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**EGO DEVELOPMENT IN ALCOHOLICS IN DETOXIFICATION CENTERS: AN
ADAPTIVE APPROACH TO ALCOHOLISM**

by

C. Colby Lewis

B.A., University of Prince Edward Island, 1985

THESIS SUBMITTED IN PARTIAL FULFILLMENT OF
THE REQUIREMENTS FOR THE DEGREE OF
MASTER OF ARTS
in the Department
of
Psychology

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Ego Development in Alcoholics in Detoxification Centers: An Adaptive

Approach to Alcoholism

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Abstract

Research generated within a disease paradigm has generally failed to reveal those factors responsible for the onset and course of alcoholism. An alternative model is proposed in which alcoholism is considered as an adaptive response to stress resulting from a disparity between arrested ego development and evolving biopsychosocial demands. Subjects were 121 alcoholics in detoxification (35 females and 86 males) and 45 non-alcoholics (22 females and 23 males).

In Part I, it was predicted that alcoholics would score lower than non-alcoholics on Loevinger's (1985) measure of ego development (*Washington University Sentence Completion Test Form 68/11*). It was also predicted that most male and female alcoholics would score at Loevinger's Impulsive and Self-Protective stages respectively. Although statistically significant, the group differences in Part I were not as great as expected; alcoholic subjects scored less than one stage lower than non-alcoholics. Moreover, since 57.9% of alcoholics scored at or above the mean adjusted score for non-alcoholics, developmental arrest was likely not a definitive factor in the onset and course of alcoholism for the majority of alcoholics. Although female alcoholics scored approximately one stage higher than male alcoholics, both sexes scored above the expected Impulsive and Self-Protective stages.

In Part II, alcoholic subjects grouped by sex and high or low ego development were compared on six dependent variables. It was predicted that male alcoholics, as well as alcoholics at low ego development, would report: earlier onset of regular drinking; earlier onset of problem drinking; a longer interval from the onset of regular drinking until first seeking professional help for drinking problems; higher levels of alcohol

dependence; more trouble with the law; and shorter periods of abstinence. The only significant result was for sex on onset of regular drinking; males began regular drinking four years earlier than females. The results failed to confirm that level of ego development mediated any of the six variables associated with the onset and course of alcoholism.

Loevinger (1976) has defined ego as the master trait of personality. In Part III, personality scores (*Personality Research Form-E*) of alcoholics at Impulsive, Self-Protective, and Conformist ego stages were compared. The results indicate that alcoholics at these stages could not be distinguished on the basis of personality scores. Similar results were obtained in a second analysis in which alcoholic subjects were assigned to Low, Medium, or High ego development groups. Loevinger's proposed relationship between personality traits and ego was not confirmed in this sample of alcoholics.

Methodological and theoretical issues which may have contributed to the unexpected findings in Parts I - III are discussed. A revised model is presented which emphasizes: a) self/ideal-self disparity; b) subjective experience; and c) adaptive capacity.

Dedication

I am dedicating this paper to my Tai-tai, Wendy (Chui Fun) Lewis. Throughout this project, I have often drawn from her love, compassion, encouragement, optimism, and energy. Wendy's faith in me has brought me through those times when my self-confidence wavered, and although I often gave her reasons to complain, she didn't.

Or wing yuen oi lai, Tai-tai.

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In the beginning, I had an idea.... Throughout this long, sometimes frustrating, but mostly rewarding endeavor, I have become indebted to many people who I would now like to acknowledge. First, I want to thank my wife, Wendy Lewis, for her many contributions which involved endless hours of work, always offered without hesitation. These contributions include, to name only a few, assisting in data coding, transcribing several thousand handwritten and sometimes barely legible sentence stem responses, and numerous edits. More importantly, I want to express my gratitude for the unwavering and unconditional support and love Wendy has extended to me throughout.

I want to thank Prof. Bruce Alexander, my senior supervisor, for his time, patience, encouragement, insights, and friendship. In the time I have spent with Bruce, his integrity and genuine curiosity have inspired me to think critically. I am quite sure he will understand if I refer to him as a "gadfly".

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INTRODUCTION

Current approaches to alcoholism are generally premised on a disease model, but the validity of this model has been the focus of recent criticism (Faulkner, Sandage, and Maguire, 1988; Peele, 1987; Douglas, 1986; Dreger, 1986; Baar and O'Connor, 1985; Blume, 1983; Marlatt, 1983). The results of research within this disease paradigm has been largely inconclusive (Alexander, 1990) and medical approaches to treatment have not been particularly successful. For example, Pickens, Hatsukami, Spicer, and Sytkis (1985) reported that 44% of their sample of alcoholics (N = 208) had relapsed during the first year following treatment. Polich, Armor and Braiker (1980) reported that 93% of their sample of male alcoholics (N = 758) had relapsed at one time or another during a 4-year period following admission to alcoholism treatment centers. Among those who had relapsed, the severity of drinking problems was classed as serious in 81% of the cases. Polich et al concluded, "Among persons who come to formal treatment, alcoholism appears to be a continuing condition for the great majority" (1980, p. 414). Following a review of approaches to the treatment of alcoholism, Nathan and Hay (1984) wrote:

We conclude, with reluctance, that a widely effective approach to the treatment of alcoholism has not yet been documented. (p. 577)

In the present study, an alternative to the disease model of alcoholism is evaluated. In the proposed model, alcoholism is conceptualized as a coping strategy for individuals unable to manage stress resulting from a disparity between arrested ego development and ongoing biopsychosocial demands.

Ego Development

Loevinger has synthesized cognitive, social, moral, and psychosexual strands of development (Vaillant and McCullough, 1987) into a comprehensive and robust model of ego development which has been supported by a compelling body of empirical research (Hauser, 1976).

Within her model, ego is not a passive recipient of experience, but rather an active process providing individuals with a "frame of reference" or internal structure, through which they perceive and understand themselves, their interactions with others, and the world.

In constructing this frame of reference, the ego process attempts to maintain a dynamic internal equilibrium, by not only ascribing meaning to incoming information which is concordant with the current frame of reference, but also by selectively gating out discordant and irrelevant information. Loevinger (1976) has argued that an individual "... is equipped to engage in exchanges with the environment!" and such exchanges take one of two forms:

...on one hand, [individuals] select what is environment to them; on the other, they possess flexibility, some repertory of responses, in accommodating to the various demands of different environments: (p. 34).

Because environments inevitably change throughout the lifetime of an individual, the individual "...needs to adjust and accommodate, to substitute

It must be emphasized that in Loevinger's model of ego development, "environment" takes on two distinct but related forms. For example, siblings raised in the same home are exposed to a similar, macro-environment. However, as a function of individual ego development, each sibling selects from the macro-environment that which is environment to them by idiosyncratically ascribing meaning to incoming information and gating out irrelevant or discordant information (micro-environment). Therefore, a distinction is made between the environment at large and that subset of the environment which the individual constructs as his or her own.

a new response for a once successful one." (Loevinger, 1976, p. 34).

Loevinger (1976) has argued that the degree of flexibility that individuals are capable of reflects their stage of ego development.

Beginning at birth, individuals progress through a sequence of qualitatively distinct and increasingly complex ego stages. Of the ten stages (seven basic stages and three transition stages) identified by Loevinger (see Table 1), virtually everyone progresses through the first stage (Presocial/Symbiotic) during infancy. Not everyone develops at the same rate or to the same extent, but for most people development begins to stabilize in early adulthood, usually at the Conscientious-Conformist stage. (Holt, 1980).

Table 1. Description of Loevinger's ego stages and corresponding developmental milestones^a.

<u>Impulse Control character style</u>	<u>Interpersonal style</u>	<u>Conscious preoccupations</u>	<u>Cognitive style</u>
	Autistic Stage		
	Autistic	Self vs. nonself	
	Symbiotic Stage		
	Symbiotic	Self vs. nonself	
	Impulsive Stage (TPR² = 1)		
Impulsive; fear of retaliation	Receiving; dependent; exploitive	Bodily feelings especially sexual and aggression	Stereotypy; conceptual confusion

²Total Protocol Rating is derived from item scores on Loevinger's measure of ego development.

