliability Estimates (Cronbach's alpha) of Marital Measures for Alcoholic husbands and Nonalcoholic Wives.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Scale/ subscale</th>
<th>Husbands</th>
<th>Wives</th>
<th>Husbands</th>
<th>Wives</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Mean</td>
<td>SD</td>
<td>Mean</td>
<td>SD</td>
</tr>
<tr>
<td>EMCS</td>
<td>Total Score</td>
<td>14.90</td>
<td>14.03</td>
<td>5.96</td>
<td>9.05</td>
</tr>
<tr>
<td>DAS</td>
<td>Dyadic consensus</td>
<td>39.60</td>
<td>8.87</td>
<td>37.51</td>
<td>8.68</td>
</tr>
<tr>
<td></td>
<td>Dyadic satisfaction</td>
<td>30.44</td>
<td>6.34</td>
<td>27.02</td>
<td>6.16</td>
</tr>
<tr>
<td></td>
<td>Affective expression</td>
<td>6.19</td>
<td>2.76</td>
<td>5.65</td>
<td>2.65</td>
</tr>
<tr>
<td></td>
<td>Dyadic cohesion</td>
<td>12.65</td>
<td>3.82</td>
<td>10.94</td>
<td>3.97</td>
</tr>
<tr>
<td></td>
<td>Total Score</td>
<td>88.88</td>
<td>17.86</td>
<td>81.11</td>
<td>17.14</td>
</tr>
<tr>
<td>PIQ</td>
<td>Romantic love</td>
<td>52.22</td>
<td>7.78</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td>Supportiveness</td>
<td>59.94</td>
<td>9.79</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td>Communication ease</td>
<td>65.75</td>
<td>11.75</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td>Romantic love</td>
<td>--</td>
<td>--</td>
<td>51.39</td>
<td>8.64</td>
</tr>
<tr>
<td></td>
<td>Supportiveness</td>
<td>--</td>
<td>--</td>
<td>55.05</td>
<td>11.14</td>
</tr>
<tr>
<td></td>
<td>Communication ease</td>
<td>--</td>
<td>--</td>
<td>59.64</td>
<td>11.48</td>
</tr>
<tr>
<td>SASB</td>
<td>Interpersonal Scale</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Affiliation:</td>
<td>I initiate</td>
<td>82.12</td>
<td>58.98</td>
<td>73.17</td>
<td>55.93</td>
</tr>
<tr>
<td></td>
<td>I respond</td>
<td>66.95</td>
<td>64.96</td>
<td>41.75</td>
<td>62.68</td>
</tr>
<tr>
<td></td>
<td>Other</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>initiates</td>
<td>64.81</td>
<td>73.72</td>
<td>29.95</td>
<td>70.23</td>
</tr>
<tr>
<td></td>
<td>responds</td>
<td>58.81</td>
<td>72.16</td>
<td>24.11</td>
<td>64.76</td>
</tr>
<tr>
<td>Autonomy:</td>
<td>I initiate</td>
<td>16.23</td>
<td>33.09</td>
<td>-1.85</td>
<td>41.58</td>
</tr>
<tr>
<td></td>
<td>I respond</td>
<td>10.00</td>
<td>30.58</td>
<td>19.61</td>
<td>43.22</td>
</tr>
<tr>
<td></td>
<td>Other</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>initiates</td>
<td>-5.45</td>
<td>38.27</td>
<td>13.78</td>
<td>45.18</td>
</tr>
<tr>
<td></td>
<td>responds</td>
<td>25.52</td>
<td>33.09</td>
<td>19.89</td>
<td>42.41</td>
</tr>
</tbody>
</table>
subscale and total score means. Both alcoholic husbands and nonalcoholic wives total DAS means indicated that the couples in the study were indeed maritally distressed and well below the critical value of 100. When compared to norms provided by the author of the DAS (Spanier, 1976), the couples in the study scored well below the means for married or cohabiting couples on all subscales except Dyadic Cohesion. In this case the study couples’ means were lower, but only slightly. The DAS total score means were also well below the established norms, indicating that couples in the study were not well adjusted to marriage or cohabitation but were maritally distressed with serious problem areas in their relationship. It is noteworthy that the DAS means for the men were consistently higher than those for their spouses.

Regarding the PIQ subscales scores (Table 8), the alcoholic husbands and nonalcoholic wives reported low levels of psychosocial intimacy in their relationships in terms of Romantic Love, Supportiveness, and Communication Ease. The wives’ subscale means were somewhat lower than those for their husbands. Although no norms exist for the PIQ, its author reports total scale means ranging from 265 to 297 for college-age men and women in two studies (Tesch, 1985), whereas in the present study total scale means are well below 200.

On the SASB-Interpersonal Scale measure, the husbands and wives in the study reported their Affiliation and Autonomy perceptions with respect to each of "Other" and "I" initiate and
respond. As with the SASB-Introject dimensions, each score has a theoretical range of minus 200 to plus 200.

Scores are reported in Table 8, and as can be seen, the husbands' and wives' means for Affiliation were all positive, ranging from 24.11 (SD=64.76) for the women's perception of their spouses' responses to them (Other Responds), to 82.12 (SD=58.98) for the men's perception of their own initiating behavior (I Initiate). This indicates that both the men and the women tended to perceive their own and their spouses actions and responses to one another as more Friendly than Hostile, with some differences in the level of Friendliness. Once again, the magnitude of the standard deviations associated with each mean must be duly noted.

The mean scores for Autonomy showed less overall spread and ranged around the origin. The highest positive mean score for Autonomy was that of the men's perception of their spouses responses to them (Other Responds: 25.52; SD=33.09), whereas, the lowest negative mean was that of the men's perception of their spouses initiating behavior (Other Initiates). Theoretically, initiating behavior is described as tending towards either Giving Autonomy or Controlling, while responding behavior tends towards either Being Separate (Differentiated) or Submitting. As a group, the men and women tended slightly towards Giving Autonomy and Being Separate. Two exceptions were the men's mean score for Other Initiates (minus 5.45; SD=38.27) and the women's mean score for I Initiate (minus 1.85; SD=41.58), which indicates an agreement that the women as a group tend to initiate in ways that
are more Controlling than Giving Autonomy.

Scores on the AC were divided between those for alcoholic husbands and nonalcoholic wives separately and those for couples (see Table 9). Referenced to data from distressed and non-distressed normative groups (Margolin et. al., 1983), the husbands' and wives' mean scores on Desired Change and Perceived Change were more comparable to those of the distressed group. Thus, the amount of change that the alcoholic husbands and nonalcoholic wives in the sample were seeking was consistent with the amount of change requested by maritally distressed couples.

Table 9.
Means, Standard Deviations (SD), and Reliability Estimates (Cronbach's alpha) of Marital Measures for Alcoholic husbands and Nonalcoholic Wives.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Scale/ subscale</th>
<th>Husbands</th>
<th>Wives</th>
</tr>
</thead>
<tbody>
<tr>
<td>AC</td>
<td>Desired change</td>
<td>22.80</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td>Perceived change</td>
<td>31.98</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td>Perceptual Accuracy</td>
<td>0.97</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td>Desired Change</td>
<td>--</td>
<td>37.42</td>
</tr>
<tr>
<td></td>
<td>Perceived Change</td>
<td>--</td>
<td>26.31</td>
</tr>
<tr>
<td></td>
<td>Perceptual Accuracy</td>
<td>--</td>
<td>1.48</td>
</tr>
</tbody>
</table>

SD Alpha: .88, .89, .87, .88, .88
It is notable that the husbands' and wives' means were complementary in that the nonalcoholic wives desired more change and the alcoholic husbands perceived that more change was wanted of them and vice versa.

Table 10 show the values for couple level AC variables, that is, Total Agreement, Total Disagreement, Total Desired Change,

Table 10
Means, Standard Deviations (SD), and Reliability Estimates (Cronbach's alpha) of Marital Measures for Couples.

<table>
<thead>
<tr>
<th>Instrument</th>
<th>Subscale</th>
<th>Mean</th>
<th>SD</th>
<th>Alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>AC</td>
<td>Total agreement</td>
<td>16.95</td>
<td>7.87</td>
<td>.76</td>
</tr>
<tr>
<td></td>
<td>Total disagreement</td>
<td>11.10</td>
<td>6.06</td>
<td>.79</td>
</tr>
<tr>
<td></td>
<td>Total desired change</td>
<td>60.21</td>
<td>23.09</td>
<td>.86</td>
</tr>
<tr>
<td></td>
<td>Total perceived change</td>
<td>58.29</td>
<td>22.45</td>
<td>.91</td>
</tr>
<tr>
<td>Perceptual Accuracy:</td>
<td>Male of female</td>
<td>0.97</td>
<td>0.66</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td>Female of male</td>
<td>1.48</td>
<td>1.14</td>
<td>--</td>
</tr>
</tbody>
</table>

Total Perceived Change and the Perceptual Accuracy of Change for Males and for Females. The level of Perceptual Accuracy, a proportion representing partner A's perception of the change desired by partner B, was lower for the men than for the women, indicating a discrepancy between them on this variable.
Family Level of Assessment

Variable statistics related to the family level of assessment are shown in Table 11. In the main, the men’s subscale means on the FES were higher than those of the women, with the exception of the subscales Organization and Control, in which the women’s were higher. Both the men’s and women’s mean scores were in the range of distressed family normative means provided by the author of the instrument (Moos, 1981). The comparison indicates that families in this study scored in a similar fashion to other distressed families.

The level of family satisfaction (FS) was very low for both the husbands and wives (see Table 11). Compared to normative group means, the husbands’ mean score of 38.56 (SD=8.84) put them in the 12th percentile, while the wives’ mean score of 37.06 (SD=8.44) put them in the 4th percentile. This indicates that the alcoholic husbands and nonalcoholic wives in the study were much less satisfied with their family functioning than the majority of the normative group (Olson, 1982).

The mean scores for the subscales of the FACES III measure were comparable for the alcoholic husbands and the nonalcoholic wives (Table 11). On the Cohesion subscale, both the husbands’ mean score (32.95) and the wives’ mean score (34.34) were at the upper end of the Disengaged range (10-34) close to the lower end of the Separated range (35-40). Similarly, the husbands’ and wives’ mean scores on Adaptability (24.91 and 24.94, respectively) were situated at the boundary between Structured
Table 11.

Means, Standard Deviations (SD), and Reliability Estimates (Cronbach's alpha) of Family Measures for Alcoholic husbands and Nonalcoholic Wives.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Scale/Subscale</th>
<th>Husbands</th>
<th>Wives</th>
<th>Husbands</th>
<th>Wives</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Mean</td>
<td>SD</td>
<td>Mean</td>
<td>SD</td>
</tr>
<tr>
<td>FES</td>
<td>Cohesion</td>
<td>5.18</td>
<td>2.40</td>
<td>4.89</td>
<td>2.74</td>
</tr>
<tr>
<td></td>
<td>Expressiveness</td>
<td>4.69</td>
<td>2.12</td>
<td>4.46</td>
<td>2.05</td>
</tr>
<tr>
<td></td>
<td>Conflict</td>
<td>4.29</td>
<td>2.32</td>
<td>4.59</td>
<td>2.32</td>
</tr>
<tr>
<td></td>
<td>Independence</td>
<td>6.34</td>
<td>1.60</td>
<td>5.94</td>
<td>1.99</td>
</tr>
<tr>
<td></td>
<td>Organization</td>
<td>4.07</td>
<td>2.56</td>
<td>4.35</td>
<td>2.23</td>
</tr>
<tr>
<td></td>
<td>Control</td>
<td>4.29</td>
<td>2.00</td>
<td>4.86</td>
<td>2.00</td>
</tr>
<tr>
<td>FACIES III</td>
<td>Cohesion</td>
<td>32.95</td>
<td>7.45</td>
<td>34.34</td>
<td>7.50</td>
</tr>
<tr>
<td></td>
<td>Adaptability</td>
<td>24.91</td>
<td>5.37</td>
<td>24.94</td>
<td>5.15</td>
</tr>
<tr>
<td>FS</td>
<td>Total Score</td>
<td>38.56</td>
<td>8.84</td>
<td>37.06</td>
<td>8.44</td>
</tr>
<tr>
<td>PSS-Family</td>
<td>Total Score</td>
<td>89.49</td>
<td>21.05</td>
<td>93.87</td>
<td>20.70</td>
</tr>
</tbody>
</table>

(10-24) and Flexible (25-28) score ranges. This indicates that, as a group, this sample of families were more Disengaged than Enmeshed on the Cohesion dimension and more Rigid than Chaotic on the Adaptability dimension.

The extent to which social support from the family was experienced by alcoholic husbands and nonalcoholic wives in the study was measured by the PSS-Family (PSS-Fa) scale. The means and standard deviations are given in Table 11 and show that the women's mean was slightly higher than that of the men. Norms are not available for this instrument, however, the study sample means were compared to those found in previous research. To
effect this comparison, the means were first transformed into a common metric.

