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YOUNG MALE OFFSPRING OF ALCOHOLIC FATHERS: EARLY DEVELOPMENTAL AND COGNITIVE DIFFERENCES FROM THE MSU VULNERABILITY STUDY

By

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ABSTRACT

YOUNG MALE OFFSPRING OF ALCOHOLIC FATHERS:
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FROM THE MSU VULNERABILITY STUDY

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Alcohol abuse has repeatedly been implicated in many behavioral and health related problems, yet little is known concerning etiology before age 12. The present study was designed to compare a sample of preschool boys statistically at risk for the development of alcohol related problems - in adulthood - to a sample of same-aged community control peers.

The high risk boys in this study were the offspring of untreated but alcoholic fathers contacted by way of their arrest for drunk driving during the child's lifetime. Nine community control boys from families in the same census tract were also studied; matching was done on social prestige, sibship constellation, age of target child, and birth position of target child. Analysis of parental self-report data on alcohol problems indicated that while all of the fathers of high risk boys met formal diagnostic criteria as alcoholic, none of the fathers of community control boys were so diagnosed.

Children were assessed with parental reports of children's activity level, mood, aggression, and

attention-span persistence. In addition children were assessed with direct observations of general developmental status and with three Piagetian like tasks to determine knowledge of alcoholic beverages.

Significant differences were demonstrated on developmental assessment; control boys performed significantly better on indices of language, fine motor, personal/social, and adaptive development. On the tasks designed to assess knowledge of alcoholic beverages, high risk boys demonstrated quicker recognition of and greater knowledge about alcoholic beverages and its uses. However, no statistically significant differences were obtained on either of the parent report measures of temperament or of child behavioral symptomatology.

The results of this study are discussed within the context of Zucker's multilevel heuristic model for the development of drinking behaviors. The differences in developmental status were hypothesized to be reflective of differences in socialization and maternal responsivity among these families; the implications of these findings for the subsequent development of psychopathology were also examined using social learning theory. The drinking cognitive data are discussed in the context of early learning within the family of origin. Etiological implications of these drinking related cognitive findings are examined within the framework of current prevention/education programs.

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CHAPTER I

INTRODUCTION

High-risk research concerned with the etiology of the major behavioral disorders has become increasingly more prevalent during the past decade (cf. Garmezy, 1973, 1974; Hanson, Gottesman, & Meehl, 1977). While the majority of the work has focused upon schizophrenia, other types of psychiatric disturbances continue to plague society. Alcohol related problems cost the U.S. economy nearly 43 billion dollars in 1975 and are currently considered to be the fourth most serious health problem in the United States (DHEW, 1974, 1978; O'Leary & Wilson, 1975). While schizophrenia occurs in somewhat less than 1 percent of the overall population (Kramer, 1978; Woodruff, Goodwin, & Guze, 1974), prevalence estimates of the number of severe problem drinkers and alcoholics are 4-6 percent, or 9.3-10 million persons (Alcoholism & Drug Addition Research Foundation, 1978; DHEW, 1971, 1978; Haglund & Schuckit, 1977). Primary or secondary problems with alcohol are associated with 50 percent of first admissions to mental hospitals (Haglund & Schuckit, 1977; Ullmann & Krasner, 1975), and evidence exists which suggests that the extent of the problem is underestimated in this population (McLellan, Druley, & Carson, 1978). Approximately five to six million Americans are considered to be

alcoholic (Chafetz, 1967, p. 1014; Haglund & Schuckit, 1977). More than 50 percent of all fatal traffic accidents involve alcohol, as one of twelve Americans is too drunk to drive at any given moment on our nation's highways (Cummings, 1979). Clearly the scope of the problem is great; however, our knowledge of alcoholism, especially its earliest precursors, is limited. The earliest longitudinal research to date begins at the age of ten (Zucker, 1976).

Problems of Definition

A critical issue which high-risk research must address is the definition of the problem or trouble being studied (Baldwin, Cole, & Baldwin, 1982). Typically research on alcoholism and/or problems directly related to excessive consumption of alcohol has employed varied criteria and/or different labels for the same area of problems. Keller (1972) cogently analyzes the criteria necessary for a behavioral-operational definition of alcoholism and concludes that both excessive drinking and ill effects from the drinking must be present. He states that the notion of alcoholism as a disease is based on an inability to control one's drinking despite the consequences, and defines alcoholism as "a chronic disease manifested by repeated implicative drinking so as to cause injury to the drinker's health or to his social or economic functioning" (p. 316).

Cahalan (1970) utilizes a similar operational definition, but concludes that the term "alcoholism" is

not useful. Rather he prefers the concept of problem drinking along with a concurrent statement of the type of problems that the drinking has caused (also see Schuckit, 1978). While the philosophical and social consequences of the use of the terms "alcoholic" or "problem drinker" are great (c.f. Cahalan, 1970, for a discussion of this issue), the specific operational definitions employed by Cahalan and Keller vary only slightly. Cahalan (1970) includes frequent intoxication, as measured by frequency, quantity, and variability (Q-F-V index) of alcohol consumption, as well as the occurrence of a number of problems typically associated with excessive drinking. These problems include four items associated with the drinking behavior itself, four items connected with interpersonal relations, and three items that could fall into either of the aforementioned classes. At a theoretical level, Keller is more concerned with chronicity of alcohol problems while Cahalan emphasizes current problems resulting from alcohol consumption; however, the specific operational criteria utilized by both for diagnosis are strikingly similar.

Other researchers vary only slightly among themselves in their criterion of frequent intoxication or amount of heavy drinking, but utilize similar problem areas to establish a positive alcoholic diagnosis. Kaij (1972) uses the term alcoholism rather than problem drinker and includes four parameters: amount of drinking, social

consequences, medical consequences, and presence of addictive symptoms. Other workers include consequences of alcohol abuse, symptoms of addictive drinking, social problems consequent to drunkenness, and interpersonal problems related to heavy drinking (Goodwin, Schulsinger, Hermansen, Guze, & Winokur, 1975; Reich, Robins, Woodruff, Taibleson, Rich, & Cunningham, 1975). A minimum of one positive response in three of four categories is generally required for a definite diagnosis of alcoholism. Finally, Feighner and his colleagues (see Table 1) in their paper on establishing specific research diagnostic criteria (RDC) for use in psychiatric research define an alcoholic as someone who has had symptoms in three of four general areas (Feighner, Robins, Guze, Woodruff, Winokur, & Munoz, 1972). The Feighner et al. criteria are similar to those already mentioned.

The National Council on Alcoholism established a criterion committee to enumerate criteria necessary for a diagnosis of alcoholism (Criterion Committee, 1972). The scheme for diagnosis is similar to the aforementioned systems; however, this work includes three different diagnostic levels, definite, probable, possible, which depend upon the number of clinical manifestations of excessive consumption of alcohol and accompanying problems. The criteria established by the committee for a diagnosis of alcoholism are far more elaborate than any of the

Table 1

Research Diagnostic Criteria (RDC)
for Diagnosis of Alcoholism

Probable diagnosis -	when symptoms occur in two of the following groups as a result of alcohol consumption
Definite diagnosis -	when symptoms occur in 3^{+} of the following groups as a result of alcohol consumption
Group 1:	Any manifestations of alcohol withdrawal (ie. convulsions, tremulousness, delirium); history of medical complications (ie. cirrhosis, gastritis); alcoholic binges (48 hours^{+}); or periods of amnesia (blackouts)
Group 2:	Loss of control (ie. morning drinking, repeated attempts to control drinking by self limit setting
Group 3:	Legal or work related difficulties (ie. traffic offenses, absenteeism)
Group 4:	Social or interpersonal problems (ie. marital problems, feeling guilty about drinking, loss of friends)

Adapted from Feighner et al., 1972.

aforementioned diagnostic systems and are oriented towards clinical usage rather than research per se.

This study will use the terms "problem drinker" and "alcoholic" interchangeably. While the term "problem drinker" is sometimes used to imply drinking difficulties, this is not our intended implication. Along the lines of Zucker (1979), the less pejorative term of "problem drinking" will be used in this project to deal with situation specific drinking problems, and the term "problem drinker" will be used to imply greater individual stability over time of drinking related difficulties. It should also be noted that the term "problem drinker" or "alcohol abuser" is sometimes used to imply a decreased pattern of pathological alcohol use compared to the term "alcoholic" or "alcoholic dependent" (see DSM-III, 1980) irregardless of the social or behavioral consequences of drinking. The emphasis in this project is placed upon consequences of drinking behavior and our use of the term "problem drinker" does not mean decreased pathological alcohol use. An attempt will be made to carefully delineate specific diagnostic criteria used by the studies reviewed, as different diagnostic criteria can clearly cause samples and results to vary significantly. Altering the essential diagnostic criterion can change results far more significantly than the choice of diagnostic labels. Specific sampling techniques and

criteria for inclusion of subjects into our study will be extensively discussed in the Methods section.

Rationale for Cross-Sectional Design in Research With Statistically High-Risk Children

A myriad of research has retrospectively examined the early life of the alcoholic; these studies attempt to trace the etiology of the disorder. This approach has insurmountable methodological flaws (cf. Livson & Peskin, 1980; Yarrow, Campbell, & Burton, 1970). We are therefore left with a serious gap in the data which consequently diminishes our knowledge of alcoholic etiology. The present study is a beginning at filling this critical gap. By selecting a small sample of young male children, identified as statistically at higher-risk for subsequent development of alcoholism on the basis of parental characteristics which are known to be associated with disproportionately greater numbers of alcoholic offspring, it is hoped that an early but realistic goal can be achieved.

We endeavor to differentiate these families from controls, and thus may identify specific childhood characteristics that could possibly precede later alcoholism. If differences are found they should begin to suggest hypotheses about the early etiological roots of alcoholism.

The cross-sectional approach offers several advantages over traditional longitudinal research strategies. First, one can examine the inter-relationships among various classes of variables on the parent and the child, at various developmental points (Kagan, 1964). Just as the inter-relationships between depression (Weissman, Paykel, & Klerman, 1972), divorce (Hetherington, 1979), and other life events (see Bronfenbrenner, 1979) have been examined within the context of the family life cycle, the cross-sectional method would permit a study of the inter-relationships of paternal alcoholism, child rearing practices, and other classes of influence on the developing child who is statistically at risk. Evidence exists (cf. Nylander, 1960; Rydelius, 1981) that the relationship between parental alcoholism and the child depends upon numerous factors such as personality of both drinking and non-drinking parents, sex and age of the child, etc. (see Wilson and Orford, 1978, for a detailed discussion of potentially relevant variables).

Second, the cross-sectional method can offer relief from data bias, by providing current information that is systematically and uniformly collected. Data are obtained before subjects suffer from the potential

ravages of the disorder (cf. Mednick & McNeil, 1970). The data which are acquired on each subject are collected at one point in time, thus there are no repeated measurement effects as in longitudinal design.

Third, a cross-sectional design would be less expensive and time consuming than a comparable longitudinal study. In addition, problems with attrition of subjects and locating subjects who are willing to participate over extended periods of time are not difficulties inherent to this approach.

At the same time, certain pitfalls central to the cross-sectional method exist. First, changes in individual subjects across time cannot be traced. While a transactional model of development (Sameroff, 1975; Sameroff & Chandler, 1975) may form the theoretical groundwork for conceptualization of the etiology of alcoholism, the cross-sectional method does not permit one to follow the growth of the developing child across time, while simultaneously assessing the effects of various classes of influence on the developing organism.

Second, cross-sectional designs are particularly vulnerable to problems caused by unrecognized sampling fluctuations. Since a new sample is utilized at each age, it is mandatory that the samples be comparable. Changes in a particular cohort from which a sample is drawn from uncontrolled cultural-historical effects can reduce the internal validity of cross-sectional comparisons. Mednick (1978) also discusses problems of the high-risk method with respect to sampling and the inevitable biased selection of cases. He concludes that the only alternative would be to assemble an exceptionally large birth cohort and study them intensively for an extended period of time, although even this exhaustive project would require replication (cf. Clarke-Stewart, VanderStoep, & Killian, 1979).

Third, cross-sectional studies confound generational effects with the effects of aging. Achenbach (1978a,b) discusses problems associated with age, cohort and time of assessment, and notes inherent limitations of cross-sectional designs. The external validity of a cross-sectional design is threatened because differences or similarities among cohorts may not be generalizable to other points in time because of cultural-historical changes. The internal validity of the cross-sectional design is threatened by the possibility that differences between age groups may be caused by factors other than age, such as cultural-historical effects. The results that

Nesselroade and Baltes (1974) obtained utilizing a longitudinal-sequential design clearly demonstrated the limitations which Achenbach discusses. However the exploratory nature of the present study justifies the use of the cross-sectional design and still makes it an acceptable one.

Conceptual Models of the Etiology of Alcoholism

Much of the high-risk research on psychopathology has been completed without overarching theoretical models serving as a conceptual framework. When a specific orientation was utilized, it typically viewed psychiatric problems from a monist perspective. For example, problem drinking has been conceptualized as an attribute of personality (cf. Williams, 1976) or the result of non-specific biological or genetic variables (cf. Goodwin, 1976). Other workers have viewed problem drinking from the perspective of sociocultural variables (cf. Cahalan, 1970; Cutter & Fisher, 1980) or as an attribute of specific situational stressors (cf. Snow, 1975) which lead to alcoholism.

Recently, work has begun to attempt to integrate the above classes of influence into a biopsychosocial model (Schwartz, 1982) which takes a more broad based perspective. Sadava (1978) emphasizes the role of personality in the etiology of alcoholism, but gives careful consideration

to situational factors from a life span perspective. He argues that "attention must be directed toward patterns of interaction and reciprocal influence" (p. 209). Kissin (1977) points out that a single faceted theory of the etiology of alcoholism is clearly no longer a tenable theoretical position. Only a multi-faceted model which attempts to integrate biological, sociocultural, and personality variables as interacting classes of influence can reasonably account for the acquisition of problem drinking behaviors (also see Freed, 1979; Jalali, Jalali, Crocetti, & Turner, 1981; Peele, 1979, 1980). Two theorists who attempt to develop a model which can account for the acquisition of drinking behaviors and problem drinking per se using a multi-faceted model are Jessor and Zucker.

The Jessor Model

Richard Jessor and his colleagues (1968, 1977) are specifically concerned with the acquisition of deviant behaviors and their development in youth. Problem drinking is one of a host of asocial and antisocial behaviors which Jessor examines under the general rubric of deviant behavior. According to Jessor, behavior is the result of sociocultural and personality variables which operate simultaneously. These two major classes of variables are each divided into subsystems that in turn are further

divided into measurable component elements. For example, Jessor originally divided the personality system into three substructures: the personal belief structure, the personal control structure, and the perceived opportunity structure. Within the personal belief structure was the individual's general cognitive orientation. Specific variables which Jessor employed to measure this area were locus of control and alienation. While specific component elements within the model have changed as further work has been completed, the basic model structure has remained consistent. When the model is applied developmentally, Jessor emphasizes the reciprocal influence of major variables and their subsystems across time.

One major limitation of the Jessor model is the lack of a specific developmental time frame within which various classes of variables may become more or less salient. A second limitation of the model is that typically the percentage of variance which has been accounted for is 10-55 percent. While the 55 percent is clearly satisfactory, 10 percent is not adequate. Finally, the Jessor model is oriented towards general deviant behavior rather than the specific form it may take, such as excessive drinking. Greater specificity is clearly called for.

The Zucker Model

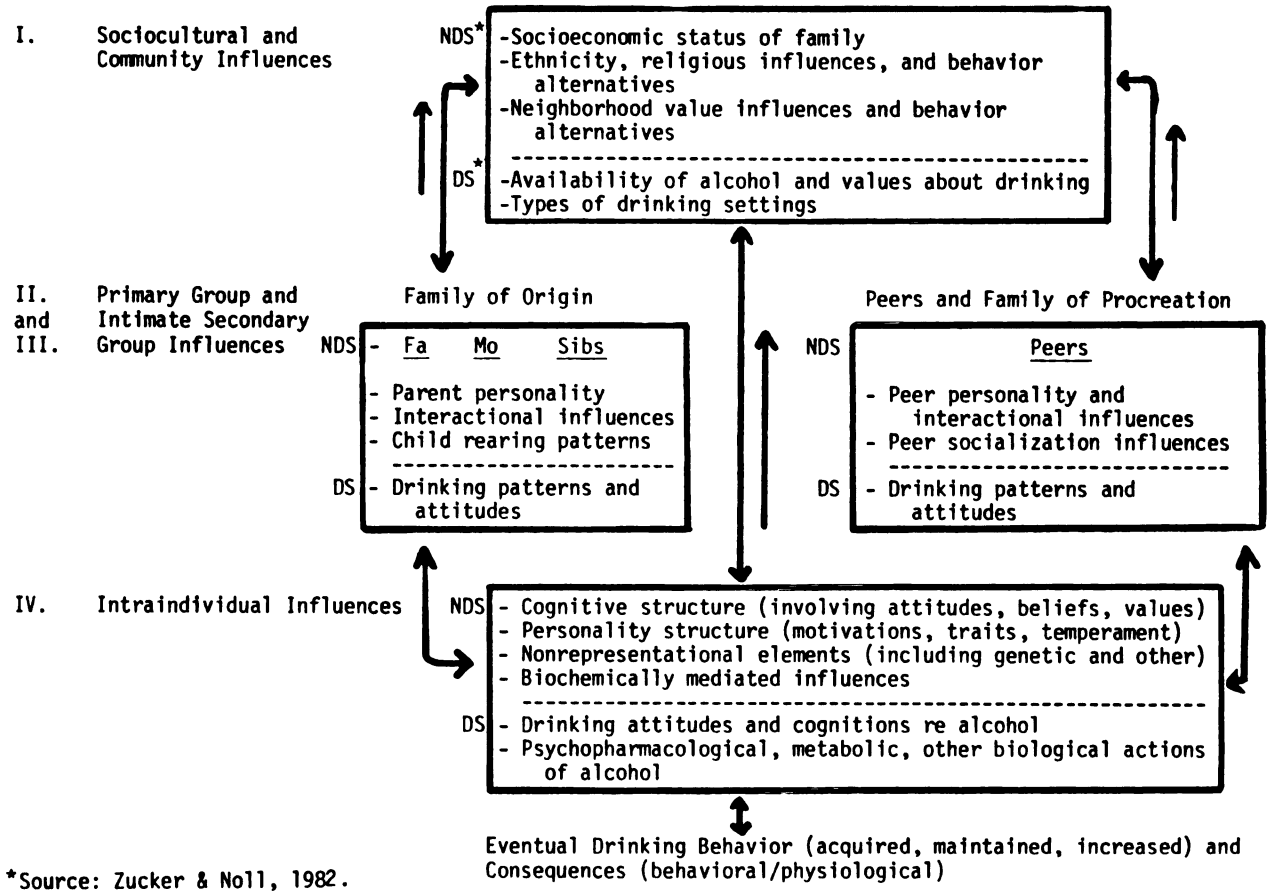
The Zucker (1976, 1979; Zucker & Noll, 1982) model of development of drinking behavior places emphasis upon

problem drinking within the general context of antisocial behavior. Originally Zucker postulated that problem drinking had its origins in disturbed or dysfunctional family relationships. Specifically, inadequate satiation of the child's dependency needs as well as disturbed emotional relationships among family members were viewed as critical. The final significant component was the parents' failure to provide appropriate discipline and control for the child. Subsequent work on the model has focused on classes of influence as they impact upon the child from both a cross-sectional and longitudinal perspective. Zucker postulates that four major classes of influence have an impact upon eventual problem drinking behaviors. Class I influences are social and community factors; Class II influences are from family of origin focusing specifically on child rearing practices, parental personality influences, and other familial influences; Class III influences deal primarily with peer group socialization factors; and Class IV influences are intra-individual components such as personality, temperament, and physiological factors that may influence predisposition towards excessive alcohol consumption (Table 2).

These four classes of influence are examined longitudinally as the salience of each class of variables is postulated to change along with the development of the

Table 2

An Organizational Structure for Classes of Influence Upon Drinking Behavior



*Source: Zucker & Noll, 1982.

Note: DS refers to drinking specific factors; NDS refers to non-drinking specific factors.

organism. As can be seen in Figure 1, Zucker has hypothesized that specific classes of variables may be less relevant during certain developmental time frames, while others are of greater import during the same time frame.

While the Zucker model addresses some of the limitations inherent to the Jessor work, several problems remain. First, the majority of Zucker's data are cross-sectional and were obtained on samples of adolescents. Longitudinal data are essential to test the limitations of the model. Second, while the model postulates various classes of influence ebbing and flowing with development, there is a lack of specificity with respect to exact variables which would precisely assess the global effects of the four classes of influence. The dimensions of this problem become exaggerated when a developmental perspective is taken along with longitudinal methodology. Finally, the general classes of influence are exceptionally broad based. From the perspective of one overall model this limitation is not serious, but as hypotheses become more specific the classes are so broad that inter-class clusters of variables become important. For example, the fourth class of influence, intra individual, includes personality influences as well as physiological. Some workers would argue that these classes of influence deserve separate categories.

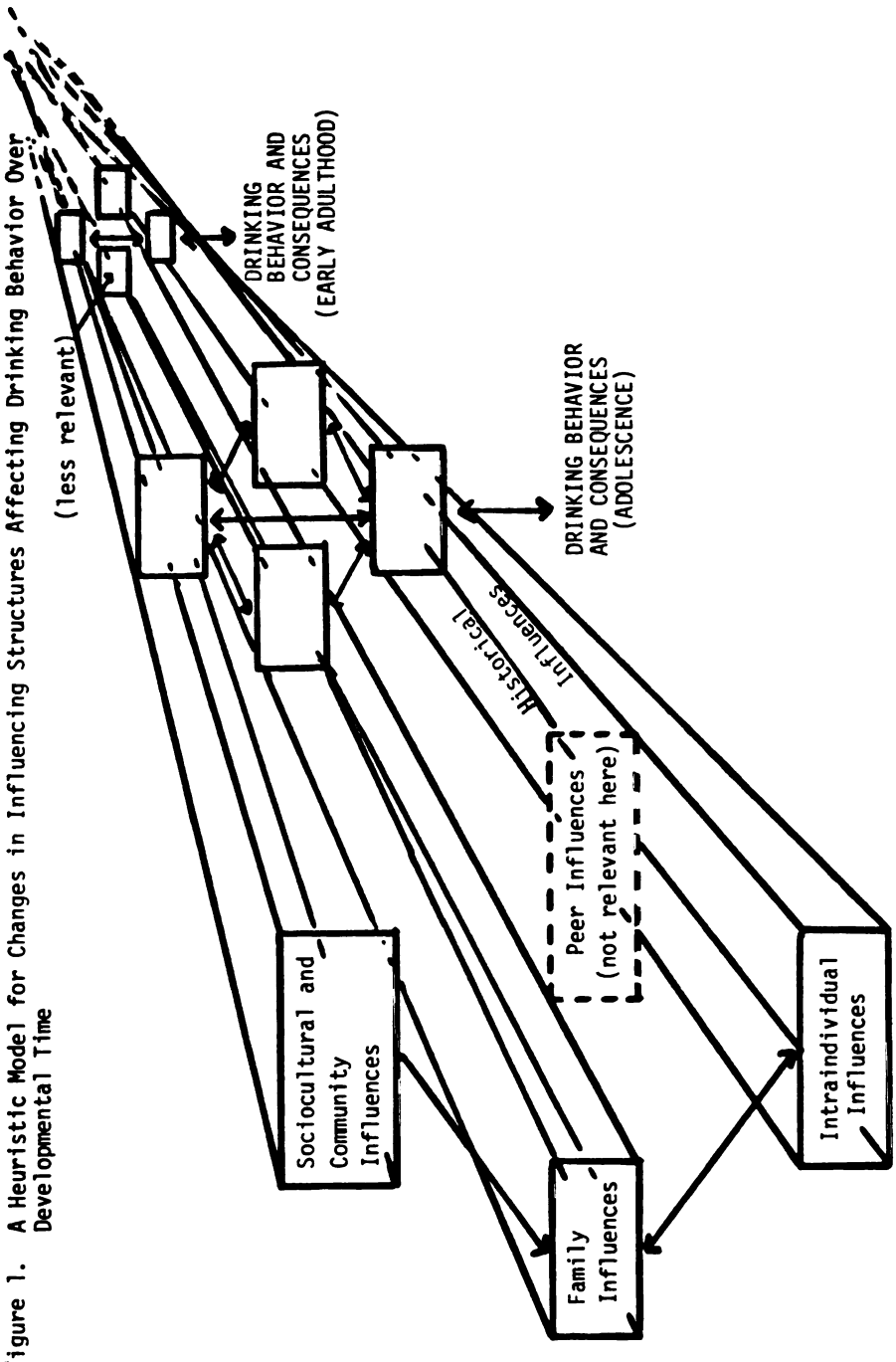


Figure 1. A Heuristic Model for Changes in Influencing Structures Affecting Drinking Behavior Over Developmental Time

From: Zucker & Noll, 1982.

While the Zucker model clearly has limitations, its major advantage is the unique application of a developmental perspective to the etiology of problem drinking. While the perspective that various classes of influence may increase in significance across stages of the life span and at other times become less relevant is standard for developmental life span psychologists (see Baltes & Schaie, 1973), it is not commonly found in studies of psychopathology. This orientation is a major strength of the Zucker model and makes easily adaptable to a longitudinal study of children who are statistically at high-risk for subsequent development of alcoholism.

The present study is a pilot, designed to gather data in an area that has not previously been systematically studied. It begins formal data collection early in the lifespan of the offspring, utilizing an eclectic, but conceptually guided approach. Through the use of direct observations, questionnaires, developmental assessments, and interviews, the groundwork will be laid for the eventual study of a larger group of high-risk subjects in a combined cross-sectional-longitudinal design that could possibly have transcontextual validity (Weisz, 1978) for the development of alcoholism. The overall viewpoint of this work is that alcoholism develops as the result of transactions between numerous variables--biological, psychological, social, cultural. The developing organism is examined within a

larger ecological setting (Bronfenbrenner, 1977), attempting to understand the texture of the transactions between the high-risk child and his environment (Bell, 1979; Brazelton, 1978; Sameroff, 1975, 1978a, b). It is expected that effects may vary during different developmental stages, dependent upon present salient issues for both the specific family and the child (Ainsworth, 1979; Field, 1977). Our goal is to identify characteristics of the child, the family, or the dynamic interactions between them, which are clearly high-risk markers for subsequent development of alcoholism as early in life as possible, so that mental health professionals can strive towards prevention rather than rehabilitation. Because this work is a pilot study and problem drinking is more prevalent in males (DHEW, 1971, 1974), this study focuses predominantly on the etiology of excessive drinking in men. All children included in this study will be male.

CHAPTER II

REVIEW OF THE LITERATURE

Previous studies have attempted to reconstruct the history of the alcoholic in an attempt to understand the development of the disorder. This work has largely focused on the acquisition of retrospective information about the alcoholic's earlier life, rather than sifting through data which had been collected during earlier critical time periods. While many of the major psychological (cf. Blum, 1966; Sadava, 1978; Williams, 1976) and/or biological (cf. Goodwin, 1976; Kissin, 1977) theories pertaining to the etiology of alcoholism give credence to the notion that alcoholism is caused by very early developmental events, none of the previous research in this area has begun early enough to examine the critical questions without encountering the serious methodological flaws inherent to retrospective research. Also, the majority of this work has either lacked a basic conceptual model or employs a monist model. By examining studies done utilizing the above methods and conscientiously avoiding "enlightened historical selectivity" (Nathan and Lansky, 1978; Pillemer & Light, 1980), an attempt will be made to select markers which might be indications that a child is high-risk for subsequent development of alcoholism. Four general types of research

will be reviewed: 1) studies which utilize personality theory as a conceptual basis, 2) studies which utilize genetic theory as a conceptual basis, 3) longitudinal studies, and 4) cross-sectional studies.

Personality Theory as a Conceptual Basis

This section will review and critique one representative major study which attempts to describe the dynamic personality of the alcoholic. Other principal works in this area are referenced; however, they are not reviewed, since this would be overly redundant.

In an extensive clinical study with adult alcoholics, Blane (1968) attempts to analyze the personality of the alcoholic. This work scrutinizes the personality of the alcoholic and the psychological needs which the drinking helps to satisfy. Blane states that male alcoholics suffer from a conflict between exaggerated dependency needs and the gratification of these intensified needs. The vital element which varies from individual to individual is the method of conflict resolution--how the alcoholic resolves the conflict between dependency needs which require fulfillment and a masculine identity which prevents gratification of these needs. According to Blane, alcohol is the solution to the conflict over dependency wishes, since drinking is typically regarded as masculine activity, which provides feelings of comfort and warmth as well as permitting

dependent types of behavior to occur.

We are left with the question of how alcoholic men develop the exacerbated dependency need which eventually culminates in the alcoholic experience. Blane (1968) attempts to understand the dynamic personality of the alcoholic, but offers little specific data for understanding the ontogeny of the alcoholic personality. The strong dependency need apparently originates in earlier childhood experiences; but what specific events are responsible? Extrapolations are carried out by some theorists, moving from the adult alcoholic to hypothetical causal agents in earlier life (e.g., White & Watt, 1973). This process is attempted via the acquisition of retrospective information and through deductive logic, although both methods have serious shortcomings. Since the human organism is in its most dependent state as an infant, gradually becoming less and less dependent, it seems obvious that proponents of dependency theory would begin their search for the origin of the exaggerated dependency needs during this earliest period of life (cf. Blane, 1974).

This theoretical orientation to problem drinking places greatest emphasis upon intra-individual influences (Class IV) with secondary implied emphasis upon family of origin influences (Class II). The effects of sociocultural factors (Class I) as well as peer personality and peer socialization (Class III) are not integrated into the dependency

hypothesis. Numerous other researchers have also examined the personality of the alcoholic in an attempt to uncover hypothesized underlying personality constructs or conflicts that are unique to the alcoholic population and the literature supports the presence of depression, denial, and problems with impulse control (see Sadava, 1978; Williams, 1976). Much of this work lacks the conceptual clarity of Blane's clinical research; however, others have completed excellent work on the alcoholic personality, most notably McClelland and his research group (cf. McClelland, Davis, Kalin & Wanner, 1972). The best of this work is plagued by the same serious methodological problems as Blane's work, therefore it would be pedantic to review this work here. The interested reader is referred to several excellent reviews of this literature (cf. Barry, 1974a; Freed, 1979; Williams, 1976).

Genetic Theory as a Conceptual Basis

Areas reviewed in this section include a brief review of genetic marker and metabolic studies as well as a subsequent exhaustive review of twin and adoption studies.

Several groups of investigators have attempted to ascertain if any known genetic traits are found more often in alcoholics than controls. For example, extensive explorations of possible associations between alcoholism, cirrhosis, and color blindness (as a possible genetic

marker) have been done by Cruz-Coke and associates (cf. Cruz-Coke & Varela, 1966). These investigators have examined color vision defects in alcoholic patients and their non-alcoholic relatives. Their data indicate that male alcoholics have more color vision defects than male controls. In addition, similar color vision defects were found in male and female relatives of the male alcoholic. These researchers argue that the color vision defect found in the alcoholic males and their non-alcoholic relatives were clearly not the result of excessive alcohol consumption. Rather they argue that a genetic component associated to alcoholism and color vision defects is present (Varela, Rivera, Mardones & Cruz-Coke, 1969). Unfortunately data obtained in this area by other researchers have not replicated the above results when color vision testing was postponed until the alcoholic had been dry for 30 days (Failkow, Thuline, & Fenster, 1966; Smith & Brinton, 1971). A similar study of 11 serological markers of known genetic origin on alcoholic men who had been dry for 30 days also found no positive evidence for genetic association (Hill, Goodwin, Cadoret, Osterland, & Doner, 1975). Cruz-Coke argues that the failures to replicate are the result of insensitive color vision tests (Cruz-Coke & Mardones, 1972). A recent study examined the presence of color vision defects in a normal population being studied in the Tecumseh Community Health Study (Harburg, Gleiberman, &

Ozgoren, 1982). In this large sample, alcohol consumption ranged from abstinence to heavy use and a higher percentage of color blindness was found in moderate-heavy drinkers while no color blindness was found in any individual who was an abstainer. It is possible that the association between color blindness and drinking in the Harburg study was the result of recent heavy ingestion of alcohol since time of last drinking episode was not controlled.

Metabolic studies focus on varying physiologic responses to alcohol ingestion. This type of approach attempts to explain why some individuals and even some ethnic groups seem to respond physiologically in vastly different ways to alcohol consumption. Why does alcohol ingestion cause adverse physiological symptoms (i.e. dizziness, nausea, etc.) in some and not in others? While the majority of this work has dealt with reactivity differences among different racial groups (Ewing, Rouse, & Pellizzari, 1974; Zeiner, Paredes, & Christensen, 1979), recent work by Schuckit and Rayses (1979) indicates that children of alcoholics metabolize alcohol differently from control children. Schuckit and Rayses cogently argue that their results indicate that children with family histories of alcoholism could be predisposed to alcoholism themselves. Goodwin (1979) reviews these data and hypothesizes that large numbers of individuals are protected from alcohol problems because of their adverse physiological reactions. Goodwin suggests

that minimally the alcoholic lacks an inherited intolerance of alcohol.

The metabolic studies have begun to demonstrate that differential rates of alcohol problems among different ethnocultural groups (Class I) could have physiological underpinnings which presumably are genetically transmitted (Class IV). The study by Schuckit and Rayses examines Class IV factors which presumably cause higher familial rates of alcoholism.

Goodwin's (1976, 1979) comprehensive review of adoption and family studies relevant to alcoholism gives us another perspective into the alcoholic problem. Alcoholism is viewed as a family disease, as no previous study of male alcoholics had less than 25-50 percent of the first degree male relatives also alcoholic (Fitzgerald & Mulford, 1981; Goodwin, Schulsinger, Hermansen, Guze, & Winokur, 1973; Goodwin, Schulsinger, Knop, Mednick, & Guze, 1977; Gregory, 1960; Jellinek, 1945; Schuckit & Haglund, 1977; Tarter, McBride, Buonpane, Schneider, 1977; Winokur, Reich, Remmer, & Pitts, 1970). Why does the affliction with alcoholic addiction seem to run so consistently in families? Further evidence is suggested from one of Goodwin's earlier studies that utilized a Danish sample where subject location and follow-up is easier to achieve (Goodwin et al., 1973). Probands (biological father alcoholic), who were removed from their family during early infancy and raised by families without alcohol problems, were compared to their stepbrothers

(biological fathers nonalcoholic). The groups were not different on a large number of dimensions (e.g., SES, educational experience, non-alcohol psychiatric illness), but differed significantly with respect to serious alcohol problems. The control group of adoptees surprisingly had more heavy drinkers, while at the same time contained fewer drinkers who had serious problems as a result of excessive drinking. A subtle, but very important distinction is made between heavy drinking and excessive drinking that causes other problems for the drinker (also see Templer, Ruff, & Ayers, 1974). The conclusion reached from this study is best summarized by the following passage:

> "Sons of alcoholics were no more likely to become alcoholic if they were reared by their alcoholic parent than if they were separated from their alcoholic parent soon after birth and reared by nonrelatives" (Goodwin, 1976, p. 76).

Goodwin's work has been sharply criticized by Tolor and Tamerin (1973). First, the assessment of psychopathology in the adoptive parents of both groups was based upon information provided by the adopted subjects and was concerned only with gross pathology (seeking treatment). This approach makes it impossible to insure that both groups of parents were equivalent on this crucial dimension.