Table 1. continued:

**Impulse Control,
character style**

**Interpersonal
style**

**Conscious
preoccupations**

**Cognitive
style**

Self-Protective Stage (TPR = 2)

Fear of being caught; externalizing blame; opportunistic

Wary; manipulative; exploitative

Self-protection; wishes; things; advantages; control;

**Transition from Self-Protective
to Conformist (TPR = 3)**

Obedience and conformity to social norms; simple and absolute rules

Manipulative; obedient

Concrete aspects of traditional sex roles; physical causation as opposed to psychological causation

Conceptual simplicity; stereotypes

Conformist Stage (TPR = 4)

Conformity to external rules; shame; guilt for breaking rules

Belonging; helping; superficial niceness

Appearance; social acceptability; banal feelings; behavior

Conceptual simplicity; cliches

**Transition from Conformist to
Conscientious (Conscientious-Conformist,
TPR = 5)**

Dawning realization of standards, contingencies; self-criticism

Being helpful; deepened interest in interpersonal relations

Consciousness of the self as separate from the group; recognition of psychological causation

Awareness of individual difference in attitudes, interests, abilities; global concepts

Table 1 continued:

Impulse Control character style	Interpersonal style	Conscious preoccupations	Cognitive style
Conscientious Stage (TPR = 6)			
Self-evaluated standards; self-criticism; guilt for consequences; long term goals	Intensive; responsible; mutual; concern for communication	Differentiated feelings, motives for behavior; self-respect; achievements; traits; expression	Conceptual complexity idea of patterning
Transition from conscientious to autonomous (TPR = 7)			
Individuality; coping with inner conflict	Cherishing of interpersonal relations	Communicating, expressing ideas and feelings; process and change	Toleration for paradox & contradiction
Autonomous Stage (TPR = 8)			
Add ^b : Coping with conflicting inner needs	Add: Respect for autonomy	Vividly conveyed feeling; integration of physiological & psychological causation	Increased conceptual complexity toleration for ambiguity; objective
Integrated Stage (TPR = 9)			
Add: Reconciling inner conflicts; renunciation of unattainable goals	Add: Cherishing of individuality	Add: Identity	

^aFrom Loevinger, 1976; Hauser, 1978.

^b'Add' means in addition to the description of the previous ego level.

To explain the impetus underlying an individual's progression to a higher stage of ego development, Loevinger (1976) has proposed:

Any [individual's] foremost tendency is to survive and to remain the same, and thus oppose radical changes. There are limits, however, to the [individual's] stability. Sometimes structural changes (development, according to our definition) may depend on internal, even genetic, processes. Other times, they may depend on environmental pressures. When the range of its response repertory is inadequate to deal with a particular environment, the [individual] must die or change its structural laws to meet environmental demands. In psychological development, the alternatives are rarely so extreme. Here, the impulse to change one's structure is provided by the desire to satisfy one's needs more adequately, to become more competent, to grasp the world more fully, and similar motives. The dynamics, however, are basically the same and consist in the interplay of match and mismatch between a structure and its environment. (p. 35)

Thus, development from one stage to the next is initiated by a critical level of discordance between biopsychosocial demands and the individual's ability to manage those demands. When the disparity reaches a critical level, a metamorphosis occurs and a more complex and differentiated frame of reference or stage is constructed. This stage suffices until once again further biopsychosocial changes necessitate further ego development. When biopsychosocial demands stabilize and the ego has equilibrated sufficiently by constructing a frame of reference with a level of complexity suited to cope with such demands, ego development stabilizes, usually in early adulthood.

Loevinger reports that a wide range of ego levels are present in the adult population. Although some individuals progress beyond the modal Conscientious-Conformist stage, the sequence can be interrupted at any stage of development, resulting in a character style which corresponds with features of that ego stage (Hauser, 1978). There are two quite different reasons why ego development may be arrested. First, the biopsychosocial

demands may not necessitate a higher level of ego development. Second, as suggested by Loevinger (1976), development may be arrested by early-life trauma (e.g., overprotective or negligent parenting, child abuse, separation from parents, etc.). Loevinger (1976) writes:

If the problems of some stage of ego development are insurmountable for a child, by reason of trauma, deprivation, indulgence, environmental restriction, or whatever, he will cease to develop at that point or develop very slowly thereafter. Future problems will be met and construed in terms of the ego structure appropriate to the earlier stage. (p. 174)

In this instance, individuals are likely to experience increasing levels of stress and anxiety as a result of a widening gap between arrested ego development and evolving biopsychosocial demands. This latter situation is especially important to the present study.

Since first presenting her model, Loevinger (1966) and her colleagues have developed a complex assessment technique for measuring ego development. The instrument consists of 36 incomplete sentence stems onto which individuals project their frame of reference, and a detailed scoring system with which to rate the degree of complexity and differentiation in the individuals' responses. (Because most individuals progress through the Presocial/Symbiotic Stage during infancy and prior to the acquisition of formal language, only the latter stages can be assessed with this instrument.)

During the more than two decades since its introduction, a substantial number of researchers have evaluated the scientific merit and integrity of the model and its measurement (Holt, 1980, reported 45 published and 80 unpublished studies employing Loevinger's measure prior to 1980.). Critical reviews of these studies have been favorable (Hauser, 1976; Loevinger, 1979; Holt, 1980). With respect to the reliability of the measure, high test-retest

(.79 - .91), internal consistency (.80 - .89), and split-half (.85 - .90) correlations have been reported. With respect to the validity of the model, Hauser (1976) and Loevinger (1979) have reviewed more than 50 empirical studies which support the discriminant and convergent validity of ego development. For example, ego development was found to be conceptually distinct from intellectual and moral development (discriminant validity). Ego development scores were significantly related to interpersonal behavior patterns predicted by the various stages (convergent validity). For example, delinquents were most often at the Impulsive stage, people exhibiting conformist behavior patterns were at the Conformist stage and people receptive to new experiences were at post-Conformist stages. Furthermore, longitudinal research has supported the model's assumption that ego develops in a sequential and invariant order to increasingly differentiated and complex frames of reference (Redmore and Loevinger, 1979).

Alcoholism and Ego Development

As noted above, Loevinger has argued that when an individual's repertory of responses is insufficient to cope with a particular environment, the individual "...must die or change its structural laws to meet environment demands." (1976, p. 35). Loevinger qualified this by adding that within the realm of psychological development, the alternatives are rarely as extreme. Although Loevinger has made no claim that ego development is related to

mental health³ (Loevinger and Wessler, 1970, V.1; Vaillant and McCullough, 1987), the present study assumes alcoholism to be one of those less extreme alternatives available to individuals unable to deal with their environment. A review of the literature on ego development has yielded only one study related to alcoholism. Vaillant and McCullough (1987) reported that in a group of 180 males, alcoholism and level of ego development correlated only -.08. Unfortunately, since the authors did not specify what proportion of their sample was alcoholic or whether those individuals were currently drinking or had been abstinent for a period of time, their finding is ambiguous.

The major premise underlying this model is that individuals experiencing high levels of stress as a result of a disparity between the repertory of responses provided by their level of ego development on the one hand, and biopsychosocial demands on the other, will seek alternative ways to reduce the stress, one of which involves consuming excessive quantities of alcohol. The excessive consumption of alcohol to relieve immediate stress is assumed to become a chronic strategy as the disparity between level of ego development and age-appropriate demands increases --- a strategy which is likely to be ultimately self-defeating because it exacerbates the original ineffectiveness of the individual's ability to cope with his environment.

³Loevinger has argued, "There is a temptation to ... assume that the best adjusted people are those at the highest stage. This is a distortion. There are probably well-adjusted people at all stages." (Loevinger and Wessler, 1970, V.1; p. 7). Loevinger goes on to state, "Probably those who remain below the conformist level beyond childhood can be called maladjusted, and many of them are undoubtedly so even in their own eyes." (p. 7).

An Adaptive Model of Alcoholism: Assumptions and Supporting Research

This model will be formalized by listing 12 underlying assumptions and citing research in support of each.

1. Traumatic events during the formative years of ego development increase the likelihood of ego developmental arrest. This assumption is supported by Loevinger (1976), and is intrinsic to other cognitive-developmental and psychoanalytic stage models of development (Lerner, 1986; Erikson, 1964; Kohlberg, 1984; Fromm, 1941; Piaget, 1952; Ausubel, 1952; Sullivan, Grant, and Grant, 1957; Peck and Havighurst, 1960).

2. The earlier the traumatic experience, the lower the stage at which ego development is arrested. In particular, developmental arrest may occur at one of the three basic stages (Impulsive, Self-Protective, and Conformist) below the adult modal Conscientious-Conformist stage (Loevinger, 1976).

3. A growing disparity between developmental arrest at a lower ego stage (e.g., Impulsive stage) and evolving, age-appropriate, biopsychosocial demands is expected to result in increases in the level of stress experienced by the individual. Motor skill development provides an example of how biopsychosocial demands change with age --- the more skilled the child becomes at manipulating objects, the more the parents come to expect from the child (e.g., feeding and dressing self). Other important changes relate to body size and strength, beginning school, athletic prowess, knowledge acquisition, sexual maturity, dating, employment, and marriage.