The husband’ and wives’ mean PSS-Fa scores were somewhat lower (by about 0.2 SD and 0.1 SD, respectively) than those found by the authors of the instrument in three samples of undergraduate students (Procidano & Heller, 1983). The study means were higher (by about 0.5 SD and 0.6 SD, respectively) than the mean found for an inpatient chronic-psychiatric adult sample and about equivalent to the mean found for a diabetic adult group (Lyons et al., 1988). These comparisons suggest that the men and women in the study experienced less social support from their family than a normal group and about the same level of support as a symptomatic group.

**Social Level of Assessment**

The level of support felt from the social system was measured by the PSS-Friends (PSS-Fr) scale. Mean scores for alcoholic husbands and nonalcoholic wives are shown in Table 12. These show that the women’s mean was higher than that of the men. Norms are not available for this instrument, however, as with the PSS-Fa, the study sample means were transformed and compared to those found in previous research.

The men’s mean PSS-Fr score was approximately 0.5 SD lower than the means found for three samples of undergraduate students, whereas the women’s mean was lower by about 0.2 SD (Procidano & Heller, 1983). Compared to the mean found for an inpatient
Table 12.

Means and Standard Deviations (SD) of Social Measure for Alcoholic husbands and Nonalcoholic Wives.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Scale/subscale</th>
<th>Husbands</th>
<th>Wives</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Mean</td>
<td>SD</td>
</tr>
<tr>
<td>PSS-Friends Total score</td>
<td>85.97</td>
<td>21.06</td>
<td>100.54</td>
</tr>
</tbody>
</table>

chronic-psychiatric adult sample, the men’s mean was about 0.2 SD higher and the women’s mean was 0.6 SD higher. Compared to a diabetic adult group, the men’s mean was almost equivalent and the women’s mean was about 0.3 SD higher (Lyons et al., 1988). These comparisons suggest that the men experienced about the same level of social support from friends as did a symptomatic group, whereas the women experienced a higher level of support, placing them in between the symptomatic group and the normal group.

Therapeutic Level of Assessment

An indication of the extent to which a person in therapy can experience a productive relationship with the therapist was measured by the Therapeutic Alliance Scale-revised (TAS-rev). Due to dropout and to the design of the therapy outcome portion of the larger study (The Alcohol Recovery Project), the number of available respondents was much lower for the TAS-rev than for all other measures used in this study. Data was available for only 91
men and 39 women for this measure. The mean score for the men was approximately 0.3 SD lower than that for the women (Table 13).

Table 13.
Means, Standard Deviations (SD) and Sample Sizes of the Therapeutic Measures for Alcoholic husbands and Nonalcoholic Wives.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Scale/subscale</th>
<th>Husbands</th>
<th>Wives</th>
</tr>
</thead>
<tbody>
<tr>
<td>TAS</td>
<td>Total score</td>
<td>114.40 15.63 91</td>
<td>118.77 13.97 39</td>
</tr>
</tbody>
</table>

This suggests that the men did not experience a productive relationship with the therapist to the same degree as did the women.

Cluster Analysis

Derivation of the Cluster Groups

The first step in the derivation of cluster groups involved using only the continuous variables in the cluster analysis. The first cluster analysis employed 7 variables, in z-score form, namely: MAST, ADD, TotalSDU, AlcProbs (alcohol-related problems), AlcFam (index of alcoholism in the family), IDS-42-One (extent of high risk of heavy drinking due to Personal States), and IDS-42-Two (extent of high risk of heavy drinking due to Situations with Others). Results from this cluster analysis suggested a five-group solution, however, it was noted that mean scores for IDS-
42-One and IDS-42-Two were very close for each of the five groups. Since the correlation between these two variables was high ($r = .74$) and they made little or no unique contributions to the cluster analysis, the total IDS-42 score was used instead.

The resulting 6-variable cluster analysis indicated a possible 7, 4, or 3-group solution as indicated in a graph of the change in the magnitude of coefficients (Figure 1). This somewhat ambiguous cluster solution was clarified greatly with the addition of the single categorical variable "Drinking Pattern" (DrnkPatt). This dichotomous variable split the sample into Irregular (50.8%) and Steady (49.2%) pattern drinkers. Figure 2 shows the change in magnitude of coefficients for the 7-variable

---

**Cluster solution I: Six variables**

![Graph of the change in magnitude of error coefficients](image)

**Figure 1.** Graph of the change in magnitude of the coefficients associated with the final steps in the 6 variable cluster analysis (n=130).
Cluster solution II: Seven variables

Figure 2. Graph of the change in magnitude of the coefficients associated with the final steps in the 7 variable cluster analysis (n=130).

As can be seen, the first and only large change in the magnitude of the coefficients occurs when the number of clusters progresses from 3 to 2 groups. Thus, this final cluster analysis indicates the presence of 3 distinct cluster groups in the sample. This three-group solution was adopted for further evaluation and use in the study.

Figure 3 shows the profiles of the 3 cluster groups in terms of their mean z-scores on the 7 cluster variables. Groups One (n=31), and Three (n=39) show remarkably similar profiles for the first 4 variables, with a difference only in elevation; Group One
Figure 3. The three derived cluster groups profiled using the z-score means of the alcohol cluster variables.

shows more elevated means. The distinctive features of the two groups are evident, however, in the remaining three cluster variables (ADD, IDS-42 and DrnkPatt). Group Two (n=60), on the other hand, shows a remarkably consistent pattern of much lower scores for the 7 variables. It should be noted that a high positive z-score for DrnkPatt is associated with Steady drinking, whereas a high negative z-score is associated with Irregular drinking.

A further check on the correctness of the three-group cluster solution was made by examining the dendogram resulting from the cluster analysis (Appendix C). The dendogram maps out the succession of clusters formed according to the cluster analytic procedure. As can be seen, the two-group solution has
Group One and Group Three merged together into a single group. This seems inappropriate given their distinctive features, especially since these differences are lost in the two-group solution (compare Figure 3 with the two-group profile, Appendix C). The four-group solution, on the other hand, shows Group Two breaking into two clusters, one with 38 cases, and the other with 22 cases. Examination of the profile of the four-group solution (Appendix C) reveals that these two new clusters are very similar in terms of all of the cluster variables except DrnkPatt. The larger group (n=38) has a somewhat elevated profile than the smaller group (n=22) and indications of an irregular drinking pattern. In contrast, the smaller group profile shows an indication of a primarily steady drinking pattern. These examinations affirm the appropriateness of the three-group solution and give further evidence of the homogeneity of the three sub-groups.

The results of the MANOVA conducted on the 6 continuous cluster variables for the 3 cluster groups was highly significant, as expected (Hotellings approximate F=24.98; \( p<.0001; \text{df}=12,242 \)). Table 14 indicates that group differences were significant for all univariate tests as well, however, some component variables (e.g. amount of wine contributed to the Total Standard Drink Units) were not significant. Table 15 shows the raw score means for the three groups as well as the significantly
Table 14.

Univariate Test Results for Group Differences of Cluster Variables.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Component</th>
<th>F-value</th>
<th>F-probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAST</td>
<td>Total SDU</td>
<td>90.23</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td></td>
<td>Amount of beer</td>
<td>4.98</td>
<td>.008</td>
</tr>
<tr>
<td></td>
<td>Amount of wine</td>
<td>5.54</td>
<td>.005</td>
</tr>
<tr>
<td></td>
<td>Amount of liquor</td>
<td>1.20</td>
<td>.305</td>
</tr>
<tr>
<td>AlcProbs</td>
<td>Medical</td>
<td>43.02</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td></td>
<td>Work</td>
<td>15.94</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td></td>
<td>Legal</td>
<td>35.00</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td></td>
<td>Social</td>
<td>28.78</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td>AlcFam</td>
<td>Medical</td>
<td>10.47</td>
<td>.0001</td>
</tr>
<tr>
<td>ADD</td>
<td>Medical</td>
<td>29.52</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td>IDS-42</td>
<td>Medical</td>
<td>28.86</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td></td>
<td>Personal states</td>
<td>35.61</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td></td>
<td>Situations with others</td>
<td>13.61</td>
<td>&lt;.0001</td>
</tr>
</tbody>
</table>

degrees of freedom: 2,127

different pairs for each variable. With respect to the categorical variable DrnkPatt, Group One was 93.5% Irregular, 6.5% Steady; Group Two was 61.7% Irregular, 38.3% Steady; and Group Three was 100% Steady. A breakdown for this variable is given in Table 16.
Table 15

Means of Cluster Variables and Component Variables for the Cluster Groups.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Component Variable</th>
<th>One (n=31)</th>
<th>Two (n=60)</th>
<th>Three (n=39)</th>
<th>Sig. diff groups (p&lt;.05)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAST</td>
<td>-------</td>
<td>41.13</td>
<td>23.65</td>
<td>38.26</td>
<td>1&amp;2;3&amp;2</td>
</tr>
<tr>
<td>Total SDU</td>
<td>-------</td>
<td>24.45</td>
<td>17.87</td>
<td>21.20</td>
<td>1&amp;2</td>
</tr>
<tr>
<td>Amount of beer</td>
<td>13.01</td>
<td>8.38</td>
<td>10.49</td>
<td>1&amp;2</td>
<td></td>
</tr>
<tr>
<td>Amount of wine</td>
<td>1.45</td>
<td>2.24</td>
<td>2.63</td>
<td>None</td>
<td></td>
</tr>
<tr>
<td>Amount of liquor</td>
<td>10.00</td>
<td>7.25</td>
<td>8.08</td>
<td>None</td>
<td></td>
</tr>
<tr>
<td>AlcProbs</td>
<td>-------</td>
<td>11.90</td>
<td>4.45</td>
<td>10.56</td>
<td>1&amp;2;3&amp;2</td>
</tr>
<tr>
<td>Medical</td>
<td>1.45</td>
<td>0.57</td>
<td>1.67</td>
<td>1&amp;2;3&amp;2</td>
<td></td>
</tr>
<tr>
<td>Work</td>
<td>3.03</td>
<td>0.65</td>
<td>2.87</td>
<td>1&amp;2;3&amp;2</td>
<td></td>
</tr>
<tr>
<td>Legal</td>
<td>3.29</td>
<td>0.80</td>
<td>2.08</td>
<td>All pairs</td>
<td></td>
</tr>
<tr>
<td>Social</td>
<td>4.13</td>
<td>2.43</td>
<td>3.95</td>
<td>1&amp;2;3&amp;2</td>
<td></td>
</tr>
<tr>
<td>AlcFam</td>
<td>-------</td>
<td>52.44</td>
<td>29.83</td>
<td>40.47</td>
<td>1&amp;2</td>
</tr>
<tr>
<td>ADD</td>
<td>-------</td>
<td>55.58</td>
<td>44.36</td>
<td>69.05</td>
<td>All pairs</td>
</tr>
<tr>
<td>IDS-42</td>
<td>-------</td>
<td>39.20</td>
<td>43.52</td>
<td>65.75</td>
<td>1&amp;3;2&amp;3</td>
</tr>
<tr>
<td>Personal states</td>
<td>37.90</td>
<td>39.93</td>
<td>65.53</td>
<td>1&amp;3;2&amp;3</td>
<td></td>
</tr>
<tr>
<td>Situations with others</td>
<td>41.36</td>
<td>49.51</td>
<td>66.12</td>
<td>1&amp;3;2&amp;3</td>
<td></td>
</tr>
</tbody>
</table>

*pairs of groups significantly different at the 0.05 level.

Hypothesis #1: Adequacy of the Derived Typology

Operationalizing the first hypothesis of the study involved focusing on the statistical adequacy of the alcoholic typology created by empirical means. The first hypothesis was operationalized as two sub-hypotheses, one dealing with the reliability of the cluster solution and the other dealing with validity issues. The results from tests centered on each sub-hypothesis are presented below.
Table 16

Frequencies Breakdown (Counts, Row and Column Percentages) for Drinking Pattern Variable (DrnkPatt) by Cluster Group Membership

<table>
<thead>
<tr>
<th>Cluster Group</th>
<th>DrnkPatt</th>
<th>One</th>
<th>Two</th>
<th>Three</th>
<th>Row Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Irregular</td>
<td>29</td>
<td>37</td>
<td>0</td>
<td></td>
<td>66</td>
</tr>
<tr>
<td></td>
<td>43.9%</td>
<td>56.1%</td>
<td>0.0%</td>
<td></td>
<td>50.8%</td>
</tr>
<tr>
<td></td>
<td>93.5%</td>
<td>61.7%</td>
<td>0.0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Steady</td>
<td>2</td>
<td>23</td>
<td>39</td>
<td></td>
<td>64</td>
</tr>
<tr>
<td></td>
<td>3.1%</td>
<td>35.9%</td>
<td>60.9%</td>
<td></td>
<td>49.2%</td>
</tr>
<tr>
<td></td>
<td>6.5%</td>
<td>38.3%</td>
<td>100%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Column Total</td>
<td>31</td>
<td>60</td>
<td>39</td>
<td></td>
<td>130</td>
</tr>
<tr>
<td></td>
<td>23.8%</td>
<td>46.2%</td>
<td>30.0%</td>
<td></td>
<td>100%</td>
</tr>
</tbody>
</table>

Note: Chi-square significant at p<.0001

Hypothesis (1a): Reliability of the Cluster Solution

As a check on the reliability of the cluster solution, a replication procedure was used involving Discriminant Function Analysis (DFA). First, 30 cases were randomly sampled and removed from the original group; their initial cluster group membership was noted. Second, the remaining 100 cases were used in another cluster analysis with the same set of alcohol variables. The correspondence between the n=130 cluster analysis and the n=100 cluster analysis was assessed using a chi-square procedure. The chi-square test was highly significant (142.52; df=4; p<.0001)
and there was a good correspondence between the three-cluster solution for each of the analyses (see Appendix D). Next, a DFA was conducted with the 100 cases whereby functions were computed and used to predict membership in the 3 groups. Actual group membership (as determined by the n=100 cluster analysis) was compared to predicted group membership (as determined by the DFA) for the 100 cases. Finally, the 30 cases removed from the sample were used as new cases in the DFA; their actual group membership (determined by the original cluster analysis) was compared to their predicted group membership. Overall, 96.0% of the 100 cases and 83.3% of the 30 cases were correctly classified by the DFA (see Table 17).