A second major criticism of the work was that the evidence favoring the genetic hypothesis is based solely upon four cases. That is, of the 55 probands, four were

hospitalized and definitely diagnosed as alcoholic. While the results were statistically significant, one must consider the practical significance of basing conclusions on four cases. It seems more interesting to wonder about the 51 probands who were not diagnosed as alcoholic. Finally, Goodwin's manner of grouping the data to reflect drinking severity seems highly arbitrary, although it was done in the blind. The slightest alteration of his categories would dramatically change the results of his work. Also, general criticism of the adoption study method can be made on the grounds that Danish adoptees often (approximately 60 percent) have some knowledge of their biologic parents (Eldred, Rosenthal, Wender, Kety, Schulsinger, Welner, & Jacobsen, 1976). The precise effect of this contact on subsequent development of alcoholism has not been investigated. Last, no genetic evidence has been found among women, although alcoholism in females also runs in families. Clearly, the work of Goodwin requires replication.

Further evidence for the heritability of alcohol problems is advanced by a Swedish study (Kaij, 1960) that compared concordance rates for alcoholism between monozygotic and dyzygotic twins. The identical twins were concordant for alcohol problems in 54 percent of the cases, while fraternal twins were concordant in 28 percent of the cases. The twin study method was also utilized in a Finnish study (Partanen, Brunn, & Markkanen, 1966). The main findings of this research were

that normal drinking, abstinence, and heavy drinking show some heritable variation, while arrests, signs of addiction, and social complications seem unrelated. The authors differentiate the two groups of variables, the former as actual drinking behaviors and the latter as the social consequences of drinking. These data seem to show that actual drinking behaviors are affected by heritable factors, while the consequences of drinking behavior are not affected. Partanen (1972) concluded on the basis of these data that "innate differences between individuals in their propensities to consume alcohol" (p. 114) clearly exist. It is important to keep this distinction between actual drinking behavior and social consequences for drinking in mind. Although the twin study method has often received criticism (cf. Goldfarb, 1970; Rosenthal, 1971), it does provide valuable information which can be viewed as a vital first step in the process of understanding the interplay between genetic and environmental factors (DeFries & Plomin, 1978; Fischbein, 1978).

The final research reviewed which presents evidence for the heritability of alcohol problems utilizes the half-sibling method (Rosenthal, 1970). This work by Schuckit, Goodwin, and Winokur (1972a, b; Winokur, 1976) examined primary alcoholics (i.e. those with no other major psychiatric disturbance) who had a half-sibling. A diagnosis of alcoholism was based upon excessive drinking that had

caused serious problems with health or social adjustment. This research focused on the relative influence of having a biological parent who was alcoholic versus being reared by an alcoholic parent. While their sample size was small (n= 69), all of their findings indicated that having an alcoholic biological parent was the most predictive factor of an alcoholic outcome in these offspring. Living with an alcoholic parent did not increase the incidence of alcoholism for those half-siblings who did not have a biological alcoholic parent; nor did living with an alcoholic parent increase the incidence of alcoholism for those half-siblings with a biological alcoholic parent. Their data indicated that having an alcoholic biological parent had a greater influence on the incidence of alcoholism than environmental factors. Schuckit et al. concluded "having a biological alcoholic parent was the strongest predictor of alcoholism in the half-siblings" (p. 126). Other investigations of adopted and nonadopted sons of alcoholics report similar results (Goodwin, Schulsinger, Moller, Hermansen, Winokur, & Guze, 1974).

The numerous studies reviewed in this section purport that alcoholism is a familial disease with a nonspecific genetic component. In addition to the published research reviewed, Goodwin (1979) cites two unpublished adoption studies (M. Bohmen, unpublished data, 1977; R. Cadoret & A. Gath, unpublished data, 1977), one unpublished twin

study (J.C. Loehlin, unpublished data, 1972), and one untranslated foreign twin study (Jonsson & Nilsson, 1968). Goodwin reviews these four studies and concludes that they present further evidence for a heredity factor in alcoholism. Utilizing a myriad of complex methods designed to estimate the proportions of variance specifically attributable to genetic factors or environmental factors, these researchers conclude that a genetic component plays a significant causal role in the etiology of alcoholism. Future work in this area should endeavor to identify the precise genetic mechanisms (Cruz-Coke, 1973) along with specifying the nature of their undoubtably complex interactions with environmental factors (see Gottesman, 1974, for a discussion of this problem). The genetic studies place emphasis exclusively upon intra-individual differences (Class IV) of a biological nature. The effects of sociocultural (Class I), family of origin (Class II), and peer factors (Class III) are not generally integrated into this model, although the metabolic studies include some discussion of Class I factors.

While considerable data clearly demonstrate that alcoholism can be a familial disease (Cotton, 1979), the data are not sufficient to specify whether this finding is the result of environment or biology. The studies of Goodwin and his colleagues begin to attempt to isolate the effects of heredity from environment. Goodwin (1982) suggests

that minimally what is inherited is a lack of intolerance, that is, many individuals are unable to drink because they possess a strong intolerance for alcohol. Nevertheless the issue of mechanism is not yet at all understood. The high familial incidence of alcoholism can also be viewed from a social learning perspective, ie. the effect of a significant adult role model on the male offspring's future expectations about his own behavior.

Etiological Theories from the Perspective of Longitudinal Data

Several studies have looked at problem drinking with the specific intent of identification of its precursors. This work follows the course of an individual's development across time. As members of the subject pool subsequently have problems associated with drinking, the data that already exists can be carefully examined to see what commonalities exist between different afflicted individuals. In addition, the available data on subjects who do not have subsequent difficulties can also be examined to ascertain what commonalities exist within this group of "invulnerable" individuals (El-Guebaly & Offord, 1980; Garmezy, 1981).

This design (follow-through methodology) avoids the pitfalls already mentioned with retrospective analysis or extrapolation vis-à-vis deductive logic to assumed earlier events, although the longitudinal method does have several basic limitations (see Achenbach, 1978a). Four representative longitudinal studies are reviewed in this section (see Zucker & Noll, submitted for publication, for a review of all longitudinal studies completed).

The Oakland Growth Study has yielded some interesting information on the earlier life of the problem drinker. The work of Jones (1968) specifically looks at antecedents of drinking patterns in adult males and possible personality correlates. The age of first contact with subjects was ten and the last published follow-up report was at 33. The criterion for diagnosis of problem drinker was based on extensive interview data in conjunction with a medical examination. Part of this study reports on the pre-problem drinkers in junior high school. Jones discovered that male pre-problem drinkers tended to be extroverts who had a negative attitude towards life. Also they were impulsive in an unpredictable fashion, tending to be dissociative and disorganized. Many of these characteristics remained consistent across time, continuing to manifest themselves when later evaluations were conducted. Within the proposed model we employ, these results focus on intra-individual (Class IV) effects.

Jones' work produced information about the early life of the problem drinker which enhances our understanding of the ontological progress of alcohol problems. Additionally, it yielded some information about the family life of the problem drinker (Jones, 1971). These data are considered to be Class II (family of origin) factors of influence. Specifically, those men who developed drinking problems had mothers who tended to be sour and disagreeable, while at the same time they seemed uninterested in their son. These women disliked their position in life and felt unhappy about their status. Jones (1968) concluded that the men with drinking problems developed an intense independence-dependence conflict, as a result of earlier familial experiences. The conflict is resolved through the use of alcohol. She concludes that the combination of under-control and inability to function in a dependent relationship seems to be one which causes men to be highly susceptible to problems with alcohol. Jones has examined two classes of influence within our purported model. Her conclusions fit easily into the theoretical framework of the Zucker model as she postulates that interactions between Class II variables (family of origin) and Class IV variables (intra-individual) ultimately cause the male to have problems with dependency relationships which leaves him highly susceptible to future problems with alcohol.

An extensive examination of alcoholism utilizing data obtained vis-à-vis the longitudinal method is found in McCord and McCord (1960). Their work places emphasis upon the family, the individual, the interaction between them, examining in detail the environment within which the high-risk child develops, prior to the overt manifestation of the alcoholic disorder. First contact was when these subjects were ten or a bit older, and was maintained for over 20 years. All subjects were males and alcoholism was diagnosed on the basis of AA membership and/or public records from hospitals, welfare agencies, and courts. These operational criteria result in selection of a sample of individuals who are probably not representative of all problem drinking (Sadava, 1978). According to the McCords, the primary source of alcoholism in males is a dependency conflict. The conflict is the result of permanently heightened dependency needs, which cannot be satisfied because of the male role confusion of the child. These data are intra-individual factors (Class IV). The aggression and antisocial behavior commonly manifested by the prealcoholic male (also see Kulik, Stein, & Sarbin, 1968; Williams, 1970; Zucker & Barron, 1973) is simply a reaction formation against strongly felt needs to be cared for and nurtured, needs that in turn are experienced as unacceptable (McCord & McCord, 1962). While the heightened dependency needs remain as the primary contributing factor, the male

alcoholic also suffers from role confusion. The combination of these two specific elements culminates in alcoholism, rather than some other type of psychopathology.

The work of the McCords is unusually rich in its examination of the earlier family life experiences which seem to cause the alcoholic's conflict. They carefully examine potential effects of parental personality and style of discipline (Class IV factors) along with the developing child's personality (Class IV factors). Their data suggest that the inferred heightened dependency needs are caused by inconsistent mothering and intense parental conflict. Other factors which are thought to contribute include maternal escapism and maternal deviant behavior. The picture which emerges from their data is that of a male child who gets inconsistent care. The vascillations between good care and neglect cause the child to always want more. Additionally, because of the antagonistic maternal attitude towards society, the child never feels completely safe with his relationship to his mother (i.e., if she escapes from other problems, perhaps she's not completely safe for me).

These investigators believe that the source of the adult alcoholic's role confusion lies in a number of variables which are also intertwined with the child's father. These fathers were found to show more active rejection, punitiveness, escapism, and made low demands of their sons. Thus the paternal model available is the one which is

ultimately identified with by the child. These boys are not trained by example or by appropriate discipline to accept the responsibilities of an appropriate male role; they fluctuate between roles and never feel certain of their male identity (see Lamb, 1979, for an excellent discussion of these issues). Ultimately, the child develops a confused self-image. The primary factors which seem to combine to cause the alcoholic solution are inconsistent mothering, maternal deviance, paternal antagonism, and parental escapism. These factors combine to cause the exaggerated dependency needs, the masculine role confusion, and the resulting conflict. While these variables often seem to contribute to many types of psychopathology, the McCords argue that this very specific combination of complex elements results in alcohol related deviance. Later work by Joan McCord (1979) on child-rearing antecedents of adult criminal behavior suggests that child rearing variables which are most relevant to future criminal behavior are quite different from those which lead to alcoholism.

The model that the McCords suggest is associated with the following pattern. The family background of the future alcoholic (from early adolescence onwards) is one of general stress and erratic satisfaction of dependency needs, along with inadequate specification of the male role. The result of this environment is a male who has intensified dependency conflicts over means of satisfying these needs.

This specific constellation of elements leaves the male vulnerable to alcoholism rather than other types of psychopathology. While the specific variables assessed by the McCords differ from those of Jones, these researchers postulate similar models. Both hypothesize that the most critical factors are earlier familial factors (Class II) which interact with the developing child's personality (Class IV). These two classes of influence and the interactions between them are hypothesized to cause a specific personality type to develop which is highly susceptible to future drinking problems.

A recent longitudinal study was completed by Rydelius (1981). He followed up on a sample of male and female children of alcoholics and their controls who had been originally evaluated by Nylander (1960). Children in the original study were between four and 12 years and follow-up occurred twenty years after the initial contact. All of the follow-up data was collected by using the numerous public registers maintained by Swedish authorities and no personal contact took place. Rydelius found that, compared to male controls, male probands demonstrated poorer social adjustment, poorer general health, and more visits to psychiatric polyclinics as a result of abuse of alcohol or other drugs. Female probands demonstrated more health related difficulties, but did not differ from female controls on overall adult social adjustment. While this

work presents very interesting findings it is not yet a longitudinal study of alcoholism as the age at follow-up is still generally too young for severe manifestations of chronic alcohol abuse to be present. In addition these data were collected on a sample that was predominantly lower class and difficulties these children experienced were exacerbated by the multiple effects of social misery and severe paternal alcoholism.

The final study to be reviewed in this section was recently completed by Valliant & Milofsky (1982). They reported results from a follow up study of early adolescent boys (14 ± 2 years) who had served as a non-delinquent inner city control group for a study of delinquent youths. These boys were reinterviewed at ages 25, 31, and 47 years in an attempt to examine the contribution of five variables to subsequent development of alcoholism over the 33 years of the study. The variables examined were: 1) ethnic background, 2) alcoholic heredity, 3) antisocial behavior prior to alcoholism, 4) boyhood emotional adjustment, and 5) family stability/instability. Alcoholism was diagnosed on the basis of self-report interview information at ages 31 and 47 years utilizing diagnostic criteria of DSM-III, the Cahalan scale (Cahalan, 1970) and the Problem Drinking Scale (Vaillant, 1980). While these scales view alcoholism from different perspectives (ie. medical, sociological) the results of the study were minimally effected by these

various diagnostic criteria, that is, the specific criteria used to diagnose alcoholism had a negligible effect on the results.

According to Valliant and Miloksky, the best premorbid predictors of alcoholism were alcoholism in parents and ancestors; cultural background; and school behavior problems. The child's socioeconomic status during development, childhood emotional problems, quality of maternal affection, child's I.Q., and number of mentally ill relatives were not related to subsequent development of alcoholism. While these data suggest that having alcoholic relatives increases the child's risk, they do not allow any partitioning of variance between hypothesized genetic effects and/or effects as a result of living with an alcoholic parent. This study examines sociocultural and community influences (Class I) as well as family of origin (Class II) and intraindividual (Class IV) effects. The author's conclude that when a life span prospective approach is utilized, their data indicate that the most important contributions to explaining the etiology of alcoholism comes from consideration of cultural background (Class I) and alcoholism in one's parents and ancestors (Class IV).

The findings of this study are not conclusive as several serious methodological and conceptual issues are present. First, much of the parent and child data was collected

retrospectively. Problems with this technique have already been discussed. Second, the authors attempt to separate the contribution of school behavior problems from childhood emotional problems to adult alcoholism outcomes and argue that these two classes of variables contribute independently. Many children who experience school behavior problems also have emotional problems (cf. Loney, 1978) and while recent investigations have begun to attempt to tease apart any independent contributions of these childhood symptoms to eventual adult symtomotology (Loney, Kramer, & Milich, 1980) considerable work remains. The problem of differentiation of specific symptoms in childhood is especially critical in the Valliant study since data was collected retrospectively and interrater reliability for the presence of childhood emotional problems was very low - .56. Finally, while Valliant argues that culture and alcoholic parents make the most significant contributions of variance in his regression equation, these variables were the first entered into the equation and together account for only 11.1 percent of the variance.

Etiological Theories from the Perspective of Cross-Sectional Data

Areas reviewed in this section include a critical review of literature on children of alcoholics; a brief review of cross-sectional studies of problem drinking in

adolescence; and a review of a wide variety of studies which attempt to link hyperactivity in children to problem drinking in adults. The hyperactivity studies which are reviewed employ a broad spectrum of methodological approaches in addition to cross-sectional procedures. All of these studies are reviewed here to facilitate understanding.

The majority of the cross-sectional data on younger children who are statistically at risk for becoming alcoholic adults is discussed under the general rubric of children of alcoholic parents (Black, 1979; Blane & Hewitt, 1977; El-Guebaly & Offord, 1977; Fox, 1962, 1963; Haberman, 1966; Herjanic, Herjanic, Penick, Tomelleri, & Armbruster, 1977; Hindman, 1975; Jackson, 1962; Jacob, Favorini, Meisei, & Anderson, 1978; Moos & Billings, 1982; Nylander, 1960; Stevens, 1967; Wilson & Orford, 1978; Whitfield, 1980). This literature generally focuses upon either the numerous problems which children of alcoholic parents typically encounter when living with an alcoholic parent or any emotional/behavioral problems which are manifested by these children; presumably the child's problems are the result of the detrimental effect of parental alcoholism on children. Interestingly, except for the Herjanic study the literature which discusses young children from these families does not focus on the child's overall stature in juxtaposition to the child's high-risk status for

subsequent problems with alcohol. Behavioral/emotional problems which these children manifest are simply not commented upon from the perspective of earliest precursors of adult alcoholism. Zucker and Noll (1982) speculate that the ravages of adult alcoholism are so severe that attention of clinicians and researchers has remained riveted on the problem drinking along with its direct consequences on children, rather than viewing the children of alcoholics with a more critical eye. The perspective suggested is that a child's development is the result of numerous transactions between parents and child; each makes their own unique contribution. Thus the problems so typically found in children of alcoholics are seen as the result of contributions from both parents and child. The recent study of Moos and Billings (1982) begins to adopt such a perspective by looking at children of alcoholics still having difficulties and comparing these children to offspring of recovered alcoholics as well as normal controls.

Blane and Hewitt (1977) cogently point out many of the methodological limitations in this literature and caution against reaching any conclusions. For example, extensive use of antecdotal data, sampling difficulties, lack of clear diagnostic criteria for alcoholism, no controls or controls that have not been screened to exclude alcoholics, and poor measures are but a few of the problems. In addition, no study specifies both the age and sex of

children of alcoholics along with a specific catalog of problems of these offspring and only one study (Herjanic et al., 1977) differentiates age of children and problems manifested. Finally, only one attempt has been made to juxtapose the difficulties of the child with the duration and time of onset of the parent's alcohol related difficulties (Moos & Billings, 1982). Unfortunately then, from a developmental perspective little can be distilled from this earlier work.

Substantial cross-sectional evidence exists which links male adolescent problem drinking with concurrent antisocial behavior and impulsive activity (Costello, Parsons-Manders, & Schneider, 1978; Demone, 1972; Jessor et al., 1968; Jessor & Jessor, 1973; Schuckit & Chiles, 1978; Williams, 1970; Zucker & Barron, 1973; Zucker & Devoe, 1975). Further longitudinal data on adolescent behaviors has demonstrated that antisocial and impulsive activity can precede future alcohol abuse (Jessor, Collins, & Jessor, 1972; Robins, 1966). Since antisocial behavior and impulsivity frequently occur along with alcohol abuse, often even preceding the alcohol abuse (Loeber, 1982), perhaps a pattern exists which may be utilized by mental health professionals to intervene prior to the actual alcohol abuse.

Along these lines, some researchers argue that the prealcoholic male manifests the hyperactive child syndrome during early and middle childhood (Bell & Cohen, 1981;

Cantwell, 1972, 1978; El-Guebaly & Offord, 1977; Goodwin et al., 1975; Mendelson, Johnson, & Stewart, 1971; Morrison & Stewart, 1971, 1973; Tarter et al., 1977). Although hyperkinesis lacks a standardized diagnostic definition (Lambert, Windmiller, Sandoval, & Moore, 1976; Loney, 1980; Rosenthal & Allen, 1978), which varies dependent upon the source of data (Langhorne, Loney, Paternite, & Bechtoldt, 1976; DeFilippis, 1980), the type of measurement employed (Barkley, 1977; Sandoval, 1977), and the item pool utilized (Lahey, Stempniak, Robinson, & Tyroler, 1979; Loney, Langhorne, & Paternite, 1978), nearly all authorities agree that impulsivity is a primary symptom of the hyperactive child syndrome (Cantwell, 1978; Goodwin et al., 1975; Lambert et al., 1976; Rosenthal & Allen, 1978; Sandoval, 1978; Shaffer & Greenhill, 1979; Werry, 1968a, b). Some researchers have speculated that perhaps the impulsivity found in hyperactive boys underpins first hyperkinesis in early/middle childhood, second antisocial behavior in adolescence, and third problem drinking in adulthood (cf. Hale, Hesselbrock, & Hesselbrock, 1982; Tarter et al., 1977). This notion is especially intriguing since some argue that hyperactivity has a genetic etiology with an organic basis (Cadoret, 1976; Humphries, Kinsbourne, & Swanson, 1978; Rose, 1978), although others argue against this organic and/or genetic hypothesis (Dubey, 1976; Grinspoon & Singer,

1973; Langsdorf, Anderson, Waechter, Madrigal, & Juarez, 1979; Shaffer & Greenhill, 1979; Waechter, Anderson, Juarez, Langsdorf, & Madrigal, 1979).

The aforementioned problems with the hyperkinesis literature must be kept in mind when links between childhood hyperactivity and adult alcoholism are discussed. Despite the limitations, a substantial amount of work has been done which utilizes follow-up methodology to trace the adult outcome of childhood hyperactivity. In general, the pattern which emerges across numerous different studies suggests that hyperactive children are at risk for subsequent alcohol abuse and/or antisocial behavior; they also tend to remain impulsive, irregardless of treatment during childhood (Blouin, Bornstein, & Trites, 1978; Cantwell, 1972, 1978; Goodwin et al., 1975; Hechtman, Weiss, Wener, & Benn, 1976; Mendelson et al., 1971; Menkes, Rowe, & Menkes, 1967; Schaffer & Greenhill, 1978; Tarter et al., 1977; Weiss, Hechtman, Perlman, Hopkins, & Wener, 1979; Weiss, Minde, Werry, Douglas, & Nemeth, 1971). Recent work in this area has utilized longitudinal methodology (follow-through) along with multivariate statistics (Loney, Kramer, & Milich, in press). This work attempts to ascertain which specific symptoms of the hyperactive child syndrome are related to subsequent outcomes. The developmental pathway suggested by the Loney et al. data is that aggression in childhood rather than over activity is

the precursor of antisocial behavior and over activity in adolescence. Aggressive behavior is often reported in hyperactive children as one common symptom in the syndrome; however, much of the literature on childhood hyperactivity does not differentiate hyperactive behavior from aggressive behavior in these children (see Shaffer, McNamara, & Pincus, 1974, for a discussion of this problem).

Summary

The work discussed thus far provides some leads into the possible etiology of alcoholism. It is particularly weak in areas that concern behavioral manifestations in the child and his environment occurring prior to age 10 that are the precursors of alcoholism. The earliest longitudinal studies that deal with the ontogeny of alcoholism have not begun until late childhood, and most begin in late adolescence. The cross-sectional studies which provide data on younger children at statistical risk have primarily focused upon children of alcoholic parents as victims. When this literature is re-examined from the perspective of seeking earliest precursors of alcoholism, a host of serious methodological problems arise (see literature review). A second limitation with the work cited is that generally only two major classes of influence are integrated into the theoretical models that are developed. Greater emphasis must be placed upon potential sociocultural classes of

influence (ie. Vaillant & Milofsky, 1982) as well as the potential effects of peers. While some of the work that has been reviewed seems to indicate that the first "sensitive period" in the etiology of alcoholism in males might not occur until the child reaches his second or third birthday (ie, attachment theory as it relates to dependency), clearly strong evidence has been cited that indicates some generational continuity in the use of alcohol in males does exist (also see Cotton, 1979; Seixas, 1977; Whitlock, 1975). On this basis the precursors for subsequent alcoholism could be present from birth onwards, or at least shortly thereafter. All previous attempts at conceptualization of the earliest stages of development of the prealcoholic male have been done without actual observations and systematic data collection.

Statement of the Problem and Predictive Framework

The present project is a pilot study aimed at beginning to fill the critical gap which exists in our understanding of the development of alcoholic disorders. The research program will begin very early in the life of the child for several reasons:

(1) Considerable evidence has been reviewed which suggests that both males and females with a biological alcoholic parent have a substantially increased risk of

subsequently becoming alcoholic (also see Coombs & Dickson, 1981). While the data indicate that alcoholism is often a familial disorder, insufficient data exists to firmly identify specific etiological mechanisms. It is possible that high-risk children, from birth onwards, manifest subtle harbingers of future problems (see Schwarz, 1979).

(2) McCord and McCord (1960, 1962) found that male alcoholics exhibited more overt seeking of comfort, care, and direct guidance than nondeviate controls. These behaviors were categorized by the McCords as dependency behaviors. Since alcoholic males manifested more of these behaviors they concluded that alcoholics are excessively dependent. An interesting aspect of the McCord's data was that the male alcoholics exhibited fewer overt dependency behaviors than controls during adolescence (also see Blane & Chafetz, 1971; Jones, 1968). Zucker (1968), using the Gough Femininity Scale, found that heavy drinking adolescent males scored higher on tests of overt masculinity, but found no differences on tests of covert masculinity. Alcoholics have been found in general to prefer foods that are smooth, bland, rich, soft, and wet, more often than controls. A preference for these type foods was considered an indication of more intense oral passivity (Wolowitz, 1964; Wolowitz & Barker, 1968). Finally, alcoholics have been found to be perceptually more field dependent than controls (Witkin, Karp, & Goodenough, 1959). These findings

generally support the notion that male problem drinkers tend to have problems with developing means for satisfying dependency needs and they resolve this difficulty by establishing a facade of independence. The origin of the conflict over satisfying dependency needs could possibly lie in earliest infant attachments (Blane, 1974). Heavy drinking cultures have more oral themes in their folk tales (McClelland, Davis, Wanner, & Kalin, 1966) and male adolescents who have drinking problems have more oral themes in their fantasies than nonproblem drinkers (Zucker & Fillmore, 1968). In addition to the oral and dependency themes, psychodynamic conceptualizations of drug dependence emphasizes the narcissistic nature of the problem (Greenspan, 1977; Wurmser, 1977) and/or the unresolved conflicts between attachment and alienation (Barry, 1974b). Drug abuse, including alcohol, is viewed by many clinicians and researchers as a long standing problem in personality maladjustment (Apfeldorf, 1978; Huba, Wingard, & Bentler, 1979). "An impulsive, uninhibited, violent quality characterizes the normal infant, the intoxicated person and the chronic alcoholic" (Barry, 1974a, p. 92).

(3) The dramatic rise in the number of studies on the infant and preschooler during the past ten years (cf. Sameroff, 1978b) has provided a richer and fuller picture of early human development. An ancillary result of this increased research is the availability of a myriad of

sophisticated methods (cf. Brazelton, 1973; Thomas, Chess, Birch, Hertzig, & Korn, 1963) for assessing young children. These methods can be applied systematically and reliably to study children who are at higher-risk for subsequent drinking problems.

(4) An offshoot of improved research methods has been increasingly fine-grained analyses of early life events and their subsequent long-term effects. Brackbill (1977) found that anesthetics given to mothers during delivery can affect autonomic functioning of infants for eight months or longer (also see Friedman, Brackbill, Caron, & Caron, 1978). Transient neonatal symptoms (ie., restlessness, rigidity, apathy) have recently been found to correlate with loneliness and immaturity in 10 to 12 year olds (Mednick, 1977). Dubey (1976) in his excellent review of organic factors in hyperkinesis concludes that "the presence of higher than normal anomaly scores in hyperkinetic children does strongly suggest that a subtle deviation in prenatal development can lead to both minor physical anomalies and behavioral deviance" (p. 360). Some evidence exists indicating that males are less receptive to environmental influences during early infancy and show greater internal stability of behaviors (Yang & Moss, 1978), although Walraven (1974) reported that methods of feeding had greater psychobiological significance for males than females. Much of the earlier work in this area has not analyzed male and female data separately.

(5) Sarnoff Mednick and his colleagues (Mednick, Mura, Schulsinger, & Mednick, 1971) point out the need for good perinatal data on infants who are high-risk for schizophrenia. The complexity of Mednick's findings between difficulties in pregnancy, psychiatric status of the mother, type abnormality during neonatal examination, and outcome, suggests that similar results might be found with infants at risk for drinking problems. This type of work has never been undertaken.

The present pilot work attempts to move into new areas to advance our understanding of the alcoholic problem. The aim is to conduct a preliminary cross-sectional study which makes contact early in the child's life (under 6 years). The primary concern is to acquire valid and reliable data on each child using a wide variety of techniques such as formal and informal observations; mothers' and fathers' questionnaires; and experimental paradigms. We are carefully attempting to acquire data on each child from a number of perspectives especially direct observations, since much of the data on children of alcoholics has been obtained via mother's reports or indirect methods (Jacob et al., 1978; Moos & Billings, 1982). It is hoped that if high-risk markers exist, they will eventually be detected through the use of a conceptually guided, broad-based approach. This work will permit perfection of methodology and a narrowing of feasible hypotheses so that eventually a study can be

conducted using larger cohorts longitudinally.

The major weakness of this design is that if no significant differences are found, the results would be extremely difficult to interpret since this initial pilot study will be conducted with nine alcoholic and nine control families (see Minium, 1970, for a discussion of this problem). The low group N biases the study in the direction of committing Type II error. The optimal solution to this problem is to increase the sample size. This work is currently being planned.

The methods and theoretical framework described in this dissertation are one segment of a larger cross-sectional study--the Michigan State University Risk Study (Zucker, 1980; Zucker, Baxter, Noll, Theado, & Weil, 1982)--which is being conducted by Professor Robert Zucker and a number of his students. The scope of this paper is purposefully limited as it dovetails into the work which is being completed by others on the project staff. Thus each participant in the project is focusing their research on a relevant topic which is also of interest to them. This will facilitate the project's goal of utilizing a broad-based approach with limited resources.

Following the model which Zucker proposes, the present study will assess factors within Class IV, intra-individual influences in children from ages 2½-6. The remaining three spheres of influence are assessed using generic measures

which are collected on all families, or by specific metrics developed by other project members for their individual studies. This will permit us to establish the beginnings of a map of presumed etiological factors, within each of the four spheres of influence which have been suggested by the research on older populations.

Since this study focuses upon young children who are statistically at risk and no empirical data is available which is directly relevant, expected results are based entirely upon long range use of hypothetic-deductive thinking. Extrapolations must be made from retrospective, genetic, longitudinal, and cross-sectional data on alcoholics and preproblem drinkers. Whenever a clear body of directly pertinent data exists, a formal prediction of expected results will be made. Formal predictions are listed in Table 3, as well as being included in the text of the Methods section. If no directly relevant data is available or if previous findings are methodologically unsound, a statement of expected findings will be made. Expected findings are listed in Table 4, as well as being included in the text of the Methods section; they are more speculative than formal predictions.

Much of the data to be collected within the intra-individual sphere of influence focuses on generic topics of purported relevance to the etiology of alcoholism. As noted earlier (Zucker, 1980), variables which are being studied

Table 3

Formal Predictions

Assessment Focus	Instrument	Predictions
Children's ability to identify alcoholic beverages using smell	Recognition of Smells Task (modified from Jahoda & Cramond, 1972)	High risk boys will identify alcoholic beverages by smell more often than control boys
Children's knowledge of what beverages are appropriate for consumption by adults or children on various types of occasions	Appropriate Beverages Task (modified from Penrose, 1978)	All boys will select alcoholic beverages more often for adults than children--high risk boys will select alcoholic beverages more often than controls
Children's knowledge of the logical category "alcoholic beverage"	Alcohol Concept Task (modified from Jahoda & Cramond, 1972)	High risk boys will sort the beverages on the basis of alcoholic-nonalcoholic more often than control boys thus demonstrating more awareness of the concept "alcoholic beverage"

Table 4

Anticipated Directions of Effect

Assessment	Instrument	Expected Difference
Child's activity level, attention-span, persistence and mood	Behavior Style Questionnaire (BSQ; McDevitt & Carey, 1978)	High-risk boys will be described by their parents as having higher activity levels, lower attention-span persistence, and more negative mood than control boys
Child's activity level, mood, aggression, and impulsivity	Child Behavior Checklist (CBCL; Achenback, 1978b)	Parent's of high-risk boys will endorse more items indicative of high activity level, negative mood, or impulsivity - Aggressive factor on CBCL
Impulsivity and attention-span persistence	Revised Yale Developmental Inventory	High-risk boys will score lower on fine motor and adaptive than controls

have been selected on the basis of three major criteria:

1) Variables which appear to be etiologically relevant based upon data obtained with older high-risk populations (cf. Jones, 1968; McCord & McCord, 1960).
2) Variables which attempt to assess major classes of influence hypothesized to be theoretically relevant (cf. Sadava, 1978; Zucker, 1979; Zucker & Noll, 1982) to the development of drinking problems.
3) Variables which add to our general knowledge of child development in the context of the family (cf. Kagan, 1979).

Within the above context this research examines the following areas:

I. Each child's general development and cognitive capacities is assessed. This assessment is relevant to criteria 2 and 3 above. Impulsivity and hyperactivity are often cited as possible precursors that exist in the male child who subsequently becomes an alcoholic (see literature review). Insofar as the high-risk child tends to be more impulsive, has a shorter attention-span, and is less reflective in his approach to problem solving, performance on tasks which require attention and persistence will be less optimal (cf. Humphries, Swanson, Kinsbourne, & Yiu, 1979). Thus, if differences exist between high-risk and control boys, we anticipate that fine motor and adaptive scores will

be lower in the high-risk children (see Table 4). Assessment items in these areas favor an approach which is more reflective and persistent. Also, clumsiness of fine movements has been found in hyperactive children (cf. Menkes et al., 1967) and this could decrease performance on fine motor items. Since the ability levels in the children have not been controlled, this could potentially serve to mediate differences. For example, a high-risk boy may possess exceptionally high adaptive ability and perform only slightly above age level because he responded impulsively, or gave up relatively quickly. Despite this methodological problem, we anticipate that differences will emerge.

II. A second set of measures assesses the child's temperament, again evaluating attention-span persistence, but also focusing on activity level and mood. This assessment is relevant to criteria 1 and 2 above. The majority of studies on alcoholics and adolescent heavy drinkers agree that these men are characterized by negative mood and impulsivity (see literature review). Preproblem drinking males could tend towards impulsivity and negative mood from very early periods of development onwards, or this aspect of temperament might manifest itself only later (Zucker, 1979). Collection of temperament data cross-sectionally could provide new and important information.

Insofar as differences emerge between the high-risk and control boys, we expect that the high-risk boys will be

described by their parents as being higher on activity level, lower on attention-span persistence and having more negative mood than the descriptions of control boys by their parents (see Table 4).

III. Another area of focus is childhood psychopathology. This assessment is relevant to criteria 1 and 2 above. We are again especially interested in items endorsed by parents which indicate high activity levels, negative moods, or impulsivity in their child. These characteristics have been cited as possible precursors that exist in preproblem drinking male children. Since none of the data which have been reviewed is directly relevant to specific items which might be endorsed by the parents of a preproblem drinking male child at age 2½-6 years, no formal prediction of results will be made. However, insofar as differences exist, we expect parents of high-risk males to more frequently endorse items on the aggressive factor of the CBCL profile for males age 4-5 (see Table 5).

IV. The last set of measures assesses the child's knowledge of alcoholic beverages and their effects (see Aitken, 1979). This assessment is relevant to criteria 2 and 3 above. We are especially interested in exploring whether the high-risk boys perform differently from control boys with respect to knowledge, attitudes, and expectations about alcohol (cf. Christiansen, Goldman, & Inn, 1982). Only three studies have explored the development of

Table 5

Child Behavior Checklist Items Indicative of High Activity Level, Negative Mood, or Impulsivity.

3.	Argues a lot
8.	Can't concentrate, can't pay attention for long
10.	Can't sit still, restless or hyperactive
19.	Demands a lot of attention
22.	Disobedient at home
35.	Feels worthless or inferior
37.	Gets in many fights
41.	Impulsive or acts without thinking
74.	Showing off or clowning
86.	Stubborn, sullen, or irritable
87.	Sudden changes in mood or feelings
95.	Temper tantrums or hot temper
109.	Whining

children's (under ten) attitudes and knowledge of alcoholic beverages (Jahoda & Cramond, 1972; Penrose, 1978; Spiegler, in press). Perhaps the major reason for the paucity of systematic investigations in this area is the implicit belief that young children have no real knowledge of alcoholic beverages and their effects. Along with this belief has been the accompanying fear that exposure of young innocent children to knowledge of alcohol by researchers could cause harmful effects. Although our everyday experiences with young children and even infants in our own homes, as well as some empirical data (Jahoda & Cramond, 1972; Penrose, 1978; Spiegler, in press), clearly demonstrates that young children know about alcoholic beverages, the myth of children's innocence in this area seems to live on.