Each event creates a new set of demands, some requiring a more complex ego level to integrate the change (Swenson, 1980).⁴

Although studies on ego development and stress have not been reported, several studies have found that stress induced by traumatic events is associated with variables which may reflect arrested ego-development. These include depression, hopelessness, alienation, personal insecurity, labile emotionality, anxiety, meaninglessness in life, and perceived loss of control (Deykin, Levy, and Wells, 1987; Newcomb and Harlow, 1986; Newcomb, Huba, and Bentler, 1986; Tartar, Alterman, and Edwards, 1985; Tartar and Edwards, 1987; Peele and Brodsky, 1975; Peele, 1987; Allen, Peterson, and Whipple, 1981; Pandina and Schuele, 1983; Segal, Huba, and Singer, 1980; Markowitz, 1984; Scoufis and Walker, 1982).

4: When stress becomes unmanageable, individuals search for alternative strategies to obtain relief. When alcohol is readily available, when parents model alcohol consumption, and when alcohol consumption is the norm in peer groups, an alternative coping strategy may include excessive alcohol consumption.

Although previous research has not investigated the assumption that arrested ego development mediates the relationship between early trauma and alcoholism, a spate of studies have reported that traumatic life events often precede substance abuse and addiction. Death of a family member or friend, economic hardship, constant family stress, parental alcohol abuse, divorce or separation of parents, remarriage and family relocation have been

⁴Environmental and social demands are sometimes adjusted to a child's level of ego development, as in the case of a "momma's boy"; however, given inescapable biological demands such as puberty and social demands such as peer group pressure, some disparity and ensuing stress is likely inevitable.

found to precede substance abuse in adolescents and young adults (Pearlin and Radabaugh, 1976; Sadava, 1978; Sadava, Thistle, and Forsyth, 1978; Braucht, Brakarsh, Follingstad, and Berry, 1973; Browne and Finkelhor, 1986; Wurmser, 1978; Yeary, 1982; Morrissey and Schuckit, 1978; Bruns and Geist, 1984; Carman, 1979; Headlam, Goldsmith, Hanenson, and Rauh, 1979; Newcomb, Huba, and Bentler, 1986a; Newcomb, Huba, and Bentler, 1986b; Newcomb and Bentler, 1986; Newcomb and Harlow, 1986).

5. It is assumed that individuals experiencing a disparity between a low level of ego development and evolving biopsychosocial demands will consume alcohol to temporarily alleviate the resulting stress. Several studies have reported that alcohol consumption temporarily facilitates coping (Newcomb and Harlow, 1986; Sher and Levinson, 1982; Shiffman and Wills, 1985; Wilson, 1987; Fingarette, 1985; Yankofsky, Wilson, Adler, Hay, and Vrana, 1986; Hull, 1981; Neff and Husaini, 1982; Berglas and Jones, 1978; Wright and Obitz, 1984; Donovan and O'Leary, 1979). It has been argued that alcohol interacts with cognitive processes to temporarily reduce stress in two ways. First, it helps to alter the meaning of negative stimuli, making them more manageable. Second, the interaction promotes feelings of self-efficacy --- individuals feel they are more powerful, and therefore better able to surmount perceived difficulties (Wilson, 1987; Yankofsky et al, 1986; Steel, Southwick, and Pagano, 1986). At lower stages of ego development, where stress is assumed to be greatest, the need for the stress-reducing effects of alcohol is expected to be greatest and the possibility of subsequent alcohol dependency increases.

6. Although alcohol consumption is an effective coping strategy, it becomes ineffective when it is excessive. Excessive consumption ultimately exacerbates the original problem, creates new problems (e.g., poor grades

in school, loss of job, drunk driving charges, loss of friends, divorce, etc.) and produces a further increase in stress, which in turn may induce an increase in alcohol consumption, and so on. This is an especially important assumption given the current debate over whether stress causes, or is a consequence of, addiction (Alexander, 1984; Vaillant and Milofsky, 1982). This model assumes both: premorbid stress resulting from an increasing disparity between level of ego development and biopsychosocial demands produces stress, which is temporarily reduced by alcohol consumption --- however, continued and excessive alcohol consumption creates problems that eventually produce an increase in stress.

7. Although arrested ego development may place an individual at risk for alcoholism, it is not a sufficient condition for the onset of alcoholism. First, arrested ego development may lead to addictions to drugs other than alcohol. Alcoholism is often discussed in isolation from other forms of drug abuse, but a review by Malloy (1981) found drug abuse to range from 20% to 80% in various samples of alcoholics. Second, if alcohol or other drugs are not available to reduce stress (for cultural or social reasons), neurotic behavioral styles may emerge (cf. Shapiro, 1965, for a discussion of neurotic responses to excessive stress).

8. There are three types of alcoholism corresponding to three stages of immature ego development.

a) The Impulsive Type: This type of alcoholism is characterized by attributes which define Loevinger's Impulsive stage of ego development, namely dependency, delinquency, exploitiveness, poor impulse control, emphasis on bodily feelings and immediate gratification of sexual and aggressive drives. Cognitive processes are relatively underdeveloped.

b) The Self-Protective Type: This type of alcoholism, corresponding with Loevinger's Self-Protective stage, is less socially disruptive than the Impulsive type. People with this type of alcoholism are wary, opportunistic, and controlling. Exploitativeness is present, but emerges out of a fear of harm. Interpersonal dependency, characteristic of the Impulsive stage, becomes an issue to resolve because it places the person in a vulnerable position and conflicts with the need to exert control over others and the environment.

c) The Conformist Type: This type of alcoholism, corresponding with Loevinger's Conformist stage, is characterized by rule conformity, a need to belong to social groups and a concern with self-presentation. An alcoholic of the Conformist type is likely either to belong to an alcoholic subculture where drinking is the norm, or to be involved in some group or treatment (e.g., Alcoholics Anonymous) in which conformity is emphasized. This type of alcoholic should have longer periods of abstinence than the Impulsive or Self-Protective type.

9. Ego, the "master trait" of personality (Loevinger, 1976), influences which personality traits become prominent at each stage of ego development. Vaillant and McCullough (1987) have noted that:

Of all developmental theories postulating that important facets of adult personality correspond to developmental stages, Loevinger's scheme for ego development has the best designed and most empirically based measure for its assessment.
(p. 1189)

Therefore, this model assumes that the three levels of ego development corresponding with the three alcoholism types can be distinguished by distinct clusters of personality traits. Although previous research has not investigated the relationship between ego development and personality traits in alcoholics, several studies have reported personality traits in

alcoholics which appear to correspond with these three ego stages (see Table 2).

Table 2. Ego development stages and corresponding personality traits.

Ego Stages	Studies	Personality Traits
Impulsive	Tuite and Luiten (1986)	Immaturity; manipulativeness; poor impulse control; self-centeredness; primitive concept of self in relation to others.
	Nerviano (1981); Nerviano and Gross (1983)	Sociopathic; dependent; aggressiveness; impulsivity; nonconformity.
	Barnes (1979)	Sociopathic; aggressiveness; primitive concept of self in relation to others.
	Conley and Prioleau (1983)	Impulsivity; aggressiveness; socially disruptive; immaturity; early onset.
	Cloninger (1987)	Sociopathy; impulsivity; early onset; predominance of males.
	Segal, Huba and Singer (1980)	Sociopathy; impulsivity; sensation seeking.
	Brennan, Walfish and Au Buchon (1986)	Sociopathy; sensation seeking.
Self-Protective	Tuite and Luiten (1986)	Alienation; wariness; resentment; guilt; desperation; manipulativeness.
	Barnes (1979)	Inhibited; fearful; apprehensive.

Table 2 continued.

Ego Stages	Studies	Personality Traits
Self-Protective (continued)	Cloninger (1987)	Fear of dependence; need for control; later onset; predominance of females.
	Nerviano (1981); Nerviano and Gross (1983) Segal, Huba and Singer (1980)	Avoidant; withdrawn. Harm-avoidance.
Conformist	Conley and Prioleau (1983)	Submissiveness; compulsivity; later onset.
	Barnes (1979) Nerviano and Gross (1983)	Compulsivity. Submissiveness; conformity; compulsivity.

10. The type of alcoholism an individual experiences (i.e. the type of personality traits an alcoholic possesses) should correspond with the age at which early trauma occurs and with age of onset of alcoholism. The Impulsive type should be characterized by the earliest evidence of trauma and the earliest age of onset of alcoholism. Later trauma and later onset of alcoholism should characterize the Self-Protective and the Conformist types respectively.

11. The prognosis for the Impulsive type of alcoholism is expected to be poorest, followed by the Self-Protective and Conformist types respectively, because the disparity between level of ego development and biopsychosocial demands is correspondingly greater. Prognosis should improve with each successive type due to a corresponding decrease in disparity and associated stress.