Hypothesis (1b): Evidence of External Validity

The eight subscales of the SCQ-39 were used in a MANOVA by cluster group for the men. The overall test was significant, (Hotellings approximate F=1.70; p=.047; df=16,236), with 5 of the 8 univariate tests significant at the level of p<.05. Figure 4 shows the profiles of the SCQ-39 subscale means for the three groups. It is important to note that profiles such as those shown in Figure 4 will appear "parallel" to the extent that the variables profiled are correlated. This is the case with the eight subscales of the SCQ-39; the 28 intercorrelations range from .44 to .83 with a mean intercorrelation of .64.

The cluster groups were also compared with respect to drinking style characteristics (Table 18). There was strong
Table 17

Classification Results from Discriminant Function Analysis (DFA) (n=100) following Cluster Analysis (n=100) for cases used and not used in the DFA.

<table>
<thead>
<tr>
<th>Cases used in the DFA</th>
<th>Actual Group</th>
<th>No. of Cases</th>
<th>Predicted Group Membership</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>1</td>
<td>17</td>
<td>17(100%)</td>
<td>0 (0.0%)</td>
</tr>
<tr>
<td>2</td>
<td>49</td>
<td>1(2.0%)</td>
<td>46 (93.9%)</td>
</tr>
<tr>
<td>3</td>
<td>34</td>
<td>0(0.0%)</td>
<td>1 (2.9%)</td>
</tr>
</tbody>
</table>

100

<table>
<thead>
<tr>
<th>Cases not used in the DFA</th>
<th>No. of Cases</th>
<th>Predicted Group Membership</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>7</td>
<td>3(42.9%)</td>
</tr>
<tr>
<td>2</td>
<td>14</td>
<td>0 (0.0%)</td>
</tr>
<tr>
<td>3</td>
<td>9</td>
<td>0 (0.0%)</td>
</tr>
</tbody>
</table>

30

* percent of grouped cases correctly classified overall: 96.0%
** percent of grouped cases correctly classified overall: 83.3%

evidence of differences between groups as 5 of the 6 variables had a chi-square test significance at a p<.10 level. These were: Time of Drinking, Place of Drinking, Polydrug Use, Tendency to Drink Until Intoxicated, and Duration of Drinking Problem. Although not significant, there were differences between the groups for the sixth variable (Mostly Drink Alone) as evidenced by the trend toward significance for the the chi-square (p=.129).

The variable Duration of Problem Drinking deserves further explanation as it can be related to the age of onset, which has been noted as an important subtype characteristic (Babor et al., 1992). The mean age of the men in the three groups is different
Figure 4. Cluster group profiles of mean scores on the SCQ-39 subscales.

but not significantly so (p=.417), with Group Two having the highest mean age (41.32; SD=9.82), Group Three being in the middle (40.05; SD=7.44), and Group One having the lowest (38.74; SD=8.70). Since 90% of the men in Group One reported problem drinking occurring more than 8 years ago compared to 77% in Group Three and only 66% of those in Group Two, it seems likely that Group One had an earlier age of onset than did Group Two or Three.

It is also important to note the results of the chi-square for the variable DrnkPatt, shown in Table 18 in its original four categories. As can be seen, Group One is composed mainly of
Table 18

Summary of Results for Chi-square Tests of Group Membership and Drinking Style Characteristics: Percentages and P-values

<table>
<thead>
<tr>
<th>Drinking Characteristics</th>
<th>Cluster Group</th>
<th>Chi-square</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>One</td>
<td>Two</td>
<td>Three</td>
</tr>
<tr>
<td>Time of Drinking</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Day</td>
<td>55%</td>
<td>33%</td>
<td>59%</td>
</tr>
<tr>
<td>Night</td>
<td>45</td>
<td>67</td>
<td>41</td>
</tr>
<tr>
<td>Place of Drinking</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>In-home</td>
<td>31</td>
<td>61</td>
<td>75</td>
</tr>
<tr>
<td>Out-of-home</td>
<td>69</td>
<td>39</td>
<td>25</td>
</tr>
<tr>
<td>Mostly Drink Alone</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>53</td>
<td>35</td>
<td>31</td>
</tr>
<tr>
<td>Yes</td>
<td>47</td>
<td>65</td>
<td>69</td>
</tr>
<tr>
<td>Polydrug Use</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>53</td>
<td>88</td>
<td>64</td>
</tr>
<tr>
<td>Yes</td>
<td>47</td>
<td>12</td>
<td>36</td>
</tr>
<tr>
<td>Drink until Intoxicated</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>16</td>
<td>38</td>
<td>26</td>
</tr>
<tr>
<td>Yes</td>
<td>84</td>
<td>62</td>
<td>74</td>
</tr>
<tr>
<td>Duration of Drinking</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Problem</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;1 yr to 8 yrs</td>
<td>10</td>
<td>34</td>
<td>23</td>
</tr>
<tr>
<td>&gt;8 yrs</td>
<td>90</td>
<td>66</td>
<td>77</td>
</tr>
<tr>
<td>Drinking Pattern</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Episodic</td>
<td>71</td>
<td>30</td>
<td>0</td>
</tr>
<tr>
<td>Steady</td>
<td>6</td>
<td>38</td>
<td>100</td>
</tr>
<tr>
<td>Regular Weekly</td>
<td>10</td>
<td>15</td>
<td>0</td>
</tr>
<tr>
<td>Combination</td>
<td>13</td>
<td>17</td>
<td>0</td>
</tr>
</tbody>
</table>

Episodic and other irregular pattern drinkers and very few Steady drinkers, Group Two is a combination of the four patterns, and Group Three is 100% Steady drinkers. The chi-square test associated with this variable is highly significant (p<.0001).
Other Alcohol Drinking Characteristics

A number of variables which reflected important drinking characteristics were included in this study. The following variables were categorical in nature and were used in chi-square tests to examine group differences.

**Longest duration without a drink:** This chi-square test was significant at the p<.05 level (p=.037). Results show that 61.3% of Group One reported abstaining from 1 to 24 weeks. This contrasts sharply with Group Two and Three in which 50.0% of the former and 69.2% of the latter reported abstaining less than 1 week.

**Times stopped and started again:** The chi-square test for this variable was highly significant (p=.0037). Comparing the groups in terms of stopping and starting drinking 5 times or more, Group Two had the lowest proportion (36.7%), Group Three had the middle position (59.0%), and Group One had the highest proportion (80.6%).

**Attend AA:** The chi-square test for this variable was highly significant (p<.0001). Interestingly, Groups One and Three both had high proportions (77.4% and 71.8%, respectively) attending Alcoholics Anonymous meetings more than twice in the last 12 months, whereas Group Two had only 25.0% attending AA meetings more than twice in the last 12 months.

**Attend NA:** The significant chi-square test (p=.034) reflected the data showing that about a third each of Groups One and Three (32.3% and 30.8%, respectively) had ever attended Narcotics
Anonymous meetings, whereas only 6.7% of Group Two men had ever attended an NA meeting.

**Helpseeking:** One final variable in this section represented the degree of helpseeking behavior the men had engaged in. The variable was the sum of four Yes/No response questions having to do with previous treatment for alcohol problems. A one-way analysis of variance was conducted and was found to be significant (p=.0001). Group One had the highest mean score with 2.48 (SD=1.23), compared to Group Three’s mean score of 1.92 (SD=1.24) and Group Two’s mean score of 1.25 (SD=1.37).

**Summary: Alcohol-Related Characteristics of the Cluster Groups**

**Group One (n=31):** This group of alcohol-dependent men reported an Irregular drinking pattern, tending to drink in the day or at night about equally, mostly out of the home and about equally between solitary drinking and drinking with others. They reported longer periods of abstinence than the other two groups. There were indications of an earlier onset of alcoholism as, on average, they were younger, yet had a very high proportion (90.0%) reporting problem drinking for more than 8 years. They tended to drink until intoxicated, sought help for drinking more than the other two groups, and had the highest AA attendance. About half of this group reported using other drugs and about 1/3rd had attended NA meetings. This group had the highest mean scores on the MAST, and the highest means for TotalSDU, AlcProbs, and AlcFam. Their mean score on the ADD was mid-range, well
between the other two groups, and they had the lowest mean score on the IDS-42. Henceforth this subtype will be referred to as the Severe, Irregular Pattern (SIP) drinkers.

**Group Two** (n=60): In terms of drinking pattern, this group was a composite of 2/3rds Irregular and 1/3rd Steady drinkers. Further inspection of the DrnkPatt variable revealed that the 2/3rds Irregular could be divided into 1/3rd Episodic and 1/3rd Regular Weekly and/or Combination patterns. They tended to drink mostly at night, in the home and alone. The men in this group reported having little abstinence throughout their problem drinking years. On average, these men were the oldest yet only 2/3rds reported having had problem drinking for more than 8 years. About 2/3rds reported typically drinking until intoxicated. The men in this group indicated less helpseeking than the other two groups, and the least AA attendance. Likewise, they seemed to have little drug use and almost no attendance at NA meetings. This group had the lowest mean values for the MAST, the ADD, TotalSDU, AlcProbs, and AlcFam variables. Their mean score on the IDS-42 was also lower, however, it was somewhat higher than Group One’s. This subtype was labelled Moderate, Mixed Pattern (MMP) drinkers.

**Group Three** (n=39): This group was made up entirely of Steady pattern drinkers who reported drinking daily. They tended to drink equally in the day or night-time, mostly in the home and mostly alone. They reported having little abstinence during their problem drinking years. The mean age of the men in this group
fell between those of the other groups, as did the proportion of men reporting more than 8 years of problem drinking (about 75%). Most of the men (75%) reported usually drinking until intoxicated, a high degree of helpseeking and high attendance at AA meetings. About 1/3rd reported using drugs and about the same proportion had attended NA meetings. Although the group means for the MAST and the variable, AlcProbs, were high, they were lower than those for Group One (SIP). Means for TotalSDU and AlcFam were in the medium-high range, much closer to Group One (SIP) than to Group Two (MMP). This group had the highest mean score on the ADD and on the IDS-42. In the following pages, this subtype of alcoholism is referred to as the Severe, Steady Pattern (SSP).

All means and standard deviations for the three cluster groups are given in Appendix E.

**Hypothesis #2: Ecosystemic Assessment of Alcoholic Husbands and Nonalcoholic Wives by Cluster Group**

The second hypothesis of this study asserted that the alcoholic men and their nonalcoholic spouses grouped according to the alcoholics' empirically-derived subtypes would differ in terms of their psychosocial functioning. The operationalization of this hypothesis involved breaking it down into a series of sub-hypotheses focusing on the different levels of the ecosystemic assessment model used. The results from tests centered on each sub-hypothesis are presented below, following a
brief section on the comparability of the subtypes in terms of their sociodemographics. It should be noted that in most of the analyses below, subtype differences and person differences (those between the alcoholic men and the nonalcoholic women) were explored, as well as any possible subtype by person interaction effects.

**Sociodemographic Comparability of the Cluster Groups**

The three cluster groups did not differ significantly with respect to most of the sociodemographic variables. The men, grouped according to subtype, were essentially the same in terms of race, first language, ethnicity, age, level of education and employment status. Only in the area of socioeconomic status was a significant difference (p=.020) found between the sociodemographics of the groups. Group Two (MMP) had the highest mean SES indice (Blishen code) (44.81; SD=12.46), then Group Three (SSP) (40.37; SD=9.35) and Group One (SIP) having the lowest mean SES (38.99; SD=11.04). The women, categorized by their husband’s subtype, were also essentially the same on the above aspects, with no significant differences in mean SES indices. The couples, sorted into subtype groups, were not significantly different from one another in terms of number of years together, marital status, family income, and family size. The three subtypes were evenly distributed across the three treatment modes and the two clinic settings (i.e. urban and rural).
Hypothesis (2a): Assessment of Differences at the Intrapsychic Level of Functioning

On the Shipley Institute of Living Scale (SILS), the three subtypes were not significantly different nor were there person or interaction differences (Table 19). A trend was in evidence (p=.106), however, for the overall cluster group distinction, with the means for the subscales Vocabulary and Abstraction being highest for the alcoholic husbands and nonalcoholic wives in Group Two (MMP) and lowest for Group Three (SSP). Figures 5 and 6 show the SILS subscale means by subtype for husbands and wives, respectively (also see Appendix F).