Insofar as differences exist between the high-risk and control boys, we predict the high-risk boys will possess greater knowledge of alcohol and its effects than control boys (Table 3). This prediction of expected differences is based upon a social learning framework and Zucker's heuristic model. Zucker's model postulates that a young child will be affected more heavily by familial influences (Class II) than social and community influences (Class I). Social learning theory has demonstrated that an important person modeling live behaviors will have a greater impact than less significant individual modeling behaviors either live or pictorially (Bandura, 1969).

CHAPTER II

METHOD

Subjects

Rationale

Due to the higher rates of alcoholism among men (see literature review), all children included in this study are male. High-risk male children were selected on the basis of paternal alcoholism. According to Goodwin (1976), no study which has examined the first degree male relatives of alcoholic men (fathers and brothers) has found less than 25 percent of these men alcoholic also. Thus alcoholism is 4-6 times more prevalent in these families than the general population (also see Cotton, 1979; Winokur, 1976). While a wide variety of additional sociological, cultural, and psychological factors have been implicated by investigators as being associated with the etiology of alcoholism, and conceivably could be used in selecting a high-risk group, we believe on the basis of the available data that the acquisition of families with problem drinking fathers renders the male child at sufficiently higher-risk for future alcohol abuse to warrant this research, utilizing this criterion only.

Alcoholic Families

The goal of our subject recruitment efforts was to locate a sample of men who had recently had sufficient drinking related problems to warrant a diagnosis of definite or probable alcoholic. The focus of this search was placed upon identification of men with intact families and young male children who had experienced drinking related problems during the life of their child.

The initial search process focused upon three potential sources of subjects: 1) industry; 2) the medical community; and 3) the Michigan Alcohol Highway Safety Program. Contacts with industry were limited to the Lansing area General Motors Plants since they already had an alcohol program established within the Oldsmobile and Fisher Body Plants. Because of non-resolved issues of confidentiality and a lack of cooperation from individuals in charge of this program, we were unable to use this potential source of subjects. The greatest problem in this area was the lack of cooperation and the implicit attitude we experienced of why should we help, what's in it for us? If cooperation could be obtained from large industry, this could be an excellent source of subjects.

Our search into the local medical community focused upon two potential subject pools: 1) inpatient alcoholism treatment centers and 2) physicians in the Greater Lansing area who specialized in the treatment of alcoholics. The

St. Lawrence Alcoholism Treatment Unit was open to our ideas and supportive, but the majority of the population they treated were older men with no young children. They did see a few younger men in this facility but the sample was very small. A larger treatment facility of this type would probably yield a sample of alcoholic men with pre-school children. Our contacts with physicians who specialized in the treatment of alcoholics met with some enthusiasm, but the group of men they treated was generally older with pathophysiological problems as a result of chronic long term alcohol abuse.

Contacts with the Michigan Alcohol Highway Safety Program brought us into contact with a large population of problem drinkers as well as the Alcoholics Anonymous (AA) hierarchy of the community. This large population of individuals arrested for drunk driving (DWI) had people of all ages and appeared to be an excellent source of subjects. Problems arose as a result of the generally uncooperative stance taken by project staff who were typically AA members and did not agree with aspects of the research we were conducting. Our anticipation of an unsympathetic view of our study had caused us to avoid official contact with AA as resource and the experience we had with officials at the Michigan Alcohol Highway Safety Program confirmed our expectations about the generally closed nature of the AA community to researchers.

The recruitment process failed to locate subjects through industry, the medical community, or the legal system. However, the legal system looked promising as men of all ages were getting arrested for DWI. Contact was initiated with the presiding judge of the East Lansing District Court who was enthusiastic about our project and permitted us to begin working with the probation officers who had contact with nearly all of the people arrested for DWI. The probation officers were also enthusiastic about our project and assisted project staff with an exhaustive search of court records to compile a list of all men who were married and arrested for drunk driving from January, 1978, to December, 1982. Subsequent to our successful work with the East Lansing District Court, we began a similar process with the Lansing District Court. The work with the Lansing District Court focused upon development of a list of men who were recently arrested for DWI and were married with a young male child between the ages of 2½ and 6-0 years.

The high-risk families were contacted via these two district courts in the Greater Lansing metropolitan area. From the East Lansing court all males who were married and had been arrested for impaired driving or driving under the influence of liquor from January, 1978, to the present were asked by probation officers on the court staff for permission to release records, names, and phone numbers to the research

project staff. The study was described as focusing on child development and family health. During this initial screening of records, the court staff attempted to contact 164 men. Phone contact was established with 129 of these men, as 35 had either moved away from the local area or had no current phone listing. Of the 129 men who were contacted 116 (90%) gave permission to court staff to release their name to the MSU study. The Lansing District Court also provided subjects for this project. All contacts attempted by this court staff were successful in that potential respondants agreed to allow contact with the researchers, but within the present sample, only one respondant had a male child in the appropriate age range. This man also was included. Subsequent to obtaining permission these records were screened by the research staff to ascertain whether criteria for inclusion are met. The criteria were:

1) Blood alcohol concentration (BAL) when arrested at least .15% (150 mg/100 ml; to reach this level a 150 lb. man would have to consume approximately 8 drinks in the past 1-2 hours on an "empty stomach" or 10 drinks in the past 1-2 hours on a "full stomach"[1] (AAA, 1982).
2) Having a biological male child between ages 2½ and 6-0 years at the time of data collection.

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[1] In Michigan, a blood alcohol concentration of 0.08% (80 mg/100 ml) to .10% (100 mg/100 ml) is considered impaired driving and blood alcohol concentration of greater than .10% is considered driving under the influence.

3) At time of initial study involvement, marriage is intact (ie. biological mother and father living together).

When a name on the court list met our criteria, project staff contacted the family either by phone or letter. Although it was sometimes difficult to make initial contact, all eligible families were eventually contacted. During the initial phone or mail contact families were told we were conducting a research project on child development and family health. Families were told they would be paid, and were asked when an appropriate time might be for our staff to explain the project in greater detail to them. The initial contact was not an active recruiting effort; rather it was to establish contact with the family prior to asking them to participate in person. All alcoholic families who were contacted in this fashion agreed to participate. Nine alcoholic families were qualified and then recruited from this list. The majority of the names on our lists were disqualified because they were older men whose children no longer met project age limits (no families were disqualified for low BAL).

It should be noted that our method for selection of families on the basis of paternal legal problems which are a direct result of excessive drinking was designed to insure that fathers meet time frame diagnostic criteria for a research diagnosis of definite or probable alcohol

abuse which have been used by other researchers. For this purpose, more complete information on parental drinking and its consequences were obtained on both alcoholic and control parents later during the course of data collection.

Community Control Families

This study utilized one control group, a "community" control group. A matched community control family was located for each alcoholic family that was part of the study. The family was to control for the effects of social prestige; age and birth position of the target child; and sibling constellation. By selecting families that lived well within the same census tract we hoped that control families would be very similar in sociocultural background.

Subsequent to the successful recruitment of an alcoholic family the person who contacted the alcoholic family began a door to door canvassing of the homes at least one block or more away from where the alcoholic family lived, but still in the same census tract. The purpose of this search was to locate comparable families with young children, specifically, to find a number of families who had a male child whose chronological age was matched to the age of the target child in the alcoholic family. Families were not actively recruited at this point, rather they were told that a research project on child development and family

health was taking place in their neighborhood. They were asked for their name, phone number, and the ages/sex of children living at home and were told they might be contacted in the future by the MSU Family Study staff. They were also informed they were under no obligation but if they did participate they would be paid for their time. In this fashion an extended list of potential community control families was developed. Ranging in an ever increasing recruitment circle, the list included all intact families in the neighborhood with a male child within ± one year (but no younger than 2½ years) of the target child in the alcoholic family. The list was extended until a perfect match on all relevant criteria (see below) was obtained, or until five potential families were found with appropriate aged sons. In the latter case the recruiter, in consultation with the project director, selected the family from the list of five that most closely fit our criteria.

From our list of families, first priority was given to matching on the basis of age of target child. Second priority was given to the type of home, avoiding obvious economic discrepancies, and third priority was to match the age/sex distribution of the sibship (Lahey, Hammer, Crumine, & Forehand, 1980; Lewis & Kreitzberg, 1979; Weller & Bell, 1965) as well as its overall size (El-Guebaly, Offord, Sullivan, & Lynch, 1978). (See Jacob, 1975; Seifer, Sameroff, & Jones, 1981, for a discussion of the rationale for matching). Over 90 percent of the families

contacted during neighborhood canvasses gave their names and phone numbers. Every family that was selected from our lists consented to participate.

Table 6 gives the demographic characteristics of the alcoholic and control families. There were no differences between the alcoholic and control families on any of the variables we attempted to match. In addition the age of the alcoholic and control parents did not significantly differ, nor did the current religious backgrounds of the families. "NA" in Table 6 indicates that a clear lack of differences was present so no statistic was computed.

Procedure

Initial Contacts and Screening

Subsequent to the initial phone contacts with families[1] who met research criteria, an appointment was made with each family to explain the details of the project (see Table 7) and to actively recruit them into "a project focusing on child development and family health". All recruitment was done in the home of potential subjects at the family's convenience (often weekends or evenings) by core research staff.

During the initial face-to-face contact families were assured that all of the information they gave us was

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[1] If a family agreed to participate in this project, and then or at a later point the parents voiced concerns about family problems in general, appropriate referrals were made.

Table 6

Sociodemographic Characteristics of Alcoholic and Community Control Families

		Alcoholic families (n=9)	Community control families (n=9)	F-value[1]
Age in Years				
- father's	$\bar{X}$	31.78	28.89	1.59
	S.D.	3.90	5.17	
- mother's	$\bar{X}$	30.22	28.11	<1.00
	S.D.	4.16	4.70	
Religion				
% Protestant				
-fathers		44%	33%	NA
-mothers		44%	44%	NA
% Catholic				
-fathers		33%	44%	NA
-mothers		44%	33%	NA
% no religion				
-fathers		22%	22%	NA
-mothers		11%	22%	NA
Family Social Prestige[2,3]				
	$\bar{X}$	29.72	27.03	<1.00
	S.D.	9.89	16.04	
Number of Children Currently Living At Home				
	$\bar{X}$	3.22	2.78	<1.00
	S.D.	2.11	1.72	

Table 6 (cont'd.)

Age of Children Living at Home (Years)				
	$\bar{X}$	6.50	4.61	3.03
	S.D.	4.68	2.80	
Age of Target Child (Years)				
	$\bar{X}$	4.11	4.07	<1.00
	S.D.	1.17	1.28	
Birth Position of Target Child				
	% 1st	22%	33%	NA
	% 2nd	56%	45%	NA
	% 3rd	22%	22%	NA

[1]Based on univariate F - tests; all p's nonsignificant.

[2]Duncan TSEI2 Socioeconomic Index, Stevens & Featherman (1980). These scores are based upon father's occupation except in one alcoholic family. This man had not worked for over 2 years as he was attempting to claim a work related physical disability. His wife's occupation was utilized, score 21.2.

[3]Two alcoholic fathers had been chronically unemployed. Phone contact with the Michigan Employment Security Commission established that "laborer" jobs at the minimum wage are available in the Lansing area and that the job classification "laborer" is not currently on the surplus labor list. Both of these men had been working previously as semi-skilled laborers.

Table 7

Contact Schedule for Collection of Child Related Data (All Contacts at Respondent's Home).

I. Initial contact for recruiting and screening (1½ hr)
   A. Consent forms and questionnaires (Project staff)
      1. Research Participation Informed Consent form - H & W* (Appendix I)
      2. Demographic Background Questionnaire - H & W (Appendix II)
      3. Health Questionnaires - H & W (Appendix III & IV)
         a. includes SMAST
         b. early developmental history of target child

II. Developmental assessment; questionnaires for parents (2 hr)
   A. Questionnaires about parents - Drinking and Drug History - H & W (Appendix V) - Project staff
   B. Developmental assessment + questionnaires about the child (RBN + Project staff)
      1. Revised Yale Developmental Inventory (YDI)
      2. Temperament questionnaire (Behavioral Style Questionnaire) - H & W
      3. Child Behavior Checklist - H & W

Table 7 (cont'd.)

III. Knowledge of alcoholic beverages (1 hr)

A. Assessment of child's attitudes and knowledge of alcoholic beverages (RBN)

1. Recognition of Smells (Appendix VI)

2. Appropriate Beverage Task (Appendix VII)

3. Alcohol Concept Task (Appendix VIII)

IV. Final contact session

A. Debriefing family and feedback from family (Project staff)

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*H = Husband, W = Wife

confidential. Twelve of the 18 families (six alcoholic and six control) contacted were randomly requested to participate in a more elaborate project that included home visits and video taping (see Baxter, 1981). All families who were offered this lengthier schedule consented to participate. Families were paid $150 for participation in the extended project and $75 for participation in the regular project and all families contacted agreed to participate.

When agreement was obtained parents signed consent forms (Appendix I) and were asked to complete a demographic information form (Appendix II) and a health history (Appendix III & IV). They were informed that they could end their voluntary participation whenever they wanted, but that payment would occur after the final data collection. Subsequent to this first session, the health histories of all men were examined since we had placed the short-form of the Michigan Alcoholism Screening Test (SMAST; Seltzer, 1971, 1975) within the health history questionnaire. The SMAST was used as the initial alcoholism screening inventory to insure that the ostensibly alcoholic families had men who in fact met appropriate alcoholic diagnostic criteria, and that they were having problems as a result of their drinking and control families did not have fathers who met these criteria. The father in one family that was initially recruited as a control scored very high on the SMAST and reported a recent DWI. This family was reassigned to the alcoholic group on the basis of these data. Mother's scores on the SMAST were not utilized

as criteria for either inclusion or exclusion from the project. Since self-reports of alcoholic's drinking behaviors generally coincide with the reports of collateral informants (Adams, Grant, Carlin, & Reed, 1981; Cotton, 1979; Guze, Tuason, Steward, & Picken, 1963; Maisto, Sobell, & Sobell, 1979; Polich, 1982), we had reason to expect the information from the SMAST would be valid. Even so, subjects' scores on the SMAST were only used to initially screen families. The definitive information on current patterns of alcohol consumption and problems associated with drinking were collected later in the data collection process (N.B. In point of fact, this screening was entirely successful; in no instance was a family admitted into the study as alcoholic, where later information disconfirmed that, although as we have noted, the obverse situation occurred in one instance.).

In general our goal was to collect all of the data for this project in the blind. Unfortunately this was possible in only 4 of the 9 pairs of families as I participated in recruitment of the remaining families. Possible differences as a result of blind vs. non blind data collection will be dealt with later in the discussion.

Measures

Each family that participated in the project completed numerous questionnaires, interviews, and direct observation sessions (see Zucker, 1980). It is beyond the scope of this

paper to discuss the methodology of the overall project. Measures included in this study in addition to sociodemographic characteristics of families are six sets of variables about the status of the target child and two variables about parent's drinking. Each parent completed four self-administered questionnaires, while each child was individually evaluated on two occasions (see Table 7).

Parent measures. Each parent was given two questionnaires about current (last six months) drinking patterns and problems they may have had related to consumption of alcoholic beverages. During initial screening each parent completed the SMAST and on a second testing each parent completed a Drinking and Drug History (DDH). The DDH was developed to provide detailed information on current consumption patterns of alcoholic beverages as well as problems resulting from drinking; it also provided detailed information on current and past consumption of other drugs (ie. marijuana, amphetamines, LSD, cocaine, etc.) as well as problems resulting from abuse of these drugs. Although detailed analysis of the polydrug use has not been completed, cursory examination of these data indicate that one of the alcoholic fathers has had problems as a result of excessive use of drugs other than alcohol in addition to problems resulting from alcohol consumption. Items were taken from a variety of sources (Cahalan, Cisin, & Crossley, 1969; Johnston, Bachman, & O'Malley, 1979; Schuckit, 1978; Appendix V). The consumption data from this questionnaire permits cataloging of drinking patterns into

quantity-frequency-variability (Q-F-V) indexes (Cahalan et al., 1969). The Q-F-V reflects the amount of alcoholic beverages consumed on each drinking occasion and the frequency of drinking occasions as well as the variability between drinking occasions. The Q-F-V index number is then placed into one of five drinking categories: 1) Heavy drinker, 2) Moderate drinker, 3) Light drinker, 4) Infrequent drinker, and 5) Abstainer. The DDH also has multiple questions (22 items) on problems and consequences of drinking. Ten of the items are the same or similar to SMAST items and twelve of the items reference different alcohol related problems. Items from the SMAST and DDH were carefully selected to insure that sufficient information was available on each subject so that a diagnosis of definite or probable alcoholism could be made using the Research Diagnostic Criteria (Feighner et al., 1972).

Child measures. Six sets of variables were assessed on each target child using a variety of different instruments and informants as well as direct assessments of the child. The variables assessed in each child were 1) impulsivity, 2) attention-span persistence, 3) mood, 4) activity level, 5) knowledge of alcoholic beverages, and 6) overall developmental status.

(A) Measurement of Temperament (especially activity level, mood, and attention-span persistence)

Both parents of children who participated completed the Behavior Style Questionnaire (BSQ; McDevitt & Carey, 1978). Thus for each child two measures of temperament were obtained. This approach permitted us to begin to ascertain if interrater

reliability between parents for the temperament dimensions conceptualized exists. Within Zucker's heuristic model, this assessment was designed to measure intra-individual factors (Class IV).

The BSQ is a 100-item questionnaire designed to obtain parental ratings on temperament for children ages 3-7. The BSQ is based directly upon the New York Longitudinal Study conceptualization of temperament and was developed in an attempt to provide a reliabile and practical instrument to assess NYLS temperament dimensions. Initially, 135 potential items were screened by eight judges familiar with the NYLS concept of temperament. Items were retained only if five of eight judges agreed which of the nine temperament dimensions that an item measured. An initial questionnaire containing 112 items was pre-tested on 53 school-aged children. Items were retained if they were highly correlated ($\geq$.30) with their assigned temperament dimension. An 108-item version of the BSQ was given to 369 parents of three to seven year old children. Items were retained as in the pre-test and this resulted in a final 100-item questionnaire.

The BSQ was returned by 350 of 369 parents and 55 of these parents were asked to retake the questionnaire four weeks later. The total score test-retest reliability was .89. The alpha coefficients (Cronbach, 1951) for the nine factors ranged from .47 to .80, with threshold (.47) and rhythmicity (.48) the only factors below .60. Thus the internal consistency for seven of nine temperament factors was above .60 for the overall sample (N = 350). The relationship between BSQ scores and early

school adjustment was investigated by Carey and associates (Carey, Fox, & McDevitt, 1977). They found that temperament was "a significant factor in school adjustment and that it can be measured by a clinical instrument appropriate for pediatric use" (p. 621). Carey et al. argue that their data provide some support for the external validity of the BSQ measure of temperament (also see Billman & McDevitt, 1980; Carey, McDevitt, & Baker, 1979; Field & Greenberg, 1982). Finally, Carey and McDevitt (1978) examined stability of temperament clusters in children from infancy (4 to 6 months) to early childhood (3 to 7 years) utilizing an infant temperament questionnaire and the BSQ. They found that a disproportionate number of children sampled showed continuity of temperament across time. Difficult infants who also had either high activity levels or very negative mood were most likely to remain classified as difficult in childhood (also see McDevitt & Carey, 1981). An excellent review of the psychometric adequacy of the BSQ along with 25 other instruments developed to measure temperament can be found in Hubert, Wachs, Peters-Martin, & Grandour (1982).

(B) Measurement of Childhood Psychopathology (especially activity level, mood, aggression, impulsivity)

Both parents completed the Child Behavior Checklist (CBCL; Achenbach, 1978c; Achenbach & Edelbrock, 1979; 1981). The CBCL consists of 118 behavior problem items and 20 social competence items that have been adapted for optimal use by parent report. The responses to the CBCL are scored

for social competence and behavior problems utilizing the appropriate Child Behavior Profile. Separate editions of the Child Behavior Profile have been developed and standardized for each sex at ages 4-5, 6-11, and 12-16. The profile developed for males, ages 4-5 was utilized for all children in this study including those under age four and over five years 11 months. Standardization and normative data for both age and sex of the child has repeatedly demonstrated that the same behavioral problems can vary in their empirical and clinical significance (Achenbach & Edelbrock, 1978c; DeHorn, Lachar, & Gdowki, 1979). For example, noctural enuresis has vastly different implications/consequences for a four year old male than for a 16 year old female. The CBCL provides data on any problem behaviors which the parent's perceive the child manifesting.

The pattern of scores on the CBCL permits analysis of the child's behavior problems with respect to profile types. These types are unique to each age/sex group and are based upon score patterns per se, not elevations (Edelbrock & Achenbach, 1978). All behavior problems are dichotomized between the two general factors of internalizing and externalizing. This dichotomy has proven to be highly robust with numerous instruments by different types of raters and in different situations (Achenbach, 1978c; Edelbrock & Achenbach, 1980). The profiles that have been obtained with the CBCL are the result of factor analysis that has been

systematically applied to completed checklists. The norms that have been obtained are clinical norms rather than norms for "normal" children. By utilizing a sample of clinic referred children to develop norms, maximal differentiation between profiles has been obtained (Edelbrock & Achenbach, 1978).

Preliminary investigation of the stability and reliability of the CBCL has indicated that the instrument is satisfactory for both referred and nonreferred children. Follow-up stability, across all sex/age groups for six months has been .71-.73; for eighteen months it has been .59 (Edelbrock & Achenbach, 1978; Achenbach & Edelbrock, 1979). Follow-up stability has been even better when the continuity of profile types are assessed. For all age/sex groups six month profile type stability was .89; for eighteen months the profile pattern stability was .76 (Edelbrock & Achenbach, 1978). The test-retest reliability of the CBCL across all age/sex groups is above .80 (Achenbach & Edelbrock, 1979, 1981). Finally, parents have been given the CBCL independently and asked to complete the checklist. Interparent agreement for all boys has been .79 (Achenbach & Edelbrock, 1979). Clearly the reliability and stability of the CBCL is satisfactory, although these data were not exclusively obtained from families with an alcoholic parent. The juxtaposition of the high interparent agreement on this instrument and the high value generally given to parent reports of child

behavior problems, i.e., "parents are typically the most important source of data on child behavior problems" (Achenbach & Edelbrock, 1978c, p. 1289, 1290), indicates that the CBCL will provide a rich picture of any behavior problems the child may have.

We were especially interested in items endorsed by parents which indicate high activity levels, negative moods, or impulsivity in their child (see literature review). The majority of these items (11 of 13) are on the aggressive factor of the CBCL profile for males age 4-5 and are considered by Achenbach to be externalizing items.

(C) Assessment of Cognitions about Alcohol

Recent work by Hood and Bloom (1979) strongly suggests that preschool children possess greater cognitive conceptual competence than classic Piagetian theory predicts (also see Brainerd, 1979; Gelman, 1979; Gelman, Bullock, & Mech, 1980; Nelson, 1972; Sugarman, 1981). Therefore all children were assessed on the child's knowledge and attitudes towards alcoholic beverages. This assessment was designed to ascertain whether male children of alcoholic fathers have a special awareness of alcohol and its effects at an early age as a result of presumed familial influences. The experimental paradigm being used was designed to assess whether differences exist.

Each child was tested in one session that lasted approximately thirty to forty-five minutes. The testing was

done by the same experienced examiner who assessed the child with the YDI. To avoid sensitizing the parents to our interest in alcoholic beverages, this assessment was done in our research van in front of the child's home. While cognitive testing appears straightforward, it is very difficult to conduct properly, and biased results can easily occur (see Jahoda & Cramond, 1972; Santostefano, 1978, p. 411). We attempted to create an optimal setting to assess the child by using an individual familiar to the child who is experienced in child assessment in a safe place free from distractions. Children were assessed on their ability 1) to recognize and verbally label the smell of alcoholic beverages, 2) to correctly identify the appropriate beverage for adults and children on various festive or everyday occasions, and 3) to correctly group various beverages into the class "alcoholic" or "non-alcoholic".

C-1: Smell recognition task

The recognition of smells task was developed by Jahoda and Cramond (1972) to assess the degree of familiarity that Scotish children ages six to 10 years had with one aspect of alcoholic beverages - the smell. The original procedures developed by Jahoda and Cramond have been modified slightly to increase task appropriateness for the younger American children assessed in this project. Children were asked to close their eyes and smell the contents of nine jars with various substances in them one at a time. Subsequent to the

first trial children who did not correctly name three substances plus one alcoholic beverage were shown photographs of the jars' contents and the task was repeated. In addition to assessment of children's ability to provide verbal labels for substances they smelled, children were asked a series of standardized questions after each correct response to determine whether they liked/disliked the substance and had knowledge of its appropriate uses. (See Appendix VI for a complete description of this task.)

C-2: Appropriate beverage identification

The appropriate beverage task is a "projective-like" technique developed by Penrose (1978). This task was designed to find out if a child is aware of which beverages are appropriate for children or adults on various occasions. Children were shown an array of photographs of different types of beverages and then were shown drawings of adults and children in different situations. For each drawing depicting women and men, boys and girls, the child was asked what the person(s) in the drawing would like to drink. At the conclusion of the task children were asked to provide verbal labels for all of the photographed beverages they had not already named. (See Appendix VII for a complete description of this task.)

C-3: Alcohol concept task

The final procedure assessed children's knowledge of the logical category "alcoholic beverage". The procedures

which were developed are based upon the work of Jahoda and Cramond (1972) and Santostefano (1978). Although children may be capable of naming an individual alcoholic drink, this ability does not imply that the child understands that each alcoholic drink falls into the larger, more general over-arching category of "alcoholic beverages".

The essential portion of this task examined whether each child could sort a group of eight beverage containers into smaller groups of beverages that belong together. The desired outcome for this object sorting task was for the child to sort the beverage containers into two groups - alcoholic and non-alcoholic beverages. If the child did not sort the beverage containers on this basis, then the examiner did it for the child. The child was then asked the basis for the object sort (alcoholic vs. non-alcoholic) and a series of standardized questions regarding their knowledge of alcoholic beverages. (See Appendix VII for a complete description of this task.)

D. Measurement of General Developmental Status (especially impulsivity, attention-span persistence)

All children who participated in the project were assessed with the Revised Yale Developmental Inventory (YDI). This inventory was administered to the child by a qualified examiner (RBN) who knew the purpose of the study. The YDI is difficult to administer properly, so undergraduate volunteers were not utilized.

The YDI was utilized to obtain extensive normative general developmental data on the children. These data provided a broad-based graphic of the child's general developmental status; they also permitted another assessment of the child's tempo as it impaired or enhanced his performance on the developmental assessment. Finally, the data could be compared to similar data that had been obtained in other major longitudinal studies (i.e., Study of Human Development, Fels Research Institute; Berkeley Growth Study, Institute of Human Development, University of California).

The YDI is a clinically oriented assessment tool that can be used with children aged four weeks through six years. The inventory examines the child's development in five major areas: 1) gross motor, 2) fine motor, 3) adaptive, 4) language, 5) personal-social. The result of the examination of the child with the YDI is a developmental age for the child in each of the five aforementioned areas and an overall developmental quotient for the child.

The YDI is primarily the Gesell Institute of Child Development Inventory (Gesell & Amatruda , 1958), along with selected supplementary items from the Merrill-Palmer, Stanford-Binet, Bayley, and the Hetzer-Wolf Baby Scales from the Vienna Test. The instrument was originally developed to be an extensive and comprehensive developmental inventory, taking items from other scales to increase the scope and depth of the assessment (Benedict, Note 1). It was chosen

over other potential early childhood developmental screening measures because of its scope and depth.

Although administration of the YDI requires strict adherence to specific guidelines for each test item, the specific order of item presentation is left to the discretion of the examiner. This permits a flexible approach by the examiner so that the child's interest and enjoyment can be optimized. This approach is in sharp contrast to other preschool assessment measures that require strict adherence to order of presentation as well as method of item presentation (ie. Stanford-Binet). The paucity of reliability and validity data on the YDI reflect this flexible approach; however, the flexibility generally permits a more comprehensive assessment.

The YDI is typically used clinically, not as a research instrument; however, the YDI has been used in several studies. This work has used the YDI to assess: 1) effects of infantile institutionalization on the child's subsequent general development (Provence & Lipton, 1962), 2) effects of day care (Provence, Naylor & Patterson, 1977), 3) effects of an extensive intervention project with high-risk infants (Provence, 1980), and 4) assessment of cognitive and language development in a longitudinal study of 47,XXX females studied from birth to 6-14 years (Pennington, Puck, & Robinson, 1980). The YDI has also served as a frame of reference for

the development of other preschool assessment instruments. Ritter (1977) reports a concurrent validity coefficient of r = .86 between the personal/social scale of the YDI and the Preschool Attainment Record (Doll, 1966), and Krasner and Silverstein (1976) report a concurrent validity coefficient between the YDI personal/social scale and the Vineland Social Maturity Scale (Doll, 1953) of r = .97. Finally, a correlation between the Denver Developmental Screening Test (Frankenburg, Dodds, Fandal, Kazuk, & Cohrs, 1975) and the YDI of .97 was reported by Frankenberg and Dodds (1967).

The YDI was administered to all children in the home during the morning. This minimized the stress for the child and should facilitate performance (Passman & Lautmann, 1982). In addition, testing at home with both parents present enhanced the ecological validity of this assessment of the child's emerging competencies. The YDI permitted exploration of any standard developmental marker differences that existed between high-risk and control children; it was not utilized as a predictor of future intellectual functioning, since longitudinal studies of mental abilities have clearly shown that early performance (under six years) has relatively little predictive validity for future cognitive abilities (Bayley, 1970).

CHAPTER IV

RESULTS

Analyses

The two groups were compared on the six sets of variables relevant to the target boys and the two sets of variables about parents' drinking, all previously described. Since the target children were recruited on a matched pair basis, these six indices were analyzed using a matched pair analysis of variance (BMD-P2V). Analyses of covariance (BMD-P2V) controlling for chronological age, were conducted on the measures reported by parents and the developmental data to determine whether differences were significant when this factor was taken into account. Results obtained using analyses of variance and covariance were strikingly similar. The two parental self report indices were compared using one way analyses of variance (SPSS).

Parent Measures

General

Each parent completed a SMAST and a DDH. These two self-report questionnaires provided data on current drinking patterns and problems experienced as a result of

drinking. All of these results are given in Table 8.

Diagnosis of Alcoholism

Based upon Research Diagnostic Criteria (Feighner et al., 1972; Table 1) for diagnosis of alcoholism, all of the alcoholic fathers were diagnosed as either definite or probable alcoholic, while none of the control fathers were diagnosed as alcoholic. Two of the wives of alcoholics were also diagnosed as being definite alcoholics; thus in two of the alcoholic families both parents were alcoholics. One of the control wives was diagnosed as a probable alcoholic. These diagnoses are based upon self-reported problems or consequences of drinking during the life of the target child, ie. approximately over the past four years. Alcoholism related signs reported before this period were not included in arriving at these tabulations.

Drinking Problems

The alcoholic fathers reported significantly more drinking related problems on the SMAST and on the measure of total number of drinking related problems from the DDH. Differences between wives of alcoholics and control wives were not significant for SMAST scores or total number of problems. The scores of control fathers were quite similar to the scores obtained by both groups of wives and all of these scores are indicative of nonproblem drinking.

Table 8

Alcoholic Diagnosis, Drinking Problem Scores, and Drinking Pattern Scores in Alcoholic Families And Community Control Families

		Alcoholic Families (N=9)	Community Control Families (N=9)	χ^2 Value[1]
% with diagnosis of alcoholic[2] during life of target child				
- fathers				
% probable		22%	0%	<1.00
% probable + definite		100%	0%	37.98***
- mothers				
% probable		0%	11%	<1.00
% probable + definite		22%	11%	<1.00
- fathers and mothers				
% probable		0%	0%	<1.00
% probable + definite		22%	0%	<1.00
Total number of drinking problems (ever)				F Value[3]
- fathers	$\bar{X}$	9.89	2.11	18.16***
	S.D.	5.11	1.96	
- mothers	$\bar{X}$	1.67	.89	<1.00
	S.D.	2.91	1.29	
Mean SMAST[4] scores				
- fathers	$\bar{X}$	7.56	.89	29.33***
	S.D.	3.61	.78	

Table 8 (cont'd.)

- mothers	$\bar{X}$	1.22	.67	<1.00
	S.D.	2.39	1.00	
Mean Q-F-V[5] index past 6 months				
- fathers	$\bar{X}$	2.00	2.44	<1.00
	S.D.	1.32	1.13	
- mothers	$\bar{X}$	2.56	2.89	<1.00
	S.D.	1.51	1.36	

[1] χ^2 computed with Yates correction for continuity.

[2] Using Feighner et al. (1972) Research Diagnostic Criteria and best estimate data from SMAST and Drinking and Drug History.

[3] Based on univariate F - tests.

[4] SMAST - Short form Michigan Alcohol Screening Test; data are best estimates from multiple information sources.

[5] Cahalan et al. (1969) Alcohol Consumption Index (Quantity-Frequency-Variability): 1=Heavy drinker; 2=Moderate drinker; 3=Light drinker; 4=Infrequent drinker; 5=Abstainer.

Drinking Pattern

The alcoholic fathers reported consuming more alcoholic beverages during the past six months than control fathers but this difference was not significant. Reported consumption was moderate for alcoholic fathers and moderate to light for control fathers. Both groups of mothers reported consuming less than the men, with wives of alcoholic men reporting slightly more consumption than control wives. None of these differences are significant.

Child Measures

General

Two types of measures were obtained on each child - direct observations and parental reports. Direct observational data included the Revised Yale Developmental Inventory (YDI) and the measures of children's knowledge and attitudes towards alcoholic beverages. Parental report data included two Child Behavior Checklists and two Behavioral Style Questionnaires, one from each parent for each child.

Direct Observations

(A) Measure of General Developmental Status

All children were tested during the morning in their home with the YDI. The pattern of results obtained on developmental testing indicated that while the control

children and the high risk children were well matched on chronological age, the control children performed significantly better in all areas assessed except gross motor (see Figure 2). High risk boys generally performed at appropriate age level, but the control boys obtained scores that were significantly above age level. This pattern of results occurred in all areas except gross motor, where both control and high risk children performed at appropriate age level. A secondary analysis of these data examined the correlation between risk status and performance on the YDI with chronological age as a covariate (Table 9) and found that risk status was highly correlated with indices of performance on developmental testing.