12. The sex differences in alcoholics for age at onset of problem drinking and for prevalence rates are assumed to be mediated by ego development. A later onset of alcoholism in females has been reported in three studies (Cloninger, 1987; Conley and Prioleau, 1983; Filstead, 1984). Filstead reported that the mean age at which alcoholics reported first realizing they had a problem with alcoholism was 32.2 years for males and 37.0 years for females. Sex differences in prevalence rates for alcoholism were also reported in the recent Epidemiologic Catchment Area Studies of the American National Institute of Mental Health (Nace, 1987). Prevalence rates for alcoholism among people with some identifiable disorder in three major urban centers (St. Louis, Baltimore, and New Haven) were: males (28.9%), females (4.3%); males (24.9%), females (4.2%); and males (19.1%), females (4.8%) respectively.

Although Loewinger has noted that a sex difference for the mean level of ego development in adulthood has not been reported, ego tends to develop more quickly and stabilize sooner in females (Loewinger, Cohn, Bonneville, Redmore, Streich, and Sargent, 1985). Consequently, at any given point throughout development, females are more likely to be at a higher ego stage than their male cohorts and assumedly, better equipped to cope with similar traumatic events. However, if a trauma is severe enough to lead to an arrest of ego development in both male and female cohorts, it follows that females are likely to be, on average, at a relatively more advanced ego stage. Therefore, the disparity between level of ego development and biopsychosocial demands is likely less and the need for a coping strategy such as excessive alcohol consumption may be reduced or delayed in females.

In support of this, one study has reported that female alcoholics began to drink regularly at around age 25 whereas male alcoholics began earlier at age 20 (Filstead, 1984). An especially interesting finding reported in this study was that the amount of time between the onset of regular drunkenness and first-hospitalization for females (3.2 years) was almost half of that for males (5.9 years). Two possibilities are suggested by this apparent time compression for female alcoholics. First, female alcoholics may be more likely to suffer the negative consequences of alcohol dependence following regular drunkenness sooner than male alcoholics, thereby necessitating earlier treatment. Second, female alcoholics may be more sensitive to the negative personal and social consequences associated with alcohol dependence, and consequently, are more likely to attempt to correct the problem before it becomes extreme. Since the emergence of personal and social awareness is typical at higher levels of ego development, the latter explanation is plausible, especially if female alcoholics are higher in ego development than male alcoholics.

Further evidence that female alcoholics can be expected to be at a higher level of ego development relative to male alcoholics is provided by Cloninger (1987). Cloninger reported that male alcoholics were typically characterized by sociopathy and impulsivity, and female alcoholics were commonly characterized by a fear of dependence and a need for control. This sex difference appears to correspond with Loewinger's lower stages of ego development; sociopathy and impulsivity (male alcoholic) are traits expected at the Impulsive stage, and fear of dependence and a need for control (female alcoholic) are traits expected at the next level of development, the Self-Protective stage.

Hypotheses

The assumptions outlined above provide a set of hypothesized relationships between alcoholism and ego development. However, for practical reasons, these assumptions could not all be fully assessed in this study. A series of hypotheses derived from these assumptions were tested in three studies outlined below.

Part I

Hypothesis 1: Level of Ego Development.

Alcoholics are expected to score lower on Loevinger's measure of ego development than non-alcoholics (Assumptions 3 and 4).

Hypothesis 2: Level of Ego Development in Alcoholic Subjects.

In addition to expecting alcoholics to score lower on Loevinger's measure of ego development (Hypothesis 1), male alcoholics are expected to score lower than female alcoholics (Assumption 12). Specifically, male alcoholics are expected to score at Loevinger's Impulsive stage and female alcoholics are expected to score at Loevinger's next highest stage, the Self-Protective stage.

Part II

Hypothesis 1: Onset of Regular Drinking.

Male alcoholics will report an earlier onset of regular drinking than female alcoholics. Alcoholics at low ego development will report an earlier

onset of regular drinking than alcoholics at high ego development (Assumptions 5 and 12).

Hypothesis 2: Onset of Problem Drinking.

Male alcoholics are expected to report an earlier onset of problem drinking than female alcoholics. Alcoholics at low ego development are expected to report an earlier onset of problem drinking than alcoholics at high ego development (Assumptions 5 and 12).

Hypothesis 3: Number of Years From Regular Drinking to First Help for Drinking Problem.

Male alcoholics are expected to report a longer interval from onset of regular drinking until the age when they first seek help for their problem than female alcoholics. Alcoholics at low ego development are expected to report a longer interval from onset of regular drinking until the age when they first seek help for their problem than alcoholics at high ego development (Assumptions 11 and 12).

Hypothesis 4: Level of Alcohol Dependence.

Male alcoholics are expected to report higher levels of alcohol dependence (measured by the *Alcohol Dependence Scale*, Skinner and Horn, 1984) than female alcoholics. Alcoholics at low ego development are expected to report higher levels of alcohol dependence than alcoholics at high ego development (Assumption 5).

Hypothesis 5: Trouble With Law.

Male alcoholics are expected to report more incidents of trouble with the law than female alcoholics. Alcoholics at low ego development are expected to report more incidents of trouble with the law than alcoholics at high ego development (Assumption 6).

Hypothesis 6: Longest Period of Abstinence.

Male alcoholics are expected to report shorter periods of abstinence than female alcoholics. Alcoholics at low ego development are expected to report shorter periods of abstinence than alcoholics at high ego development (Assumption 5 and 11).

Part III

Hypothesis 1: Personality and level of ego development.

Because of the proposed relationship between ego level and personality (Loevinger, 1976), it is predicted that the three lower levels of ego development (Impulsive, Self-Protective, and Conformist Stages), which are expected to account for the majority of alcoholic subjects, will correspond to three distinct personality types (Assumptions 8 and 9):

Impulsive level: Alcoholic subjects at this level (in comparison to alcoholic subjects at the other two levels) are expected to score higher on the following personality traits: Aggression, Dominance, Exhibition, and Impulsivity; and lower on Endurance.

Self-Protective level: Alcoholic subjects at this level are expected to score:
higher on Defence and Harmavoidance; and lower on Abasement.

Conformist level: Alcoholic subjects at this level are expected to score:
higher on Achievement, Affiliation, Cognitive Structure, Endurance, Order,
and Social Recognition; and lower on Autonomy and Change.

METHOD

Subjects and Procedure

Subjects were 121 alcoholics (35 females and 86 males) and 45 non-alcoholics (22 females and 23 males). To limit the possible effects of treatment and ensure a somewhat homogeneous sample with respect to phase of addiction, the alcoholic sample was limited to those individuals currently in detoxification centers. With permission from Dr. D. Parsloe of British Columbia's Ministry of Health, Alcohol and Drug Programs, alcoholic inpatients from the Great Northern Way Detoxification Centre in Vancouver and the Maple Cottage Detoxification Centre in New Westminister were solicited for their participation in this study.

The large number of males in the alcoholic group is indicative of the predominance of males in these detoxification centers, and reflects the higher prevalence of alcoholism in males reported by Nace (1987). Potential subjects were initially screened by members of the medical staff at each center to ensure that they were sufficiently detoxified to undergo approximately two hours of testing. Length of abstinence for these subjects ranged from 3 days to 2 weeks. The median age and level of education for these subjects were 36 years and 12 years respectively (see Table 3).

Control (non-alcoholic) subjects were volunteers from the community and from two psychology courses at Simon Fraser University, Burnaby, B.C.. Potential subjects who reported not being addicted to alcohol or other drugs were requested to complete the *Alcoholism Dependence Scale* (Skinner and Horn, 1984), a screening measure of alcohol dependence. Their scores on this measure ranged from 0 to 12 (below the 1st quartile),

suggesting little or no evidence of alcohol dependence⁵. Approximately 75% of these subjects reported drinking on a regular basis. The median age and level of education of these non-alcoholic subjects was 26 years and 14 years respectively (see Table 3).

Table 3. Demographic characteristics of subject sample.

	Male (n=109)	Female (n=57)	Non- Alcoholic (n=45)	Alcoholic (n=121)	All (N=166)
<u>Age</u>					
Mean	36.8	32.1	30.5	36.9	35.2
SD	11.81	9.82	11.06	11.02	11.36
Range	51	36	40	52	52
<u>Education</u>					
Mean	12.2	12.7	13.7	11.9	12.4
SD	2.60	2.07	1.81	2.46	2.44
Range	13	10	10	13	13
<u>Occupation^a</u>					
Mean	3.2	3.1	3.0	3.2	3.1
SD	1.32	1.13	1.01	1.34	1.26
Range	5	5	5	5	5

^aSubjects' occupations were coded with values ranging from 1 to 6 (Barona, Reynolds, and Chastain, 1984). See footnote 7 below.