Significant differences on the SCL-90-R were found for alcoholic husbands by subtype (p=.061), by subtype overall (p=.070) and for person (p<.001). Probability values for the overall test and univariates tests are given in Table 19. By examining the subtype profiles for the alcoholic husbands (Figure 7) and nonalcoholic wives (Figure 8), it can be seen that in both cases Group One (SIP) shows the highest levels of distress. For husbands, however, Group Three (SSP) is virtually indistinguishable from Group One (SIP), whereas for wives, Group Three (SSP) and Group Two (MMP) share the lowest mean scores. This may account for the trend toward significance for the interaction between person and subtype (p=.155). Overall, the men had higher levels of distress than did the women, with the Interpersonal Sensitivity, Anxiety, Paranoid Ideation and Psychotocism subscales showing significance at the univariate
test level (see Appendix F).

No significant differences for subtype were found for the SASB-Introject, with the exception of a trend in the case of the wives' scores (see Table 19). A highly significant difference was found (p<.0001) for person, however, with women as a group scoring more extremely positive on Affiliation (means of 57.09 vs. 22.55) and more extremely negative on Autonomy (means of minus 34.87 vs. minus 17.44). Mean scores on Affiliation and Autonomy are shown in barchart form for the alcoholic husbands and nonalcoholic wives by group in Figures 9 and 10, respectively (also, see Appendix F).

Hypothesis (2b): Assessment of Differences at the Marital Level of Functioning

The extent to which a spouse has considered or moved towards separation and/or divorce was captured by the MSQ. The difference between the subtypes for the nonalcoholic wives was significant at a p<.10 level and there was a trend towards significance for the alcoholic husbands. Table 20 shows the actual p-values attained. There was a significance for subtype overall (p=.039) and for person (p=.035). Figure 11 shows the mean scores for the alcoholic husbands and nonalcoholic wives by group. For the husbands, Group One (SIP) had the highest mean score and Group Three (SSP) the lowest; for wives, Groups One (SIP) and Two (MMP) were high on the MSQ mean score and Group Three (SSP) was much lower (see Appendix G).
Table 19

Intrapsychic Measures: Manova and Univariate Summary for Alcoholic husbands and Nonalcoholic wives by Subtype

<table>
<thead>
<tr>
<th>Instrument Subscales</th>
<th>Multivariate Oneway ANOVA by Subtype</th>
<th>Repeated Measures Manova</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Husbands</td>
<td>Wives</td>
</tr>
<tr>
<td>SILS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overall Univariates</td>
<td>p=.149</td>
<td>p=.353</td>
</tr>
<tr>
<td>Vocab</td>
<td>.044</td>
<td>.194</td>
</tr>
<tr>
<td>Abstract</td>
<td>.187</td>
<td>.533</td>
</tr>
<tr>
<td>SCL-90</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overall Univariates</td>
<td>p=.061</td>
<td>p=.289</td>
</tr>
<tr>
<td>Somatization</td>
<td>.002</td>
<td>.035</td>
</tr>
<tr>
<td>Obsessive-compulsive</td>
<td>.020</td>
<td>.176</td>
</tr>
<tr>
<td>Interpersonal sensitivity</td>
<td>.020</td>
<td>.147</td>
</tr>
<tr>
<td>Depression</td>
<td>.135</td>
<td>.171</td>
</tr>
<tr>
<td>Anxiety</td>
<td>.002</td>
<td>.101</td>
</tr>
<tr>
<td>Hostility</td>
<td>.012</td>
<td>.106</td>
</tr>
<tr>
<td>Paranoid ideation</td>
<td>.102</td>
<td>.114</td>
</tr>
<tr>
<td>Psychoticism</td>
<td>.033</td>
<td>.036</td>
</tr>
<tr>
<td>SASB-Introject</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overall Univariates</td>
<td>p=.422</td>
<td>p=.178</td>
</tr>
<tr>
<td>Affiliation</td>
<td>.411</td>
<td>.086</td>
</tr>
<tr>
<td>Autonomy</td>
<td>.616</td>
<td>.574</td>
</tr>
</tbody>
</table>

The MANOVA results for the DAS indicate significant differences for nonalcoholic wives by subtype, for subtype overall and for person (Table 20). Figures 12 and 13 show graphs of the DAS subscales means for the alcoholic husbands and nonalcoholic wives by subtype. These means have been converted to z-score means in order to facilitate comparison across subscales which have quite different metrics. As can be seen, there was a tendency for Group One (SIP) to have lower DAS scores. The subscale Dyadic Satisfaction, which was significant at the univariate level for
Figure 5. Bar chart of the SILS subscale means for alcoholic husbands by cluster group.

Figure 6. Bar chart of the SILS subscale means for nonalcoholic wives by cluster groups.
SCL-90-R Means by Group: Husbands

Figure 7. Graph of the SCL-90 subscale means for alcoholic husbands by cluster group.

SCL-90-R Means by Group: Wives

Figure 8. Graph of the SCL-90 subscale means for nonalcoholic wives by cluster group.
Figure 9. Bar chart showing the SASB-Introject Affiliation means for alcoholic husbands and nonalcoholic wives by cluster group.

Figure 10. Bar chart showing the SASB-Introject Autonomy means for alcoholic husbands and nonalcoholic wives by cluster group.
Table 20

Marital Measures: MANOVA and Univariate Summary for Alcoholic husbands and Nonalcoholic wives by Subtype

<table>
<thead>
<tr>
<th>Instrument/Subscale</th>
<th>Multivariate Oneway ANOVA by Subtype</th>
<th>Repeated Measures MANOVA</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Husbands</td>
<td>Wives</td>
</tr>
<tr>
<td>MSQ</td>
<td>p=.129</td>
<td>p=.070</td>
</tr>
<tr>
<td>DAS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overall p=129</td>
<td>.240</td>
<td>.011</td>
</tr>
<tr>
<td>Univariate</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dyadic Consensus</td>
<td>.215</td>
<td>.191</td>
</tr>
<tr>
<td>Dyadic Satisfaction</td>
<td>.080</td>
<td>.092</td>
</tr>
<tr>
<td>Affective</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Expression</td>
<td>.857</td>
<td>.571</td>
</tr>
<tr>
<td>Dyadic Cohesion</td>
<td>.761</td>
<td>.302</td>
</tr>
<tr>
<td>PIQ</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overall p=.741</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Univariate</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Romantic Love</td>
<td>.556</td>
<td>.157</td>
</tr>
<tr>
<td>Supportiveness</td>
<td>.233</td>
<td>.035</td>
</tr>
<tr>
<td>Communication Ease</td>
<td>.624</td>
<td>.107</td>
</tr>
<tr>
<td>SASB-Interpersonal</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Affiliation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overall p=.032</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Univariate</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other Initiates</td>
<td>.183</td>
<td>.028</td>
</tr>
<tr>
<td>Other Responds</td>
<td>.077</td>
<td>.019</td>
</tr>
<tr>
<td>I Initiate</td>
<td>.007</td>
<td>.090</td>
</tr>
<tr>
<td>I Respond</td>
<td>.095</td>
<td>.200</td>
</tr>
<tr>
<td>Autonomy</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overall p=.557</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Univariate</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other Initiates</td>
<td>.540</td>
<td>.159</td>
</tr>
<tr>
<td>Other Responds</td>
<td>.303</td>
<td>.694</td>
</tr>
<tr>
<td>I Initiate</td>
<td>.289</td>
<td>.236</td>
</tr>
<tr>
<td>I Respond</td>
<td>.393</td>
<td>.024</td>
</tr>
<tr>
<td>AC</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Desired/Perceived</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Change Overall</td>
<td>p=.365</td>
<td>p=.004</td>
</tr>
<tr>
<td>Univariate</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Desired Change</td>
<td>.264</td>
<td>.193</td>
</tr>
<tr>
<td>Perceived Change</td>
<td>.484</td>
<td>.001</td>
</tr>
</tbody>
</table>
Figure 11. Bar chart showing MSQ means for alcoholic husbands and nonalcoholic wives by cluster group.

Figure 12. Graph of the DAS subscale z-score means for alcoholic husbands by cluster group.
husbands and wives by subtype and by subtype overall, shows this tendency most clearly (Appendix G).

Psychosocial intimacy was measured by the PIQ, however, since the items of this measure have different referents for husbands and wives (i.e. rather than a common referent such as "the marital relationship", a male respondent considers his wife, and a female respondent considers her husband), no repeated measures MANOVA could be conducted. The oneway MANOVA by subtype which was conducted showed significance for nonalcoholic wives by subtype (p=.030), with the subscale Supportiveness being significant at the univariate level (p=.035). Romantic Love and
Communication Ease both showed trends towards significance (Table 20). Figures 14 and 15 show profiles using mean subscale scores for the alcoholic husbands and nonalcoholic wives by cluster group. There was an overall trend for Group Three (SSP) to have the highest levels of psychosocial intimacy in the marital union with Group One (SIP) having the lowest levels (see Appendix G).

The SASB-Interpersonal scale was also analyzed using only oneway MANOVAs by subtype due to the absence of a common referent for husbands and wives. The Affiliation and Autonomy subscales were analyzed independently. Significance was found for both the alcoholic husbands and nonalcoholic wives by subtype on the Affiliation subscales, and a trend towards significance was found.

**PIQ Means by Group: Husbands**

![PIQ Means by Group: Husbands](image)

Figure 14. Graph of the PIQ subscale means for alcoholic husbands by cluster group.
Figure 15. Graph of the PIQ subscale means for nonalcoholic wives by cluster group.
for nonalcoholic wives only on the Autonomy subscales (Table 20). Figures 16 to 19 show profiles of the Affiliation and Autonomy subscale means scores for husbands and wives by subtype. Once again, the overall trend is for Group One (SIP) husbands and wives to have lower scores than the other two groups. This is seen clearly with the Affiliationsubscales (Figures 16 and 17), however, the position of Group Two (MMP) vis-a-vis Group Three (SSP) is reversed for the wives compared to husbands (see Appendix G).

Analysis of the AC was divided into two kinds: those for alcoholic husbands and nonalcoholic wives considered separately.

SASB-Inter. Affiliation: Husbands

Figure 16. Graph of the SASB-Interpersonal Affiliation subscale means for alcoholic husbands by cluster group.
**SASB-Inter. Affiliation: Wives**

![Graph of the SASB-Interpersonal Affiliation subscale means for nonalcoholic wives by cluster group.](image)

**SASB-Inter. Autonomy: Husbands**

![Graph of the SASB-Interpersonal Autonomy subscale means for alcoholic husbands by cluster group.](image)
SASB-Inter. Autonomy: Wives

Figure 19. Graph of the SASB-Interpersonal Autonomy subscale means for nonalcoholic wives by cluster group.

and those in which they were considered jointly, as a couple.
Change subscales were significant for wives by subtype (p=.004), with Perceived Change being significant at the univariate level as well (p=.001) (Table 20). Figures 20 and 21 show graphs of the AC Change subscale means for the alcoholic husbands and nonalcoholic wives by subtype, respectively. In the case of the wives' scores, Group One (SIP) had the highest means for Desired and Perceived Change, with Groups Two (MMP) and Three (SSP) being indistinguishable from one another.

Considered as couples, there was a significant difference by subtype for the Change subscales (p=.089), with Perceived Change reaching significance at the univariate level (p=.018) (Table
21). Once again, Group One (SIP) had the highest scores, however, in this case there was more separation between the other two groups with Group Two (MMP) having the lowest mean values (Figure 21). Conversely, Group One (SIP) had the lowest Perceptual Accuracy scores and Group Three (SSP) had the highest (Figure 23)(also, see Appendix G).