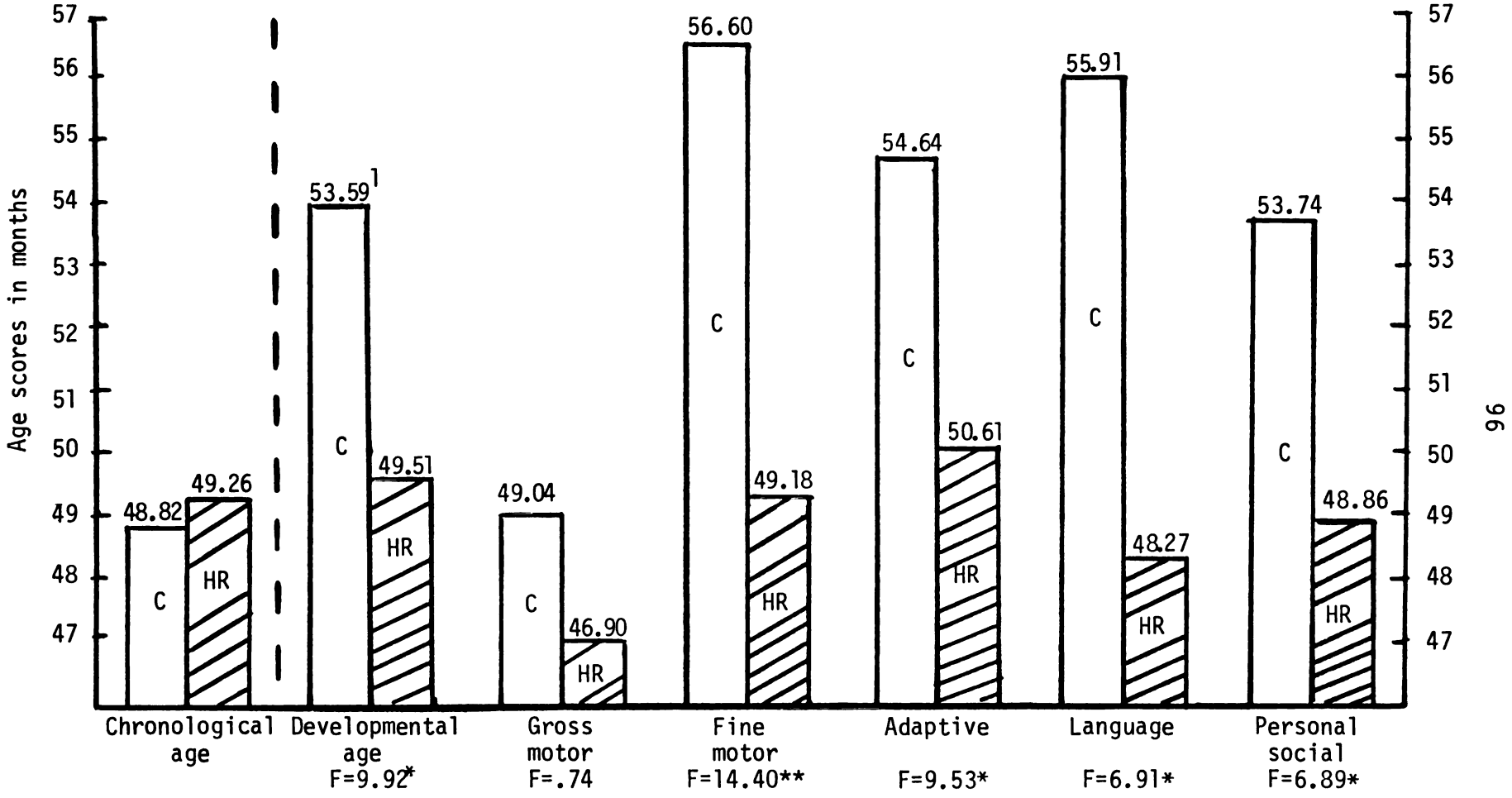
(B) Assessment of Cognitions about Alcohol

Each child was assessed with three tasks designed to elicit data regarding their knowledge of alcoholic beverages. Data were first analyzed to determine whether young children could respond appropriately and second to determine if differences were present between high risk and control children.

B-1: Can children provide verbal labels for substances they have smelled?

The data indicate that the children correctly labeled substances on the basis of smell alone and their overall performance improved slightly when given photographs of these substances as an additional aid (Table 10). None

Figure 2. Scores on Yale Developmental Inventory-Revised. Matched Pair Comparisons Between High Risk (HR) and Control (C) Children.



[1]All mean ages are adjusted cell means

*p<.05, **p<.01. (All matched pairs ANACOVA, chronological age as covariate, N=9 pairs)

Table 9

Correlations[1] Between Performance on YDI Indices and Risk Status

Developmental age	.76**
Gross Motor	.31
Fine Motor	.82**
Adaptability	.76**
Language	.70**
Personal/social	.70**

**p<.01

[1]Note: Correlations were obtained with chronological age as a covariate using EWFTOR statistical procedures (Cohen & Cohen, 1975).

Table 10

Children's Ability to Verbally Label Substances

Using Smell Alone for the Stimulus

	High risk (N=9)	Control (N=9)	F Value[1]
Smell Alone[2]			
$\bar{X}$	4.22	2.78	2.38
S.D.	1.79	2.17	
Smell and Photographs			
$\bar{X}$	4.38	4.13	<1.00
S.D.	1.18	1.25	

[1]Based on univariate F-tests, all p's nonsignificant.

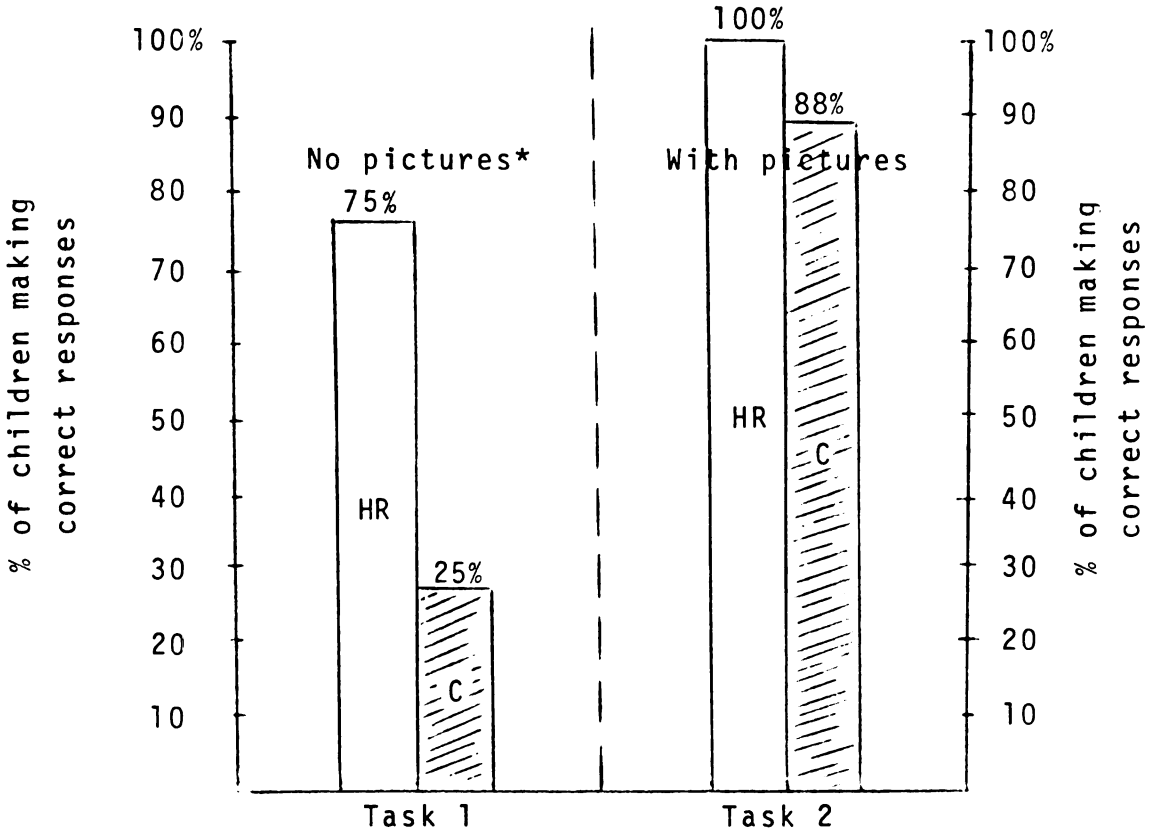
[2]Note: The children smelled nine different substances: Coffee, play doh, popcorn, beer, whiskey, wine, apple juice, tobacco, and perfume.

of these differences are significant. Data on alcoholic beverages alone show that while control and high risk boys did equally well in their overall ability to correctly label alcoholic beverages, the high risk boys did significantly better than control boys during the first trial (Task 1) of the assessment (ie. without any picture present; Figure 3). These findings are based upon giving children positive credit on alcoholic beverage identification even when they mislabeled the specific beverage (ie. called whiskey "beer"). Both groups of children made nearly equal numbers of errors (17 total; nine errors by controls and eight by high risk boys) and children rarely labeled any of the alcoholic beverages anything except its correct name or another alcoholic beverage. For individual subjects, six high risk boys (67%) succeeded at labeling alcoholic beverages correctly on Task 1, while only two control boys (22%) were successful ($\chi^2 = 3.83$, $p < .10$, with Yates continuity correction).

When the substances were presented to the children along with photographs (Task 2) the control boys improved significantly. For individual subjects, eight high risk and seven control boys could correctly label at least one of the alcoholic beverages on either Task 1 or 2. Across both tasks for all trials of alcoholic beverages high risk boys correctly labeled alcoholic substances 44 percent of the time, control boys 31 percent of the time. It should

Figure 3

Children's Ability to Identify Alcoholic Beverages Using Smell[1]. High Risk vs. Controls[2].



[1]Children first attempted the smelling task (Task 1) without pictures. If a child could not correctly identify 1 alcoholic beverage plus 3 other smells, they attempted it again with photographs of the substances placed before them (Task 2). If a child succeeded with Task 1, the task ended.

[2]N=8 pairs. The youngest pair of children ages 32 and 31 months did not comprehend the task.

*χ^2=4.25, $p<.05$. (χ^2 computed with Yates continuity correction).

be noted that within this sample chronological age and the ability to correctly label substances by smell alone were significantly correlated ($r=.59$, $p<.005$); of the three boys who were never able to correctly label any of the alcoholic beverages on either Task 1 or 2, all were under 33 months.

Children were asked questions about the substances they had correctly identified from smell. The children not only could identify the substances, but could provide socially normative information about the substance. In response to "who uses these things?", Table 11 shows the children stated that adults more typically used both alcoholic beverages and adult substances, while children reported the generic substances (e.g. pop corn) were used by both adults and/or children. When asked "do you like (particular substance)?, they showed a clear preference for the generic substances, but generally reported they did not like the alcoholic beverages or the adult substances (Table 12). There were no differences between the high risk and control boys on either of the above two questions.

B-2: Appropriate beverages task.

In general both the high risk and the control boys selected alcoholic beverages significantly more often for pictures of adults (age effect) than they did for pictures of children (Table 13). Alcoholic beverages were selected for pictures of children 5 percent of the time and for pictures of adults 27 percent of the time. This analysis

Table 11

Childrens' Responses to the Question

"Who Uses This Substance?"[1]

Type of Substance	Who uses substance?	
	Adults only	Adults and/or children
Alcoholic beverages (beer, wine, whiskey) $\chi^2=4.47$*	84%	16%
Adult substances (coffee, tobacco, perfume) $\chi^2=1.32$	68%	32%
Generic substances (play doh, popcorn, apple juice $\chi^2=18.01$**	0%	100%

[1]Only children who successfully identified a substance by smell were asked this question about that substance.

*$p<.05$, **$p<.01$. (χ^2 computed with Yates Continuity correction).

Table 12

Childrens' Responses to the Question

"Do You Like/Dislike the Substance?"[1]

Type substance	Like	Dislike
Alcoholic beverages (beer, wine, whiskey) $\chi^2=1.03$	33%	67%
Adult substances (coffee, tobacco, perfume) $\chi^2=1.48$	32%	68%
Generic substances (play doh, popcorn, apple juice) $\chi^2=16.02$*	100%	0%

[1]Only children who successfully identified a substance by smell were asked this question about that substance.

*$p<.01$. (χ^2 computed with Yates continuity correction).

Table 13

Appropriate Beverage Task: Comparison of Beverage Selections of High Risk and Control Boys (Risk Status) for Festive and Non-festive Occasions (Type of Occasion) Involving Pictures of Adults and Children (Age Effect).[1]

Source	SS	df	MS	F
Total	2.019	56		
A. Risk status	.100	1	.100	3.71*
B. Type occasion	.025	1	.026	.63
C. Age effect	1.648	1	1.648	48.86**
A x B	.022	1	.022	1.06
A x C	.011	1	.011	.51
B x C	.030	1	.030	1.41
A x B x C	.003	1	.003	.26
Error	.180	49	.004	

*p<.10, **p<.003.

[1]Note: These data were analyzed using a matched pair analysis of variance design (N=8 pairs). One pair was not available for this analysis because the youngest matched pair of children (ages 31 and 32 months) did not understand the task and it was not administered.

also shows a risk status effect; high risk boys tended to select alcoholic beverages more often than control boys, but this difference only reached the 10 percent level of confidence.

A second analysis of these data examined responses to pictures of adults alone (Table 14). Both groups of children selected alcoholic beverages more often for pictures of men than women. Alcoholic beverages were selected as appropriate beverages 51 percent of the time for adult men and 22 percent of the time for adult women. Both risk status groups were similar on this task. There also were no differences on either of these analyses as a result of the type of occasion (festive/non-festive).

Subsequent to completing the Appropriate Beverage Task children were asked to name or identify the photographs of the beverages. This provided an additional assessment of the childrens' knowledge of alcoholic beverages vis à vis their ability to recognize photographs of alcoholic beverages. Table 15 shows that while children were generally better at identifying the non-alcoholic beverages, beer was correctly identified as often as milk or soda. The risk groups did not differ on this task.

B-3: Alcohol Concept Task

Very few of the children were able to determine an appropriate verbal label for any of the groups of objects that they had been presented. Even fewer understood the

Table 14

Appropriate Beverage Task: Adult Pictures Only: Comparison of High Risk and Controls (Risk Status) for Festive and Non-festive Occasions (Type of Occasion) Involving Pictures of Adult Males and Females (Sex Effect)[1].

Source	SS	df	MS	F
Total	2.136	56		
A. Risk status	.192	1	.192	2.18
B. Type occasion	.000	1	.000	.00
C. Sex effect	1.147	1	1.147	29.88**
A x B	.004	1	.004	.06
A x C	.074	1	.074	.29
B x C	.038	1	.038	1.03
A x B x C	.010	1	.010	.11
Error	.671	49	.014	

**p< .001.

[1]Note: These data were analyzed using a matched pair analysis of variance design (N=8 pairs). One pair was not available for this analysis because the youngest matched pair of children (ages 31 and 32 months) did not understand the task and it was not administered.

Table 15

Children's Ability to Correctly Name or Identify Photographs of Alcoholic and Non-Alcoholic Beverages[1].

Alcoholic beverages	% of children who correctly named or identified photograph	Non-alcoholic beverages	% of children who correctly named or identified photograph
Beer	100%	Coffee	94%
Wine	59%	Lemonade	88%
Whiskey	41%	Milk	100%
Sherry	12%	Orange Juice	94%
Gin/Godka	47%	Soda	100%

[1]These data are based upon N=17. One high-risk child aged 32 months did not participate in this task.

concept of sorting objects into groups that belonged together. Regardless of their ability to sort objects or supply verbal labels to groups of objects, all of the children were asked if they had ever tasted any alcoholic beverages, who gave the beverage to them, and whether they planned to drink alcoholic beverages when they were adults. Many of the children reported trying alcoholic beverages (67%) and nearly all of these children reported that their fathers had given it to them (80%). Nearly all of the children reported they planned to drink as adults (89%), while all (100%) of the children reported they planned to use tools as adults. There were no differences between the risk groups.

Parent Reports

(A) Measurement of Temperament

No differences were found in any of the data obtained with the Behavioral Style Questionnaire (BSQ). These data were analyzed using a matched pair design with chronological age as a covariate to test the three hypotheses concerning mood, activity level, and attention-span persistence. A second analyses of these data using the same design, compared responses of parents on all of the nine temperament dimensions assessed by the BSQ, and again found no differences between parents in alcoholic or control families. A final analysis to determine whether high risk parents disagreed more than control parents on

their child's temperament also revealed no significant differences (see Table 16 for the means and standard deviations used in these analyses.)

(B) Measure of Childhood Psychopathology

No differences were found in any of the data obtained with the Child Behavior Checklist (CBCL). These data were analyzed using a matched pair design with chronological age as a covariate. The first analysis compared scores of high risk to control boys on the 11 critical items (Table 7) selected from the CBCL as being indicative of high activity levels, negative mood, or impulsivity. A second analysis compared the groups on all of the CBCL factor scores. The final analysis of these data examined differences in reporting between alcoholic and control parents to determine if alcoholic parents disagreed more or less in their perceptions of their sons' than control parents. There were no significant differences in any of the above analyses (see Table 17 for the means and standard deviations used for these analyses).

Table 16

Behavioral Style Questionnaire: Means and Standard Deviations for High Risk Boys and Control Boys

		High Risk Families (N=9)		Control Families (N=9)		F-Value[1]
		Fathers	Mothers	Fathers	Mothers	
Activity level						
	$\bar{X}$	3.70	3.73	3.55	3.53	1.14
	S.D.	.49	.51	.38	.56	
Mood						
	$\bar{X}$	2.82	3.38	2.93	3.01	<1.00
	S.D.	.51	.80	.42	.56	
Attention-span Persistence						
	$\bar{X}$	2.98	3.13	3.02	2.70	<1.00
	S.D.	.67	.63	.76	.77	

[1] Based upon balanced designs analysis of variance (Coyle & Frankmann, 1981) high risk vs. control parents.

Table 17

Child Behavior Checklist: Means and Standard Deviations for High Risk Boys and Control Boys

	High Risk Families (N=9)		Control Families (N=9)		F-Value[1]
	Fathers	Mothers	Fathers	Mothers	
Aggression					
$\bar{X}$	10.67	10.33	8.89	11.44	<1.00
S.D.	4.30	8.65	5.11	4.36	
Critical items					
$\bar{X}$	7.78	7.20	5.89	7.56	<1.00
S.D.	3.77	4.58	3.37	3.32	
Total problems					
$\bar{X}$	22.22	25.11	24.44	29.22	<1.00
S.D.	8.01	16.49	13.67	8.03	

[1]Based upon balanced analysis of variance (Coyle & Frankmann, 1981) high risk vs. control parents.

CHAPTER V

DISCUSSION

Before a discussion of the results of this dissertation can be undertaken, several problems inherent to the design and methodology used in this study will be analyzed. First, although a significant amount of data on a group of children homogeneous for age were collected, the sample size is very small. This creates several problems with these data. It is possible that more differences existed between the groups, most notably on the parent checklists and alcohol concept tasks, but the small sample size limited the power of this study to uncover these differences (ie. Type II error). Thus some of the no difference results presented here need to be accepted quite cautiously.

A second problem related to the small sample size is that perhaps the sample is idiosyncratic in a manner that we failed to control or recognize. There are several ways this could take place: 1) By selective bias in recruitment - This does not seem likely since we went right down our list when contacting alcoholic families and went door to door when recruiting community control families. 2) By selective participation - This also does not seem very likely since the participation rate of alcoholic families

was 100% and for control families approximately 90%. 3) By selecting from an unusual population - We recruited from court records in a midwestern community and obtained a sample whose social prestige scores are indicative of blue collar semi-skilled laborers. While the results obtained may not be generalizable to other social class groups this is not a serious defect since the largest group of alcoholics is also found among individuals with this socio-economic background. It does need to be kept in mind. 4) Idiosyncratic sampling - It is possible that our particular sample is idiosyncratic in some way that we did not anticipate. Because of the small size of our sample this possibility must also be kept in mind.

Another problem with this study is that much of the direct observational data were not obtained in the blind so it is possible that experimenter bias influenced the results (Rosenthal, 1976). This problem exists on two levels: 1) the tester knew the purpose and design of the study and 2) the tester knew whether many of the children were either a member of the alcoholic or community group. To minimize potential experimenter effects during the difficult developmental and cognitive assessments of these preschoolers, each child was encouraged to perform at the limits of his ability rather than taking a more restrained approach to the assessments. It was hoped that experimenter effects could be minimized if the examiner routinely

attempted to obtain each child's optimal performance.

Evidence suggesting that experimenter effects did not significantly influence the results comes from two sources. First, if these effects influenced the results they occurred in an apparently haphazard fashion. Some of the study's hypotheses were rejected, some were not, and some significant findings occurred in areas that were not predicted or anticipated. Second, if experimenter effects were occurring a differential pattern of results should manifest itself dependent upon whether the examiner knew in advance which group the child was a member of. The examiner knew in advance about the child's risk status for 12 children (6 pairs), but did not know the child's risk status in advance for six children (3 pairs). Careful examination of YDI scores across these 2 groups (known vs. unknown status) indicated that the pattern of differences between high risk and controls was the same regardless of their status with the examiner prior to testing. A similar analysis of the children's performance on the smell task also did not show any differential pattern of results. Although these two lines of circumstantial evidence suggest that experimenter effects did not occur, it remains possible that they influenced the results. As stated, the examiner was not blind to the design and purpose of the study and could have correctly guessed the status of the child. Future data collection procedures

using direct observations should be blind not only to the child's risk status, but also to the design and purpose of the study.

Adult Measures

Drinking Patterns and Problems

Three types of circumstantial evidence exist which suggested that these fathers with young children are not a unique population who had the misfortune to be apprehended subsequent to their one rare binge. First, epidemiological data obtained on "nonalcoholic" populations indicates that various aspects of drinking patterns vary concomitantly. The episode-frequency distributions obtained show that drinkers who drink the most per occasion also consume the greatest amount overall (Fuller, Bebb, Littell, Houser, & Witschi, 1972). More recent data obtained by Babor and his colleagues (Babor, Mendelson, Uhly, & Souza, 1980) with a sample of male problem and non-problem drinkers in an experimental and naturalistic setting are consistent with the Fuller et al. results. These researchers concluded that their data offer "empirical evidence for the proposition that frequency of drinking varies with intensity" (p. 647). Both of these studies seem to indicate that the drinker who consumes a large amount on any one occasion is the same drinker who drinks large amounts overall.

A second line of evidence relevant to the problem drinking status of our fathers examines their drinking behavior from a life-span perspective. Zucker (1979) noted that epidemiological data has demonstrated that the proportion of drinkers in the overall population increases steadily until approximately age 24, then it falls off markedly. A similar pattern emerges for problems associated with drinking, in that younger segments of the population experience more problems as a result of drinking. Zucker postulates that the shift in the number of drinkers as well as the decline in drinking related problems is a result of "marriage and its related values for increased interdependence, achievement and prosocial activity (starting a family, holding a steady job, etc.)" (p. 51). Along similar lines, Gutmann (1975) argues that parenthood has a significant effect on fathers causing a dramatic shift towards greater responsibility and moderation. Gutmann interviewed fathers from several cultures and found similar patterns existing across cultures (also see Feldman, Biringen, & Nash, 1981). We expected these men who were drinking excessively and had legal problems when they were married with very young children would indeed be a severe problem drinking population.

The results show that our recruitment of families via the court subsequent to an arrest for DWI produced a sample of families with men who are or have recently been alcoholic.

However, while all men who receive a DWI tend to drink more heavily (cf. Donovan & Marlatt, 1982), they are not all serious problem drinkers or alcoholic. We speculate that our recruited population was involved more heavily with alcohol than the typical DWI population because of their family status and high blood alcohol level. These men were all married with young children and had consumed an inordinate quantity of alcohol prior to their arrest. We speculate that the combination of married with young children combined with a high BAL is critical. We hypothesize that married men with young children whose BAL is above .15 when arrested for DWI tend to be a population of men who frequently have a severe drinking problem. The implications of this finding are that perhaps courts can begin to look at criteria other than only BAL on first arrests to determine which men are at risk for greater involvement with alcohol. This finding should be replicated as it has clear practical implications and is based upon a very limited sample.

The finding that the alcoholic men currently report only moderate consumption appears somewhat incongruent with the other data obtained on drinking and its consequences. Several explanations for these data seem feasible: 1) It is possible that actual consumption of alcoholic beverages is not a stable event, that is, these men who have imbibed excessively during the past were actually only consuming

moderate amounts of alcohol in the past six months. 2) These men have always been moderate drinkers as assessed by the Q-F-V index but tend to drink heavily on rare occasions. Thus their self-reported moderate consumption is accurate but slightly misleading. 3) This cohort of alcoholic men were not reliable reporters of actual alcohol consumption and tended to underreport their alcohol intake.

The available evidence suggests that #3 above could be a factor as self-reports of specific difficulties as a result of drinking were also underreported as measured by single sources of evidence. It should be noted that the SMAST data and the data on total drinking problems were obtained from multiple sources of information on different occasions; scores in Table 8 on these indices are "best estimates". Our data indicated that information from a single drinking problem questionnaire was not a good estimate of what is probably the actuality of their drinking histories. Table 18 shows the SMAST results as reported from one source and our best estimate SMAST scores from the Drinking and Drug History, the Health History, and legal records. While these data demonstrate that all of the adults in our sample initially underreported drinking problems, the differences are not practically significant except for the alcoholic men. Their scores changed about 3 points from below the suggested SMAST cut-off score for alcoholic (+7), to above the alcoholic cut-off. These data

Table 18

SMAST Data: Initial Health History Scores (Single Source) and Best Estimate Scores (Multiple Data)[1]

	Alcoholic families N=9			Community control families N=9		
	Initial Health History Score	Best Estimate	F Value[2]	Initial Health History Score	Best Estimate	F Value[2]
Men						
$\bar{X}$	4.89	7.56	5.85*	.00	.89	10.39**
S.D.	3.52	3.61		.00	.78	
Women						
$\bar{X}$	.11	1.22	2.27	.11	.67	2.76
S.D.	.33	2.39		.33	1.00	

*p< .05, **p< .01

[1]These data were obtained from 3 sources - the initially collected Health History, self-reported Drinking and Drug History, and local court records.

[2]Based on univariate F-tests.

have lead us to suspect that since the drinking quantity data was obtained from one source and is a more subjective event than actual problems, it could possibly also be significantly underreported by the alcoholic men. It remains possible that these alcoholic men are currently moderate drinkers despite the number of drinking related problems they reported in their recent past; however, we remain skeptical about the validity of their self-reported data on drinking when it is from a single source.

In view of the preponderence of evidence that self-report SMAST scores are reliable (cf. Cotton, 1979), the data in Table 18 are surprising. We speculate that the unreliable reporting discovered in this project is the result of interacting factors. First, the SMAST was given to families during the initial screening session and parents may have been slightly recalcitrant to respond with total honesty. Rapport had not yet been established and we experienced some outright lying on this questionnaire. Second, most of the alcoholics in this sample were not in treatment nor had they ever been in treatment. Many had probably not acknowledged to themselves or to anyone else they had a drinking problem. SMAST data reported in the literature on alcoholics are typically obtained from individuals who are in treatment or recently completed treatment. These men have acknowledged the presence of a problem and could be more prone to report honestly. The unreliable

reporting by controls is also surprizing, but there is a lack of data on the coincidence of self-reports by non problem drinkers and actual problems experienced. The differences between SMAST scores and best estimate scores for controls is not clinically significant and could be the sole result of data collection timing. These data clearly demonstrate the utility of multiple measures of drinking related phenomena.

Child Measures

Direct Observations

(A) Measure of General Developmental Status - Revised Yale Developmental Inventory (YDI)

Children in alcoholic families were developing considerably slower than children in control families on all indices except gross motor development. These differences were anticipated for fine motor and adaptive skills (Table 4), but were somewhat surprizing on indices of language and personal/social abilities. High risk boys performed at age level while control boys performed considerably above age level. These differences are not the result of differences in chronological age, social prestige of family, birth order, or number of siblings. Risk status accounted for a significant amount of the variance on developmental indices (Table 9). The other factors can all be ruled out.

The most interesting question is, why did the controls do so well and high risk children perform in the average range? The testing was done in the morning in the child's home. Normative data for psychological tests is typically obtained in a university laboratory where a preschoolers performance may not be optimalized, especially if parents are not present (Passman & Lautmann, 1982). This testing was done under especially benign conditions in the child's home with both parents present also in the home (but obviously not present for the actual testing). In addition children were constantly and systematically encouraged during testing to perform at optimal levels (limit pushing). We expected children to perform above age level under these conditions. If this setting was less benign for the children of alcoholic families because their homes are more stressful and chaotic, this could modulate the effects of home testing and limit pushing. We speculate that without the limit pushing the group differences would remain constant but the absolute levels of the scores would decline, still showing a positive effect from home testing.

A second feasible explanation for these developmental data relates to standardization issues for the instrument. The YDI was revised in 1970 and in 1972 the Stanford-Binet was renormed, subsequent to the revision of the YDI. According to Sattler (1982), "The largest mean changes from the 1960 to the 1972 norms (Stanford-Binet) are at the youngest

levels of the scale (mean changes of -9.7 to -10.8 IQ points in the age range from 2 to 5 years)." (p. 110). Thus a child whose IQ on the Stanford-Binet was 100 under the old norms, would score about 90 with the new norms. Since many of the YDI items for preschoolers in fine motor, adaptive, and language are Stanford-Binet items keyed to the 1960 norms, it is possible that the controls were performing at age level while the high risk boys were doing less optimally. This explanation would mean that the group differences remain significant as a result of slightly subnormal performance by high risk boys rather than the better than average performance of controls. Since Stanford-Binet I.Q. scores are derived from examination of the child's overall performance in relationship to maturational and chronological age, it is not feasible to recalculate the YDI scores with the new I.Q. tables.

A third possible explanation for the group differences is that they resulted from experimenter bias. This line of reasoning would argue that the differences between the groups resulted from the examiner's differential treatment of the children during testing. Since the examiner knew what the hypotheses were and which group many of the children were members, it is possible that the testing was biased. While this explanation remains a possibility, it has been previously discussed and does not appear to fit the results that were obtained.

Although the differences were in fact predicted on two YDI indices, they occurred on four of five of the YDI indices. Thus our hypotheses regarding YDI fine motor and adaptive performance were confirmed. Why did the control children perform better on the YDI? It should be noted that the YDI ceiling is 72 months and testing in a particular area should continue until the child has no further successes. This was often not possible with this sample because many of the children had successes through 72 months. Thus ceiling effects limited some of the children's performances, especially for control children who generally performed better on the exam. Thus, if the exam had a higher ceiling, score differences between the groups would have been even larger as many more of the control boys could have continued with testing. What could cause these differences?

Subsequent to completion of the YDI the examiner wrote an extensive set of clinical notes on the testing experience with each child, recording qualitative aspects of the assessment. These notes were generally completed immediately after testing and were written in response to a standardized set of 19 items that are sometimes used with the YDI (Appendix X). Completion of these notes was an attempt to obtain pilot clinical data that could be used in the future to generate hypotheses about these children. With the availability of these data it was hoped that their

examination would supply some insight into the mechanism(s) that caused the differences. It should be noted that differences were expected to be the result of the high risk boys' greater impulsivity, shorter attention-span, and higher activity levels.

Nine boys in alcoholic families were assessed with the YDI. Two of these boys performed better than average and one boy was at the chronological age limits of the YDI when tested. That is, the ceiling age of the YDI is 72 months and he was 75 months at time of testing. Of the six remaining boys, three had problems on the YDI as a result of attention problems, high activity levels, and general uncooperative behavior. It should be noted that three of the control boys demonstrated high activity levels and attention problems but these characteristics did not impair their performance on the YDI. The significant difference was that the high risk boys could not maintain sufficient control over themselves to complete the YDI optimally, even with limit setting by the examiner. In contrast the three control boys who had high activity levels and attention-span difficulties were able to display sufficient control over themselves during testing. They seemed to know that this was the wrong time to run about and waited until the assessment was completed. They appeared to have a combination of sufficient self control and lack of oppositionalism that allowed a good testing.

The three control boys whose scores were lowest compared to their chronological ages were very passive and sluggish during testing, never really appearing to give their best efforts. The three remaining high risk boys also demonstrated these characteristics during testing. These very preliminary data seem to demonstrate that it is not activity level, attention-span, or impulsivity per se that resulted in the lower scores by high risk boys. These differences were rather an outcome of what seemed to be a more central process. It was the lack of self-control and/or oppositionalism along with these characteristics which seems to differentiate the groups. From these preliminary data it is difficult to operationalize with greater specificity the terms self-control and oppositionalism. It is impossible for me to determine whether the high risk boys could not control themselves, simply didn't care to try, or were deliberately attempting to frustrate an adult.

An extensive review of the research on children of alcoholics (Aldoory, 1979; Bell & Cohen, 1981; Black, 1979; Bourgeois, Levigneron, & Delage, 1975; Chafetz, 1979; El-Guebaly & Offord, 1977; Fox, 1962, 1963; Haberman, 1966; Herjanic et al., 1977; Hindman, 1975, 1977; Moos & Billings, 1982; Nylander, 1960; Nylander & Rydelius, 1982; Parnitzke & Prüssing, 1966; Prewett, Spence, & Chaknis, 1981; Richards, 1979; Rydelius, 1981; Schuckit, 1982; Steinhausen, Nestler, & Huth, 1982; Whitfield, 1980; Wilson & Orford, 1978) as

well as the longitudinal studies of boys who eventually become problem drinkers (Zucker & Noll, 1982) was completed to ascertain whether any other investigators have data suggesting early developmental lags in the male children of alcoholic fathers. Only the Herjanic et al. study reports I.Q. data obtained from children of alcoholics. These data on a sample of 82 children with no controls using the Peabody Picture Vocabulary Test (PPVT), indicated that children of male alcoholics, aged six to 17 years, had an average I.Q. of 86. I.Q. scores of their fathers and mothers also using the PPVT were 95 and 92 respectively. Without similar data on I.Q. from a matched control sample these data are difficult to interpret.

In general the above studies of children of alcoholics do not report developmental or I.Q. data. Some data on offspring of alcoholic mothers indicate that some of these children are at risk for developmental delays and retardation (Fetal Alcohol Syndrome; Abel, 1981; Hinckers, 1978). Abel (1981) points out that often alcoholic mothers are married to alcoholic men and it remains possible that some component of this syndrome is caused by the father (also see Krug, 1982). Gross defects have been found in sperm samples from alcoholic men (Lester & VanThiel, 1977) and animal studies have found that male animals given alcohol prior to breeding sire offspring with defects (Anderson, Beyler, & Zaneveld, 1978; Badr & Badr, 1975). Since none

of the data available on children of alcoholics has examined early developmental progress, these data are suggestive that paternal alcoholism, either genetically or environmentally, effects the normal course of development in their male children.

An alternative explanation for these data examines the differences between the groups of boys as a possible result of early socialization experiences in the home. The two prospective longitudinal studies (Jones, 1968, 1971; McCord & McCord, 1960) that examined the home environment in greatest detail within which the pre-alcoholic child develops prior to the overt manifestation of the alcoholic disorder found that maternal care was inconsistent. Sometimes these mothers were neglectful and uninterested in their child but on other occasions they provided good care. An interesting study that examined the relationship between early environment and language delay in preschoolers using the Home Observation of the Environment Inventory (HOME; Caldwell, Heider, & Kaplan, 1966) found that language delayed preschoolers received significantly lower scores on the total HOME and on two subscales of the HOME - Maternal Involvement and Responsivity of Mother (Wulbert, Inglis, Kriegsman, & Mills, 1974). The Wulbert et al. data are correlational and it is impossible to determine the nature of the causal relationship, if any, between the maternal and child variables (cf. Bradley, Caldwell, & Elardo, 1979).