All subjects were informed of the nature and purpose of the study; were assured that their anonymity would be protected; and were advised to

⁵The ADS manual provides percentiles for four normative alcoholic samples. The sample selected as the most appropriate normative group for this study is described by Skinner and Horn (1984) as, "...clients who are seeking help for their alcohol-related problems, at a specialized treatment centre for addictions." (p. 29).

discontinue at any point if they felt unable, or were unwilling to continue. Subjects agreeing to participate in the study were asked to sign a consent form and were provided with the names and contact numbers of the researcher and the Chair of the Department of Psychology at Simon Fraser University.

All subjects received a questionnaire package requiring approximately two hours to complete. Each package consisted of a description of the study, a consent form, a brief questionnaire addressing alcohol involvement and demographic factors, the *Alcohol Dependence Scale* (Skinner and Horn, 1984), the *Washington University Sentence Completion Test-Revised* (Loevinger, 1985) and the *Personality Research Form-E* (Jackson, 1974). Data were collected from individuals and small groups of two or three subjects over an 8-month period beginning in February of 1988.

Instruments

The 'Alcohol Use and Social History Questionnaire'. This questionnaire is a composite of items formulated by the author and items derived from a measure reported by Filstead (1984). The items pertained to subjects' age, sex, level of education⁶, occupation⁷, frequency of problems

⁶The level of education was defined as the combined total of completed years of primary, secondary and post-secondary education. Training at a technical, vocational or similar institutes was not included (Barona, Reynolds, and Chastain, 1984).

⁷Occupation was coded according to the following six categories: professional and technical = 6; managers, officials, proprietors, clerical, and sales workers = 5; craftsmen and foremen (skilled workers) = 4; not in labor force = 3; operatives, service workers, farmers, and farm managers (semiskilled) = 2; farm laborers, farm foremen, and laborers (unskilled workers) = 1 (Barona et al, 1984).

with the law, and age at which subjects began regular drinking. Alcoholic subjects were additionally asked for the age at which they began to experience problem drinking, the age at which they first sought professional help for their drinking problem, and their longest period of abstinence since realizing drinking was a problem (see Appendix A). The questionnaire requires approximately 25 minutes to complete.

The *Alcohol Dependence Scale* (ADS), (1984). This is a 25-item inventory designed by Skinner and Horn (1984) to measure an individual's level of alcohol dependence. The ADS manual provides normative data for Canadian inpatient and outpatient groups; the measure requires approximately 15 minutes to complete (see Appendix B). Scoring of individual items is based on a 2- or 3-point scale resulting in raw scores ranging from 0 to 47. Scores ranging from 0 to 13 (1st quartile) suggest little or no evidence of alcohol dependence; scores ranging from 14 to 21 (2nd quartile), 22 to 30 (3rd quartile), and 31 to 47 (4th quartile) suggest moderate, substantial, and severe levels of alcohol dependence respectively.

Internal consistency reliability of an earlier 29-item version was reported to be .92, test-retest reliability over a 1-week interval was .92 and convergent validity of the ADS with the *Michigan Alcoholism Screening Test* was reported to be .69 (Skinner and Horn, 1984). The revised ADS used in the present study was shortened by four items (Skinner and Horn, 1984): two items were deleted because of their poor item-total scale correlations; further analysis revealed that two additional items which did not contribute to the reliability of the scale could be deleted. Skinner and Horn (1984) have reported that in two subject samples, the revised 25-item scale correlated with the original 29-item version .96 and .99 respectively.

The *Washington University Sentence Completion Test-Revised; Form 11/68* (SCT). This is a projective measure yielding a qualitative, hierarchical (stage) level of ego development score, or Total Protocol Rating (TPR) (Loevinger, 1985). The measure consists of 36 incomplete sentence stems which subjects were asked to complete. Based on research by Jurich and Holt (1987), the standard instruction provided by Loevinger and Wessler (1970, V.1) for completing this measure, "Please complete the following sentences," was replaced with, "This is a test of personal maturity. Please complete each sentence in as adult and mature a manner as you can." (Jurich and Holt, 1987, p. 187). Jurich and Holt (1987) reported that the modal ego level for subjects provided with the modified instruction was the Conscientious stage (TPR = 6), one stage above the modal Conscientious-Conformist stage (TPR = 5) of subjects who had received Loevinger's standard instruction. Jurich and Holt (1987) have explained this increase as a result of the reduced ambiguity and consequently, reduced error variance provided by the modified instruction:

The modified instructions ... tell respondents, in effect, to inhibit their childish or impulsive tendencies and encourage them to approach each stem thoughtfully.... (p. 191)

The SCT requires approximately 25 to 35 minutes to complete. The items differ slightly for males and females (See Appendix C).

Each item was scored according to instructions and examples provided in the original scoring manuals of Loevinger and Wessler (1970, V.1), Loevinger, Wessler, and Redmore (1970, V.2) and the scoring manual supplement (Redmore, Loevinger, and Tamashiro, 1978). Several precautions were taken to reduce the possibility that group membership (alcoholic, non-alcoholic), demographic factors, writing style, and responses to preceding stems of the SCT would influence the rating of a particular

item. As suggested by Loevinger and Wessler (1970, V.1), an assistant randomly ordered and then numerically coded the protocols; responses to items were then transcribed⁸ and further sorted into 36 groups, each including all subjects' responses to a particular sentence stem (i.e., all responses to stem 1 formed the first group, all responses to stem 2 formed the second group, etc.). All responses to a particular stem were scored before scoring the responses to the next stem.

Sentence stem responses were subsequently regrouped according to the numerical code for each protocol. Based on the cumulative frequency of ratings for the items, a Total Protocol Rating (TPR) or stage for each protocol was derived using Loevinger's borderline ogive rules (Loevinger and Wessler, 1970, V.1). Finally, TPRs were assigned to each subject⁹.

The rater was trained to score the SCT using the self-training program provided in the SCT manuals. A sample of ten protocols (five male and five female), selected from the alcoholic subject sample, was scored independently by the rater and by Dr. D. Wright at the Hillside Children's Center, Rochester, New York. Wright, a colleague of Loevinger, had previously assisted in developing the scoring manual supplement (Redmore, Loevinger, and Tamashiro, 1978).

Interrater reliabilities (Spearman rank) for individual items on the ten protocols ranged from .45 to 1.0 with a median of .82. These results

⁸Spelling, punctuation, and grammatical errors in subjects' responses were retained in the transcription.

⁹Examples of SCT protocols, selected from the sample of alcoholics and representing each of Loevinger's nine stages of ego development, are presented in Appendix D. Ratings for each of the 36 item responses, as well as the TPR, are provided for each protocol.

compare favorably with interrater reliabilities of four self-trained raters reported in the scoring manual (Loevinger and Wessler, 1970, V. I) ranging from .49 to .98 with medians ranging from .75 to .85. The interrater correlation between Wright and the rater in the present study on the ten TPRs was .87. In comparison, Loevinger and Wessler (1970, V. I) reported an interrater correlation between two self-trained raters of .87, and interrater correlations between two self-trained raters and a rater trained by Loevinger of .86 and .89 respectively.

With respect to the reliability of the SCT, high test-retest (.79 - .91), internal consistency (.80 - .89), and split-half (.85 - .90) correlations have been reported (Hauser, 1976). Normative studies for the SCT report that 33.3% to 41.8% of males and females between the ages of 16 to 25 (Browning, 1987) and 34% to 41% of college and non-college males and females between the ages of 16 to 25 (Holt, 1980) in the United States score at the Conscientious-Conformist stage (TPR = 5) of ego development.

A similar finding was reported by Jurich and Holt (1987) who found that the Conscientious-Conformist stage was the modal level for a group of control subjects provided with Loevinger's standard instruction. However, comparisons of TPRs for subjects in the present study to the modal level reported above must take into account that the modified instructions used in the present study were previously found to increase the modal level of a group of experimental subjects to the Conscientious stage, TPR = 6 (Jurich and Holt, 1987).

The *Personality Research Form-E* (PRF). This is a 352-item, true false objective personality measure yielding standard scores (mean = 50, SD = 10) for 20 personality scales and 2 validity scales (Jackson, 1974). These scales are: Abasement (AB); Achievement (AC); Affiliation (AF); Aggression

(AG); Autonomy (AU); Change (CH); Cognitive Structure (CS); Dependence (DE); Dominance (DO); Endurance (EN); Exhibition (EX); Harmavoidance (HA); Impulsivity (IM); Nurturance (NU); Order (OR); Play (PL); Sentience (SE); Social Recognition (SR); Succorance (SU); Understanding (UN); Infrequency (IN); and Desirability (DY).