Table 21

Marital Measures: MANOVA and Univariate Significance Summary for Couples by Cluster Group

<table>
<thead>
<tr>
<th>Instrument/Subscale</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>AC</td>
<td></td>
</tr>
<tr>
<td>Change &amp; Perceptual Accuracy</td>
<td></td>
</tr>
<tr>
<td>Overall</td>
<td>p = .089</td>
</tr>
<tr>
<td>Univariate s</td>
<td></td>
</tr>
<tr>
<td>Desired Change</td>
<td>.366</td>
</tr>
<tr>
<td>Perceived Change</td>
<td>.018</td>
</tr>
<tr>
<td>Perceptual Accuracy of Change:</td>
<td></td>
</tr>
<tr>
<td>Male's perception of Female</td>
<td>.226</td>
</tr>
<tr>
<td>Female's perception of Male</td>
<td>.830</td>
</tr>
</tbody>
</table>

Hypothesis (2c): Assessment of Differences at the Family Level of Functioning

The MANOVA results for the FACES-III measure showed significance for person (p = .088) with trends towards significance for nonalcoholic wives by subtype (p = .176) and person by subtype interaction (p = .184). The probability values are given in Table 22. The Cohesion and Adaptability subscale means are charted for
the alcoholic husbands and nonalcoholic wives by group in Figures 24 and 25. For the husbands, Group Two (MMP) had the highest means for both Cohesion and Adaptability, whereas Groups One (SIP) and Three (SSP) were indistinguishable on both subscale means. The nonalcoholic wives showed the same pattern as the alcoholic husbands for the Adaptability subscale, although in a less pronounced way (Figure 24). On the Cohesion subscale, however, the three groups of nonalcoholic wives were more separated out, with Group Three (SSP) having the highest mean

AC Change Indices: Husbands

AC Change Indices means

Figure 20. Graph of the AC Change subscale means for alcoholic husbands by cluster group.
AC Change Indices: Wives

Figure 21. Graph of the AC Change subscale means for nonalcoholic wives by cluster group.

AC Change Indices: Couples

Figure 22. Graph of the AC Change subscale means for couples by cluster group.
AC Perceptual Accuracy: Couples

![Graph of the AC Perceptual Accuracy subscale means for couples by cluster group.](image)

Figure 23. Graph of the AC Perceptual Accuracy subscale means for couples by cluster group.

score and Group One (SIP) having the lowest (Figure 25) (also, see Appendix H).

The results for the FES showed only a significance for person on the repeated-measures MANOVA (p=.027) with the subscales Independence and Control being significant at the univariate level and Organization showing a trend to significance. The probability values for the overall equations and the univariate tests are given in Table 22. Figure 26 shows the profile of subscale means for husbands compared to that for wives, while Figures 27 and 28, respectively, show the husbands' and wives' means broken down by subtype. Although no clear pattern can be discerned for the wives by subtype scenario, with
the husbands, Group Two (MMP) consistently scored highest on the more "desirable" subscales (i.e. Cohesion, Expressiveness, Independence and Organization) and lowest on the less "desirable" subscales (i.e. Conflict and Control) (see Appendix H).

Satisfaction with family functioning in terms of Cohesion and Adaptability was measured by the FS scale. Significance was found for nonalcoholic wives by subtype (p=.071) and a trend towards significance was found for person (p=.130) and subtype by person (p=.124). Table 23 shows the probability values obtained for the FS analyses. Figure 29 is a bar chart showing the FS mean scores.

<p>| Table 22 |
|-----------------|-----------------|-----------------|-----------------|-----------------|
| <strong>Family Measures: MANOVA and Univariate Significance Summary for Alcoholic husbands and Nonalcoholic wives by Subtype</strong> | <strong>Multivariate One-Way ANOVA by Subtype</strong> | <strong>Repeated Measures MANOVA</strong> |</p>
<table>
<thead>
<tr>
<th>Instrument/Subscale</th>
<th>Husbands</th>
<th>Wives</th>
<th>Subtype</th>
<th>Person</th>
<th>Interaction</th>
</tr>
</thead>
<tbody>
<tr>
<td>FACES III</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Univariate</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cohesion</td>
<td>.306</td>
<td>.053</td>
<td>.202</td>
<td>.028</td>
<td>.052</td>
</tr>
<tr>
<td>Adaptability</td>
<td>.266</td>
<td>.894</td>
<td>.439</td>
<td>.826</td>
<td>.664</td>
</tr>
<tr>
<td>FES</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overall</td>
<td>p=.387</td>
<td>p=.358</td>
<td>p=.495</td>
<td>p=.027</td>
<td>p=.382</td>
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<tr>
<td>Univariate</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cohesion</td>
<td>.389</td>
<td>.327</td>
<td>.970</td>
<td>.538</td>
<td>.040</td>
</tr>
<tr>
<td>Expressiveness</td>
<td>.321</td>
<td>.882</td>
<td>.446</td>
<td>.414</td>
<td>.690</td>
</tr>
<tr>
<td>Conflict</td>
<td>.095</td>
<td>.576</td>
<td>.166</td>
<td>.320</td>
<td>.572</td>
</tr>
<tr>
<td>Independence</td>
<td>.197</td>
<td>.321</td>
<td>.123</td>
<td>.043</td>
<td>.868</td>
</tr>
<tr>
<td>Organization</td>
<td>.451</td>
<td>.307</td>
<td>.672</td>
<td>.130</td>
<td>.095</td>
</tr>
<tr>
<td>Control</td>
<td>.084</td>
<td>.359</td>
<td>.171</td>
<td>.005</td>
<td>.150</td>
</tr>
</tbody>
</table>
for alcoholic husbands and nonalcoholic wives by subtype. Whereas for alcoholic husbands Group Two (MMP) has the highest mean and Groups One (SIP) and Three (SSP) are roughly equivalent, for nonalcoholic wives more separation of the means is in evidence, with Group Three (SSP) having the highest mean and Group One (SIP) having the lowest. The position of Group Two (MMP) vis-a-vis Group Three (SSP) is reversed from alcoholic husbands to nonalcoholic wives and may account for the trend towards significance for the interaction (see Appendix H).

Results for the PSS-Family are given in Table 23. A significance was found for person and trends towards significance found for nonalcoholic wives by subtype and subtype overall. Figure 29 shows the barchart of mean scores for alcoholic

**FACES III Cohesion: Husbands and Wives**

![FACES III Cohesion Means Chart]

*Figure 24. Bar chart showing the FACES-III Cohesion subscale means for alcoholic husbands and nonalcoholic wives by cluster group.*
Figure 25. Bar chart showing the FACES-III Adaptability subscale means for alcoholic husbands and nonalcoholic wives by cluster group.

Figure 26. Graph of the FES subscale means for alcoholic husbands and nonalcoholic wives.
FES Means by Group: Husbands

FES subscale means

Figure 27. Graph of the FES subscale means for alcoholic husbands by cluster group.

FES Means by Group: Wives

FES subscale means

Figure 28. Graph of the FES subscale means for nonalcoholic wives by cluster group.
husbands and nonalcoholic wives by subtype. For both husbands and wives, Group One (SIP) had the lowest mean score. In the husbands' case, however, Groups Two (MMP) and Three (SSP) are indistinguishable, whereas for the wives there is again more separation among the groups with Group Three (SSP) having the highest mean and Group One (SIP) having the lowest (see Appendix H).

Hypothesis (2d): Assessment of Differences at the Social Level of Functioning

Results for the PSS-Friends (PSS-Fr) are given in Table 23. A significant difference was found for person (p<.001) and trends toward significance were found for nonalcoholic wives by subtype (p=.158) and for the interaction between person and subtype (p=.177).

Table 23

<table>
<thead>
<tr>
<th>Instrument</th>
<th>Univariate Oneway ANOVA by Subtype</th>
<th>Repeated Measures MANOVA</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Husbands</td>
<td>Wives</td>
</tr>
<tr>
<td>FS</td>
<td>p=.480</td>
<td>p=.071</td>
</tr>
<tr>
<td>PSS-Family</td>
<td>p=.469</td>
<td>p=.189</td>
</tr>
<tr>
<td>PSS-Friends</td>
<td>p=.394</td>
<td>p=.158</td>
</tr>
</tbody>
</table>
FS Means by Group: Husbands and Wives

Figure 29. Bar chart showing the FS means for alcoholic husbands and nonalcoholic wives by cluster group.

PSS-Family: Husbands and Wives

Figure 30. Bar chart showing the PSS-Family means for alcoholic husbands and nonalcoholic wives by cluster group.
Figure 31 shows the bar chart of mean scores for alcoholic husbands and nonalcoholic wives by subtype. For husbands, Group One (SIP) had a much lower mean, whereas Groups Two (MMP) and Three (SSP) were almost indistinguishable. For wives, Group Three (SSP) had the lowest mean, whereas Groups One (SIP) and Two (MMP) were indistinguishable. This difference in pattern for the men and women likely accounted for the trend toward a significant interaction effect. It is interesting to note that the pattern of means was the same for the men on the PSS-Fa and the PSS-Fr, however, the women’s patterns were quite dissimilar (compare Figure 30 and Figure 31) (see Appendix H).

Hypothesis (2e): Assessment of Differences at the Therapeutic Level of Functioning

Results for the TAS-rev are given in Table 24. No significant differences were found for alcoholic husbands by subtype or nonalcoholic wives by subtype. For the husbands, Groups One (SIP) and Two (MMP) had the lowest means (113.55 and 113.90, respectively), however, the difference between them and the mean for Group Three (SSP) (115.93) was negligible. Similarly, the means for the women by subtype evidenced little dispersion; Group Two (MMP) had the highest mean (120.00), with Groups One (SIP) and Three (SSP) trailing (118.53 and 117.00, respectively). Overall subtype analysis, person differences and subtype by person differences were not conducted due to the low subsample size of the women’s group (n=39); in order to conduct
Figure 31. Bar chart showing the PSS-Friends means for alcoholic husbands and nonalcoholic wives by cluster group.

Table 24

Therapeutic Measure (TAS-revised): One-way ANOVA Summary for Alcoholic husbands and Nonalcoholic wives by Subtype

<table>
<thead>
<tr>
<th>Group</th>
<th>n</th>
<th>Mean</th>
<th>p-value</th>
<th>n</th>
<th>Mean</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>21</td>
<td>113.55</td>
<td></td>
<td>6</td>
<td>118.53</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>44</td>
<td>113.90</td>
<td></td>
<td>20</td>
<td>120.00</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>26</td>
<td>115.93</td>
<td></td>
<td>13</td>
<td>117.00</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>91</td>
<td>114.40</td>
<td>p=.839</td>
<td>39</td>
<td>118.77</td>
<td>p=.840</td>
</tr>
</tbody>
</table>
the repeated measures MANOVA required, the men's subsample size would have to have been reduced to 39 as well. It is interesting to note, however, that the mean for the women (118.77) was higher than that for the men (114.40) (see Appendix I).

**TAS-revised: Husbands and Wives**

Figure 32. Bar chart showing the TAS-revised means for alcoholic husbands and nonalcoholic wives by cluster group.
CHAPTER V: DISCUSSION

This chapter summarizes results found in the study, placing them in the larger context of alcoholic subtyping research and research on alcoholism and the family. Limitations of the study are outlined and the generalizeability of the results are detailed. Overall conclusions and future recommendations for research will be presented at the end of the chapter.

Summary and Conclusions

Hypothesis #1

The first hypothesis of this study stated that:

An empirically-derived typology of alcoholism, based on a multidimensional measurement approach, will demonstrate statistical adequacy, conceptual meaningfulness, and relevance in terms of previous subtyping research.

The results indicated strong support for the statistical adequacy of the resultant alcoholic typology. A clear, unambiguous cluster analytic solution was obtained which demonstrated significant differences between cluster groups on the alcohol use variables utilized in the cluster analysis. The three-group solution showed indications of reliability through the Discriminant Function Analysis procedure. The external validity of the solution was assessed by using a MANOVA with a set of external criteria variables (the subscales of the SCQ-39)
and a series of chi-square tests with drinking style characteristics. The results of these analyses gave strong evidence that the cluster groups were distinct in terms of important alcohol use variables not used in their derivation.

At this point a set of conclusions can be made, as follows:

1) The empirical derivation was successful. The particular approach used in this study to produce a typology of alcoholism satisfied the criteria outlined by Babor and Dolinsky (1988) for a useful classification system. In particular, the typology displayed homogeneity within subtypes, heterogeneity across subtypes, comprehensiveness (in that it accounted for all of the cases in the sample), specificity (in that the defining characteristics were closely related to alcoholism), multidimensionality, utility, and evidence of external validity.

2) The cluster groups are recognizable. Group One can be labelled "Severe, Irregular Pattern Drinkers" (SIP); Group Two can be labelled "Moderate, Mixed Pattern Drinkers" (MMP); and Group Three can be labelled "Severe, Steady Pattern Drinkers" (SSP). The description of Groups One (SIP) and Three (SSP) and the differences found between them are similar to other distinctions made in the literature, such as continuous/binge, steady/episodic, or gamma/delta (Tomsovic, 1974; Conners et al., 1986; Jacob & Leonard, 1988; Babor & Dolinsky, 1988), Type B/Type C (Morey et al., 1984), Type 1/Type 2 (Cloninger et
al., 1985), and Type A/Type B (Babor et al., 1992).

3) Using multiple alcohol use related variables provided richer results. It was found, for example, that the Binge/Chronic distinction alone is not sufficient to subtype alcoholics -- severity is a crucial factor as well. This finding reinforces work done by previous researchers, notably Babor and Dolinsky (1988) who showed empirically that taxonomies based upon a single variable are inadequate. The findings of the current study also dovetail with those of Morey et al. (1984), whose empirically-derived three-group typology led them to posit a hybrid model which incorporates both categorical and dimensional subtyping approaches.