It is intriguing to speculate that perhaps the maternal neglectfulness and inconsistency discussed in the above longitudinal studies are similar variables to the two HOME subscales Maternal Involvement and Responsivity of Mother. The HOME was utilized in the MSU Family Study and it will be interesting to examine these data in relationship to the YDI findings on language development. Bradley (1980) reported a multiple correlation of .72 between children's HOME scores (N=174) at 24 months and 36 month I.Q. on the Stanford-Binet, and stated that preliminary analysis of 54 month I.Q. data on the same children demonstrated that the pattern was continuing to emerge.

Finally, it is possible that the group differences on the YDI are reflective of I.Q. differences between the alcoholic and control parents. I.Q. data was collected from all parents and future analyses will determine whether this was a relevant factor.

The last aspect of the YDI data to be discussed deals with why the pattern of results is unique for gross motor compared to the other indices of developmental status. Items assessing gross motor abilities are often the most difficult to solicit cooperation from preschoolers on, as many of the items involve hopping, balancing on one foot, skipping, or jumping. It is not that preschoolers don't perform these tasks, rather, it is exceedingly difficult to get them to perform these tasks on command. Also, gross

motor skills were always assessed last, after the child and examiner had struggled for 1-2 hours with the remainder of the YDI. Gross motor testing was last since once a child leaves the table and begins running, jumping, etc. it is nearly impossible to quiet them down to resume developmental testing. When the YDI is used clinically, problems with gross motor items can be dealt with by testing the child in two sessions. Thus it is possible that these gross motor results reflected the difficulty of assessing these items along with the combined exhaustion of the tester and the child. Another possibility is that the lack of differences here was a real one on the grounds that considerable data was reviewed indicating that the high risk boys might be extremely active, aggressive, and fearless. A preschool boy who is constantly on the move trying out new motor skills may develop these emerging capacities more rapidly.

Examining these findings within the Zucker model for the acquisition of drinking behaviors these data seem to fit three distinct alternative pathways. If the high risk boys have a genetic predisposition that resulted in these developmental differences, then Class IV influences--intraindividual factors--would be most salient. Alternatively, these boys may have had their "normal" course of development disrupted by the chaos caused by living with an alcoholic parent, along with its attendant marital and family

disruptions. Along these lines, Class II factors--family of origin--would be most salient initially as they impact upon the child and cause intraindividual differences (Class IV) to emerge. A third course of influences within Zucker's model also would fit these data. Based upon the diathesis stress model of schizophrenic development (cf. Garmezy, 1974) the child (Class IV) is viewed as predisposed or vulnerable to the impact of external stressors (Class II family of origin in this case). It is not the external stress alone or the internal state of the child alone that disrupts the child's emerging competencies; rather it is the interaction between these factors that is critical.

(B) Assessments of Cognitions about Alcohol

To clarify the data on children's knowledge of alcoholic beverages and present an overall picture, this discussion will summarize results across the three tasks. Results will be discussed as related to three generic questions: 1) Can children identify alcoholic beverages?, 2) Do children possess knowledge of traditional socio-cultural norms?, 3) Do children currently like alcoholic beverages and do they plan to drink them in the future? Whenever group differences are present in the data, they will be discussed.

B-1: Can Preschool Children Identify Alcoholic Beverages?

The data present convincing evidence that this group of young children (average age four years) can correctly

identify some forms of alcoholic beverage. First, nearly all (17 of 18 boys) could correctly label or identify a photograph of beer. (In fact, the only boy who did not provide the correct answer did not even complete this task.) Second, 83 percent (15 of 18) of the children correctly identified one of three of the alcoholic beverages by smell, with photographs present. Forty-four percent of the boys were successful even without photographs (smell alone). Thus, it would appear that these boys already possess sufficient knowledge of alcoholic beverages to correctly label some types of alcoholic beverages, nearly always with photographs and quite often just by smell, with no additional cues.

Comparison of these findings with the Jahoda and Cramond (1972) study indicates that this sample of children did much better on the smell alone task than did the Scotish children tested. Specifically, Jahoda and Cramond found that children's ability to verbally label smells improved with age as 21 percent of their four year olds and 47 percent of their six year olds identified three smells, while 72 percent of our sample of four year olds identified three or more smells. Along similar lines only 14 percent of Jahoda and Cramond's four year olds and 39 percent of their six year olds could correctly identify beer and/or whiskey while 67 percent of our high risk boys and 11 percent of our controls succeeded.

Two factors are hypothesized to account for the better scores on this task by our sample. First, the substances we selected for children were more "child oriented" smells. Many of Jahoda and Cramond's substances have distinct odors, but children would not generally have alot of physical contact with these substances (e.g. disinfectant, paraffin). Also, many of the verbal labels for these substances[1] are not typically in a young child's vocabulary. It seems possible that the developmental trends reported by Jahoda in ability to verbally label smells were the result of developmental trends in language acquisition and/or additional life experiences. Along these lines 78 percent of our sample were correct with play doh; 44 percent succeeded on perfume; none succeeded on tobacco.

Second, our testing was done in optimal conditions. Children already knew the examiner, they were near their homes, and the examiner was highly skilled in preschool assessments. Jahoda and Cramond reported inter-tester differences based upon the level of experience of the examiner. These three elements contributing to the ecology of the child's testing experience presumably could also contribute to better success by the boys in our study.

The differences in success rates on correctly identifying alcoholic beverages between the two studies is extremely

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[1] Jahoda's substances were: peppermint, perfume, disinfectant, vinegar, whiskey, paraffin, beer, soap liquid, and coffee.

interesting. Comparison of our control group to the four year olds in the Scotish sample yields strikingly similar findings. Two of 14 (14 percent) Scottish children were successful; one of nine (11 percent) in our control sample were successful. Differences between the two studies arise primarily from the high success rate (67 percent) on the alcoholic beverage task by the boys from alcoholic families. These data seem to support the notion that life experiences could play a critical role in child's ability to verbally label smells. We assume that children of alcoholic fathers have had more experiences around alcohol; high risk boys did much better on alcoholic beverage smell recognition, suggesting that this may be the case.

It is also interesting to note that, as expected, when the smell task is given with photographs present, children's performance on this task improved markedly. Success is still based upon smell but visual cues are now available to assist the child with recognition. When photographs were present, for example, every child in our sample over 33 months identified or named at least one of the alcoholic beverages. Similar results were obtained on the three generic substances (popcorn, play doh, apple juice).

In this context, our results comparing high risk and control boys are even more meaningful as the control boy's significantly better performance on the YDI (especially language) should be an aid in the smell task, since

an important component of the smell task is based upon language development, ie. the ability to select the correct verbal label for a substance. Yet the children from alcoholic homes still perform better, ie. in a direction that over-rides the significant language deficit they show in contrast to community control children.

To summarize, nearly all of these boys identified at least one type of alcoholic beverage, but the high risk boys performed better with smell alone. This difference on smell is hypothesized to be the result of the boy's differential history of experiences with alcoholic beverages. These results are solely based upon three common generic alcoholic beverages, wine, beer, and whiskey, and are not based upon more fine grained assessments of the children's knowledge of specific brands or beverage types.

The reader should remember several caveats about the conditions under which these results were obtained. First, they were obtained under nearly optimal testing conditions - in a setting that was safe for the children with very few distractions and with an experienced tester who the children already knew. Second, this sample of children was largely from lower to lower middle class socioeconomic groups and most of these parents reported drinking alcoholic beverages, typically beer. Only one family had two abstainer parents and for this child the maternal grandfather was the child's source of information (child's informal verbal report).

Finally, the pattern of results with respect to the ability to identify generic types of alcoholic beverages from 2½ years onwards must be considered tentative. Clearly then these findings need replication.

Within the Zucker model these data would appear to demonstrate how drinking specific factors from within the family of origin (Class II) influence the child's development and result in drinking specific intraindividual differences (Class IV). Thus children from homes where more alcohol is consumed are more familiar with alcoholic beverages and acquire this knowledge earlier than their peers, even when their general overall development is slower.

B-2: Do Preschool Children Possess Knowledge of Traditional Drinking Norms?

The basic assumption underpinning this discussion is that the traditional cultural stereotype of alcohol consumption is that men consume alcoholic beverages more often and in greater quantity than women, and that children do not commonly drink alcoholic beverages. A second ancillary assumption is that alcoholic beverages are more commonly consumed on certain types of occasions rather than others. Two sources of data are available that attempt to answer this question. Children were asked directly "Who drinks alcoholic beverages?" and were later asked what adults and children depicted in 11 drawings might like to drink in a given situation from

an array of 10 photographs presented. Thus we have direct data, as well as data obtained in a "projective" fashion.

Children's direct responses to the question "Who uses a particular type of alcoholic beverage" was perponderantly (84 percent of the time) that only adults consumed those substances. Children responded 16 percent of the time that both adults and children drank them; no child ever said that only children drink alcoholic beverages. The results obtained at the same time on generic substances (popcorn, play doh, and apple juice) also indicate that these children understood what was being asked of them. All children said that adults and children used these three generic substances 100 percent of the time, and never said that these substances were used only by adults or children. Thus it is reasonable to conclude that these children comprehended what was being asked as their answers to both questions have face validity.

When children were asked what adults and children in a variety of different situations would like to drink, their responses indicated an awareness of traditional cultural norms. They stated overwhelmingly that adults would be more likely to drink alcoholic beverages on various occasions than would children. High risk and control boys rarely selected alcoholic beverages as the beverage of choice for children, no matter what the occasion. When the boys' responses were examined in the pictures involving adults

only, both groups of boys selected alcoholic beverages more frequently for men than women. These findings indicate that even these young boys expect men to select alcohol as their beverage of choice more often than they do women. Our results are very similar to the results obtained by Penrose (1978). She concluded that "the findings from this study strongly support the hypothesis that five and six year old children in kindergarten and first grade are aware of a cultural drinking norm in this country" (p. 83).

Our own data suggest an awareness of traditional cultural drinking norms by these boys. However, it is also possible that these results are more reflective of the boys own life histories. Specifically, fathers in this sample reported drinking more often than mothers and the boys' responses may simply reflect the live parental modeling of drinking they have observed.

Tangential support for this position comes from two sources. First, the children did not select alcoholic beverages more often for certain types of occasions when sociocultural drinking expectancies are higher or lower. No differences in alcoholic beverage choices were found dependent upon the type of occasion (Table 13 and 14). If these children were aware of these sociocultural norms the data do not seem to reflect this knowledge. Similarly, Penrose (1978) reported no differences on frequency of children's alcoholic beverage choices for adults on festive

versus nonfestive occasions (see her Table 2, p. 54). Second, high risk boys selected alcoholic beverages more often than control boys (Table 13). While we have no data on where or when parents consumed alcoholic beverages, it seems reasonable to assume that since the alcoholic parents drank more, their children had more opportunities to observe its consumption. These data thus support the conclusion that children aged 2½ to six years learn about alcoholic beverage use primarily as a result of personal experiences in the home and do not possess knowledge of sociocultural norms. This hypothesis must be considered to be very tentative and awaits further research. These data suggest that children's responses were primarily based upon their early experiences in their own home, not upon sociocultural norms, and are strikingly similar to the data obtained on Scotish children reported by Jahoda and Cramond (1972). In some ways this is an academic question since how does one learn norms except initially (especially for young kids), within the family.

Within the Zucker model these findings suggest how the drinking patterns and attitudes of parents (Class II) interact with the emerging cognitive structures in the child to create attitudes and cognitions about alcohol within the individual child (Class IV). While it is possible that our findings could be interpreted as demonstrating the acquisition by the child of general sociocultural

norms (Class I), this explanation is, at the moment, a less parsimonious one.

B-3: Do Preschool Children Report that They Currently Like Alcoholic Beverages and Do They Plan to Drink Them in The Future?

Again two sources of evidence appear relevant to the above question - direct responses to questions by the children and their indirect responses vis à vis the appropriate beverage task.

When children were asked directly if they liked a specific type of alcoholic beverage they overwhelmingly said no (67 percent). This question was asked on several different occasions during the second direct assessment of the child and the responses remained remarkably consistent. When children were asked whether they planned to drink alcoholic beverages as adults, the pattern of responses shifted radically as most of these boys (89 percent) reported planning to drink when they were adults. The juxtaposition of the children's responses to these two questions leaves one puzzled regarding the metamorphosis that must take place during the child's development. Not only did these children state they did not like alcoholic beverages (beer, wine, or whiskey), but their responses were often punctuated with further descripters, most notably "yukky". Nevertheless the data on future drinking plans of these four year old children suggests an intent

to drink that is realistic when compared with actual behavior we might expect from these children when they are older. Jahoda and Cramond (1972) report that children's self-reported intention to drink decreases with increasing age and their attitudes become consistently more negative towards alcoholic beverages in children aged six to ten years (also see Spiegler, in press); Aitken (1978) reports that important changes in children's actual drinking behaviors occurs between ten and fourteen years in the same population as, not unexpectedly, more children become drinkers during these years despite negative attitudes and intentions at ten years; and Davies and Stacey (1972) working with 14 to 17 year olds, in the same population reported actual drinking behaviors were more in accordance with the younger children's reported intentions. That is, as children become older they become more aware of what answers adults expect them to give and report in accordance with adult expectations. Our own data fit with all of these earlier studies. Pushing Jahoda and Cramond's curve further back to a younger aged group, it is appropriate to anticipate that many of the children will report an eventual intention to drink; the Davies and Stacey data also reinforce the not surprising notion that when most boys move into adolescence, irrespective of how they've felt earlier, they do in fact drink.

The second source of evidence on children's expected drinking behavior is the data obtained from the appropriate beverage task. Specifically insofar as a male child identifies with the adult males in the pictures, his beverage selections for adult men would reflect future expectations that he has for himself. When the data from the appropriate beverage task are examined from this perspective, all of these boys appear to expect to consume alcoholic beverages as adults. These data corroborate the data obtained from the direct questions about the children's future plans regarding alcohol consumption, and on this task the high risk boys selected alcoholic beverages more often than control boys (Table 13).

These data appear to present a paradox as children's current attitudes towards alcoholic beverages are preponderately negative while at the same time these children state unequivocally they expect to drink in the future. Alcoholic beverages are clearly associated with adults and their activities, they are not for children. These findings seem to parallel data one might expect to obtain from preschool children about future expectations for marriage and current dislikes of girls (they're yukky). That is, preschool boys might report that as adults they expect to marry, but right now they dislike girls. Both sets of seemingly paradoxical findings involve taboo topics for children, drinking and sex, that are acceptable

regimes of adult behavior. Both are highly affective topics in our culture and a child's lack of interest could serve as an excellent insulator from these issues. Thus children report an apparent current disinterest or dislike of a topic in the present to provide them with some safety from intense affects that often accompany these topics. A child who is limited to pre-operational logic need not concern him/herself in any real way with future plans about highly charged subject matter.

To summarize, these children fairly uniformly report that they currently do not like alcoholic beverages. Simultaneously, the same boys report that they expect to drink alcoholic beverages when they are adults. On a projective-like task high risk boys selected alcoholic beverages as adults beverage of choice more often than control boys.

Parent Reports

(A) Measure of Temperament - Behavioral Style Questionnaire (BSQ)

Hypothesized differences between high risk and control boys on activity level, mood, and attention-span persistence were not found. Not only did significant differences between the groups fail to emerge, but in addition we could not even identify any meaningful trends in these data suggestive of type II error. The data were

analyzed twice, first using analysis of variance and second using analysis of covariance with chronological age as the covariate. Several comparisons were made during each analysis. Possible overall group differences between high risk and control parents were examined as well as comparisons of alcoholic to control fathers and wives of alcoholics to control wives. We also examined differences between parents' reports within each group. Since alcoholic marriages are often described as troubled (cf. Chiles, Stauss, & Benjamin, 1980), we speculated that perhaps parents' perceptions of high risk boys would be more discrepant than controls'. That is, parents in alcoholic families might disagree more often when describing their son's temperament than control parents. These comparisons also yielded no differences.

Since a significant literature from several perspectives was reviewed and led us to anticipate that differences would emerge between the groups, these results leave us perplexed. The genetic research on alcoholism using twin studies and adoption studies indicates that children, especially boys, sired by alcoholic parents (generally alcoholic fathers) are at risk for subsequent development of alcoholism. Longitudinal investigations and family studies corroborate this evidence and with the studies of adolescent heavy drinkers indicate that negative mood, impulsivity, and low attention-span persistence could be

manifested in young boys at risk for subsequent development of alcoholism. Finally, a hodge-podge of research, both clinical impressions and empirical findings found under the generic rubric of children of alcoholics confirms that these children have considerable problems, although one clinical study (Black, 1979), argues that children of alcoholics with behavioral problems are a minority. Based upon her clinical experiences, Black argues that these children often appear to be adapting quite well as they cope with the chaos at home and only later as adults do they begin to have problems. Four feasible explanations for these data appear possible: 1) no real differences exist, 2) real differences exist but are weak, and the present sample is not sufficiently representative to allow the finding to show itself, 3) real differences exist but the BSQ and/or the concept of temperament are weak conceptual notions, and 4) real differences exist, but the methods utilized for the present evaluation using exclusively self-report data from the parents were not adequate for the task.

The BSQ data from this sample of alcoholic and control families indicated that parental perceptions of their children's temperament did not differ between the groups. That is, the parent's reports of the temperaments of the high risk boys were indistinguishable from the control boys. This finding was not expected as the confluence of

four literatures appeared to indicate that differences would emerge. The majority of the data relevant to this issue was obtained on samples of children who were considerably older than our sample; nearly all of the children were over ten years of age. Utilizing hypothetical-deductive reasoning we speculated that the consistent differences which had emerged in these older children would be present in our sample of preschool children. The biological evidence from twin and adoption studies demonstrated that inter-generational continuity of alcoholic problems could be demonstrated, while longitudinal, adolescent heavy drinking, and children of alcoholic studies showed that differences between high risk and control boys were present from age ten onwards. Given that our temperament data accurately reflect the actual temperament of these children, then two possibilities emerge. First, temperament in these children is not different during the preschool period, but changes in significant ways during school years. Along these lines, it seems feasible that the deficits manifested on the YDI could cause subsequent school related difficulties to emerge which may directly affect the child's temperament in the areas of mood, activity level, and/or attention-span persistence. An alternative pathway for the emergence of temperament differences could be that the chronic stress and chaos in the home with an alcoholic father could cause

differences to emerge. It should be noted that the children included in this study were all from intact families. Since divorce rates for families experiencing alcohol problems are estimated to be 40 percent (Schuckit & Morrissey, 1976), it is possible that these boys will begin to manifest the temperament characteristics we anticipated when their parents separate or divorce. Boys seem to be more vulnerable to the effects of marital discord and divorce, as they expereince more behavioral and interpersonal difficulties than girls (Hetherington, 1979) so these changes in temperament seem quite feasible. These alternatives are not mutually exclusive but postulate that family of origin (Class II) and/or the child's school environment (Class III) could have similar intraindividual effects (Class IV) on the developing child (see Table 2). A second possibility is that the temperament differences reported in other studies with older children are biologically mediated and only emerge with the onset of adolescence. A possible mechanism within this context would be that as the young male undergoes the hormonal events of puberty that initiate his gradual evolution from boyhood into adulthood, he could become more aware of the role modelling provided by his alcoholic father. While many of the above ideas are speculative, they can all account for the lack of differences reported in the present study. Only future longitudinal investigations can begin to sort through these alternatives.

A second feasible explanation for this finding is that idiosyncratic sampling fluctuations occurred and our groups

are not representative of their respective populations. Children of alcoholics really are different on these temperament dimensions rated by parents but our sample is not a representative one. The alcoholic families in this study were recruited through the courts subsequent to a first arrest for DWI. Nearly every appropriate family that went through the local courts with a child in the correct age range participated in this study. Similarly, controls were recruited with equal vigor and success. We hopefully eliminated bias as a result of an unusual subset of target population participation. Nevertheless, our sample was small and it remains a possibility that it is unique and not representative of the larger DWI population either locally or in broader geographic regions. Increasing the number of families participating in this study, either in the local area or from another city, would provide data appropriate to the above problems.

Related to sampling issues, this sample of alcoholic families is unique in terms of exposure to treatment and rehabilitation efforts. Within the often chronic course of problems related to alcohol and its consumption, the majority of these men had never sought treatment. Nearly all of the data from studies we reviewed relevant to characteristics children at risk could manifest were obtained from samples of alcoholics who had had treatment. Our sample of alcoholic men, although they reported many problems related to drinking, is young (30 years), and most had never sought help. It remains possible that if these men continue to chronically

abuse alcohol and eventually require treatment, their children will by that time be described similarly to the samples obtained by other investigators.

The final area to be discussed relevant to the lack of reported temperament differences is the construct of temperament and how investigators have sought to operationalize and measure it. First, it should be noted that nearly all of the normative data on children's temperament as reported by parents has been collected from ostensibly normal families (see Hubert et al., 1982). A recent study by Sameroff and his colleagues (Sameroff, Seifer, & Elias, 1982) demonstrated that the effects of maternal temperament on mother's reports of their child's temperament were more powerful than child effects. Sameroff concluded that these data "support the notion that individual differences in mothers, rather than differences in infants, may be the major contributor to early ratings of temperament" (p. 164). Given the lack of temperament data from psychiatric populations and the significant contribution that parental temperament appears to have on parent's ratings of their child's temperament, it is extremely difficult to ascertain what the temperament ratings we obtained actually indicate. The generic problem of the external validity of parents' ratings of their children's temperament remains a significant major issue (see Bonem, 1982) that would appear even more critical when parents have significant psychopathology.

Second, generic problems with the construct validity of temperament and the reliability of instruments developed

to measure it have recently been discussed in two major contributions by different investigators (Hubert et al., 1982; Lerner, Palermo, Spiro, & Nesselroade, 1982). The selection of the BSQ to measure temperament was the result of its superior normative, reliability and validity data as compared to other available instruments. But as Hubert et al. clearly point out, none of the instruments available to measure temperament at the onset of this study were psychometrically adequate. "Evidence indicates major reliability and construct validity problems in the measurement of temperament. What this means is that the use of a single instrument or method, such as parent report, may result in findings which are specific to that instrument or methodology" (Hubert et al., 1982, p. 580). The Dimensions of Temperament Survey (DOTS) recently developed by Lerner et al. (1982) appears to be a significant step to remedy some of these problems. However, considerable work remains to be accomplished before DOTS can be reliably and validly used with psychiatric populations.

To summarize, sizable problems with the construct of temperament and the numerous instruments developed to assess it make it difficult to precisely deliniate exactly what the obtained reports on children's temperament mean. In retrospect, it now appears clear that multiple measures from different sources (ie. parent report and direct observations) should have been integrated into the methodology

of this study if a useful assessment of temperament was to be made. The methodology of the larger MSU Family Study included the completion of two child Q-sorts (Block & Block, 1980) by independent raters who were members of the project staff. Thus each of the children studied in this project were rated twice using Q-sorts. Analysis of these data should provide some answers to the questions these findings have posed. The data obtained with the BSQ show no differences between the groups, and while it is tempting to dismiss these data as erroneous, this would be a serious error. Although a p ponderance of evidence suggested that differences in temperament should emerge, this did not occur. Future research in this area is clearly needed. This work should utilize multiple measures of temperament, especially direct observations, in an effort to determine whether the alcoholic parents' reports accurately reflect their child's temperament or some undefined aspect of their own personality or psychopathology.

(B) Measures of Childhood Psychopathology - Child Behavior Checklist (CBCL)

Hypothesized differences between high risk and control boys on activity level, mood, aggression, and impulsivity did not occur in the CBCL data. Not only did significant differences fail to emerge, but in addition we could not identify any meaningful trends in the data suggestive of type II error. These data were analyzed

exactly the same way as the BSQ data were analyzed. The specific details of the analyses will not be repeated here.

As with the BSQ predictions, a significant literature from multiple perspectives lead us to anticipate that differences would emerge between the two groups of pre-school children, high risk versus control. Again the majority of the data from these studies was obtained from samples of older children with alcoholic fathers who had been in treatment as a result of drinking problems. Despite these differences between our sample and the previous studies, we anticipated that differences would emerge between the groups (Table 4). Several explanations for the lack of differences seem feasible: 1) the data accurately reflect a lack of difference between the two groups and no "real" differences between the high risk and control population exist; 2) real differences exist but these samples are idiosyncratic; and 3) real differences exist but the CBCL using parent reports did not detect these differences.

The first explanation for these data is that they accurately reflect a lack of differences between the two groups of boys. Since nearly all the data relevant to the anticipated effects we expected was obtained from samples of older children it remains a succinct possibility that the differences do not emerge until a child is older. Possible mechanisms for these changes are discussed in the

BSQ section. A second related reason for the lack of differences could be the young age of our alcoholic fathers and their relatively brief temporal history of drinking and its consequences. Again this alternative is discussed in the previous BSQ section.

A second possibility is that the data accurately reflect only the specific samples we recruited, but will not generalize to larger alcoholic and normal populations. Problems with selective participation by families contacted is not an issue; however, our small sample size makes the possibility of idiosyncratic sampling as a result of uncontrolled random variables a real possibility. It is also quite feasible that the population of alcoholic families represented by our sample is different from the populations of alcoholic families sampled by other studies. Our method of recruiting, from a non-treatment source, yielded a much younger sample of alcoholics with a shorter temporal history of drinking problems than most studies of children of alcoholics.

The third possibility is that differences exist between the samples of boys but these parents failed to report them. Given the impressive reliability, validity, and normative data available for the CBCL (Achenbach & Edelbrock, 1981), it is difficult to ascertain why these samples of parents would not accurately report children's problem behaviors if they existed. Two reasons for

inaccurate reporting by parents of these samples appear possible: 1) age of children and 2) timing of completion of the questionnaire.

The children's average age at the time of parental completion of the CBCL was four years. One third of the children in our sample were under four years of age when their parents completed the CBCL and Achenbach does not recommend using the CBCL with children under four years. According to Achenbach and Edelbrock (1981) "below the age of four, behavior is so variable and dependent on organic maturation, and children's immediate social environments vary so widely, that parental reports are of limited value in establishing baselines for behavioral problems and competencies" (p. 5). When we selected the CBCL for use in this study we were cognizant of this limitation but expected differences to emerge despite this problem. Further analysis of the CBCL data using only the six pairs of children who were four years of age or older also did not produce any significant results or trends in the data in predicted directions. Thus while the age of children could possibly have compromised the reliability or validity of the data obtained with the CBCL, circumstantial evidence would suggest this is not the case.

The second possible problem with use of the CBCL pertains to the timing of data collection that has occurred during development of the CBCL norms, reliability, and

validity. Clear evidence supports the ability of the CBCL to differentiate reports by parents of children who are referred for outpatient mental health services from reports by parents of comparable children who were not referred for mental health services. However, the data on the referred children were obtained after parents decided that their child's problems were sufficiently severe to warrant a referral when they were in the process of trying to get help. The socially desirable response set for these parents may change radically as these parents try to impress upon mental health professionals that their child really needs help. It seems quite feasible that when parents finally decide to ask for help they change their perspective about their child and/or are more willing to report problems to mental health professionals on the CBCL. Thus the social setting and the timing of completion of the CBCL could effect reported scores on the CBCL. If these factors have a significant impact on CBCL scores, it seems possible that alcoholic parents or control parents are not prepared to share their concerns about the significant problems their children are experiencing.

A related issue relevant to the CBCL scores pertains to the effects of parental psychopathology on the reports by parents of their children's problems. The data collected with the CBCL has not systematically examined the effects

of parental deviance on their perception of problems in their child. It seems feasible that parents have more tolerance or less awareness of their child's problems if they are having significant troubles of their own. An alcoholic father could be very unaware of his son's problems and his wife's preoccupation with his drinking and any marital problems his drinking caused could result in less maternal and paternal awareness. Parents who are experiencing severe marital problems could be less sensitive to behavioral problems of their children. This is an empirical issue that should be examined by future research.

Both the response set and timing issues as well as the effects of parental psychopathology could influence CBCL scores. An example of the possible effects of these mechanisms occurred in one of the alcoholic families. The proband child, who was 36 months at the time of testing, was the most difficult child to test during this project. This child was exceptionally oppositional, as he was quick to refuse to participate in the YDI assessment and started throwing materials all over the room. This child's behavior was so inappropriate that research staff consulted with one another about the appropriateness of making a referral to mental health professionals. Subsequent to the home YDI assessment the parents told the examiner how poorly he had conducted the testing as they felt that the entire process was inappropriate for their child. If only

the examiner had known how to behave with their child then he would have performed more optimally. Examination of the CBCL scores from these parents for their child showed that they checked fewer items than any other parents (score 2 from mother; score 13 from father). These scores are exceptionally low for normal male children in this age group (Achenbach & Edelbrock, 1981). These issues warrant further research with the CBCL to determine how they effect the external validity of parental reports of childhood psychopathology.

Despite the issues surrounding use of the CBCL with parents in this study, the data collected with this psychometrically sound instrument indicate that differences between parents' reports on the CBCL did not emerge. Although a preponderance of evidence suggested that differences would emerge, these data failed to support our expectations. While many hypothetical explanations for these data can be generated, they should be considered very carefully. Within the Zucker model, the BSQ and CBCL data were collected to ascertain whether intraindividual differences (Class IV; Table 2) existed between high risk and control children. The parental reports collected indicate that differences are not present in these two groups of preschool children. Since parents are typically the most significant adults in a preschooler's life, they have the opportunity to observe their children in a variety of

different contexts across the span of the child's development. These parents reported that high risk children were similar to community control children. Since investigators of similar groups of older children have suggested that differences are present, future work should focus upon the onset and evolution of these differences. Only longitudinal investigations can begin to answer some of the numerous questions these data provoke, and given the scope of alcohol related costs within this country each year, this type of work would appear to be more than needed.

Future Directions

Future work in this area should focus upon development of another control group, or groups. Investigators conducting high risk research on psychiatric populations are increasingly finding that comparisons between "normal controls" and psychiatric populations do not permit sufficiently fine grained analyses for specific etiological inferences to be made (Erlenmeyer-Kimling, 1972, 1975; Fisher, Kokes, Harder, & Jones, 1980; Worland, Lander, & Hesselbrock, 1979). Differences between groups could be the result of paternal pathology, psychiatric treatments, confusion and chaos in the home, genetic differences in the child, or a host of other problems that are the result of having a parent with mental illness. The addition of a second control group (cf. Beisser, Glasser, & Grant, 1967) with

another type of paternal pathology would permit significant insights into this welter of variables. One possible control group might be fathers who are experiencing psychiatric difficulties such as depression; another might be fathers who are obese; another interesting control group would be fathers who have problems with drugs other than alcohol. Each of these controls would have advantages and disadvantages and each would permit greater insight into the problems discussed above. Data is currently being collected by MSU Family Project staff on a control group of families with fathers who are experiencing psychiatric difficulties with depression.

Because this sample of alcoholic families was recruited via a non-treatment source, the additional confound of miscellaneous treatment effects is not relevant. This sample of alcoholic men have all demonstrated the presence of a severe drinking problem that generally appears chronic, but most have not been in treatment to date (7 of 9). These data permit comparison of a group of boys with a father who has overt serious psychopathology, chronic excessive alcohol consumption, to a group of boys with a "normal" father.

The second major direction that future work should take is to re-assess this sample of boys, high risk and control, in the future. Plans are already being made by members of the MSU Family Study to procede in this direction. While many of the questionnaires and interviews used for the adults can and should be used again to facilitate comparisons within individuals over time, all of the direct observational measures of the children

require total replacement or significant changes, and the continued use of the parental report measures should be given careful consideration prior to their reuse. In addition to parental reports and direct observations, data should be systematically obtained from schools. Whenever possible measures that both parents and teachers can complete should be used and teacher reports should be collected in the latter part of the school year. Two measures that are currently available with promising reliability and validity; alternate forms for teachers and parents; and assess areas theoretically relevant are the Dimensions of Temperament Survey (DOTS; Lerner et al., 1982) and the Perceived Competence Scale for Children (Harter, 1981, 1982). Although the Conners Teacher Rating Scale (Conners, 1969) does not have alternate forms, it is the most reliabile and valid measure of childhood hyperactivity (Christenson, 1975; Conners, 1969; Goyette, Conners, & Ulrich, 1978; Rapoport, Abramson, Alexander, & Lott, 1971; Rapoport, Quinn, Bradbard, Riddle, & Brooks, 1974; Trites, Blonin, & Laprade, 1982; Werry, Sprague, & Cohen, 1975), and should be given careful consideration. Given the significant differences between control and high risk boys on developmental testing, an I.Q. test should also be given. This intelligence testing might be integrated into a neuropsychological assessment of the child, given the recent interest in neuropsychological deficits in alcoholics (cf. Parsons & Farr,

1981) and the possibility that some deficits are present before alcohol abuse. The Halstead-Reitan Battery or the Michigan Neuropsychological Battery would both be appropriate.

A third direction for future work is expansion of the size of the original cohort of high risk and control families. In addition new cohorts of high risk and control families should be recruited for this study. For example, a sample of families with older high risk and control boys, ages ten to twelve, could be recruited for this study. This cohort of families with older boys could be followed longitudinally at the same time the cohort of families with younger boys is being followed. Rather than a longitudinal design, the study would use a longitudinal sequential design with its numerous advantages (Achenbach, 1978a; Noll, submitted for publication).

The final direction future research could take discussed in this section is the inclusion of female offspring. Boys were selected for study in this project because of the higher rate of alcoholism in men and the stronger genetic evidence regarding alcoholism in males. It seems highly likely that paternal alcoholism could have significantly different effects on female children and the inclusion of this group would provide potential for greater understanding of the etiological mechanisms involved in alcoholism.

To summarize, four areas for future research were briefly discussed. The addition of another control group should be given highest priority along with increasing the sample size and continued follow-up contacts with the families already in the project. This work has already begun by MSU Family Project staff. The addition of new birth cohorts and female children should also be considered, but these directions should have lower priority.

CHAPTER VI

SUMMARY

The present study was designed to compare a sample of preschool boys who are statistically at considerable risk for developing alcohol related problems as adults to a sample of community control same-aged boys. It was hypothesized that high risk boys would be more aware of the classification "alcoholic beverage" and would demonstrate more clear-cut awareness of various uses of alcoholic beverages and their effects on adults than control boys. It was anticipated that high risk boys would be described by their parents as having higher activity levels, more aggressiveness, higher impulsivity, lower attention-span persistence, and more negative mood than control boys. It was also anticipated that high risk boys would score lower than control boys on indices of fine motor and adaptive development as a result of their higher impulsivity and lower attention-span persistence.

The nine high risk boys included in this study were the offspring of men who had been arrested for driving under the influence of alcoholic beverages at least once during the life of the boy. A community control group of nine families with same-aged boys was also included in this study. Matching between alcoholic and community control

families was done on social prestige, sibship constellation, age of target child, and birth position of target child. Parents' reports of their son's activity level, aggressiveness, impulsivity, and mood were obtained using the Behavioral Style Questionnaire (McDevitt & Carey, 1978) and the Child Behavior Checklist (Achenbach, 1978b). A direct observational measure of the child's developmental status in gross motor, fine motor, adaptive, language, and personal/social was obtained with the Revised Yale Developmental Inventory. Three direct observational measures of the children's knowledge of, and attitudes towards alcoholic beverages were collected: 1) Smell Recognition Task (modified from Jahoda & Cramond, 1972), 2) Appropriate Beverage Identification (Penrose, 1978), and 3) Alcohol Concept Task (modified from Jahoda & Cramond, 1972).

Data was collected from each parent concerning current consumption patterns of alcoholic beverages and any problems they may have had as a result of drinking alcoholic beverages. Each parent completed the Short form of the Michigan Alcohol Screening Test (Seltzer, 1975) and on a separate occasion a Drinking and Drug History (Cahalan et al., 1969; Johnston et al., 1978; Schuckit, 1978). Both self-report questionnaires provided data regarding any consequences that had resulted from excess alcohol consumption and the later questionnaire yielded data on current

drinking practices coded into the Quantity-Frequency-Variability index of Cahalan et al. (1969).