The PRF was selected for this study since it has been used previously in several studies on personality and alcoholism (Nerviano, 1981; Nerviano and Gross, 1983), and because several of the scales tap dimensions which appear to correspond with Loewinger's stages of ego development. The PRF requires approximately 45 to 60 minutes to complete. Test-retest reliabilities for the 20 personality scales, over a 1-week interval, ranged from .69 to .90. Median convergent validity coefficients for the 20 PRF content scales with behavior ratings by peers and with the *Trait Rating Form* were .52 and .56 respectively (Jackson, 1974).

RESULTS

Sub-programs of BMDP Statistical Software (1988) were used to analyze the data in this study.

Part I

Hypothesis 1: Level of Ego Development

Based on a Group (non-alcoholic, alcoholic) X Sex (male, female) analysis of covariance (N = 166) with education as a covariate¹⁰, main effects for level of ego development were found for both group and sex (see Table 4 and Figure 1).

Table 4. Analysis of covariance^a table for Sex (male, female) X Group (alcoholic, non-alcoholic).

Source	Sum of Squares	Mean Square	df	F	p value	Regress Coeff
Sex	19.626	19.630	1	10.01	0.0019 ^c	
Grp	13.509	13.508	1	6.89	0.0095	
SG ^b	0.814	0.814	1	0.42	0.5230	
Ed	70.899	70.899	1	36.17	p < .00005	0.287
Error	315.585	1.960	161			

^aCovariate = education.

^bSG = Sex X Group interaction.

^cBold-faced p values indicate significance at $\alpha = .01$.

TPR scores (ego development stage) on the SCT were almost one stage lower for alcoholic subjects (adjusted mean TPR = 4.5) compared to

¹⁰Initially, an analysis of covariance with age and education as the covariates was performed. Since age was not significant, the analysis was re-run with only education as a covariate.

non-alcoholic subjects (adjusted mean TPR = 5.4) (see Table 5); males (adjusted mean TPR = 4.4) also scored approximately one stage lower than females (adjusted mean TPR = 5.4). The interaction effect of group and sex was not significant.

Table 5. Means (M), standard deviations (SD), and adjusted means (AM)^a of TPR scores for Sex X Group.

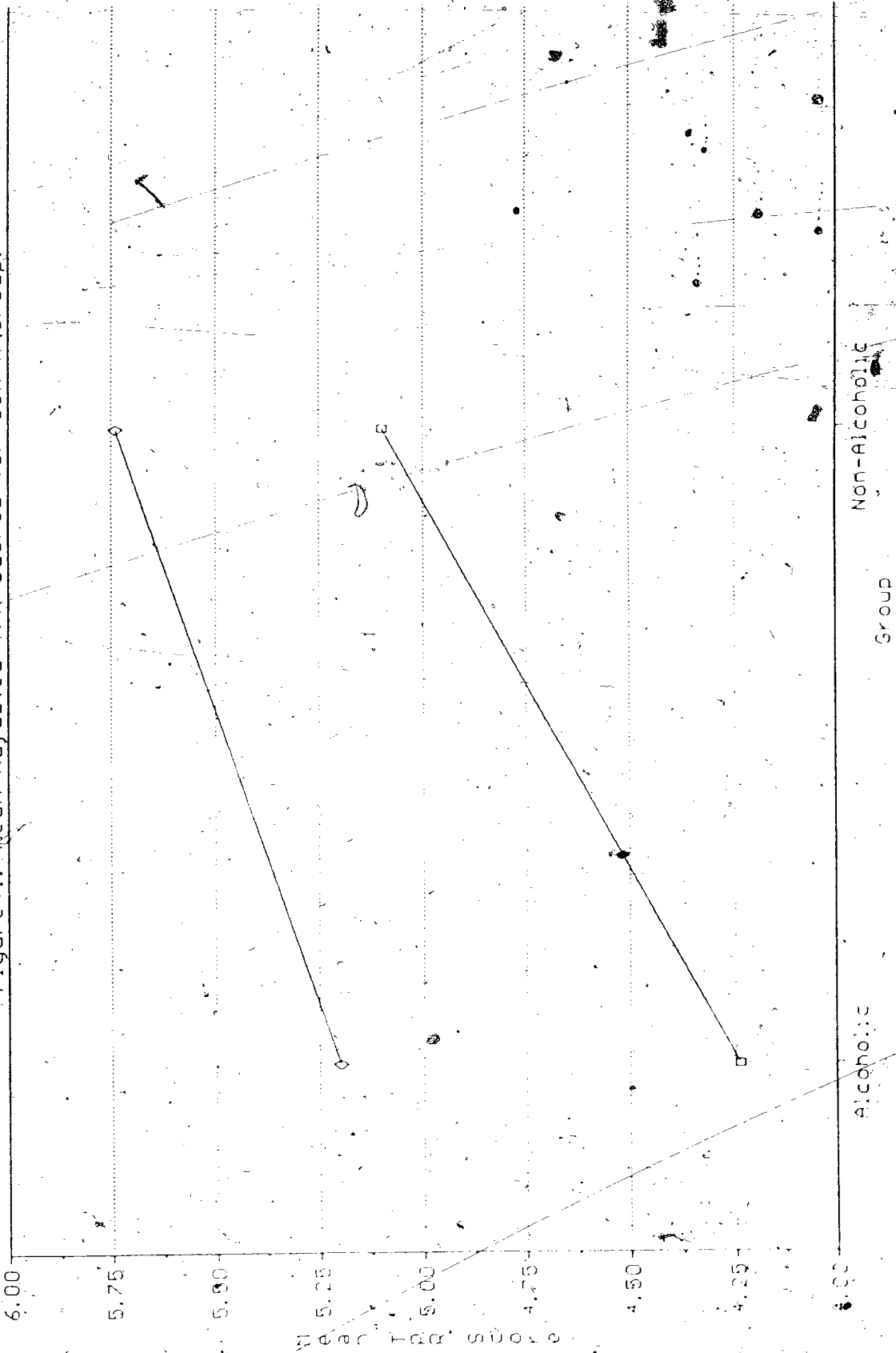
	Alcoholic (n = 121)			Non-Alcoholic (N = 45)			All (n = 166) ^a		
	<u>M</u>	<u>SD</u>	<u>AM</u>	<u>M</u>	<u>SD</u>	<u>AM</u>	<u>M</u>	<u>SD</u>	<u>AM</u>
<u>Male</u> (n = 109)	4.1	1.78	4.2	5.4	1.03	5.1	4.4	1.73	4.4
<u>Female</u> (n = 57)	5.1	1.35	5.2	6.2	1.23	5.7	5.5	1.42	5.4
<u>All</u> (N = 166)	4.4	1.72	4.5	5.8	1.20	5.4	4.8	1.7	4.8

^aMeans in this and subsequent analyses of covariance were adjusted by the covariate regression coefficient.

Hypothesis 2: Level of Ego Development in Alcoholic Subjects.

Based on the above results (a significant main effect for sex and a non-significant Group X Sex interaction), the difference in level of ego development between male and female alcoholics was also significant. Female alcoholics (adjusted mean TPR = 5.2) scored one stage higher than male alcoholics (adjusted mean TPR = 4.2).

Figure 1. Mean Adjusted TPR Scores for Sex X Group.



For Each Sex: Female Male

Part II

Because alcoholic subjects ($n = 118$)¹¹ were expected to score at lower stages of ego development, it was initially intended that alcoholic subjects would be grouped by sex and stage of ego development.

However, TPR scores for alcoholic subjects ranged across the nine levels of ego development (Impulsive to Integrated) and the diversity of ego stages split across sex resulted in 18 cells, some of which were empty or contained only one or two subjects. Consequently, alcoholic subjects were reassigned to low (TPR = 1 to 4) and high (TPR = 5 to 9) ego development groups. Alcoholic subjects in the low ego development group (41 males, 9 females) had received pre-Conformist or Conformist ratings; alcoholic subjects in the high ego development group (43 males, 25 females) had received post-Conformist ratings. Data were then analyzed in a Sex (male, female) X Ego development (low, high) analysis of covariance with education and age as covariates. A Bonferroni correction was used to control for family-wise error (Keppel, 1982) in testing the multiple hypotheses described earlier. The corrected level of significance for the tests was $\alpha = .0083$. A summary of the results (means, SD, and adjusted means) for hypotheses 1 to 6 is presented in Table 6.

¹¹Three subjects from Part I (two male alcoholics and one female alcoholic) were excluded from Part II because of incomplete data on one or more of the six dependent variables.

Table 6. Summary table of means (M), standard deviations (SD), and adjusted means (AM) in Part II for Sex (male, female) X Ego development (low, high) for the six dependent variables.