4) The derived alcoholic subtypes were further distinguished by drinking style variables. Variables such as usual place and time of drinking, and whether drinking was done typically alone or with others differentiated the subtypes strongly. Some of these variables have been noted as important in research on alcoholism and the family (Jacob et al., 1983; Dunn et al., 1987; Bate, 1994). The difference in drinking style may account for differences found across the ecosystemic domains (see below).

5) There were striking differences between the subtypes in terms of their perception of their own vulnerability to heavy drinking across a wide variety of personal states and social situations.
Group Three (SSP) men had a significantly higher mean IDS-42 total score than both Group One (SIP) and Group Two (MMP) men, indicating that they experienced themselves to be much more at risk for heavy drinking. This difference may relate to the internalizer/externalizer distinction made by Beutler et al. (1993), which posits that Steady drinkers (i.e. Group Three) rely more on a self-reflective style of coping with stress, exhibiting more neuroticism and anxiety than Binge drinkers (i.e. Group One), who act out with more impulsive, aggressive and sociopathic behaviors. In the present study, however, there was little difference between the SSP drinkers and the SIP drinkers in terms of anxiety and hostility as measured by the SCL-90-R.

Discussion of Hypothesis #1 Results

The results of the empirical subtyping procedure used in this study produced three subtypes, two of which are comparable to subtypes found in much of the previous subtyping research. Group One drinkers (SIP) share many of the characteristics found for binge (episodic, gamma) drinkers, and Group Three drinkers (SSP) are similar to steady (continuous, delta) drinkers. Most of the literature focuses on the differences between these two subtypes and many of those differences were found in the present study. The existence of the Group Two (MMP) drinkers presents a challenge to the widespread acceptance of dichotomous alcoholic taxonomies. This relatively large group was made up of men reporting indications of much more moderate alcohol dependency
and alcohol-related consequences.

Concerning the alcohol cluster variables, Group One (SIP) drinkers had higher MAST scores, more alcohol-related problems, a higher consumption rate, and a higher proportion of alcoholic family members than did Group Three (SSP). These differences match those found by Conners et al. (1988), Tomsovic (1974), Babor and Dolinsky (1988), Jacob and Leonard (1988), Morey et al. (1984) and Babor et al. (1992). Although there was a consistent pattern of differences between Group One (SIP) and Group Three (SSP) on these variables, they were not significantly different for the most part. Of these variables, only alcohol-related legal problems, a component of the alcohol-related problems, proved to discriminate between the two groups in a statistically significant way (see Table 15).

The remaining alcohol cluster variables, ADD, IDS-42 and DrnkPatt, sharply differentiated Groups One (SIP) and Three (SSP) and with statistical significance (see Table 15). Comparing means on the ADD, a measure of the severity of present state alcohol dependence, Group Three (SSP) had a significantly higher mean (69.05) than did Group One (SIP) (55.58). This differs from results found by many researchers regarding the greater dependency symptoms reported by binge drinkers compared to steady drinkers (Conners et al., 1986; Tomsovic, 1974; Babor & Dolinsky, 1988; Morey et al., 1984; Babor et al., 1992). At the point in time captured by the data in this study, the Group Three ) drinkers (SSP) seem to be more dependent on alcohol than the
Group One drinkers (SIP), even though they show lower means for MAST scores, alcohol-related problems and typical drinking day consumption amounts.

Examination of the drinking style variables and other drinking characteristics also provide points of comparison and contrast with previous research. In the present study, a number of results corresponded with those found in previous work, such as, 1) indications of an earlier age of onset for Group One (SIP) versus Group Three (SSP) (Tomsovic, 1974; Epstein et al., 1995; Morey et al., 1984; Babor et al., 1992), 2) evidence of greater helpseeking behavior in Group One (SIP) versus Group Three (SSP) (Tomsovic, 1974; Babor et al., 1992), 3) indications of greater polydrug use in Group One (SIP) versus Group Three (SSP) (Babor et al., 1992; Morey et al., 1984) and, 4) a greater tendency to drink until intoxicated in Group One (SIP) compared to Group Three (SSP) (Morey et al., 1984).

Group One drinkers (SIP) were found to be more likely to drink out-of-home than in-home (69%), which corresponds with research by Jacob et al. (1983) and Dunn et al. (1987) regarding episodic drinkers. These researchers found, however, that steady drinkers were about equally likely to drink out-of-home or in-home, whereas in the present study the steady pattern group (Group Three) tended to drink mostly in-home (75%). With respect to a tendency to drink alone, Morey et al. (1984) found steady drinkers more gregarious and affiliative, and binge drinkers more socially withdrawn, whereas in the present study, Group One (SIP)
were somewhat more likely to drink with others (53%) and Group Three (SSP) more likely to drink alone (69%). This may be reflective of the composition of the subject pool used, in that, in contrast to previous studies, all participants had intact families.

In fact, it is somewhat surprising that so few discrepancies exist between the present research and previous work considering that the samples are so different. In this study, the alcoholic sample was 100% male and all in intact family settings. Most previous research, however, utilized samples that were of mixed gender and only about one-third married or common-law. The degree of consistency is also striking given that most of the previous research cited developed two-group taxonomies whereas in the present study three groups were derived. It seems important to closely compare the present results with those of certain key studies in the alcohol subtyping literature.

Comparison with Epstein et al. (1995)

Recent research conducted by Epstein et al. (1995) is one of the few in the subtyping literature which, like the present study, used a sample of alcoholic men in a stable, cohabiting relationship with a female partner. This research also stands out as one in which great rigor was used in the classification of the alcoholics into a typology based on drinking pattern. These factors, which set the research apart from the majority of other subtyping research, may also account for the fact that most of
the results (i.e. that the groups were not significantly different) were contrary to the majority of other research results, including those of the present study.

Although the sample used by Epstein et al. (1995) was very similar to the one used in the present study, there were substantial differences in how subtypes were derived. Where Epstein et al. used a single variable, drinking pattern, to carefully categorize the male alcoholics, the present study used seven variables including drinking pattern to empirically derive the drinking subtypes. Previous research has indicated that single-variable approaches to subtyping are inadequate (Babor & Dolinsky, 1988; Babor, Dolinsky et al., 1992).

In the present study, Irregular and Steady drinking patterns evenly divided the sample (50.8% and 49.2%, respectively) at the outset. The empirical derivation produced three groups, one almost entirely Irregular (93.5%), one entirely Steady (100%), and one which showed a mixed composition (61.7% Irregular and 38.3% Steady). It is important to note that the latter group was distinguished by less extreme scores on all alcohol measures and was composed of more than half of all the Irregular drinkers (37 out of 66) and about a third of all the Steady drinkers (23 out of 64). This provides strong evidence that subtyping cannot be done adequately using a one-dimensional approach; although Irregular and Steady drinking patterns are an important aspect of subtype, knowledge of drinking pattern alone does not seem sufficient to effectively subtype alcoholics.
Comparison with Babor et al. (1992)

The methodology used by Babor et al. (1992) was very similar to that used in the present study in that a biopsychosocial perspective was employed with an empirical, multi-dimensional assessment approach to deriving subtypes. Nevertheless, the research conducted by Babor et al. (1992) differed in the following important ways:

1) a two-group solution was forced rather than allowing the clustering procedure to determine the number of clusters;

2) drinking pattern was not used as one of the cluster variables;

3) variables were used in the cluster analysis which were not strictly related to alcoholism, such as indications of childhood disorders, personality traits (e.g. impulsivity), and psychological symptom counts (i.e. depression, antisocial personality, general anxiety);

4) in the sample of men employed, only 30% were married;

5) fewer standardized measures were used for the cluster analysis variables.

Despite these differences the results of the present study overlapped a great deal with those found by Babor et al. (1992). However, two important discrepancies stand out: 1) in the present study, Group Three (SSP) drinkers showed more severe dependency than Group One (SIP), whereas the opposite was true in the previous research for Type A (associated with Steady Pattern) compared to Type B (associated with Binge Pattern); 2) the
presence of three groups in the current study compared to two
groups in the previous one is another important difference.

**Comparison with Morey et al. (1984)**

The study conducted by Morey et al. (1984) used a methodology closely resembling the one used in the present study. In that research, only alcohol use variables were utilized for the derivation of subtypes and a rigorous use of the cluster analytic approach was taken (Morey et al., 1983). One important difference was that of sample composition: Morey et al. used a large group of general intake outpatients from an urban alcoholism treatment institute which was 79% male/21% female with 26% of the sample in intact marital relationships.

Their research resulted in a three-group typology, namely, Type A, Type B, and Type C. Type A (Early-stage problem drinkers) was described as "...a fairly heterogeneous group of individuals who showed evidence of alcohol abuse but who had not accrued symptoms of physical dependence on alcohol" (p. 415), Type B (Affiliative alcoholic) drinkers "...appeared more gregarious and socially oriented, tended to prefer beer, and tended to drink in a sustained manner" (p. 415), whereas Type C (Schizoid alcoholic) drinkers "...appeared more socially withdrawn and schizoid, preferred wine or liquor, tended to drink in binges, had more somatic complaints, and had a number of other psychological difficulties" (p.415). Type C drinkers were seen to be more advanced along the alcohol dependence syndrome continuum (Edwards
& Gross, 1976) than Type B drinkers and more likely to drink in an obsessive-compulsive manner.

Their results are very similar to those of present study with two major exceptions:

1) Group Three (SSP)(which matches up with Type B Affiliative alcoholics) was actually higher on the dependency measure (ADD) than Group One (SIP)(which matches up with Type C Schizoid alcoholics);

2) Group Three (SSP) men appeared to be much less affiliative than Group One (SIP) men, tending to drink at home, alone and in the daytime, whereas Group Three (SSP) men tended to drink out-of-home and with others.

These differences may be due to the differences in sample characteristics between the two studies. That the Group Three (SSP) men seemed less affiliative than Group One (SIP) men may also have to do with how affiliation is understood in the two studies. On the one hand, affiliation may be as superficial as proximity to others during drinking episodes or it may be as complex as how well one generally relates to others. Results regarding the ecosystemic evaluation of the groups (see below) suggests that Group Three (SSP) men are indeed more disordered in their ability to relate to others.

In general, the results of the present study endorse the hybrid model proposed by Morey and his associates (Morey et al., 1984; Morey & Skinner, 1986). In that model, features of both categorical and dimensional approaches to subtyping are combined,
in that the three subtypes both exhibit distinctive features and can be placed along the alcohol dependence syndrome continuum according to relative severity (see Appendix A). There are two important ways in which the present study does not support the hybrid model as outlined by Morey and associates. First, the results of the present study cast some uncertainty regarding which of the two more severely alcoholic subtypes (Group One or Group Three) are further along the alcohol dependence continuum. Secondly, the developmental aspect of the hybrid model is not supported by the current findings. Morey and associates posited that Type A (Early Stage Problem Drinkers) developed into either Type B or Type C drinkers as they became more severely dependent on alcohol. In the present study, the results indicate that Group Two (MMP) is composed not of early stage problem drinkers but of men who are moderately alcoholic, many of whom have had alcoholism problems for as long as the men in the other two groups. This suggests that the three subtypes found could represent three different endpoints of a developmental alcoholism which can be distinguished by both dimensional and categorical features.

Hypothesis #2

The second hypothesis of this study stated that:

Alcoholic men and their nonalcoholic spouses grouped according to the derived subtypes will differ in terms of their psychological functioning at the intrapsychic, marital, family,
social and therapeutic levels.

The results of the ecosystemic analysis of the husbands and wives grouped according to the husband's alcoholic subtype are complex and extensive. General trends can be discerned, however, both by examining the subtype and person differences which were statistically significant at a p<.10 level and, by examining the overall pattern of the results. The following conclusions can be made regarding the second hypothesis:

1) Differences between the alcoholic men as a group and the nonalcoholic women as a group were strong and consistent across all ecosystemic levels.

2) Consistent subtype differences were in evidence across the ecosystemic levels.

3) Subtype differences varied with person.

The subtype differences can be organized into several notable features:

(i) Statistically, the differences between the subtype groups appear more strongly in the wives' data than in the husbands' data, especially in the marital and family domains.

(ii) Group One (SIP) husbands and wives appeared to function the least well of the three subtypes across the ecosystemic levels.

The reported functioning of Groups Two (MMP) and Three (SSP) differed markedly depending upon person, as follows:

(a) Group Two (MMP) subtype drinkers (husbands), who are
much more moderate in their alcoholism than either Group One (SIP) or Group Three (SSP) subtype drinkers, generally reported better functioning across the ecosystemic levels than did Groups One (SIP) and Three (SSP).

(b) Group Three (SSP) subtype wives often reported better functioning in the marital and family domains than either Group One (SIP) subtype or Group Two (MMP) subtype wives. This was the case even though Group Three (SSP) drinkers appeared to be more severely alcohol-dependent than Group Two (MMP) drinkers, in that their ADD mean scores were higher (see Figure 3 and Table 15).

Discussion of Hypothesis #2 Results

Person Differences

On almost every instrument analyzed, there was a significant difference between the alcoholic men and the nonalcoholic women. Striking differences also appeared even when statistical comparison was not possible. For example, on the AC Change Indice Desired Change, the men’s mean was 22.80 while the women’s mean was 37.42, approximately the difference of one standard deviation.