Analysis of parental self-report data on alcohol problems indicated that all of the fathers of high risk boys were diagnosed as alcoholics (Research Diagnostic Criteria; Feighner et al., 1972) and none of the community control fathers were diagnosed alcoholic. Fathers of high risk boys reported significantly more drinking problems than fathers of control boys, although they did not report more alcohol consumption in the past six months.

Significant differences were demonstrated on developmental assessment as the control boys performed significantly better or indices of fine motor, adaptive, language, and personal/social development. However, no statistically significant differences were obtained on either of the two parent report measures, the Behavioral Style Questionnaire and the Child Behavior Checklist.

On the three tasks designed to assess knowledge of alcoholic beverages, high risk boys performed significantly better on the Smell Recognition Task and chose alcoholic beverages as the beverage of choice for adults more often on Appropriate Beverage Identification. Generally there were few differences between high risk and control boys on knowledge of alcoholic beverages task, but when differences emerged high risk boys performed better despite the significantly better language development of control boys.

The results of this study were discussed within the context of Zucker's multilevel heuristic model for the development of drinking behavior (Zucker & Noll, 1982). It was suggested that differences between high risk and control boys on alcohol knowledge tasks was the result of actual experiences of the high risk boys in their homes. Differences between high risk and control boys on indices of development were suggested to be the result of greater familial stress and the potential effects on future school experiences are postulated to increase negative mood and potentiate problems with attention-span persistence, higher activity level, and impulsivity.

APPENDICES

APPENDIX I

Research Participation Informed Consent Form

APPENDIX I

Research Participation Informed Consent Form

MICHIGAN STATE UNIVERSITY, Department of Psychology
East Lansing, MI 48824

RESEARCH PARTICIPATION INFORMED CONSENT FORM

We have freely consented to take part in a long-term scientific study of human development being conducted by Dr. Robert A Zucker.

The study has been explained to us and we understand the explanation that has been given and what our participation will involve and what our child's participation will involve.

We understand that we will receive additional explanations of specific studies during the five-year research project period.

We understand that we are free to discontinue our participation in the study at any time without penalty.

We understand that the results of the study will be treated in strict confidence and that we and our child will remain anonymous. Within these restrictions, results of the study will be made available to us periodically throughout the course of the project and for a minimum of three years after the project has concluded. Also within the restrictions noted above, we understand that general results of the research will appear in professional journals and will be presented at scientific meetings.

We understand that once we are accepted into the study we will receive an annual honorarium of $50.00 for the participation of our family in the project, to be paid at the end of the first year and yearly thereafter.

We understand that our participation in the study does not guarantee any beneficial results to us or to the members of our family.

Signed:

_____ Date_____
Mother

_____ Date_____
Father

_____ Date_____
Child (when appropriate)

Witness_____ Date_____

APPENDIX II

Demographic Information Form

APPENDIX II

Demographic Information Form

MICHIGAN STATE UNIVERSITY - Department of Psychology
East Lansing, MI 48824

FY Study P6 (DEMO)

Background Information

We would like to ask you a few questions about yourself. The questions ask about your life during the time you were growing up, as well as now. Please answer all of them as completely as possible. (PLEASE PRINT)

1. What is your full name?

_____ _____ _____
FIRST MIDDLE LAST

2. What is your date of birth?

_____ _____ _____
MONTHS DAY YEAR

3a. Where were you born?

_____ _____ _____
CITY/TOWN STATE COUNTRY (IF NON-U.S.)

3b. Where did you live most of the time until you were 18?

_____ _____ _____
CITY OR TOWN (COUNTY) if rural STATE COUNTRY (IF NON-U.S.)

4. Until you were 18, about how many times did your family move? (CIRCLE ONE)

1 2 3 4 5 6 7 or more

5a. Are both of your natural parents still living together? CIRCLE ONE)
YES (If YES, go to question 6) NO (if NO, go to question 5b)

5b. Your natural parents are no longer living together because: (CIRCLE ONE)

1. mother died
2. father died
3. both parents died
4. parents divorced or separated
5. parents never lived together
6. other (please explain) _____

6a. What adults did you live with most of the time from birth to 18? (CIRCLE ONE)

1. mother and father
2. mother, but no adult male
3. father, but no adult female
4. mother and step-father
5. father and step-mother
6. other (please explain) _____

6b. Who was the main wage earner in your family during the time you were growing up (check one)

(a) your father ____
(b) your mother ____
(c) someone else ____
(their relationship to you)
what was _____

FOR YOUR FATHER

7a. Where was your father born? _____ _____
STATE COUNTRY (IF NON-U.S.)

7b. What was the occupation of your father (or the adult male) who lived with you most of the time until you were 18? (Give job title; what kind of work he did: and what kind of business or industry it was)

_____

_____

7c. What was the highest grade of school he completed (CIRCLE THE HIGHEST GRADE COMPLETED)

None	0								
Elementary	1	2	3	4	5	6	7	8	
High School	9	10	11	12					
College	1	2	3	4					Degree?_____
Graduate school	5	6	7	8+					Degree?_____

FOR YOUR MOTHER

8a. Where was your mother born? _____ _____
STATE COUNTRY (IF NON-U.S.)

8b. What was the occupation of your mother (or the adult female) who lived with you most of the time until you were 18? (Give job title; what kind of work she did; and what kind of business or industry it was)

_____

_____

8c. What was the highest grade of school she completed? (CIRCLE THE HIGHEST GRADE COMPLETED)

None	0								
Elementary	1	2	3	4	5	6	7	8	
High school	9	10	11	12					
College	1	2	3	4					Degree? _____
Graduate school	5	6	7	8+					Degree? _____

9a. Until you were 18, what religion was practiced in your home most of the time? (CIRCLE ONE)

1. Protestant
2. Roman Catholic
3. Jewish
4. None, no religion
5. Other (please explain) _____

9b. What denomination? (Please try to specify fully)

_____

9c. Until you were 18, how often did you attend religious services? (CIRCLE ONE)

1. several times a week
2. about once a week
3. 2-3 times a month
4. once a month or less than that
5. never

10a. What is your religious preference now? (CIRCLE ONE)

1. Protestant
2. Roman Catholic
3. Jewish
4. None, no religion
5. Other (please explain _____)

10b. What denomination? (Please try to specify fully)

_____

10c. About how often did you attend religious services in the last year? (CIRCLE ONE)

1. several times a week
2. about once a week
3. 2-3 times a month
4. once a month or less than that
5. never

10d. Regardless of your attendance at religious services, how religious do you consider yourself to be?

1. Not religious at all
2. not very religious
3. fairly religious
4. very religious

11. What was the highest grade of school you completed? (CIRCLE THE HIGHEST GRADE COMPLETED)

None	0	
Elementary	1 2 3 4 5 6 7 8	
High School	9 10 11 12	
Post High School (Vocational-Technical School)	1 2 3	
College	1 2 3 4	Degree? _____
Graduate/Professional School	5 6 7 8+	Degree? _____

12a. What kind of work are you doing (what is your occupation)?

_____

(For Example: electrical engineer, stock clerk, farmer)

12b. What are your most important activities or duties?

_____

(For Example: keep account books, filing, sell cars, operate printing press, finish concrete)

12c. What kind of business or industry is this?

_____

(For Example: TV and radio mfg., Retail shoe store, State Labor Dept., Farm work)

12d. Are you:

an employee of a PRIVATE company, business or individual for wages, salary, or commissions? |___| PR

a GOVERNMENT employee (federal, state, county, or local government)? |___| GOV

self-employed in OWN business, professional practice, or farm?

own business not incorporated |___| OWN

own business incorporated |___| INC

working WITHOUT PAY in a family business or farm |___| WP

12e. Approximately what is your present annual family income? (CIRCLE ONE)

1. under $4,000
2. $4,001 - $ 7,000
3. $ 7,001 - $10,000
4. $10,001 - $13,000
5. $13,001 - $16,000
6. $16,001 - $20,000
7. $20,001 - $30,000
8. $30,000 - $50,000
9. Over $50,000

13. How many times have you been married? (CIRCLE ONE)

1 2 3 4+

14a. List the children you have had from your present marriage or any previous marriages. Please list all children, starting with the oldest, and include birthdate, sex, and if the child lives with you now.

	FULL NAME	BIRTHDATE (month/day/year)	SEX	LIVING WITH YOU NOW (check one)	NOT LIVING WITH YOU NOW (check one)
1.					
2.					
3.					
4.					
5.					
6.					
7.					
8.					

14b. Now please circle the names of the children you listed in Question 14a above who are from your present marriage. If all are from your present marriage just put a check mark here _____.

THANK YOU FOR FILLING OUT THIS QUESTIONNAIRE.

APPENDIX III

Health History - Mother

APPENDIX III

Health History - Mother

S#_____ FY Study IIF-W

Michigan State University
East Lansing, MI 48824

HEALTH HISTORY QUESTIONNAIRE - FORM W

The following questions are mainly about your medical history, health history and health habits. At the start, there also are some questions about your child _____, that ask about the pregnancy and early developmental history. Please complete each item carefully. If you have questions about any item, ask the interviewer. Remember that all information is confidential and will not be disclosed to anyone.

I. _____'S BIRTH HISTORY

During your pregnancy with _____, did you:

1. Have high blood pressure? ..... YES( ) NO( )
2. Have diabetes or sugar in your urine? ..... YES( ) NO( )
3. Have albumin or protein in your urine? ..... YES( ) NO( )
4. Have a urinary infection? ..... YES( ) NO( )
5. Have German (3 day) measles? ..... YES( ) NO( )
6. Take medicines prescribed by your doctor? ..... YES( ) NO( )
   IF YES, what? _____
   _____
7. Have you ever taken DES (diethylstilbestrol) ..... YES( ) NO( )
8. Did you frequently smoke cigarettes? ..... YES( ) NO( )
   IF YES, about how many cigarettes a day? _____ per day
9. Have a venereal disease such as gonorrhea or syphilis? YES( ) NO( )
10. Have a dependence on drugs, or alcoholic beverages? . YES( ) NO( )
    IF YES, please explain: _____
    _____
11. Have other problems, diseases or conditions? ..... YES( ) NO( )
    IF YES, please explain: _____
    _____
12. How long was your pregnancy? ..... _____months
13. How early did you start seeing the doctor? . Starting at_____months
14. Was this child premature? ..... YES( ) NO( )
15. Was more than one baby born? ..... YES( ) NO( )
16. Was it a breach (bottom first) delivery? ..... YES( ) NO( )
17. Was it a cesarean delivery? ..... YES( ) NO( )
18. What was your child's weight at birth? .....____lb.____oz.
19. Was there an Rh problem? ..... YES( ) NO( )
20. Was anything wrong with your child at birth? ..... YES( ) NO( )
    IF YES, what? _____
    _____

21. Up to what age was your child breast-fed as an infant?

( ) My child was not breast-fed.
( ) My child was breast-fed until the age of _____months.

22. At what age was your child toilet trained?

_____years _____months

23. Have you had <u>any</u> premature births? ..... YES( ) NO( )
24. Have you had <u>any</u> cesarean births? ..... YES( ) NO( )
25. Have you had <u>any</u> twin births? ..... YES( ) NO( )

THE REMAINING QUESTIONS ON THE FOLLOWING PAGES ARE ABOUT YOURSELF. PLEASE COMPLETE ALL OF THEM CAREFULLY.

GO ON TO THE NEXT PAGE

FOR WOMEN

II. PERSONAL HEALTH HISTORY

Please answer all of the questions carefully. Complete each item; if you need more space, use the reverse side of the page.

A. YOUR HISTORY OF HOSPITALIZATION AND SURGERIES

If you have ever been hospitalized for an illness or operation, please complete the chart below. Do not include normal pregnancies. If no hospitalizations, go to next section.

YEAR OF HOSPITALIZATION	OPERATION OR ILLNESS	HOW LONG IN HOSPITAL?

Check this box ( ) if you have been hospitalized more than six times.

B. MEDICATIONS

Please list all medications you have taken <u>within the past 8 weeks</u>: (include prescriptions, vitamins, over-the-counter drugs, nasal sprays, aspirins, etc.) Check this box ( ) if you have not taken any medication.

MEDICATIONS	REASON YOU ARE PRESENTLY TAKING THIS:	HOW LONG YOU'VE BEEN TAKING IT?

C. ALLERGIES

Please list all the allergies you have (include pollen, drugs, food and animals, etc.). Check this box ( ) if you have no allergies.

1. _____

2. _____

3. _____

4. _____

5. _____

6. _____

D. ILLNESSES

Mark an X in the box next to any of the following illnesses you have had.

1. ( ) Chicken pox	10. ( ) Scarlet fever
2. ( ) German measles	11. ( ) Yellow jaundice
3. ( ) Malaria	12. ( ) Neurosis
4. ( ) Measles	13. ( ) Psychosis
5. ( ) Mononucleosis	14. ( ) Schizophrenia
6. ( ) Mumps	15. ( ) Personality disorder
7. ( ) Pneumonia	16. ( ) Alcohol problem
8. ( ) Polio	17. ( ) Drug problem
9. ( ) Rheumatic fever	18. ( ) Depression

E. OTHER PROBLEMS AND SYMPTOMS

Mark an X in the box next to any of the following problems or symptoms that you have had:

I. GENERAL

( ) Excessive Fatigue
( ) Recent Weight Loss
( ) Recent Weight Gain
( ) Thyroid Disease
( ) Fever, Chills, Night Sweats

II. SKIN AND HAIR

( ) Recurrent Skin Rash or Change in Skin Color
( ) Moles that have Changes size or Color
( ) Patches of Hair Falling Out

INSTRUCTIONS: Mark an X in the box next to any of the following problems or symptoms you have had:

III. EYE, EAR, NOSE AND THROAT

1. ( ) Loss of Hearing
2. ( ) Prolonged Roaring or Ringing in Your Ears
3. ( ) Ear Pain or Discharge Lately
4. ( ) Wear Glasses
5. ( ) Disturbances in Vision Not Corrected with Glasses
6. ( ) Chronic Nasal Obstruction or Discharge
7. ( ) Persistent Dental Problems
8. ( ) Hoarseness or Voice Change (i.e., puberty)
9. ( ) Difficulty in Swallowing

IV. HEART AND LUNGS

1. ( ) Chronic Cough
2. ( ) Sputum (Phlegm)
3. ( ) Raising of Blood with Cough
4. ( ) Abnormal Chest X-Ray
5. ( ) Wheezing or Asthma
6. ( ) High Blood Pressure
7. ( ) Pain in Chest
8. ( ) Shortness of Breath
   ( ) At Rest
   ( ) On Mild Exertion
9. ( ) Discomfort in Chest on Exertion
10. ( ) Palpitation of the Heart
11. ( ) Heart Murmur
12. ( ) Other Heart Trouble
13. ( ) Pain in Legs when Walking
14. ( ) Swelling of the Ankles
15. ( ) Need to Sleep in an Elevated Position
16. ( ) Bronchitis
17. ( ) Emphysema

V. G. I. TRACT

1. ( ) Poor Appetite
2. ( ) Frequent Indigestion or Heartburn
3. ( ) Frequent Belching
4. ( ) Tarry (Black) Stool
5. ( ) Frequent Nausea or Vomiting
6. ( ) Intolerance of Fatty Foods
7. ( ) Changes in Bowel Habits
8. ( ) Persistent Constipation
9. ( ) Anal Itching, Soreness or Burning/Hemorrhoids
10. ( ) Frequent Diarrhea
11. ( ) Rectal Bleeding
12. ( ) Other Rectal Problems
13. ( ) Unusually Foul Smelling or Floating Stools
14. ( ) Diverticulosis
15. ( ) Hernia
16. ( ) Pancreatitis

Please answer these questions by putting an X by the answer that fits best.

5.	Have you used marijuana (including also hash) more than 100 times in your life?	YES( )	NO( )
6.	Do friends or relatives think you are a normal drinker?	YES( )	NO( )
7.	Are you able to stop drinking when you want to?	YES( )	NO( )
8.	Have you used stimulant drugs (like speed, benzedrine (bennies), dexedrine) more than 10 times in your life?	YES( )	NO( )
9.	Have you ever attended a meeting of Alcoholics Ananymous?	YES( )	NO( )
10.	Have you used sedative (depressant) drugs (like downers, amytal, valium, qualludes, reds) more than 10 times in your life?	YES( )	NO( )
11.	Has drinking ever created problems between you and your wife, husband, a parent, or other near relative?	YES( )	NO( )
12.	Have you ever gotten into trouble at work because of drinking?	YES( )	NO( )
13.	Have you ever neglected your obligations, your family, or your work for two or more days in a row because you were drinking?	YES( )	NO( )
14.	Have you ever gone to anyone for help about your drinking?	YES( )	NO( )
15.	Have you used opiate drugs (like heroin, methadone, darvon) more than 10 times in your life?	YES( )	NO( )
16.	Have you ever been in a hospital because of drinking?	YES( )	NO( )
17.	Have you ever been arrested for drunken driving, driving while intoxicated, or driving under the influence of alcoholic beverages?	YES( )	NO( )
18.	Have you ever used cocaine?	YES( )	NO( )
19.	Have you ever been arrested, even for a few hours, because of drunken behavior?	YES( )	NO( )

X. HEALTH PROBLEMS AND HEALTH CARE

Please briefly list--in the space below-- the conditions which you consider as your major health problems. Check this box ( ) if you do not have any major health problem.

1._____

2._____

3._____

4._____

5._____

6. Do you have any health problems or physical conditions that limit in any way the amount or kind of work you can do?

( ) No

( ) Yes, please specify:_____

7. Do you have a family doctor?

( ) No

( ) Yes → IF YES, how often do you see your family doctor for an examination?

a. Several times a year
b. Once a year
c. Every other year
d. Every 2-5 years
e. Less than once every 5 years
f. Only when a problem arises
g. Seldom or never

8. Do you have a family dentist?

( ) No

( ) Yes → IF YES, how often do you have a dental check-up?

a. Several times a year
b. Once a year
c. Every other year
d. Every 2-5 years
e. Less than once every 5 years
f. Only when a problem arises
g. Seldom or never

IF YES, how often do you have your teeth cleaned?

a. Several times a year
b. Once a year
c. Every other year
d. Every 2-5 years
e. Less than once every 5 years
f. Only when a problem arises
g. Seldom or never

XI. DIET AND WEIGHT CONTROL

1. Are you on a special diet?

( ) No

( ) Yes → IF YES, please specify:_____

2. What is the size of your "frame" (bone structure)?

   a. Small
   b. Medium
   c. Large

3. How much do you weigh? _____ pounds

4. Do you feel you are:

   a. At the correct weight
   b. Overweight
   c. Underweight

5. Within the past year, how many times did you make a serious attempt to diet (not while under the care of a doctor)?

   a. Never
   b. Once
   c. Twice
   d. Three times
   e. Four or more times

XII. PHYSICAL FITNESS

I. Please list the types of exercise you get and indicate how often you engage in them by circling the number on the right.

Type of Exercise	Every Day	Several Times a Week	Several Times a Month	Less than Once a Month
Summer				
1. _____	1	2	3	4
2. _____	1	2	3	4
3. _____	1	2	3	4
4. _____	1	2	3	4
. _____	1	2	3	4
Winter				
1. _____	1	2	3	4
2. _____	1	2	3	4
3. _____	1	2	3	4
4. _____	1	2	3	4
5. _____	1	2	3	4

2. Are you involved in a specific, planned physical fitness program (including yoga, Air Force exercises, gym class or other regimented exercise schedules)?

   a. Yes, on a regular basis
   b. Yes, on an irregular basis
   c. No

3. How often do you get a restful night's sleep?

   a. Every night
   b. Most nights
   c. Occasionally
   d. Not too often
   e. Hardly ever

4. On the average, how many hours per night do you sleep?

   a. Less than 4 hours
   b. 5-6 hours
   c. 7-8 hours
   d. 8-10 hours
   e. More than 10 hours

APPENDIX IV

Health History - Father

APPENDIX IV

Health History - Father

S#_____

FOR MEN

Michigan State University
East Lansing, MI 48824

PERSONAL HEALTH HISTORY - FORM H

All of the questions on this and the following pages ask about various aspects of your health and related behavior. Please answer all of the questions carefully. Complete each item; if you need more space, use the reverse side of the page.

A. YOUR HISTORY OF HOSPITALIZATION AND SURGERIES

If you have ever been hospitalized for an illness or operation, please complete the chart below. If no hospitalizations, go to next section.

YEAR OF HOSPITALIZATION	OPERATION OR ILLNESS	HOW LONG IN HOSPITAL?

Check this box ( ) if you have been hospitalized more than six times.

B. MEDICATIONS

Please list all medications you have taken within the past 8 weeks: (include prescriptions, vitamins, over-the-counter drugs, nasal sprays, aspirins, etc.) Check this box ( ) if you have not taken any medication.

MEDICATIONS	REASON YOU ARE PRESENTLY TAKING THIS:	HOW LONG YOU'VE BEEN TAKING IT?

C. ALLERGIES

Please list all the allergies you have (include pollen, drugs, food and animals, etc.). Check this box ( ) if you have no allergies.

1. _____

2. _____

3. _____

4. _____

5. _____

6. _____

D. ILLNESSES

Mark an X in the box next to any of the following illnesses you have had.

1. ( ) Chicken pox	10. ( ) Scarlet fever
2. ( ) German measles	11. ( ) Yellow jaundice
3. ( ) Malaria	12. ( ) Neurosis
4. ( ) Measles	13. ( ) Psychosis
5. ( ) Mononucleosis	14. ( ) Schizophrenia
6. ( ) Mumps	15. ( ) Personality disorder
7. ( ) Pneumonia	16. ( ) Alcohol problem
8. ( ) Polio	17. ( ) Drug problem
9. ( ) Rheumatic fever	18. ( ) Depression

E. OTHER PROBLEMS AND SYMPTOMS

Mark an X in the box next to any of the following problems or symptoms that you have had:

I. GENERAL

( ) Excessive Fatigue
( ) Recent Weight Loss
( ) Recent Weight Gain
( ) Thyroid Disease
( ) Fever, Chills, Night Sweats

II. SKIN AND HAIR

( ) Recurrent Skin Rash or Change in Skin Color
( ) Moles that have Changes size or Color
( ) Patches of Hair Falling Out

INSTRUCTIONS: Mark an X in the box next to any of the following problems or symptoms you have had:

III. EYE, EAR, NOSE AND THROAT

1. ( ) Loss of Hearing
2. ( ) Prolonged Roaring or Ringing in Your Ears
3. ( ) Ear Pain or Discharge Lately
4. ( ) Wear Glasses
5. ( ) Disturbances in Vision Not Corrected with Glasses
6. ( ) Chronic Nasal Obstruction or Discharge
7. ( ) Persistent Dental Problems
8. ( ) Hoarseness or Voice Change (i.e., puberty)
9. ( ) Difficulty in Swallowing

IV. HEART AND LUNGS

1. ( ) Chronic Cough
2. ( ) Sputum (Phlegm)
3. ( ) Raising of Blood with Cough
4. ( ) Abnormal Chest X-Ray
5. ( ) Wheezing or Asthma
6. ( ) High Blood Pressure
7. ( ) Pain in Chest
8. ( ) Shortness of Breath
   ( ) At Rest
   ( ) On Mild Exertion
9. ( ) Discomfort in Chest on Exertion
10. ( ) Palpitation of the Heart
11. ( ) Heart Murmur
12. ( ) Other Heart Trouble
13. ( ) Pain in Legs when Walking
14. ( ) Swelling of the Ankles
15. ( ) Need to Sleep in an Elevated Position
16. ( ) Bronchitis
17. ( ) Emphysema

V. G. I. TRACT

1. ( ) Poor Appetite
2. ( ) Frequent Indigestion or Heartburn
3. ( ) Frequent Belching
4. ( ) Tarry (Black) Stool
5. ( ) Frequent Nausea or Vomiting
6. ( ) Intolerance of Fatty Foods
7. ( ) Changes in Bowel Habits
8. ( ) Persistent Constipation
9. ( ) Anal Itching, Soreness or Burning/Hemorrhoids
10. ( ) Frequent Diarrhea
11. ( ) Rectal Bleeding
12. ( ) Other Rectal Problems
13. ( ) Unusually Foul Smelling or Floating Stools
14. ( ) Diverticulosis
15. ( ) Hernia
16. ( ) Pancreatitis

INSTRUCTIONS: Mark an X in the box next to any of the following problems or symptoms you have had:

VI. URINARY TRACT

1. ( ) Difficult or Painful Urination
2. ( ) Night Urination
3. ( ) Recurrent Bladder or Kidney Infection
4. ( ) Blood, Albumin, or Sugar in Urine
5. ( ) Passage of Kidney Stone or Gravel

VII. SKELETON AND JOINTS

1. ( ) Swollen or Painful Joints
2. ( ) Gout
3. ( ) Bursitis
4. ( ) Back Trouble
5. ( ) Fractures
6. ( ) Scoliosis

VIII. NERVOUS SYSTEM

1. ( ) Frequent or Severe Headaches
2. ( ) Attacks of Staggering, Loss of Balance or Dizziness
3. ( ) Loss of Consciousness
4. ( ) Head Injury
5. ( ) Persistent or Recurrent Numbness or Tingling of Hands or Feet
6. ( ) Episode of Difficulty in Talking
7. ( ) Frequent Nightmares
8. ( ) Prolonged Periods of Feeling Depressed or "Blue"
9. ( ) Difficulty in Concentrating
10. ( ) Sexual Difficulties
11. ( ) Suicidal Thoughts
12. ( ) Have had Psychiatric Help
13. ( ) Neuritis

IX. ALCOHOL AND DRUG USE

Please answer these questions by putting an X by the answer that fits best.

1. Do you feel you are a normal drinker? (By normal we mean you drink less than or as much as most other people. YES( ) NO( )
2. Does your wife, husband, a parent or other near relative ever worry or complain about your drinking? YES( ) NO( )
3. Do you ever feel guilty about your drinking? YES( ) NO( )
4. Have you used marijuana (including also hash) more than 1000 times in your life? YES( ) NO( )

Please answer these questions by putting an X by the answer that fits best.

5.	Have you used marijuana (including also hash) more than 100 times in your life?	YES( )	NO( )
6.	Do friends or relatives think you are a normal drinker?	YES( )	NO( )
7.	Are you able to stop drinking when you want to?	YES( )	NO( )
8.	Have you used stimulant drugs (like speed, benzedrine (bennies), dexedrine) more than 10 times in your life?	YES( )	NO( )
9.	Have you ever attended a meeting of Alcoholics Ananymous?	YES( )	NO( )
10.	Have you used sedative (depressant) drugs (like downers, amytal, valium, qualludes, reds) more than 10 times in your life?	YES( )	NO( )
11.	Has drinking ever created problems between you and your wife, husband, a parent, or other near relative?	YES( )	NO( )
12.	Have you ever gotten into trouble at work because of drinking?	YES( )	NO( )
13.	Have you ever neglected your obligations, your family, or your work for two or more days in a row because you were drinking?	YES( )	NO( )
14.	Have you ever gone to anyone for help about your drinking?	YES( )	NO( )
15.	Have you used opiate drugs (like heroin, methadone, darvon) more than 10 times in your life?	YES( )	NO( )
16.	Have you ever been in a hospital because of drinking?	YES( )	NO( )
17.	Have you ever been arrested for drunken driving, driving while intoxicated, or driving under the influence of alcoholic beverages?	YES( )	NO( )
18.	Have you ever used cocaine?	YES( )	NO( )
19.	Have you ever been arrested, even for a few hours, because of drunken behavior?	YES( )	NO( )

X. HEALTH PROBLEMS AND HEALTH CARE

Please briefly list--in the space below-- the conditions which you consider as your major health problems. Check this box ( ) if you do not have any major health problem.

1. _____

2. _____

3. _____

4. _____

5. _____

6. Do you have any health problems or physical conditions that limit in any way the amount or kind of work you can do?

( ) No

( ) Yes, please specify:_____

7. Do you have a family doctor?

( ) No

( ) Yes → IF YES, how often do you see your family doctor for an examination?

a. Several times a year
b. Once a year
c. Every other year
d. Every 2-5 years
e. Less than once every 5 years
f. Only when a problem arises
g. Seldom or never

8. Do you have a family dentist?

( ) No

( ) Yes → IF YES, how often do you have a dental check-up?

a. Several times a year
b. Once a year
c. Every other year
d. Every 2-5 years
e. Less than once every 5 years
f. Only when a problem arises
g. Seldom or never

IF YES, how often do you have your teeth cleaned?

a. Several times a year
b. Once a year
c. Every other year
d. Every 2-5 years
e. Less than once every 5 years
f. Only when a problem arises
g. Seldom or never

XI. DIET AND WEIGHT CONTROL

1. Are you on a special diet?

( ) No

( ) Yes → IF YES, please specify:_____

2. What is the size of your "frame" (bone structure)?

   a. Small
   b. Medium
   c. Large

3. How much do you weigh? _____ pounds

4. Do you feel you are:

   a. At the correct weight
   b. Overweight
   c. Underweight

5. Within the past year, how many times did you make a serious attempt to diet (not while under the care of a doctor)?

   a. Never
   b. Once
   c. Twice
   d. Three times
   e. Four or more times

XII. PHYSICAL FITNESS

I. Please list the types of exercise you get and indicate how often you engage in them by circling the number on the right.

Type of Exercise	Every Day	Several Times a Week	Several Times a Month	Less than Once a Month
Summer				
1. _____	1	2	3	4
2. _____	1	2	3	4
3. _____	1	2	3	4
4. _____	1	2	3	4
. _____	1	2	3	4
Winter				
1. _____	1	2	3	4
2. _____	1	2	3	4
3. _____	1	2	3	4
4. _____	1	2	3	4
5. _____	1	2	3	4

2. Are you involved in a specific, planned physical fitness program (including yoga, Air Force exercises, gym class or other regimented exercise schedules)?

   a. Yes, on a regular basis
   b. Yes, on an irregular basis
   c. No

3. How often do you get a restful night's sleep?

   a. Every night
   b. Most nights
   c. Occasionally
   d. Not too often
   e. Hardly ever

4. On the average, how many hours per night do you sleep?

   a. Less than 4 hours
   b. 5-6 hours
   c. 7-8 hours
   d. 8-10 hours
   e. More than 10 hours

APPENDIX V

Drinking and Drug History

APPENDIX V

Drinking and Drug History

DU -HIST

INFORMATION ON DRINKING AND OTHER DRUG USE

Code No._____

This questionnaire takes about 15 minutes to complete. All information will be used for research only and will be kept strictly confidential. If you are not sure of the answer to a question please answer the best you can. Please try to answer each item.

A. THE FOLLOWING QUESTIONS ARE ABOUT YOUR DRINKING OF ALCOHOLIC BEVERAGES:

1. HOW OLD WERE YOU THE FIRST TIME YOU EVER TOOK A DRINK? DO NOT COUNT TIMES WHEN YOU WERE GIVEN A "SIP" BY AN ADULT.

_____years old

2. OVER THE LAST 6 MONTHS, ON THE AVERAGE, HOW MANY DAYS A MONTH DO YOU HAVE A DRINK?

_____days a month

3. OVER THE LAST 6 MONTHS, ON A DAY WHEN YOU ARE DRINKING, HOW MANY DRINKS DO YOU USUALLY HAVE IN 24 HOURS? (A DRINK IS A 12 OZ. CAN,OF BEER, A 4 OZ. GLASS OF WINE, A SINGLE SHOT, OR A "SINGLE MIXED DRINK.")

_____drinks per 24 hours

4. OVER THE PAST 6 MONTHS, WHEN YOU GOT DRUNK, HOW BAD WAS YOUR HANGOVER?

_____Never bad (0)
_____Not bad (1)
_____A little less than average (2)
_____Average (3)
_____A little more than average (4)
_____Pretty bad (5)
_____Terrible (6)
_____Worst possible (7)
_____Never drank enough to get hangover (8)

B. THE FOLLOWING QUESTIONS ARE ABOUT YOUR DRINKING PATTERNS. IN ANSWERING THE QUESTIONS, PLEASE THINK ABOUT WHAT YOU HAVE DONE ON THE AVERAGE OVER THE LAST SIX MONTHS.

1. WHEN DRINKING WINE:

a) HOW OFTEN DO YOU USUALLY HAVE WINE OR A PUNCH CONTAINING WINE?

_____3 or more times a day (1)
_____2 times a day (2)
_____Once a day (3)
_____Nearly every day (4)
_____3 or 4 times a week (5)
_____2 or 3 times a month (7)
_____About once a month (8)
_____Less than once a month but at least once a year (9)
_____Less than once a year (10)
_____Never (11)

b) THINK OF ALL THE TIMES YOU HAD WINE RECENTLY. WHEN YOU DRINK WINE, HOW OFTEN DO YOU HAVE MORE THAN SIX GLASSES?

_____Nearly every time (1) SKIP TO QUESTION #2 BELOW
_____More than half the time (2) SKIP TO QUESTION #2 BELOW
_____Less than half the time (3)
_____Once in a while (4)
_____Never (5)

c) WHEN YOU DRINK WINE, HOW OFTEN DO YOU HAVE AS MANY AS FIVE OR SIX GLASSES?

_____Nearly every time (1) SKIP TO QUESTION #2 BELOW
_____More than half the time (2) SKIP TO QUESTION #2 BELOW
_____Less than half the time (3)
_____Once in a while (4)
_____Never (5)

d) WHEN YOU DRINK WINE, HOW OFTEN DO YOU HAVE THREE OR FOUR GLASSES?

_____Nearly every time (1) SKIP TO QUESTION #2 BELOW
_____More than half the time (2) SKIP TO QUESTION #2 BELOW
_____Less than half the time (3)
_____Once in a while (4)
_____Never (5)

e) WHEN YOU DRINK WINE, HOW OFTEN DO YOU HAVE ONE OR TWO GLASSES?

_____Nearly every time (1)
_____More than half the time (2)
_____Less than half the time (3)
_____Once in a while (4)
_____Never (5)

2. WHEN DRINKING BEER

a) HOW OFTEN DO YOU USUALLY HAVE BEER?

_____3 or more times a day (1)
_____2 times a day (2)
_____Once a day (3)
_____Nearly every day (4)
_____3 or 4 times a week (5)
_____Once or twice a week (6)
_____2 or 3 times a month (7)
_____Less than once a month (8)
_____Less than once a month but at least once year (9)
_____Less than once a year (10)

b) THINK OF ALL THE TIMES YOU HAVE HAD BEER RECENTLY. WHEN YOU DRINK BEER, HOW OFTEN DO YOU HAVE MORE THAN SIX GLASSES OR CANS?

_____Nearly every time (1) SKIP TO QUESTION #3 BELOW
_____More than half the time (2) SKIP TO QUESTION#3 BELOW
_____Less than half the time (3)
_____Once in a while (4)
_____Never (5)

c) WHEN YOU DRINK BEER, HOW OFTEN DO YOU HAVE AS MANY AS FIVE OR SIX GLASSES OR CANS?

_____Nearly every time (1) SKIP TO QUESTIONS #3 BELOW
_____More than half the time (2) SKIP TO QUESTION #3 BELOW
_____Less than half the time (3)
_____Once in a while (4)
_____Never (5)

(GO TO NEXT PAGE)

d) WHEN YOU DRINK BEER, HOW OFTEN DO YOU HAVE AS MANY AS THREE OR FOUR GLASSES OR CANS?