1. Age at onset of regular Drinking.

	<u>Low Ego</u> (n = 50)			<u>High Ego</u> (n = 68)			<u>All</u> (N = 118)		
	<u>M</u>	<u>SD</u>	<u>AM</u>	<u>M</u>	<u>SD</u>	<u>AM</u>	<u>M</u>	<u>SD</u>	<u>AM</u>
<u>Male</u> (n = 84)	17.2	3.88	17.8	18.7	6.78	17.8	18.0	5.57	17.8
<u>Female</u> (n = 34)	24.0	9.49	25.0	20.3	6.10	20.7	21.3	7.18	21.8
<u>All</u> (N = 118)	18.5	5.82	19.1	19.3	6.54	18.8	19.0	6.23	19.0

2. Age at onset of problem drinking.

	<u>Low Ego</u>			<u>High Ego</u>			<u>All</u>		
	<u>M</u>	<u>SD</u>	<u>AM</u>	<u>M</u>	<u>SD</u>	<u>AM</u>	<u>M</u>	<u>SD</u>	<u>AM</u>
<u>Male</u>	23.0	10.44	23.9	25.1	11.23	23.4	24.1	10.84	23.7
<u>Female</u>	28.0	11.38	29.9	23.3	6.70	24.1	24.6	8.27	25.7
<u>All</u>	23.9	10.67	25.0	24.4	9.79	23.7	24.2	10.13	24.2

3. Number of years from regular drinking to first help for drinking problem.

	<u>Low Ego</u>			<u>High Ego</u>			<u>All</u>		
	<u>M</u>	<u>SD</u>	<u>AM</u>	<u>M</u>	<u>SD</u>	<u>AM</u>	<u>M</u>	<u>SD</u>	<u>AM</u>
<u>Male</u>	13.7	9.39	13.7	14.3	8.12	13.5	14.0	8.71	13.6
<u>Female</u>	8.9	7.22	10.0	10.3	7.90	11.2	9.9	7.65	10.9
<u>All</u>	12.8	9.16	13.0	12.8	8.21	12.7	12.8	8.59	12.8

Table 6 Continued:

4. Level of alcohol dependence (measured by ADS).

	<u>Low Ego</u>			<u>High Ego</u>			<u>All</u>		
	<u>M</u>	<u>SD</u>	<u>AM</u>	<u>M</u>	<u>SD</u>	<u>AM</u>	<u>M</u>	<u>SD</u>	<u>AM</u>
<u>Male</u>	28.5	8.79	28.5	25.7	8.89	25.8	27.1	8.93	27.1
<u>Female</u>	21.9	10.04	21.6	27.0	5.63	26.9	25.7	7.27	25.5
<u>All</u>	27.3	9.28	27.3	26.2	7.86	26.2	26.7	8.47	26.7

5. Number of incidents with the law.

	<u>Low Ego</u>			<u>High Ego</u>			<u>All</u>		
	<u>M</u>	<u>SD</u>	<u>AM</u>	<u>M</u>	<u>SD</u>	<u>AM</u>	<u>M</u>	<u>SD</u>	<u>AM</u>
<u>Male</u>	7.3	9.17	5.2	9.3	16.65	11.5	8.3	13.50	8.5
<u>Female</u>	1.4	2.35	-0.1	3.4	11.90	3.5	2.8	2.55	2.5
<u>All</u>	6.2	8.64	4.3	7.1	15.26	8.6	6.8	12.84	6.8

6. Longest period of abstinence (months).

	<u>Low Ego</u>			<u>High Ego</u>			<u>All</u>		
	<u>M</u>	<u>SD</u>	<u>AM</u>	<u>M</u>	<u>SD</u>	<u>AM</u>	<u>M</u>	<u>SD</u>	<u>AM</u>
<u>Male</u>	13.5	26.88	15.0	16.0	21.63	13.9	14.7	24.22	14.5
<u>Female</u>	2.65	2.97	4.4	6.4	9.85	6.7	5.4	8.68	6.1
<u>All</u>	11.5	24.67	13.1	12.4	18.70	11.3	12.1	21.34	12.1

Hypothesis 1: Onset of Regular Drinking.

The only significant main effect was for sex on the age at onset of regular drinking (see Table 7). Alcoholic males (adjusted mean age = 17.8) reported beginning regular drinking at an earlier age than alcoholic females (adjusted mean age = 21.8).

The main effect for level of ego development was not significant; alcoholics at low ego development reported an onset of regular drinking at close to the same age (adjusted mean age = 19.1) as alcoholics at high ego development (adjusted mean age = 18.8). The interaction effect of sex and level of ego development was not significant. Of the two covariates, only age was significant.

Table 7. Analysis of covariance^a table for Sex (male, female) X Ego development (low, high) on age when subjects began regular drinking.

Source	Sum of Squares	Mean Square	df	F	p value	Regress Coeff
Sex	497.803	497.803	1	19.71	p < .00005^b	
Ego D	90.699	90.699	1	3.59	0.0607	
SL ^c	90.056	90.056	1	3.57	0.0616	
Covar	1316.694	658.347	2	26.07	p < .00005	
Ed	104.414	104.414	-	4.13	0.0444	0.428
Age	920.631	920.631	-	36.45	p < .00005	0.268
Error	2828.493	25.254	112			

^aCovariates = education, age.

^bBold-faced p values indicate significance at the corrected level of $\alpha = .0083$.

^cSL = Sex X Level of ego development interaction.

Hypothesis 2: Onset of Problem Drinking.

The main effect of sex on the age at onset of problem drinking was not significant (see Table 8), although alcoholic males (adjusted mean age = 23.7) reported problem drinking at an earlier age than alcoholic females (adjusted mean age = 25.7). The main effect of level of ego development on this variable was not significant either. Alcoholics at low ego development reported an onset of problem drinking at close to the

same age (adjusted mean age = 25.0) as alcoholics at high ego development (adjusted mean = 23.7).

The interaction effect of sex and level of ego development was not significant. Of the two covariates, only age was significant.

Table 8. Analysis of covariance^a table for Sex (male, female) X Ego development (low, high) on age subjects began problem drinking.

Source	Sum.of Squares	Mean Square	df	F	p value	Regress Coeff
Sex	222.054	222.054	1	4.07	0.0462	
Ego D	182.392	182.392	1	3.34	0.0703	
SL ^c	135.163	135.163	1	2.47	0.1185	
Covar	5653.541	2826.770	2	51.75	p < .00005^b	
Ed	130.381	130.381	-	2.39	0.1252	0.478
Age	4594.971	4594.971	-	84.13	p < .00005	0.599
Error	6117.430	54.620	112			

^aCovariates = education, age.

^bBold-faced p values indicate significance at the corrected level of $\alpha = .0083$.

^cSL = Sex X Level of ego development interaction.

Hypothesis 3: Number of Years From Regular Drinking to First Help for Drinking Problem.

A main effect was not significant for sex on the length of the interval from the age at onset of regular drinking to the age at which help for problem drinking was first sought (see Table 9). Alcoholic males reported an interval of approximately 2.7 years greater (adjusted mean = 13.6 years) than alcoholic females (adjusted mean = 10.9 years).

The main effect for level of ego development on this variable was not significant either. Alcoholics at low ego development reported an interval of

13.0 years (adjusted mean) compared to 12.7 years (adjusted mean) for alcoholics at high ego development.

The interaction effect of sex and level of ego development was not significant. Of the two covariates, only age was significant.

Table 9. Analysis of covariance^a table for Sex (male, female) X Ego development (low, high) on number of years from onset of regular drinking to first help for problem drinking.

Source	Sum of Squares	Mean Square	df	F	p value	Regress Coeff
Sex	175.560	175.560	1	4.53	0.0356	
Ego D	5.001	5.001	1	0.13	0.7202	
SL ^c	8.260	8.260	1	0.21	0.6453	
Covar	3867.477	1933.738	2	49.86	p < .00005^b	
Ed	80.035	80.035	-	2.06	0.1536	-0.375
Age	3780.316	3780.316	-	97.47	p < .00005^b	0.543
Error	4343.916	38.785	112			

^aCovariates = education, age.

^bBold-faced p values indicate significance at the corrected level of $\alpha = .0083$.

^cSL = Sex X Level of ego development interaction.

Hypothesis 4: Level of Alcohol Dependence.

The main effect of sex on level of alcohol dependence was not significant (see Table 10). Male alcoholics (adjusted mean score = 27.1) scored only slightly higher than female alcoholics (adjusted mean score = 25.5).

Similarly, the main effect for level of ego development on level of alcohol dependence was not significant. Alcoholics at low ego development (adjusted mean score = 27.3) scored slightly higher than alcoholics at high ego development (adjusted mean score = 26.2).

The interaction effect of sex and level of ego development was not significant. Neither of the covariates was significant.

Table 10. Analysis of covariance^a table for Sex (male, female) X Ego development (low, high) on level of alcohol dependence.