In the intrapsychic realm, the nonalcoholic women revealed higher cognitive functioning, lower psychological distress scores, more friendly self-regard and a greater tendency towards controlling Self than did the alcoholic men.

In the marital domain, the wives reported a greater disposition toward marital separation and were less maritally
satisfied and experienced less psychosocial intimacy in the marriage than did the husbands. Likewise, compared to the men, the women reported less friendly regard for their spouses, indicated more desired change and less perceived change, and had a greater degree of perceptual accuracy regarding what changes were desired of them.

At the family level of the ecosystem, the nonalcoholic women reported experiencing more Cohesion, as measured by the FACES-III, than did the alcoholic men. Similarly, the women reported experiencing less Independence and Expressiveness in the family environment (FES), but more Organization, Conflict and Control than did the men. Even though the women reported experiencing greater social support from their families than the men did, they reported having less overall family satisfaction.

In the social domain, the wives perceived greater social support from their friends than did the husbands, and at the therapeutic level, the mean score for the women taking part in the therapy (n=39) was higher (118.77) than that for the men (n=91; mean=114.40).

Taken together, these results seem to indicate that the nonalcoholic wives were generally functioning much better in the various psychosocial domains than were the alcoholic husbands, however, their dissatisfaction with their marriages, their spouses, and aspects of family functioning were also very evident.
Subtype Differences

Results regarding the examination of subtype differences can once again be compared to findings in previous subtyping studies. Babor and Dolinsky (1988) found gamma (binge) alcoholics had higher mean MMPI and psychological distress scores than did delta (steady) alcoholics. Babor et al. (1992) found Type B drinkers (associated with binge drinkers) had greater current and lifetime psychopathological dysfunction and more life stress. Similarly, Morey et al. (1984) found binge drinkers (Schizoid, isolative subtype) had reported higher mean levels of psychopathology than continuous drinkers (Affiliative subtype). In the present study, however, Group One drinkers (Severe, Irregular Pattern) and Group Three drinkers (Severe, Steady Pattern) were roughly equivalent in the SCL-90-R mean scores, but had much higher mean scores than Group Two drinkers (Moderate, Mixed Pattern). Epstein et al. (1995), whose sample was more similar, also found no significant differences between steady and episodic drinkers on the SCL-90-R Global Severity Index, even though these researchers used only drinking pattern to subtype the alcoholics. As before, discrepancies may be accounted for by differences in sample composition and differences in the derived alcoholic taxonomies (i.e. two-group solutions versus three-group solutions). It is important to recall that all of the men in the present study were in intact family situations and that the Irregular and Steady groups (Groups One and Three) derived in the cluster analysis contained subsets of the total number of irregular and steady
drinking pattern men.

The pattern of differences found between the alcoholic subtypes in this study relates to previous findings on alcoholism and the family in interesting ways. Based on a program of research exploring the connection between drinking behavior and family behavior, Steinglass and his associates (Steinglass et al., 1971; Steinglass et al., 1977; Steinglass, 1979; Steinglass, 1981; Steinglass et al., 1985; Steinglass et al., 1987; Steinglass, 1992) posited that family regulatory functions, such as distance regulation and affective expression, differ systematically in conjunction with drinking subtypes. Their research suggested that Alternator families (in which the alcoholic is engaged in episodic, unpredictable binge drinking) form a kind of disengaged system which excludes the alcoholic, whereas Stable Wet families (in which the alcoholic is engaged in an active, highly predictable pattern of daily or weekend drinking) learn to accommodate gradually to the more slowly developing stresses (Steinglass et al., 1985). Results from the present study confirm the idea that family systems differ in their responses to the alcoholic drinking in the household depending upon the patterning of the behavior of the alcoholic. That these responses are not merely correlated with the severity of the alcoholism is evident given the relatively better functioning reported by the Group Three (SSP) wives, especially in the marital and family domains, despite the fact that Group Two (MMP) is much more moderately alcoholic while Group One (SIP)
and Group Three (SSP) drinkers are almost equally severely alcoholic.

Steinglass and his associates (Steinglass et al., 1987) concluded that both Alternator and Stable Wet families could accommodate equally well to the alcoholic drinking. The Stable Wet pattern presents predictability, but challenges that are always present, threatening to wear the family down. On the other hand, the Alternator pattern is highly unpredictable, throwing sudden destabilizing episodes at the family, yet providing long periods of sobriety, and possibly, normalcy.

The results of the present study run counter to the idea held by Steinglass et al. (1987) that families can accommodate equally well to each alcoholic subtype. Not only did Group One (SIP) husbands and wives generally report the least healthy functioning of the three subtypes, but Group Three (SSP) wives often reported the most healthy functioning of the three groups, despite the severity of their husbands' alcoholism. Even the notion that accommodation can result in a stable, albeit unhealthy, system is not supported by the results. There are differences in the MSQ means (Figure 11) indicating variable marital stability across the subtypes: Group One husbands and wives reported a greater tendency toward marital dissolution than did Group Three husbands and wives.

These results support previous research which has consistently found an episodic or irregular drinking pattern to be associated with less healthy marital and family functioning
compared to a steady drinking pattern. Jacob and his associates (Jacob & Krahn, 1988; Jacob & Leonard, 1988), for example, found episodic alcoholics to be less effective in problem-solving sessions with their wives compared to their steady pattern counterparts. Investigating the children's perspective, Bate (1993) found that children living in irregular pattern drinking households experienced their families as functioning less well than those children living in steady pattern drinking households. Taken together, these findings strongly confirm that drinking subtypes affect the family system differentially. Although it is likely that some degree of accommodation has taken place in all of the families in this study (that the marriages have existed for an average of 12 years supports this), it seems that having to accommodate to the Group One (SIP) alcoholic subtype takes a greater toll on the family than having to accommodate to either the Group Two (MMP) or Group Three (SSP) alcoholic subtypes.

Steinglass and his associates (Davis, Berenson, Steinglass, & Davis, 1987) have posited that in the course of accommodating to the alcoholic behavior, the drinking behavior itself may come to have an adaptive function for the family. Empirical support for this idea has come from research by Jacob and his associates (Jacob & Krahn, 1988; Jacob & Leonard, 1988). They found that while intoxicated episodic alcoholics became less effective problem solvers in sessions with their wives, steady pattern alcoholics became more effective problem solvers when intoxicated. In addition, they found that higher alcohol
consumption was correlated with higher marital satisfaction and reduced psychological symptomatology in the wives of the steady pattern drinkers but not for their episodic pattern counterparts (Jacob et al., 1983). Further research determined that a positive correlation between amount of drinking and wives' marital satisfaction held for steady drinkers only if they drank alcohol primarily in the home. No such association existed for steady, out-of-home drinkers or for episodic drinkers, all of whom were out-of-home drinkers (Dunn et al., 1987).

Results from the present study parallel those outlined above in striking ways. Group Three (SSP) wives generally reported better psychological functioning than Group One (SIP) wives, and often reported better functioning than Group Two (MMP) wives despite the fact that their alcoholic husbands' alcoholism seemed quite pronounced. Group Three (SSP) men showed the most severe current dependency levels, the highest levels of risk for heavy drinking, and levels of psychological distress comparable to those of Group One (SIP) (see Figure 3). In addition, these men reported drinking heavily on a daily basis, as their mean TotalSDU was 21.20 (SD=7.06), or approximately 18 beer, three bottles of wine, or one 26 oz. bottle of liquor per day. What seems significant, however, was that most of these men reported that they drank in the home (75%), alone (69%) and in the daytime (59%). Thus, it can be presumed that:

(1) proximity, as well as predictability in drinking style, allows family members to accommodate more easily to alcoholic
behavior; and, (2) that some aspects of the alcoholic behavior of the steady, in-home drinker have an adaptive value attached to them with respect to the family.

This latter point has been addressed by Jacob and his associates (Jacob & Krahn, 1988; Jacob & Leonard, 1988, Dunn et al., 1987; Leonard, 1990). They have speculated that the steady alcoholic, who may have an inadequate personality, uses alcohol to at least partially overcome anxiety, guilt, a lack of assertiveness and passivity in order to become more involved in the family. The alcohol consumption then, allows for an increase in interactions essential to family functioning, such as a more energized approach to problem solving. This, in turn, increases marital satisfaction and reinforces the high-rate drinking of the steady pattern drinker. In contrast, the increased negativity of the episodic pattern drinker when drinking may serve only himself and not the family. As Jacob has commented:

> it seems likely that angry-hostile behavior expressed by the [episodic alcoholic] husband during periods of drinking might prevent active consideration of conflictual issues -- a process that comes to be characterized by coercive control features whereby he avoids dealing with conflictual issues by expressing high levels of negativity while drinking. To the extent that such interchanges become embedded in family life, the alcoholic’s drinking can be seen as preventing him from acknowledging and dealing with a range of marital and family problems (p. 332).

Thus, the combination of a lack of proximity, an unpredictable drinking pattern, and a more negative interactional style when
drinking may be more difficult for family members to cope with in addition to the already significant stress alcoholism brings to family life.

Limitations of the Study

Limitations of the Research Design

A number of limitations of the present study derive from the research design used.

The men in the study sample were entering into a program of treatment as data was collected regarding their alcohol use. Some of the measures of drinking characteristics used referred to the period three months prior to the point of data collection. It is possible that during this time the men were already trying to control their drinking. In the process of trying to quit or to control their drinking, they may have disrupted their usual drinking habits. This may have resulted in alcohol use data which was not entirely representative of the men in the study.

Limitations inherent in a cluster analytic procedure must be noted. A cluster solution is influenced by the variables used for derivation, the clustering method used, the approach to determining the number of clusters, and the sample size. Even using the same clustering procedure, there is sufficient interplay between the number of variables, the kind of variables and the sample size to produce substantial differences in cluster solutions. A measure of assurance can be taken in the present
study for four reasons: 1) the preliminary cluster analytic procedures produced similar results to the final solution employed, 2) evaluation of the reliability of the cluster solution was strong, 3) there were many significant differences between the three subtypes on alcohol use characteristics and a variety of ecosystemic measures, and, 4) there was correspondence between the subtypes identified in this study and those identified in previous research. Together, this evidence suggests that the final cluster solution derived was not merely coincidental but based on naturally-occurring subtypes.

The present study relied heavily upon self-report measures. This type of data collection is subject to various kinds of response bias, such as social desirability, acquiescence response set, carelessness, and fatigue effects. To the extent that these sources of bias were operating, the data collected may not accurately portray the nature of the constructs purported to be measured. On the other hand, mean scores on the EMCS indicated that there was no strong set to portray the marriage in a favourable light, indeed, couples had to be maritally distressed to participate. In addition, most of the instruments used in the study were constructed so as to counter response sets, and the instrument battery was constructed so as to prevent fatigue effects from occurring.

An issue more specific to this study is that of the confidentiality of responses. Although a large portion of the self-report measures were completed under the supervision of
trained researchers, a substantial package of material was taken home to be completed. It is possible that the integrity of the data was compromised by having couples complete forms at home where they may not have kept their answers private or felt that they could not answer honestly without scrutiny. In anticipation of this source of response distortion, the need for confidentiality was emphasized to the participants and they were urged to use the procedures developed in order to promote honest responding and to ensure privacy.

A final limitation of the design involved the necessary treatment of the subsample of nonalcoholic wives in the study as if it was a homogeneous group. Although there were no differences in the demographics of the wives classified according to their husbands' alcoholic subtype, there were likely other kinds of differences in the wives which interacted significantly with the impact of their husbands' alcoholism. The present data does not allow for the determination of whether these mediating factors had a random disbursement in the subsample of wives or if they had a more systematic effect on the results.

Limitations of Field-based Research

Some specific limitations exist regarding field-based research. In this study, the data collection process was linked to treatment in that the alcoholics and their families were part of a research project which involved receiving treatment and completing a instrument battery. The connection between self-
reporting and imminent treatment may have introduced some response bias into the data collection process. Knowing they were about to receive treatment may have had the effect of augmenting the anxiety that the family members felt or, in other cases, may have lead to feelings of relief that positive action was being taken. How systematic or extensive this source of distortion was cannot be readily assessed. However, since the classification process focused on historical behavior, that is, alcohol use habits, rather than on current psychological distress, the influence of this kind of bias on the results of the study was likely minimal.

Other limitations concerned the necessity of capturing a sample of a specific population for TARP; this meant that not all families who presented themselves for involvement in the project were accepted. On the other hand, out of the 150 families screened into the project, 20 families either dropped out before pretreatment data could be gathered, or did not provide complete data, and so had to be excluded from the final sample used for the present study.

**Generalizability**

There are several considerations in connection to the external validity of the study. The research was a field-based project that was conducted in two outpatient clinical sites with participants who were paid volunteers. Participating families came to the study from two main sources: 1) normal clinic intake
procedures and, 2) responses to the public attention given to TARP by local media. The sample was further constrained by the inclusion characteristics sought, as identified in Chapter III. As such, the study participants represent a particular subset of the total alcohol-dependent population and generalizations beyond this subset of alcoholics and families are not justified.