_____Nearly every time (1) SKIP TO QUESTION #3 BELOW
_____More than half the time (2) SKIP TO QUESTION #3 BELOW
_____Less than half the time (3)
_____Once in a while (4)
_____Never (5)

e) WHEN YOU DRINK BEER, HOW OFTEN DO YOU HAVE ONE OR TWO GLASSES OR CANS?

_____Nearly every time (1)
_____More than half the time (2)
_____Less than half the time (3)
_____Once in a while (4)
_____Never (5)

3. WHEN DRINKING WHISKEY OR LIQUOR

a) HOW OFTEN DO YOU USUALLY HAVE WHISKEY OR LIQUOR (SUCH AS MARTINIS, MANHATTANS, HIGHBALLS, OR STRAIGHT DRINKS INCLUDING SCOTCH, BOURBON, GIN, VODKA, RUM, ETC.)?

_____3 or more times a day (1)
_____2 times a day (2)
_____Once a day (3)
_____Nearly every day (4)
_____3 or 4 times a week (5)
_____Once or twice a week (6)
_____2 or 3 times a month (7)
_____About once a month (8)
_____Less than once a month but at least once a year (9)
_____Less than once a year

b) THINK OF ALL THE TIMES YOU HAVE HAD DRINKS CONTAINING WHISKEY OR OTHER LIQUOR RECENTLY. WHEN YOU HAVE HAD THEM, HOW OFTEN DO YOU HAVE MORE THAN SIX DRINKS?

_____Nearly every time (1) SKIP TO QUESTION #4 BELOW
_____More than half the time (2) SKIP TO QUESTION #4 BELOW
_____Less than half the time (3)
_____Once in a while (4)
_____Never (5)

c) WHEN YOU HAVE HAD DRINKS CONTAINING WHISKEY OR LIQUOR, HOW OFTEN DO YOU HAVE AS MANY AS FIVE OR SIX DRINKS?

_____Nearly every time (1) SKIP TO QUESTION #4 BELOW
_____More than half the time (2) SKIP TO QUESTION #4 BELOW
_____Less than half the time (3)
_____Once in a while (4)
_____Never (5)

d) WHEN YOU HAVE HAD DRINKS CONTAINING WHISKEY OR LIQUOR, HOW OFTEN DO YOU HAVE AS MANY AS THREE OR FOUR DRINKS?

_____Nearly every time (1) SKIP TO QUESTION #4 BELOW
_____More than half the time (2) SKIP TO QUESTION #4 BELOW
_____Less than half the time (3)
_____Once in a while (4)
_____Never (5)

e) WHEN YOU HAVE DRINKS CONTAINING WHISKEY OR OTHER LIQUOR, HOW OFTEN DO YOU HAVE ONE OR TWO DRINKS?

_____Nearly every time (1)
_____More than half the time (2)
_____Less than half the time (3)
_____Once in a while (4)
_____Never (5)

4. WHEN DRINKING ANYTHING, CHECK HOW OFTEN YOU HAVE ANY DRINK CONTAINING ALCOHOL WHETHER IT IS WINE, WHISKEY OR ANY OTHER DRINK. MAKE SURE THAT YOUR ANSWER IS NOT LESS FREQUENT THAN THE FREQUENCY REPORTED ON ANY OF THE PRECEEDING QUESTIONS.

_____3 or more times a day (1)
_____2 times a day (2)
_____Once a day (3)
_____Nearly every day (4)
_____3 or 4 times a week (5)
_____Once or twice a week (6)
_____2 or 3 times a month (7)
_____About once a month (8)
_____Less than once a month but at least once a year (9)
_____Less than once a year (10)

(GO TO NEXT PAGE)

C. NOW SOME QUESTIONS ABOUT PROBLEMS PEOPLE SOMETIMES HAVE BECAUSE OF DRINKING. HAVE YOU EVER HAD ANY OF THE FOLLOWING PROBLEMS BECAUSE OF YOUR DRINKING?

			IF YES	
	Yes	No(0)	HOW MANY TIMES (approximately)	AGE FIRST TIME
1. MISSED SCHOOL OR TIME ON JOB	___	___	_____	_____
2. THOUGHT I WAS DRINKING TOO MUCH	___	___	_____	_____
3. GONE ON A BINGE OF CONSTANT DRINKING FOR 2 OR MORE DAYS	___	___	_____	_____
4. LOST FRIENDS				
5. MY SPOUSE OR OTHERS IN MY FAMILY (MY PARENTS OR CHILDREN) OBJECTED TO MY DRINKING	___	___	_____	_____
6. FELT GUILTY ABOUT MY DRINKING	___	___	_____	_____
7. DIVORCE OR SEPARATION	___	___	_____	_____
8. TOOK A DRINK OR TWO FIRST THING IN MORNING	___	___	_____	_____
9. RESTRICTED MY DRINKING TO CERTAIN TIMES OF DAY OR WEEK (LIKE AFTER 5PM, OR ONLY ON WEEKENDS, OR ONLY WITH OTHER PEOPLE AROUND)	___	___	_____	_____
10. BEEN FIRED OR LAID OFF	___	___	_____	_____
11. ONCE STARTED DRINKING, KEPT ON GOING TILL COMPLETELY INTOXICATED	___	___	_____	_____
12. HAD A CAR ACCIDENT WHEN YOU WERE DRIVING	___	___	_____	_____
13. KEPT ON DRINKING AFTER I PROMISED MYSELF NOT TO	___	___	_____	_____
14. HAD TO GO TO A HOSPITAL (OTHER THAN ACCIDENTS)	___	___	_____	_____
15. HAD TO STAY IN A HOSPITAL OVERNIGHT	___	___	_____	_____
16. HAD THE SHAKES "THE MORNING AFTER"	___	___	_____	_____
17. HEARD OR SAW OR FELT THINGS THAT WEREN'T THERE (HALLUCINATIONS) SEVERAL DAYS AFTER STOPPING DRINKING	___	___	_____	_____
18. HAD BLACKOUTS (COULDN'T REMEMBER LATER WHAT YOU'D DONE WHILE DRINKING)	___	___	_____	_____
19. BEEN GIVEN A TICKET FOR DRUNK DRIVING (DWI)	___	___	_____	_____
20. HAD JERKING OR FITS (CONVULSIONS) SEVERAL DAYS AFTER STOPPING DRINKING	___	___	_____	_____
21. BEEN GIVEN A TICKET FOR PUBLIC INTOXICATION, DRUNK AND DISORDERLY OR OTHER NONDRIVING ALCOHOL ARREST	___	___	_____	_____
22. HAD THE D.T.'S DELIRIUM (SHAKES, SWEATING, RAPID HEART, ETC.) WITHIN 2-3 DAYS AFTER STOPPING DRINKING	___	___	_____	_____

C. THE LAST SECTIONS OF THIS QUESTIONNAIRE DEAL WITH VARIOUS DRUGS OTHER THAN ALCOHOL. THERE IS STILL A LOT OF TALK THESE DAYS ABOUT THIS SUBJECT, BUT VERY LITTLE ACCURATE INFORMATION, PARTICULARLY ABOUT PATTERNS OF USE OF THESE SUBSTANCES IN ADULTHOOD. THEREFORE, WE STILL HAVE A LOT TO LEARN ABOUT THE ACTUAL EXPERIENCES OF PEOPLE YOUR AGE.

WE HOPE THAT YOU CAN ANSWER ALL QUESTIONS; BUT IF YOU FIND ONE WHICH YOU FEEL YOU CANNOT ANSWER HONESTLY, WE WOULD PREFER THAT YOU LEAVE IT BLANK.

REMEMBER THAT YOUR ANSWERS WILL BE KEPT STRICTLY CONFIDENTIAL AND THEY ARE NEVER CONNECTED WITH YOUR NAME - THAT IS WHY THIS QUESTIONNAIRE IS IDENTIFIED ONLY WITH A CODE NUMBER

THE FOLLOWING QUESTIONS ARE ABOUT CIGARETTE SMOKING (CHECK THE BEST ANSWER):

1. HAVE YOU EVER SMOKED CIGARETTES?

_____Never - GO TO QUESTION 3
_____Once or twice
_____Occasionally but not regularly
_____Regularly in the past
_____Regularly now

2. HOW FREQUENTLY HAVE YOU SMOKED CIGARETTES DURING THE PAST 30 DAYS?

_____Not at all
_____Less than one cigarette per day
_____One to five cigarettes per day
_____About one-half pack per day
_____About one pack per day
_____About one and one-half packs per day
_____Two packs or more per day

THE FOLLOWING QUESTIONS ARE ALL ABOUT NON-PRESCRIPTION USE OF DRUGS, EITHER FOR RECREATION OR FOR SELF-MEDICATION (MARK ONE SPACE FOR EACH LINE).

3. ON HOW MANY OCCASIONS (IF ANY) HAVE YOU USED MARIJUANA (GRASS, POT) OR HASHISH (HASH, HASH OIL)?	0 Occasions	1-2 Occasions	3-5 Occasions	6-9 Occasions	10-19 Occasions	20-39 Occasions	40 or more
. . .in your lifetime?.	( )	( )	( )	( )	( )	( )	( )
. . .during the last 12 months? .	( )	( )	( )	( )	( )	( )	( )
. . .during the last 30 days? . .	( )	( )	( )	( )	( )	( )	( )

	0 Occasions	1-2 Occasions	3-5 Occasions	6-9 Occasions	10-19 Occasions	20-39 Occasions	40 or more
4. ON HOW MANY OCCASIONS (IF ANY) HAVE YOU USED LSD ("ACID"). . .							
. . .in your lifetime?	( )	( )	( )	( )	( )	( )	( )
. . .during the last 12 months?	( )	( )	( )	( )	( )	( )	( )
. . .during the last 30 days? .	( )	( )	( )	( )	( )	( )	( )

	0 Occasions	1-2 Occasions	3-5 Occasions	6-9 Occasions	10-19 Occasions	20-39 Occasions	40 or more
5. ON HOW MANY OCCASIONS (IF ANY) HAVE YOU USED PSYCHEDELICS OTHER THAN LSD (LIKE MESCALINE, PEYOTE, PSILOCYBIN, PCP). . . .							
. . .in your lifetime?.	( )	( )	( )	( )	( )	( )	( )
. . .during the last 12 months?	( )	( )	( )	( )	( )	( )	( )
. . .during the last 30 days? .	( )	( )	( )	( )	( )	( )	( )

	0 Occasions	1-2 Occasions	3-5 Occasions	6-9 Occasions	10-19 Occasions	20-39 Occasions	40 or more
6. ON HOW MANY OCCASIONS (IF ANY) HAVE YOU USED COCAINE (SOMETIMES CALLED "COKE").							
. . .in your lifetime?.	( )	( )	( )	( )	( )	( )	( )
. . .during the last 12 months?	( )	( )	( )	( )	( )	( )	( )
. . .during the last 30 days? .	( )	( )	( )	( )	( )	( )	( )

	0 Occasions	1-2 Occasions	3-5 Occasions	6-9 Occasions	10-19 Occasions	20-39 Occasions	40 or more
7. AMPHETAMINES ARE SOMETIMES PRESCRIBED BY DOCTORS TO HELP PEOPLE LOSE WEIGHT OR TO GIVE PEOPLE MORE ENERGY. THEY ARE SOMETIMES CALLED UPPERS, UPS, SPEED, BENNIES, DEXIES, PEP PILLS, AND DIET PILLS. ON HOW MANY OCCASIONS (IF ANY) HAVE YOU TAKEN AMPHETAMINES ON YOUR OWN--THAT IS, WITHOUT A DOCTOR TELLING YOU TO TAKE THEM.							
. . .in your lifetime?.	( )	( )	( )	( )	( )	( )	( )
. . .during the last 12 months?	( )	( )	( )	( )	( )	( )	( )
. . .during the last 30 days? .	( )	( )	( )	( )	( )	( )	( )

Mark One Space For Each Line -8-

	0 Occasions	1-2 Occasions	3-5 Occasions	6-9 Occasions	10-19 Occasions	20-39 Occasions	40 or more
8. ON HOW MANY OCCASIONS (IF ANY) HAVE YOU USED QUAALUDES (QUADS, SOAPERS, METHAQUALONE) ON YOUR OWN--THAT IS, WITHOUT A DOCTOR TELLING YOU TO TAKE THEM. . .							
. . .in your lifetime?.	( )	( )	( )	( )	( )	( )	( )
. . .during the last 12 months?	( )	( )	( )	( )	( )	( )	( )
. . .during the last 30 days? .	( )	( )	( )	( )	( )	( )	( )
9. BARBITURATES ARE SOMETIMES PRESCRIBED BY DOCTORS TO HELP PEOPLE RELAX OR GET TO SLEEP. THEY ARE SOMETIMES CALLED DOWNS, DOWNERS, GOOFBALLS, YELLOWS, REDS, BLUES, RAINBOWS, ON HOW MANY OCCASIONS (IF ANY) HAVE YOU TAKEN BARBITURATES ON YOUR OWN--THAT IS, WITHOUT A DOCTOR TELLING YOU TO TAKE THEM. . . .							
. . .in your lifetime?.	( )	( )	( )	( )	( )	( )	( )
. . .during the last 12 months?	( )	( )	( )	( )	( )	( )	( )
. . .during the last 30 days? .	( )	( )	( )	( )	( )	( )	( )
10. TRANQUILIZERS ARE SOMETIMES PRESCRIBED BY DOCTORS TO CALM PEOPLE DOWN, QUIET THEIR NERVES, OR RELAX THEIR MUSCLES. LIBRIUM, VALIUM, AND MILTOWN ARE ALL TRANQUILIZERS. ON HOW MANY OCCASIONS (IF ANY) HAVE YOU TAKEN TRANQUILIZERS ON YOUR OWN-- THAT IS, WITHOUT A DOCTOR TELLING YOU TO TAKE THEM. . . .							
. . .in your lifetime?.	( )	( )	( )	( )	( )	( )	( )
. . .during the last 12 months?	( )	( )	( )	( )	( )	( )	( )
. . .during the last 30 days? .	( )	( )	( )	( )	( )	( )	( )

11. ON HOW MANY OCCASIONS (IF ANY) HAVE YOU USED HEROIN (SMACK, HORSE, SKAG)	0 Occasions	1-2 Occasions	3-5 Occasions	6-9 Occasions	10-19 Occasions	20-39 Occasions	40 or more
. . .in your lifetime?.	( )	( )	( )	( )	( )	( )	( )
. . .during the last 12 months?	( )	( )	( )	( )	( )	( )	( )
. . .during the last 30 days?	( )	( )	( )	( )	( )	( )	( )

12. THERE ARE A NUMBER OF NARCOTICS OTHER THAN HEROIN, SUCH AS METHADONE, OPIUM, MORPHINE, CODEINE, DEMEROL, PAREGORIC, TALWIN, AND LAUDANUM. THESE ARE SOMETIMES PRESCRIBED BY DOCTORS. On how many occasions (if any) have you taken narcotics other than heroin on your own-that is, without a doctor telling you to take them...	0 Occasions	1-2 Occasions	3-5 Occasions	6-9 Occasions	10-19 Occasions	20-39 Occasions	40 or more
. . .in your lifetime?	( )	( )	( )	( )	( )	( )	( )
. . .during the last 12 months?	( )	( )	( )	( )	( )	( )	( )
. . .during the last 30 days?	( )	( )	( )	( )	( )	( )	( )

13. ON HOW MANY OCCASIONS (IF ANY) HAVE YOU SNIFFED GLUE, OR BREATHED THE CONTENTS OF AEROSOL SPRAY CANS, OR INHALED ANY OTHER GASES OR SPRAYS IN ORDER TO GET HIGH.	0 Occasions	1-2 Occasions	3-5 Occasions	6-9 Occasions	10-19 Occasions	20-39 Occasions	40 or more
. . . in your lifetime?. . . .	( )	( )	( )	( )	( )	( )	( )
. . . during the last 12 months?	( )	( )	( )	( )	( )	( )	( )
. . .during the last 30 days?	( )	( )	( )	( )	( )	( )	( )

-10-

D. NOW SOME OTHER QUESTIONS ABOUT NONPRESCRIPTION USE OF DRUGS. HAVE YOU EVER HAD ANY OF THE FOLLOWING PROBLEMS BECAUSE OF YOUR USE OF THE NON-PRESCRIPTION DRUGS ASKED ABOUT IN SECTION C (THE LAST SECTION)?

			IF YES	
	Yes	No (0)	HOW MANY TIMES (approximately)	AGE FIRST TIME
1. MISSED SCHOOL OR TIME ON JOB	___	___	_____	_____
2. LOST FRIENDS	___	___	_____	_____
3. BEEN DIVORCED OR SEPARATED	___	___	_____	_____
4. BEEN FIRED OR LAID OFF	___	___	_____	_____
5. HAD A CAR ACCIDENT WHEN YOU WERE DRIVING	___	___	_____	_____
6. HAD TO GO TO A HOSPITAL (OTHER THAN ACCIDENTS)	___	___	_____	_____
7. HAD TO STAY IN A HOSPITAL OVERNIGHT	___	___	_____	_____
8. HAD TO SEE A DOCTOR BECAUSE OF DRUG USE (UNINTENTIONAL OVERDOSE) OR HAD A DOCTOR SAY DRUGS HAD HARMED YOUR HEALTH	___	___	_____	_____
9. GONE THROUGH PHYSICAL WITHDRAWAL FROM DRUGS	___	___	_____	_____
10. BEEN ARRESTED MORE THAN ONCE FOR POSSESSION OR SALE OF DRUGS OTHER THAN MARIJUANA	___	___	_____	_____

11. HAVE YOU EVER TAKEN ANY DRUGS INTRAVENOUSLY (USING A NEEDLE)? DON'T COUNT SHOTS YOU WERE GIVEN BY A DOCTOR OR NURSE OR SHOTS YOU MAY HAVE TAKEN FOR TREATMENT OF DIABETES.

_____No (0) _____Yes (1)

IF YES, WHAT DRUGS HAVE YOU TAKEN INTRAVENOUSLY (IV)? _____

_____

AT WHAT AGE DID YOU FIRST TAKE AN IV DRUG? _____years old

APPENDIX VI

Smell Recognition Task

APPENDIX VI

Smell Recognition Task

This task is designed to assess the degree of familiarity that children have with the smell of alcoholic beverages and their ability to verbally label a substance by smell. Children were asked to close their eyes and smell the contents of nine bottles with various substances in them one at a time, including wine, whiskey, and beer[1]. The contents were replaced just prior to each presentation to insure freshness of odors. They were given the following instructions:

> I have a group of jars over here with different things in them. We are going to play a smelling game. I want you to close your eyes and then I will let you smell what is in one of my jars. After you smell it, I want you to tell me what you are smelling without looking. Then I'm going to ask you some questions about what is in the jar.

The jars were presented in pre-planned random order using a random number table except that the beer, wine or whiskey were not presented first or last, or on consecutive trials. This avoided order effects. After the child smells the contents of each jar, they were asked:

---

[1]The substances were Play Doh, perfume, ground coffee, pipe tobacco, apple juice, popcorn, wine, whiskey, and beer.

1) Have you ever smelled this before? (If yes, go to 2, if no go to 3)

2) If the substance is familiar then: (the child can smell the contents as often as they like during inquiry)

   a) What is it?

   b) Who uses it?

   c) What do they use it for?

   d) Where is it used?

   e) Do you like/dislike it?

3) If the substance was not familiar, the jar was replaced and a new substance was presented.

If the child was able to correctly identify any three or more smells, plus either wine, whiskey, or beer they were asked how the jar(s) with wine, whiskey, and/or beer (the one(s) correctly identified) were different from the other substances. This inquity focused on b, c, d, e above.

If the child was unable to identify three smells, plus either wine, whiskey, or beer, nine 5"x7" color photographs[1] were placed in front of the child in a 3x3 arrangement. Picture placement was in pre-planned random order using a random number table, except wine, whiskey, and beer were not both in the same horizontal or vertical row. The child was again asked to close his eyes and smell the contents of the nine jars, one at a time. Again, a pre-planned random order was used, except that wine, beer, or whiskey was not

presented first or last, or on consecutive trials. After the child smelled the contents of each jar, they were asked if they could point to the correct picture. The inquiry delineated above was used again. If the child could now correctly identify any one or more smells, plus either wine, whiskey, or beer, they were asked how the bottle with wine, whiskey and/or beer (the one(s) correctly identified) was different from the other substances. The inquiry focused on b, c, d, e above. While this final step using color photos was not included by Jahoda and Cramond, this facilitated recognition and labeling of smells by children who were not able to correctly identify smells during the initial procedure. The child's responses were written down verbatim during the task by the examiner in the following instruction booklet.

---

[1]The color photographs were Play Doh, perfumes, coffee, a smoking pipe, apple juice, popcorn, wine, whiskey, beer.

APPENDIX VI

Smell Recognition Task - Instruction Booklet

I. Instructions: "I have a group of jars over here with different things in them. We are going to play a smelling game. I want you to close your eyes and then I will let you smell what is in one of my jars. After you smell it, I want you to tell me what you think you smelled without looking. Then I'm going to ask you some questions about what is in the jar."

When the child is ready, present the bottles in the designated pre-planned specific order for this child. The child can smell the contents as often as they want.

After the child smells the contents of the first jar (record all responses verbatim:

1. Have you ever smelled this before?_____

   (If "yes" go to #2; if "no" then tell the child that sometimes it is hard to tell what a smell is and then present another jar (maintain rapport)).

2. Substance familiar, then:

   A. What is it?_____

   _____

   B. Who uses it?_____

   _____

   C. What do they use it for?_____

   _____

   D. Where is it used?_____

   _____

   E. Do you like/dislike it?_____

   _____

_____ jar

1. Have you ever smelled this before?_____
   (If "yes" go to #2; if "no" present another jar)
2. Substance familiar, then:
   A. What is it?_____
   _____
   B. Who uses it?_____
   _____
   C. What do they use it for?_____
   _____
   D. Where is it used?_____
   _____
   E. Do you like/dislike it? _____
   _____

_____ jar

1. Have you ever smelled this before?_____
   (If "yes" go to #2; if "no" present another jar)
2. Substance familiar, then:
   A. What is it?_____
   _____
   B. Who uses it?_____
   _____
   C. What do they use it for?_____
   _____
   D. Where is it used?_____
   _____
   E. Do you like/dislike it?_____
   _____

II. After initial presentation of the 9 jars

A. If the child correctly identified 3 or more smells, plus either wine, whiskey, or beer, then:

Place before the child all of the jars they correctly identified and say "you were right about what was in these jars (allow the child to see the contents). Now I want to ask you a couple of questions".

1. In what ways is/are the beer, wine, and/or whiskey different from the other things here that you knew the smell of?

alcoholic_____

_____

non-alcoholic_____

_____

Probes:

A. Who uses it?_____

_____

B. What is it used for?_____

_____

C. Where is it used?_____

_____

D. Do you like/dislike it?_____

_____

2. Now go to the Appropriate Beverage Identification Task.

B. If the child was unable to correctly identify 3 or more smells, plus either wine, whiskey, or beer, then:

Place before the child the 9 color photographs and give the following instructions:

"Now I am going to let you smell what's in the jars again. These photographs are pictures of what is in the jars. They will help you to be able to identify the smell of what is in the jar and figure out what it is. When you smell what is in the jar this time, you can point to the picture of it and/or tell me what you think it is. Then I will ask you some questions about what is in the jar".

When the child is ready, present one of the jars. Present the jars in the designated pre-planned order. The child can smell the contents as often as they want. If the child was correct with a smell on the first trial, don't present that jar again. Just let him know that he was correct (i.e. You got this one right already so I'll place it on top of its picture).

After the child smells the contents of the 1st jar (record all responses verbatim):

1. Have you ever smelled this before?_____
   (If "yes" go to #2; if "no" present another jar)
2. Substance familiar, then:
   A. What is it?_____
      _____
   B. Who uses it?_____
      _____
   C. What do they use it for?_____
      _____
   D. Where is it used?_____
      _____
   E. Do you like/dislike it?_____
      _____

III. After 2nd presentation of the 9 bottles

A. If the child correctly identified 1 or more smells, plus either wine, whiskey, or beer, then:

Place before the child all of the bottles they correctly identified on top of the matching photo and say: "You were right about what was in these bottles (allow the child to see the contents). Now I want to ask you a couple of questions."

1. In what ways is/are the beer, wine, and/or whiskey different from the other things here that you knew the smell of?

alcoholic _____

_____

non-alcoholic _____

Probes

A. Who uses it?_____

_____

B. What is it used for?_____

_____

C. Where is it used?_____

_____

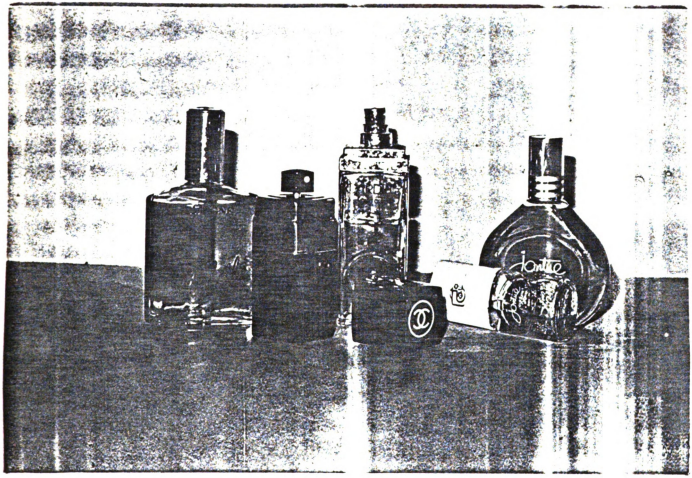
D. Do you like/dislike it? _____

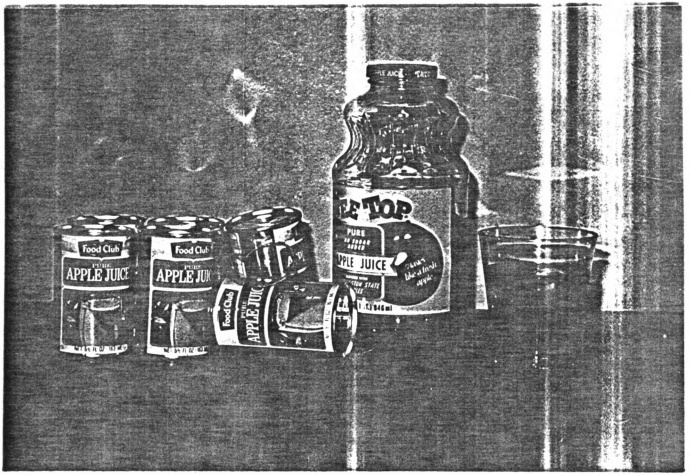
_____

B. If the child was unable to correctly identify 1 or more smells, plus either beer or whiskey, then:

1. Do not proceed any further with the task: Go to the Appropriate Beverage Identification Task.


Maxwell
House
Electric Perk
HILLS
BROS
15¢

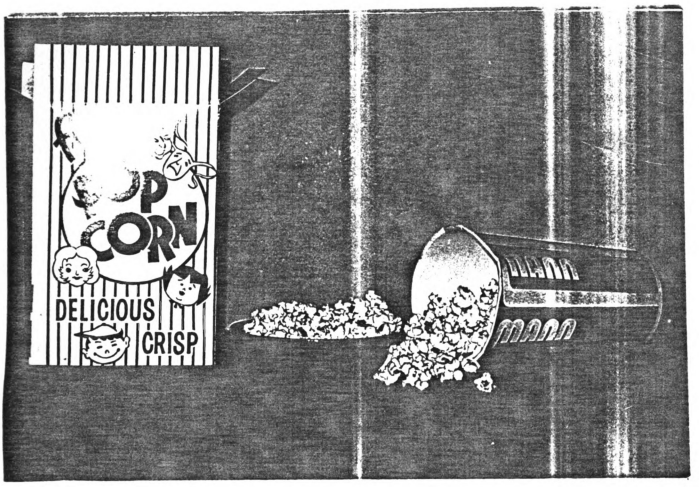


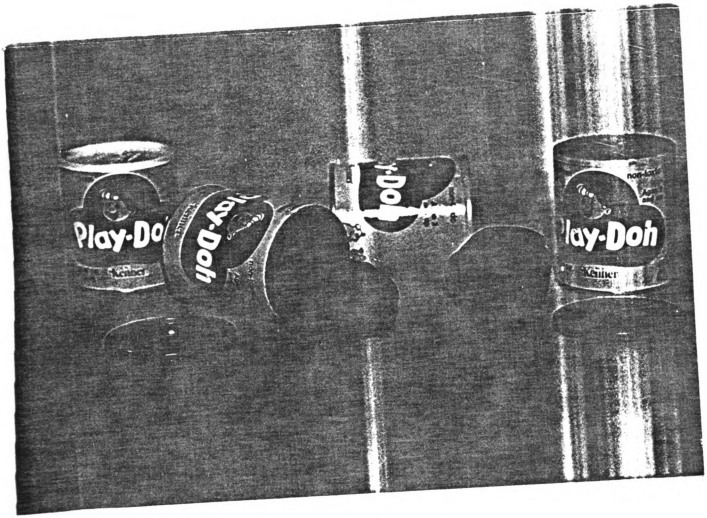

Food Club
APPLE JUICE
Food Club
APPLE JUICE
Food Club
APPLE JUICE
PURE
APPLE JUICE


Inglenook
NAVALLE
CHENIN BLANC
Mirassou
Chenin Blanc
B V
PRIVATE RESERVE


IMPORTED
Seagram's
V.O.
CANADIAN WHISKY
BOTTLED IN CANADA
SMOOTH AS SILK
KESSLER


Stroh's
BEER
lite
Budweiser


POP
CORN
DELICIOUS
CRISP


Play-Doh
Play-Doh
Play-Doh


SAIL
TOBACCO • TABACO
SMOOTH DUTCH CAVENDISH
CAVENDISH DOUX HOLLANDAIS
NET WEIGHT 1¼ OZ. TOBACCO

APPENDIX VII

Appropriate Beverage Identification

APPENDIX VII

Appropriate Beverage Identification

This task is designed to ascertain whether a child is aware of which beverages are appropriate for children or adults to drink on various occasions. The child was seated at a table with 10 color photos (5"x7") of various beverages (5 alcoholic and 5 non-alcoholic).[1]

Each child was shown a sheet of white cardboard (8½"x11") with simple line drawings of four faces displayed on the cardboard. One face was located in each quadrant and the faces depicted the emotions of anger, happiness, fear, and sadness. The examiner insured that the child knew what feeling was represented by each drawing by asking the child to point to the correct face for each feeling mentioned. If the child was not certain which face represented a feeling, they were told. This technique has been used successfully with preschoolers to assist them with identification of feelings (Borke, 1971; Partyka, 1974; Walden & Field, 1982).

Subsequently the child was given the following instructions:

> I have some drawings here showing kids and grown-ups. I want you to look carefully at the people in the drawings and then tell me what each one would like to drink.

---

[1]The alcoholic beverages were wine; beer, gin & vodka; bourbon & scotch; and sherry. The non-alcoholic beverages were milk; orange juice; coke & Tab; lemonade; and coffee.

One by one, a series of 11 black and white line drawings depicting women and men, boys and girls, participating in various activities were randomly shown in a pre-planned sequence[1]. The child was then asked:

1. Can you tell me and/or point to what each person in this drawing would like to drink? (Insure each character is discussed.)
2. Can you tell me and/or point to how each person in the scene is feeling? (The examiner will use the cardboard faces as necessary to help the child identify the feelings.)
3. How does the _____ they are drinking effect their feelings? (each character) (Probe: How drinks can change people's feelings and have they ever seen this happen?)

All responses were recorded verbatim by the examiner during the testing session in the accompanying examination booklet. At the conclusion of the task the child was asked to identify by name any of the beverages not selected. Those that the child could not name were left on the table and the examiner stated the correct names of the beverages,

---

[1]The scenes were an adult New Years Eve Dancing Party, three adult males at a birthday party, three adult females at a birthday party, a 4th of July family picnic (2 scenes), a Thanksgiving dinner, 2 boys eating lunch, 2 girls eating lunch, an adult couple sitting in front of a fireplace, a man watching TV (from Penrose, 1978).

one at a time, in alphabetical order, while asking the child to point to the correct picture. Children ages 4 to 5 are often not able to name an object, but can correctly identify one picture in a group if the object name is stated (see Gesell & Amatruda, 1958). More generally, even when language concepts are not mastered with respect to verbal production, verbal comprehension can be present since it often preceeds production. The technique allows for assessment of this occurrence.

APPENDIX VII

Appropriate Beverage Identification - Instruction Booklet

I. Place the ten color photos in a 5x2 display before the child, in the pre-planned random order.

A. Show the child the card with the four faces and insure that the child knows what feelings each face represents.

B. Instructions: "I have some drawings here showing kids and grown-ups. I want you to look carefully at the people in the drawings and then tell me what each one would like to drink."

C. When the child is ready, present him with the first drawing and say:

1. "Can you tell me and/or point to what each person in this drawing would like to drink? (persons are numbered left to right)

person #1_____

person #2_____

person #3_____

person #4_____

2. "Can you tell me and/or point to how each person in the scene is feeling?" (use the cardboard faces as necessary to help the child identify the feelings.)

person #1_____

person #2_____

person #3_____

person #4_____

3. "How does the _____ they are drinking effect their feelings?

person #1_____

person #2_____

person #3_____

person #4_____

Drawing # _____

1. "Can you tell me an/dor point to what each person in this drawing would like to drink? (persons are numbered left to right)

   person #1_____

   person #2_____

   person #3_____

   person #4_____

2. "Can you tell me and/or point to how each person in the scene is feeling? (use the cardboard faces as necessary to help the child identify the feelings)

   person #1_____

   person #2_____

   person #3_____

   person #4_____

3. "How does the _____ they are drinking effect their feelings?

   person #1_____

   person #2_____

   person #3_____

   person #4_____

II. Identification of photographs not selected.

A. After the 11 drawings have been shown to the child, pick up all the photographs which the child has selected.

1. If the child selected all of the beverage photographs at least once, this task is completed. Go to the Concept Task.

2. If the child did not select all of the photos, pick up the photos he selected and correctly named and leave the others on the table.

Beer
Coffee
Gin
Lemonade
Milk
OJ
Sherry
Soda
Whiskey
Wine

A. Ask the child to name each photographed beverage.

Photograph	Child's Response	Photograph	Child's Response
1		1	
2		2	
3		3	

B. Any beverages that the child cannot name should be left on the table and the others should be picked up. (If only 1 photograph remains, omit this step). In alphabetical order, ask the child to point to beverage you are naming. Record here what beverages the child could not name and if the child pointed correctly.

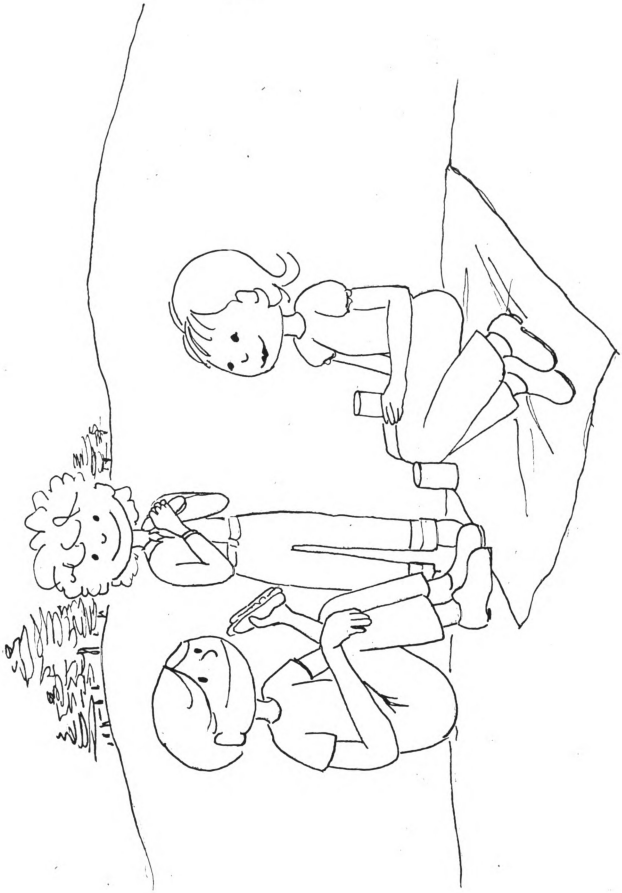
1. yes no _____ 5. yes no _____

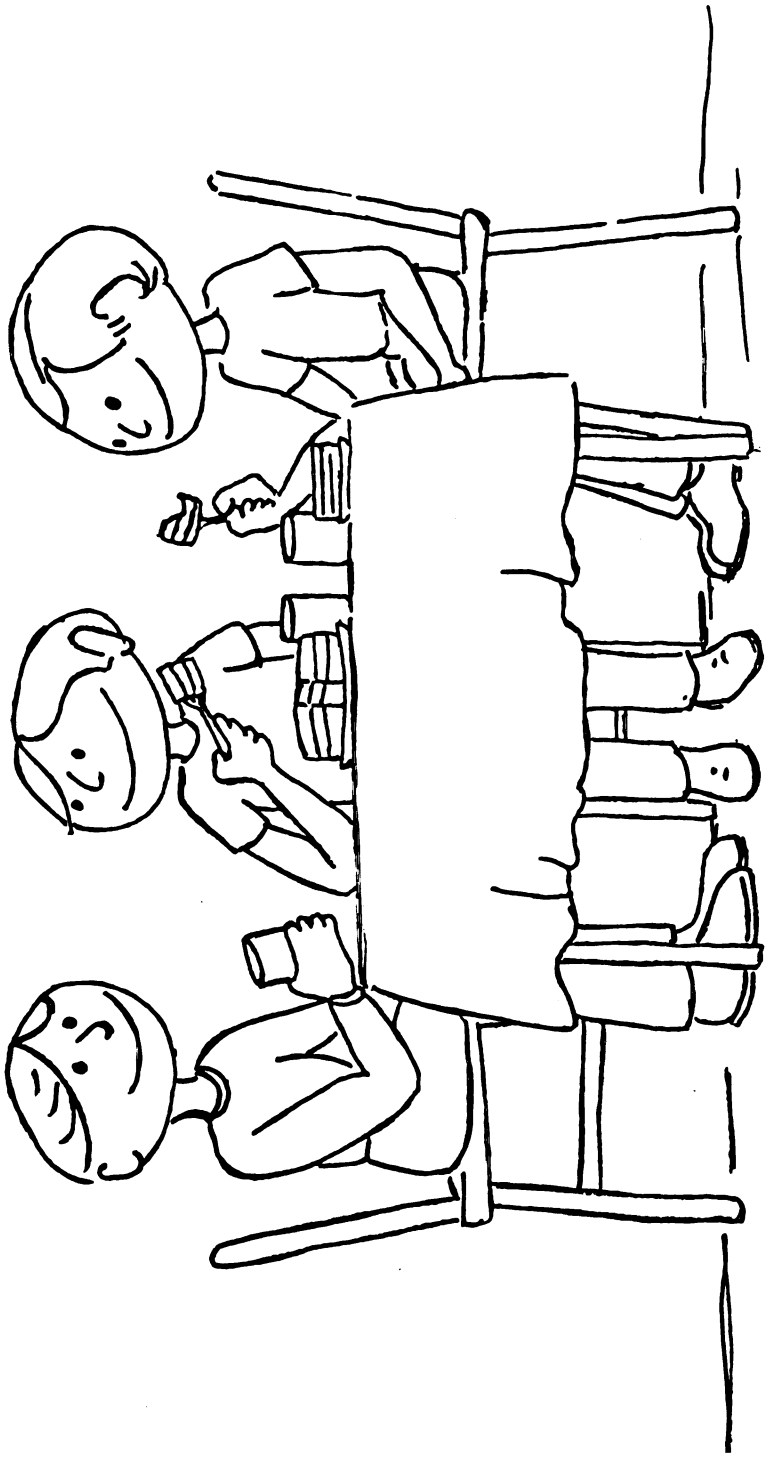
2. yes no _____ 6. yes no _____

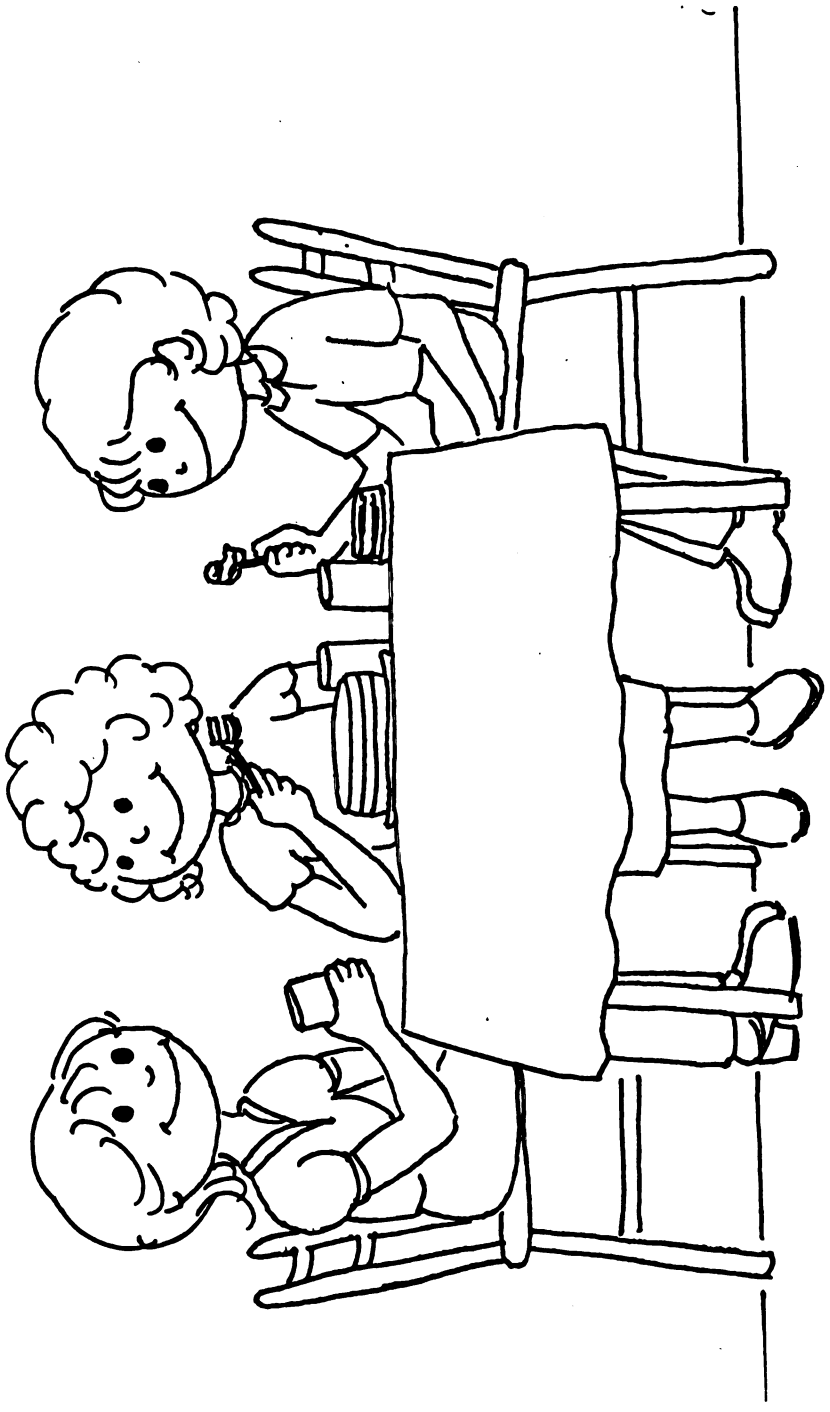
3. yes no _____ 7. yes no _____

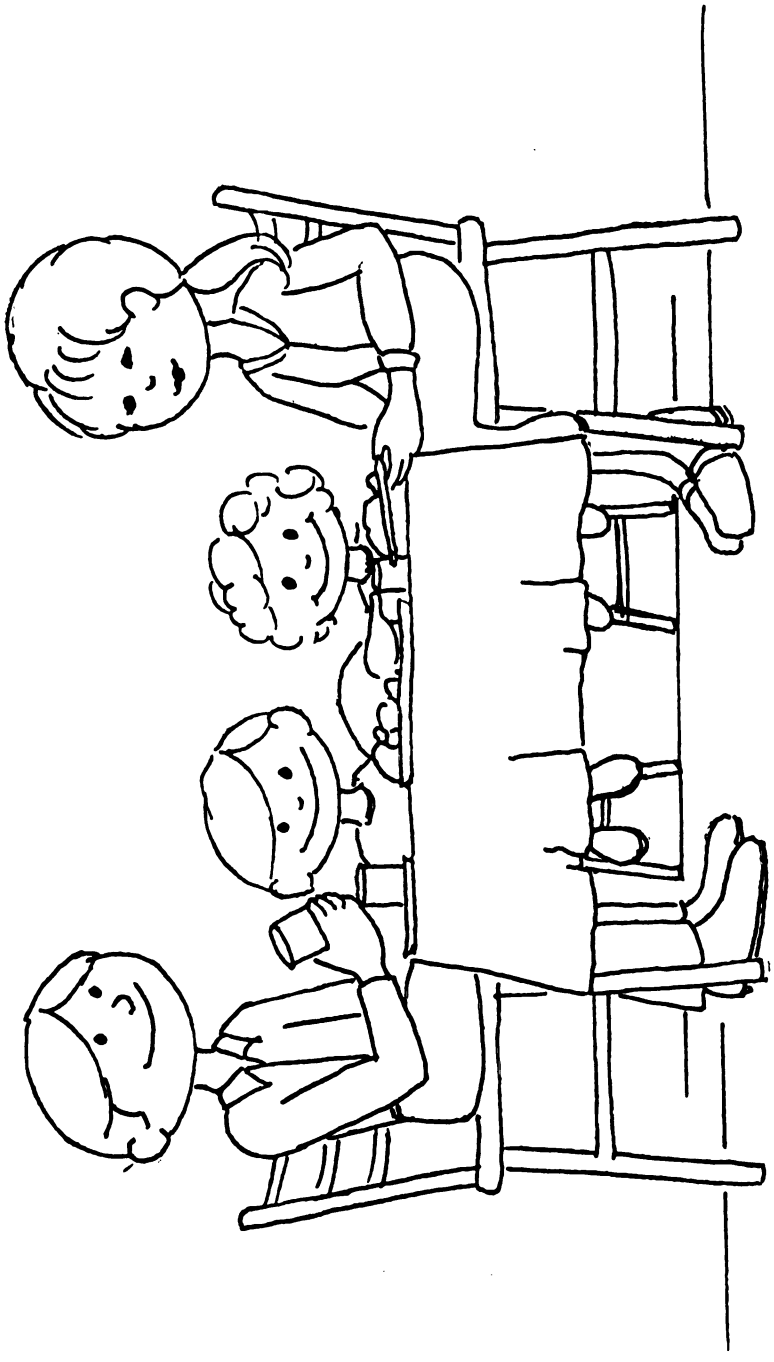
4. yes no _____ 8. yes no _____

This task is now complete. Go to Concept Task.

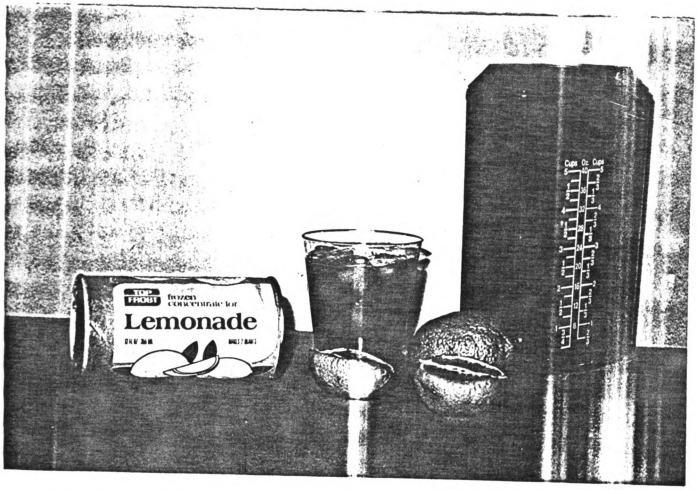


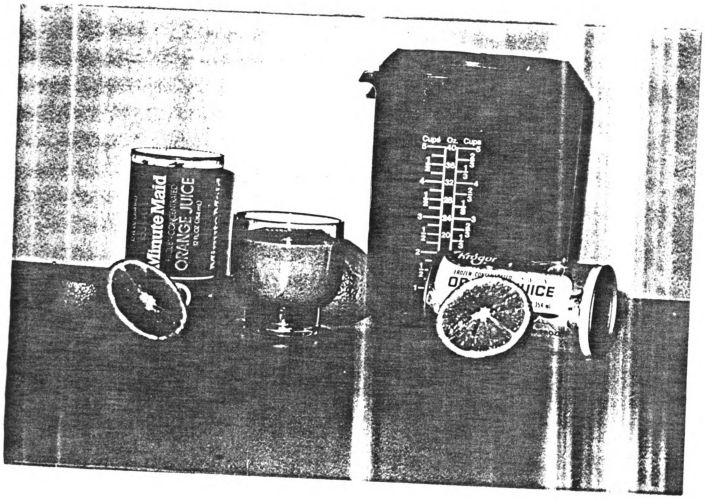


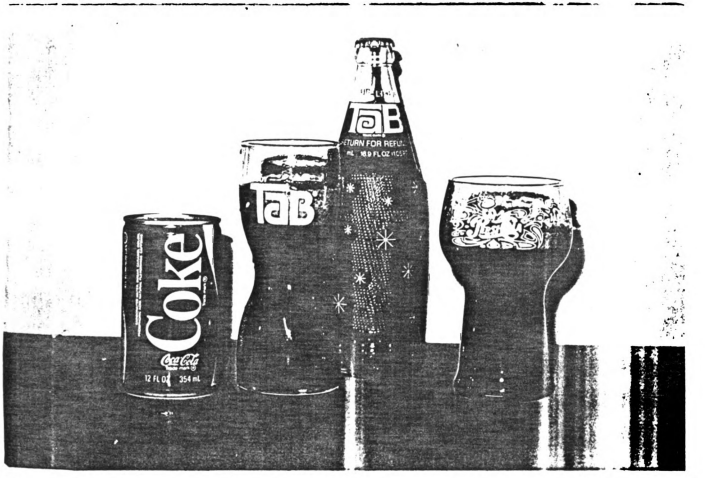





Stroh's
BEER
Lite
A FINE PILSNER
BEER
Budweiser


TOP FROST
frozen concentrate for
Lemonade


Minute Maid
ORANGE JUICE
Cups
Oz.
Liters
Kroger

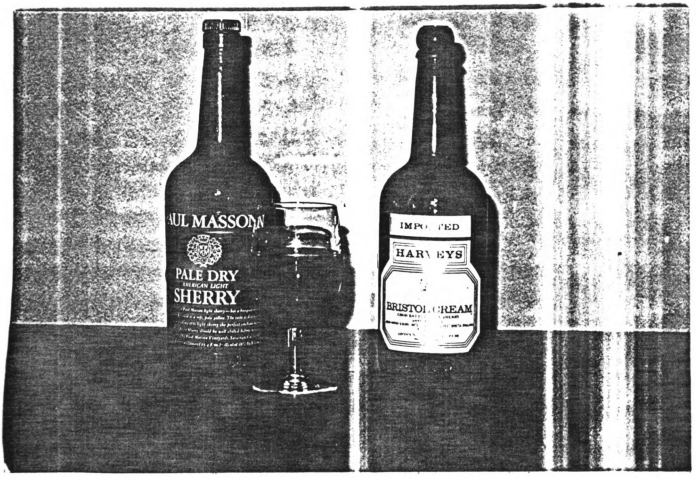

TAB
RETURN FOR REFUL
Coke
Coca-Cola
12 FL OZ 354 mL


Vitamin D
Milk
ONE QUART (946 ml)
Quality
2


Maxwell
HOUSE
Electric Perk
HILLS
BROS
15¢


Inglenook
NAVALLE
CHENIN BLANC
1974
BV
PRIVATE RESERVE


Arrow
Charcoal Filtered
VODKA
100 PROOF
Don Q
PUERTO RICAN
RUM
CALVERT
GIN


AUL MASSONN
PALE DRY
SHERRY
IMPO ED
HARV EYS
BRISTOL REAM


IMPORTED
Seagram's
V.O.
CANADIAN WHISKY
A BLEND
BOTTLED IN CANADA
SMOOTH AS SILK
KESSLER

APPENDIX VIII

Alcohol Concept Task

APPENDIX VIII

Alcohol Concept Task

This task was designed to assess the child's understanding of the logical class "alcoholic beverage". Initially the child was seated at a table with the examiner and was given the following instructions:

> Now we are going to play another game--a guessing game. I'm going to put two things in front of you and I want you to guess which one I am thinking of.

The examiner selected two objects from an array of eight[1] and placed them in front of the child. The order of object presentation was the same for all children. On each paired object presentation, one of the items was a piece of fruit. The "correct" response for each trial was the piece of fruit. When the child "guesses" which item the examiner was thinking of, the examiner recorded the child's response on the prepared answer sheet. The answer sheet provided a list with the order of paired object presentations, space to record the child's response, and the instructions for the task. Each correct response by the child was immediately followed by social reinforcement from the examiner (e.g. Right! You guessed the one I was thinking of--good job...). Incorrect responses were followed by more neutral responses

---

[1]The objects were: apple, banana, orange, lemon, peanuts, fork, plate, and hot dog.

(e.g. no, that's not the one I was thinking about--try this one...).

This task continued until the child responded correctly on six successive trials or until sixteen trials were completed. Next, the examiner placed all items on the table in two groups--fruit and non-fruit, and the child was asked to correctly label the group which the examiner was thinking of. Children who could not provide an adequate response (fruit) were told the basis of the discrimination and an explanation followed. This task was utilized to give the child an opportunity for training on a discrimination-like task.

The food objects were removed and eight beverage containers were placed in front of the child in a preplanned order. He was asked to identify these items, i.e., things to drink, and if the child could not provide this label he was told that all of the items are things to drink. Subsequently, the child was asked to sort the containers into groups that belong together, just like they did previously with the fruit.

When the child was finished, he was asked why the items in each group belonged together. Specific inquiry questions and techniques used by Santostafano (1978) and Kreinik (1967) were used by the examiner. All groups of objects were recorded verbatim by the examiner as well as the child's rationale for the groupings.

If the child did not sort the beverage containers on the basis of alcoholic/non-alcoholic, this was done by the examiner after inquiry about the groups the child did construct. The child was then asked to explain the difference between the two groups. The inquiry focused upon what the child knew about the contents of each grouping. Specifically:

1. Who drinks them (both groups)?
2. Where have they seen the alcoholic beverages and where have they seen them drunk?
3. How do people feel when they drink these (both groups)?
4. Have you ever drank any of these (alcoholic beverages only)?
5. Who gave them to you to drink (alcoholic beverages only)?
6. Do you plan to drink these when you are older? (alcoholic beverages only)?

The examiner recorded all of the child's responses to this portion of the task verbatim on the prepared answer sheet.

Subsequent to the inquiry, a group of eight tools (real: screwdriver, pliers, knife, nail, toy, screwdriver, hammer, saw, pliers) was placed before the child. He was asked to

identify these things, i.e., "tools". Subsequently the child was asked to sort the tools into groups that belong together, just like they did previously. When the child finished they were asked why the members of each group belong together.

If the child did not sort the tools on the basis of real tools/toy tools this was done by the examiner and the child was asked to explain the differences between the two groups. The inquiry focused on what the child knew about the tools. Specifically:

1. Who uses them?
2. Where they have seen them used?
3. How people feel when they use them?
4. Do you plan to use them when you are older and have you ever used them? (real tools)?
5. Anything else the child knows about the tools.

This distracted the child from the topic of alcohol and along with the fruit task provided additional data on the child's overall level of cognitive development. The following instruction booklet was utilized to record each child's responses.

APPENDIX VIII

Formation of Concept "Alcoholic Beverages"

I. Instructions: Pairs Game

"Now we are going to play another game--a guessing game. I am going to put 2 things in front of you and I want you to guess which one I am thinking of. Any questions?"

A. When the child is ready, begin placing the following pairs of objects in front of him. The "correct" response is always the fruit. If the child responds correctly say: "Right! You guessed the one I was thinking of. Good job. Let's try another one." (If the child responds incorrectly say: "No. That's not the one I was thinking about. Try this one." (Record all responses verbatim)).

1)	Apple-Fork	_____	9)	Apple-Peanuts	_____
2)	Banana-Hot Dog	_____	10)	Banana-Plate	_____
3)	Peanuts-Orange	_____	11)	Fork-Orange	_____
4)	Lemon-Plate	_____	12)	Lemon-Hot Dog	_____
5)	Hot Dog-Apple	_____	13)	Plate-Apple	_____
6)	Peanuts-Banana	_____	14)	Fork-Banana	_____
7)	Orange-Plate	_____	15)	Orange-Hot Dog	_____
8)	Fork-Lemon	_____	16)	Peanuts-Lemon	_____

B. When the 16 trials are completed or he has 6 correct responses in succession, place all of the items on the table in 2 separate groups--fruit and non-fruit. Say: "Can you tell me what all these things (point to fruits) I was thinking of are called?

Child provides correct answer: Yes No (Circle one)

1. If the child responds "fruit" go to the next task.
2. If the child is unable to provide the correct response then say: "These are all fruits (pointing). I was always thinking of the fruit".
   A. Insure that the child understands the basis of the discrimination.
   B. Go to the next task, Beverage Object Sort.

II. Beverage Object Sort

A. Place the 8 beverage containers in front of the child according to the diagram below:

	1	2	3	4
A	apple juice	Jim Beam	milk	Strohs beer
B	Almaden wine	Hawaiian Punch	Gallo sherry	Coca-cola

Examiner//Child

B. Instructions: "Can you tell me, why do all these things belong together?"

Child provides correct answer: Yes No (Circle one)

1. If the child does not provide the correct response, "things to drink" then tell the child they belong together because they are things to drink.

C. Instructions: "Now I want you to put these things to drink into smaller groups that belong together, just like you did when I put the larger groups of things in front of you."

D. Inquiry: Begin with the 1st group constructed by the child. Say "Tell me, why do these things belong together? How do they go together?

Objects	Responses

Objects	Responses

1. If the child sorts the beverage on the basis of alcoholic/non-alcoholic, ask the following questions:

A. Who drinks these (alcohol)?_____

Who drinks these (non-alcoholic)?_____

B. Where have they seen the alcoholic beverages and where have they seen them drunk:_____

_____

C. How do people feel when they drink these (alcohol)?_____

_____

How do people feel when they drink these (non-alcoholic)?_____

_____

D. Have you ever drank any of these (alcoholic beverages only)?_____

_____

E. Who gave them to you to drink (alcoholic beverages only)?_____

_____

F. Do you plan to drink these when you are older (alcoholic beverages only)?_____

Proceed to III Tool Object Sort and skip #2

2. If the child does not sort the beverages on the basis of alcoholic/non-alcoholic, then sort the beverages on this basis for the child. Ask the following:

A. Why do these (alcohol) go together?_____

Why do these (non-alcohol) go together?_____

B. Who drinks these (alcohol)?_____

Who drinks these (non-alcohol)?_____

C. Where have they seen the alcoholic beverages and where have they seen them drunk:_____

_____

D. How do people feel when they drink these (alcohol)?_____

_____

How do people feel when they drink these (non-alcoholic)?_____

_____

E. Have you ever drank any of these (alcoholic beverages only?_____

_____

F. Who gave them to you to drink (alcoholic beverages only)?_____

_____

G. Do you plan to drink these when you are older (alcoholic beverages only)?_____

III. Tool Object Sort

A. Place the 8 tools in front of the child according to the below diagram:

	1	2	3	4
A	real screwdriver	toy hammer	real nail	toy pliers
	toy saw	real knife	toy screwdriver	real pliers

Examiner//Child

B. Instructions: "Can you tell me, why do all these things belong together?"

Child provides correct answer: Yes No (Circle one)

1. If the child does not provide the correct response, "tools" then tell the child they belong together because they are tools.

C. Instructions: "Now I want you to put these tools into smaller groups that belong together, just like you did when I put the larger group of tools in front of you."

D. Inquiry: Begin with the 1st group constructed by the child. Say "Tell me, why do these things belong together? How do they go together?"

Objects	Responses

1. If the child sorts the tools on the basis of real/toy, ask the following questions:

A. Who uses these (real)?_____

Who uses these (toy)?_____

B. Where have they seen real tools and where have they seen them used?

_____

C. How do people feel when they use them (real)?_____

_____

D. Have you ever used any of these (real tools only)?_____

_____

E. Who lets you use them (real tools only)?_____

_____

F. Do you plan to use these when you are older (real tools only)?_____

_____

2. If the child does not sort the tools on the basis of real/toy, then sort the tools on this basis for the child. Ask the following?

A. Why do these (real) go together?_____

Why do these (toy) go together?_____

B. Who uses these (real)?_____

Who uses these (toy)?_____

C. Where have they seen real tools and where have they seen them used?___

_____

D. How do people feel when they use them (real)?_____

_____

E. Have you ever used any of these (real tools only)?_____

_____

F. Who lets you use them (real tools only)?_____

_____

G. Do you plan to use these when you are older (real tools only)?_____

_____

3. End of Task.

APPENDIX IX

Raw Scores for Study Children on the Behavioral Style Questionnaire and Child Behavior Checklist

APPENDIX IX

Raw Scores for Study Children on the Behavioral Style Questionnaire and Child Behavior Checklist

A. Behavioral Style Questionnaire

High risk child number[1]		Dimensions of Temperament								
	- mother reports	Activity	Rhythm	App/With	Adapt	Intens.	Mood	Persist.	Distract	Thresh.
1		3.92	2.44	3.73	2.83	4.58	4.00	3.70	3.60	4.45
2		3.77	2.33	1.60	1.92	3.42	2.83	2.60	4.00	4.55
3		3.31	2.67	1.91	2.50	4.58	3.17	2.60	3.20	3.09
4		3.23	2.89	2.60	2.17	4.42	2.58	2.90	4.10	2.91
5		4.23	1.67	3.73	3.92	5.17	4.42	3.30	3.90	4.27
6		3.61	2.44	2.20	1.67	3.64	2.00	2.10	4.40	4.45
7		3.31	3.34	4.40	2.92	4.00	3.45	3.30	4.40	3.91
8		4.77	2.56	2.09	3.42	5.18	4.20	4.00	4.70	3.09
9		3.46	2.33	3.30	2.83	5.00	3.75	3.70	3.80	3.64
	- father reports									
1		4.08	2.67	2.82	1.92	4.08	3.25	3.80	4.50	4.00
2		3.31	2.25	2.60	2.92	4.33	3.42	2.00	4.10	3.73
3		3.46	2.22	1.80	2.00	4.17	2.33	2.60	3.50	3.18
4		3.46	2.67	2.40	2.25	4.42	2.42	2.90	3.90	3.18
5		3.92	3.00	2.73	3.00	4.25	2.92	3.30	3.70	3.70
6		3.61	2.60	2.20	1.67	3.73	2.00	2.10	4.40	3.73
7		3.23	2.44	2.09	2.23	4.42	2.83	2.80	3.50	2.73
8		4.77	3.78	1.64	2.67	5.17	3.50	3.70	3.80	4.18
9		3.46	3.56	2.70	2.67	3.50	2.75	3.60	4.00	3.18

Behavioral Style Questionnaire (continued)

Control child number[1]		Activity	Rhythm	App/With	Adapt	Intens.	Mood	Persist.	Distract.	Thresh.
	- mother reports									
1		4.31	2.11	3.18	2.17	5.08	3.42	2.70	5.10	4.45
2		3.31	3.11	2.30	2.73	5.25	3.45	2.20	4.30	4.64
3		3.46	2.44	3.27	2.33	4.50	2.42	2.00	3.90	3.64
4		3.08	2.11	3.20	1.83	4.33	2.42	2.20	2.90	3.55
5		3.25	3.11	4.64	3.75	3.92	3.83	3.80	1.80	2.27
6		4.23	4.44	2.80	2.90	4.25	3.36	3.70	4.30	3.64
7		4.16	3.44	3.20	2.75	4.16	2.83	3.50	3.50	3.54
8		2.77	1.67	2.64	3.17	4.08	2.25	1.80	2.80	4.18
9		3.23	2.22	3.09	1.50	4.25	3.09	2.40	4.30	4.45
	- father reports									
1		3.92	2.78	3.27	2.33	4.42	3.33	4.50	3.50	3.64
2		2.69	3.11	3.00	3.00	2.25	2.67	3.40	3.50	2.64
3		3.85	3.11	2.73	2.92	3.83	2.92	2.30	3.60	2.54
4		3.61	2.55	3.40	2.67	4.25	3.50	2.60	3.80	3.91
5		3.77	2.87	1.64	1.42	4.17	2.83	3.20	4.10	3.18
6		3.77	3.75	1.90	1.50	4.58	2.17	1.80	5.40	3.91
7		3.38	3.67	3.20	2.42	4.33	3.33	3.20	3.70	3.27
8		3.31	2.56	3.00	2.50	4.50	2.58	2.90	4.40	3.82
9		3.69	3.56	3.45	2.83	3.50	3.00	3.30	3.60	3.00

[1]The matched pairs are (1,1) (2,4) (3,2) (4,9) (5,3) (6,6) (7,7) (8,5) (9,8) where the first number is the high risk child and the second number is the matched control child's number.

B. Child Behavior Checklist

High risk child number[1]		Factor Raw Scores[2]								
		I Soc With.	II Somatic	III Depress.	IV Immat.	V Sex Probs	VI Schiz.	VII Aggress.	VIII Delinq.	Other
1	- mother reports	3[2]	1	9	3	3	0	10	0	11
2		3	0	2	2	0	1	10	1	4
3		0	0	0	0	0	0	1	0	1
4		1	0	7	3	2	1	3	0	4
5		4	2	23	7	3	3	27	4	11
6		0	1	1	2	0	0	6	0	6
7		2	1	9	3	0	3	6	2	2
8		1	2	5	7	0	2	22	0	3
9		3	1	10	7	0	0	8	0	3
	- father report									
1		2	0	5	5	0	0	9	1	10
2		2	1	4	3	0	0	12	0	6
3		4	2	2	2	0	0	12	0	6
4		1	0	3	2	0	0	6	0	4
5		5	0	12	3	1	1	13	2	6
6		1	0	1	0	0	0	7	1	6
7		0	1	6	2	0	0	7	1	2
8		1	0	3	7	0	1	20	1	6
9		3	2	5	2	0	2	10	1	1

Child Behavior Checklist (continued)

Control child number[1]		I Soc With.	II Somatic	III Depress.	IV Immat.	V Sex Probs	VI Schiz.	VII Aggress.	VIII Delinq.	Other
	- mother reports									
1		4[2]	3	5	6	1	1	13	2	8
2		0	2	4	4	0	2	9	0	13
3		2	0	8	3	0	2	13	0	4
4		2	0	2	1	0	0	6	0	5
5		0	0	5	1	1	0	12	4	4
6		3	4	5	7	0	1	20	4	3
7		2	1	7	7	0	1	14	2	11
8		2	1	3	5	0	1	10	0	8
9		5	1	13	3	0	0	6	1	5
	- father reports									
1		4	0	8	3	1	1	16	0	12
2		0	1	1	0	0	0	3	0	2
3		1	0	4	2	0	1	3	0	6
4		6	1	11	5	0	2	17	1	11
5		0	0	5	3	1	0	11	4	6
6		0	1	0	0	0	0	6	2	1
7		1	0	4	3	0	0	10	0	6
8		1	1	6	4	0	2	6	2	10
9		3	0	9	4	1	0	8	1	7

[1]The matched pairs are (1,1) (2,4) (3,2) (4,5) (5,3) (6,7) (7,8) (8,6) (9,9) where the first number is the high risk child and the second number is the matched control child's number.

[2]Scores are sums of items checked.

APPENDIX X

Revised Yale Developmental Inventory

Examination and Observation Form

YALE CHILD STUDY CENTER

CHILD DEVELOPMENT UNIT

CSC # _____

Name of Child _____

Examiner _____

Date(s) of Exam. _____

EXAMINATION AND OBSERVATIONS

1. PERSONS ACCOMPANYING CHILD

2. GENERAL STATUS OF CHILD (relation to feeding, sleep, illness, injections, evidences of unusual apprehensiveness)

3. PHYSICAL DESCRIPTION (including handicaps)

4. ADJUSTMENT TO EXAMINATION (include initial adjustment; response to transitions, stress and/or fatigue; need for adaptation from examiner)

5. EYES AND VISION (movements, visual acuity, pupils, etc.)

6. HEARING (response to voice, other sounds -- designate)

2.

7. OTHER PHYSICAL FINDINGS (when indicated -- reflexes, measurements, P.E., etc.)

8. MOTOR BEHAVIOR

Gross Motor (quantitative, + co-ordination, gait, agility, modulation, etc.)

Fine Motor (quantitative, + precision of grasp, manipulative skill, eye-hand co-ordination, tremor, etc.)

Activity Characterization and Tonus (output, tempo, fluctuations)

Abnormal or Unusual Motility Patterns (whirling, rocking, head nodding, tics, posturing, flicking, "hot cube" behavior, seizures, etc.)

9. Dominant Hand _____ Foot _____ Eye _____

10. ADAPTIVE BEHAVIOR

Quantitative

Reaction to Tasks (degree of interest, specific preferences; style of approach to different kinds of tasks, "appropriate" use of materials, possible situational reasons for failure on specific tasks)

11. LANGUAGE

Quantitative (production and comprehension)

4.

Disturbance of Quality (dysarthria, echolalia, stuttering, infantile speech, neologisms, etc.)

Non-Verbal Communication of Requests (type and effectiveness)

12. PERSONAL - SOCIAL

Quantitative

Relationship to Examiner

Interaction with Parent or Others in Room (e.g., does child turn to parent for assistance, protection, to share pleasure, with aggressivity, etc.?)

5.

Auto-erotic and Auto-aggressive Behavior (describe type and context)

13. FEELING STATES AND EMOTIONS (how and when are states of comfort-discomfort, anxiety, anger, sadness, negativism, pleasure, excitement, etc., expressed. Describe the behavior from which feelings are inferred.)

14. COPING MECHANISMS (any behavior which appears to be a voluntary effort to cope with discomfort or other stress)

6.

15. ESTIMATE OF VALIDITY OF TEST

16. EXAMINER'S IMPRESSION OF PARENTS

17. IMPRESSION AND FORMULATION REGARDING CHILD'S PROBLEM

7.

18. RECOMMENDATIONS

19. SALIENT FEATURES OF FINAL CONFERENCE WITH PARENTS

LIST OF REFERENCES

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