An important feature of the study was the use of an extensive set of instruments which was administered to the participants. Some of the families were screened out due to a lack of language skills or ability to understand the questionnaires; others dropped out or did not adequately complete them. Thus, another characteristic of the sample was that the participants were able to adequately complete a lengthy battery of self-report inventories. This represents a further qualification for the generalizability of the results.

Generalizing from research subjects to clinical populations has been questioned by some researchers (Kasdin, 1986) because of the potential differences between the two groups due to volunteerism. Thus, generalizations of the results of this study, which derived from the use of volunteer participants, to larger clinical populations should be advanced with some caution.

It is important to note that although data for the present study was collected at an urban and a rural site, there were no differences in the three groups in terms of site. Consequently, the results of the study can be generalized, with caution, to all clients in urban and rural outpatient clinic settings with
similar demographic characteristics as those of the study sample.

Conclusions

The main conclusions to be drawn from the results of this study arise from the confirmation of the two research hypotheses: that a multidimensional measurement approach to empirical subtyping was successful and that the subtypes differed across ecosystemic levels. Based on a clinical, volunteer sample of male alcoholics and their nonalcoholic wives, who were maritally distressed yet living in intact family situations, the following conclusions can be made:

1. The sample of alcoholics is heterogeneous and is composed of homogeneous alcoholic subtypes.

2. Three alcoholic subtypes could be identified, as follows:
   a) severe alcohol-dependent, irregular drinking pattern;
   b) moderate alcohol-dependent, mixed drinking pattern; and
   c) severe alcohol-dependent, steady drinking pattern.

3. These subtypes were best identified using multiple alcohol use indices. Indications of the severity of alcohol dependence, as well as distinctive characteristics, such as family history of alcoholism and drinking pattern were necessary for classification purposes. These subtypes could be further distinguished by drinking style variables, for
example, usual time, place and social context of drinking.

4. A hybrid model of alcoholism, combining elements of dimensional and categorical approaches, was supported, but with three rather than two possible endpoints for the developmental progression.

5. The nonalcoholic wives functioned better psychologically than their alcoholic husbands, however, they are more dissatisfied with their marriages, with their spouses and with aspects of family functioning.

6. The behavior of the alcoholic subtypes impacts differentially on their spouses and families. Evidence of this impact can be seen across psychosocial domains.

7. Families can accommodate to alcoholic behavior, however, the success of this accommodation varies with the subtype of the alcoholic.

8. An adaptive value for the family may accrue to the alcoholic behaviors of some subtypes.

In this study, an empirical, multidimensional measurement approach was used to derive subtypes from a sample of alcoholics, and this approach was seen to be successful. Accordingly, it
would seem desirable for future subtyping studies to adopt a similar approach. Likewise, it is important that future research in the realm of alcoholism and the family acknowledge the heterogeneity of the alcoholic population.

For researchers pursuing subtype differences with respect to the family in particular, a multidimensional measurement approach should be used to classify the alcoholic sample. Spouses should be considered in this research because subtype differences appear to show up more strongly through family members. It also seems advisable, wherever it is appropriate and practical, that the ecosystemic approach be used in this type of research. At a minimum, researchers investigating alcoholism and the family should take into consideration the important contexts surrounding the focal point of study.

Clinical Relevance

There are some important conclusions to be drawn from this study which have a specifically clinical relevance.

One is the importance of identifying irregular or binge drinking as a major source of stress for couples and families. This style of drinking is not so readily acknowledged either by the drinker or by family members. Instead, there tends to be a popular misconception that if daily or regular drinking is not occurring, then there is no alcoholism, and hence, no real problems, either for individuals or for families. The results of the present study confirm previous research which indicates quite
the opposite. Thus, it is important for clinicians and for the public to be made more aware of the special and potentially serious difficulties associated with binge drinking.

Another aspect of the present findings which have a clinical relevance is the apparent confirmation of the notion that interpersonal variables account for some of the more important differences between subtypes. Although the data regarding the therapeutic alliance was non-significant, the bulk of the differences found between the groups in this study do have an interpersonal basis, that is, most of the ecosystemic domains assessed involved psychosocial functioning. This leads to the hypothesis that treatment matching with these subtypes will require the use of clinical approaches which differ in crucial ways along the dimension of interpersonal involvement.

**Future Research and Recommendations**

The first recommendation for further research is directed to the larger project, TARP. As a major portion of this overarching research had to do with treatment outcome, it would be appropriate to examine the subtypes derived in the present study with respect to possible differential treatment outcomes. This could be examined in two ways: 1) since the treatments were found to be equivalent, an overall examination of treatment outcome could be done, and 2) treatment/subtype matching could be explored by considering the treatments separately. Such a study would assess the predictive validity of the derived typology and
address the issue of treatment matching. Beutler et al. (1993), for example, have posited that the externalizing subtype may respond more favourably to cognitive-behavioral interventions while the internalizing subtype may respond better to interpersonal interventions.

For the purpose of further investigating the generalizability of the derived alcoholic typology found in this study, a similar procedure could be conducted comparing four alcoholic groups: single men, single women, and men and women in intact family situations. This would illuminate areas of convergence and divergence on the criterion of marital status in these alcoholic sub-populations.

The generalizability of the typology determined in the study could be explored with respect to other kinds of substance abuse. Ball and associates (Ball, Carroll, Babor, & Rounsaville, 1995), for example, have found that the defining characteristics of a typology derived for alcoholics was successful in subtyping cocaine abusers. A similar derivation approach to that used in the present study could be applied to data from a sample of male cocaine or marijuana abusers in intact family settings. The resultant taxonomies would then be compared to that of the present study for points of corroboration and divergence.

Further testing of the hybrid model (Morey et al., 1984) also seems to be in order. A productive line of research might include a longitudinal study examining how drinking pattern and severity of alcohol dependency change and interrelate over the
course of alcohol dependency.

Finally, important research remains to be done which focuses more directly on the irregular or binge drinker. An investigation of a qualitative nature could be conducted in order to discover and explore the biopsychosocial mechanisms which operate to cause binge drinkers to cycle between periods of abstinence and periods of unrestrained alcohol consumption. Such a study might involve monitoring key aspects of the physiological and psychological functioning of the binge drinker and critical aspects of marital and family functioning.
REFERENCES


Wiseman, J. (1980). The "home-treatment": The first steps in trying to cope with an alcoholic husband. Family Relations, 29, 541-549.


APPENDIX A

Diagram of the Hybrid Model
A hybrid model for classification of alcohol related problems
(Morey et al., 1984)
APPENDIX B

Standard Drink Units Conversion Chart
### STANDARD DRINK UNITS CONVERSION CHART

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<thead>
<tr>
<th>Beverage</th>
<th>No. of Standard Drink Units</th>
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<tr>
<td>12 oz. bottle or can (5%) (341 ml)</td>
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<tr>
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<td>.80, .90</td>
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<tr>
<td>16 oz. pint</td>
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<tr>
<td>Light beer (2.5%)</td>
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<tr>
<td>Light beer (4.0%)</td>
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</tr>
<tr>
<td>Heavy beer (6.0%)</td>
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</tr>
<tr>
<td>Malt-Liquor/Heavy beer (5.7%)</td>
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</table>

| **Ciders, Coolers**             |                             |
| 12 oz. bottle (4%)              | 0.96                        |
| 12 oz. bottle (6.0%)            | 1.40                        |

| **Wine (including Sangria)**    |                             |
| Standard glass (4 oz.) (12%)   | .96                         |
| Half-bottle (13.2 oz.)         | 3.17                        |
| Bottle (26.4 oz.) (750 ml)     | 6.34                        |
| Litre (35.2 oz.)               | 8.45                        |

| **Distilled Spirits (40%) (Gin, Vodka, Whiskey, Scotch Rum, Brandy, Tequila, etc.)** |                             |
| 1 shot (1 oz.)                 | 0.80                        |
| Jigger (1.5 oz.)               | 1.20                        |
| Double (2 oz.)                 | 1.60                        |
| Mixed drink (e.g. Rum & Cola 1 oz.) | 0.80               |
| Mickey (12.5 oz.)              | 10.00                       |
| 26 oz. bottle                  | 20.80                       |
| 40 oz. bottle                  | 32.00                       |
Miscellaneous Alcoholic Drinks

(Sherry, Vermouth, Muscatel, Port, Sake, Fortified Wine)
Standard-size glass (1.5 oz.) (20%) 0.60

Liquers, fruit flavoured brandies
Standard glass (1.5 oz.) (30%) 0.90

Special coffees
(e.g. Irish, Spanish (1 oz.) (40%) 0.80

Shooters (1 oz.) (40%) 0.80

Calculating Standard Drink Units

Step 1: The standard used in calculation is:
½ oz. (15 ml) of ethyl alcohol = 1 standard drink unit

Step 2: Take the number of ounces of drink and multiply by the percent of alcohol by volume:
e.g. 12 oz. beer x .05 (5%) strength = .60

Step 3: Divide this by the standard .5 (½ oz. drink)
e.g. .60 ÷ .5 = 1.2

Step 4: The result is the number of drink units in one drink.
e.g. 1.2 standard drink units in the case of 12 oz. of 5% strength beer

Calculating Average Standard Drinks Per Drinking Days

Step 1: Add up the total number of standard drink units for the entire week.
Step 2: Divide this total by the total number of "drinking days".
APPENDIX C

Dendogram and Profiles of the Two-Group, Three-Group (Final), and Four-Group Solutions
Two-Group Solution

z-score units

Grp One  Grp Two

MAST ALCPRBS SDU ALCFAM ADD IDS DRNKPATT
Final cluster solution

z-score means

MAST ALCPRBS SDU ALCFAM ADD IDS DRNKPATT

- Grp One
- Grp Two
Grp Three
Four-Group Solution

z-score means

Grp One  Grp Two  Grp Three  Grp Four
APPENDIX D

Contingency Table showing the Correspondence between the n=130 and n=100 Cluster Analyses
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**CHI-SQUARE** | **D.F.** | **SIGNIFICANCE**
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APPENDIX E

Means and Standard Deviations for Alcohol Measures for Alcoholic husbands by Subtype
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**Means and Standard Deviations for Alcohol Measures for Alcoholic husbands by Subtype**

SCQ-39

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APPENDIX F

Means and Standard Deviations for Intrapsychic Measures for Alcoholic Husbands and Nonalcoholic Wives by Subtype
## Means and Standard Deviations for Intrapsychic Measures for Alcoholic Husbands and Nonalcoholic Wives by Subtype

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APPENDIX G

Means and Standard Deviations for Marital Measures for Alcoholic Husbands, Nonalcoholic Wives and Couples by Subtype
Means and Standard Deviations for Marital Measures for Alcoholic Husbands, Nonalcoholic Wives and Couples by Subtype

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- Desired Chg (W) 41.49 36.38 35.78 37.42 17.52 13.02 13.45 14.41
- Percvd Chg (H) 34.24 30.27 32.82 31.98 15.77 14.07 17.96 15.69
- Percvd Chg (W) 33.56 23.64 24.66 26.31 16.14 10.36 9.66 12.41
- Desired Chg (C) 63.98 57.22 61.83 60.21 24.87 19.85 26.10 23.09
- Percvd Chg (C) 67.80 53.91 57.48 58.29 23.24 20.48 23.00 22.45
- Percept. Acc (H) 0.82 0.96 1.10 0.97 0.79 0.56 0.70 0.66
- Percept. Acc (W) 1.37 1.51 1.53 1.48 0.69 1.14 1.41 1.14

SASB-Inter:

Affiliation:
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- Othr Init. (W) 3.03 32.52 47.38 29.95 62.37 69.37 72.72 70.23
- Othr Resp (H) 33.63 70.85 58.74 58.53 67.79 64.47 82.13 71.95
- Othr Resp (W) 4.03 20.00 46.38 24.11 59.87 66.02 61.45 64.76
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- I Init. (W) 59.71 70.30 88.28 73.17 54.67 55.85 54.97 55.93
- I Rsp. (H) 44.10 74.83 71.79 66.95 63.24 66.03 62.19 64.96
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APPENDIX H

Means and Standard Deviations for Family and Social Measures for Alcoholic Husbands and Nonalcoholic Wives by Subtype
Means and Standard Deviations for Family and Social Measures for Alcoholic Husbands and Nonalcoholic Wives by Subtype

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APPENDIX I

Means, Standard Deviations and Subsample Size (n) for the Therapeutic Measure for Alcoholic Husbands and Nonalcoholic Wives by Subtype
Means, Standard Deviations and n for
Therapeutic Measure for Alcoholic Husbands and Nonalcoholic Wives by Subtype

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<th>Group</th>
<th>Mean</th>
<th>SD</th>
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<td>115.93</td>
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<td>Total</td>
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<td>13.97</td>
<td>39*</td>
</tr>
</tbody>
</table>

* Due to differences in the treatment conditions, only one-third of the nonalcoholic wives in the study were directly involved in therapy.