<u>Source</u>	<u>Sum of Squares</u>	<u>Mean Square</u>	<u>df</u>	<u>F</u>	<u>p value</u>	<u>Regress Coeff</u>
Sex	170.754	170.754	1	2.45	0.1207	
Ego D	31.100	31.100	1	0.45	0.5059	
SL ^b	310.040	310.040	1	4.44	0.0373	
Covar	188.952	94.476	2	1.35	0.2626	
Ed	2.124	2.124	-	0.03	0.8618	0.061
Age	182.295	182.295	-	2.61	0.1089	-0.119
Error	7818.908	69.812	112			

^aCovariates = education, age.

^bSL = Sex X Level of ego development interaction.

Hypothesis 5: Trouble With Law.

The main effect of sex for the number of times subjects reported being in trouble with the law was not significant (see Table 11); however, male alcoholics reported more than 3 times as many incidents with the law (adjusted mean = 8.5 incidents) as female alcoholics (adjusted mean = 2.5 incidents).

The main effect for level of ego development was not significant, although alcoholics at low ego development reported less incidents (adjusted mean = 4.3) than their counterparts at high ego development (adjusted mean = 8.6).

The interaction effect of sex and level of ego development was not significant. Of the two covariates, only education was significant.

Table 11. Analysis of covariance^a table for Sex (male, female) X Ego development (low, high) on number of incidents with the law.

Source	Sum of Squares	Mean Square	df	F	p value	Regress Coeff
Sex	891.394	891.394	1	6.44	0.0125	
Ego D	464.038	464.038	1	3.35	0.0697	
SL ^c	34.350	34.350	1	0.25	0.6193	
Covar	2958.747	1479.374	2	10.69	0.0001 ^b	
Ed	2173.839	2173.839	1	15.71	0.0001	-1.954
Age	175.505	175.505	1	1.27	0.2624	-0.117
Error	15495.051	15495.051	112			

^aCovariates = education, age.

^bBold-faced p values indicate significance at the corrected level of $\alpha = .0083$.

^cSL = Sex X Level of ego development interaction.

Hypothesis 6: Longest Period of Abstinence.

A significant main effect was not found for sex on the longest period of abstinence reported since realizing alcohol had become a problem (see Table 12); however, alcoholic males reported periods of abstinence (adjusted mean = 14.5 months) more than twice as long as alcoholic females (adjusted mean = 6.1 months).

The main effect of level of ego development on abstinence was not significant. Alcoholics at low ego development reported slightly longer periods of abstinence (adjusted mean = 13.1 months) than alcoholics at high ego development (adjusted mean = 11.3 months).

The interaction effect of sex and level of ego development was not significant. Neither of the two covariates was significant.

Table 12. Analysis of covariance^a table for Sex (male, female) X Ego development (low, high) on longest period of abstinence.

Source	Sum of Squares	Mean Square	df	F	p value	Regress Coeff
Sex	1591.863	1591.863	1	3.77	0.0548	
Ego D	6.305	6.305	1	0.01	0.9030	
SL ^b	54.960	54.960	1	0.13	0.1719	
Covar.	3623.200	181.600	2	4.29	0.0161	
Ed	1045.239	1045.239	-	2.47	0.1186	1.355
Age	1534.950	1534.950	-	3.63	0.0592	0.346
Error	47319.507	422.496	112			

^aCovariates = education, age.

^bSL = Sex X Level of ego development interaction.

Part III

Hypothesis 1: Personality and level of ego development.

To test the assumption that distinct patterns of personality traits measured by the *Personality Research Form-E* (PRF) would correspond with each of the Impulsive, Self-Protective and Conformist stages of ego development in the alcoholic sample, only those subjects rated at one of these three stages¹² were selected for the following analysis (n = 47).

Initially, a multivariate analysis of covariance with education and age as

¹²Although Loewinger's SCT manuals provide for the rating of nine ego stages, previous research employing this instrument has conventionally rated only eight stages, leaving out the transition stage between the Self-Protective and Conformist stages (Vaillant and McCullough, 1987; Browning, 1987; Hauser, 1978). For the purpose of Part III, ratings at this transition stage (TPR = 3) were collapsed into the Self-Protective stage (TPR = 2).

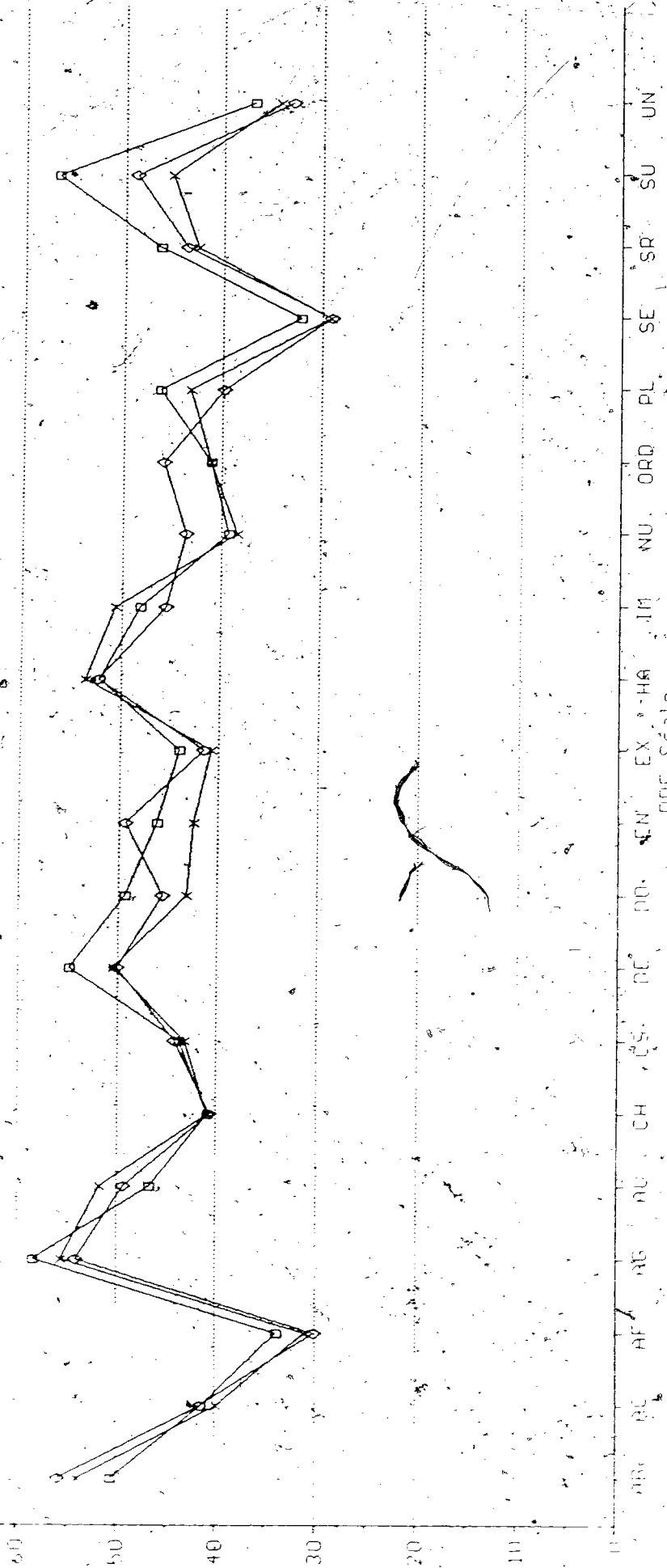
covariates was performed. However, since the contribution of age and education was not significant, the analysis was re-run without covariates. A Bonferroni correction was used to control for family-wise error in testing the 20 PRF scale scores. The corrected level of significance for the univariate tests was $\alpha = .0025$. The results of the analysis indicate that differences in PRF scale scores between the Conformist, Self-Protective, and Impulsive groups of alcoholic subjects were not significant (see Table 13, and Figure 2)13.

Table 13. Multivariate analysis of variance table for PRF scores of alcoholic subjects at Impulsive (n = 7), Self-protective (n = 24), and Conformist (n = 16) stages of ego development.

		<u>F</u>	<u>df</u>	<u>p value</u>
LRATIO	0.388016	0.76	40, 50.00	0.8177
TRACE	1.21322	-	-	-
TZ ²	31.548	-	-	-
CHISQ	42.58	-	34.481	0.8382
MXROOT	0.401110	-	-	0.6814

¹³Means and standard deviations for PRF scores of each group are provided in Appendix E.1.

Figure 1. Mean PPF Scores of Alcoholic Subjects at Impulsive, Self-Protective, and Conformist Stages of Ego Development.



PPF Scale

DISCUSSION

Part I

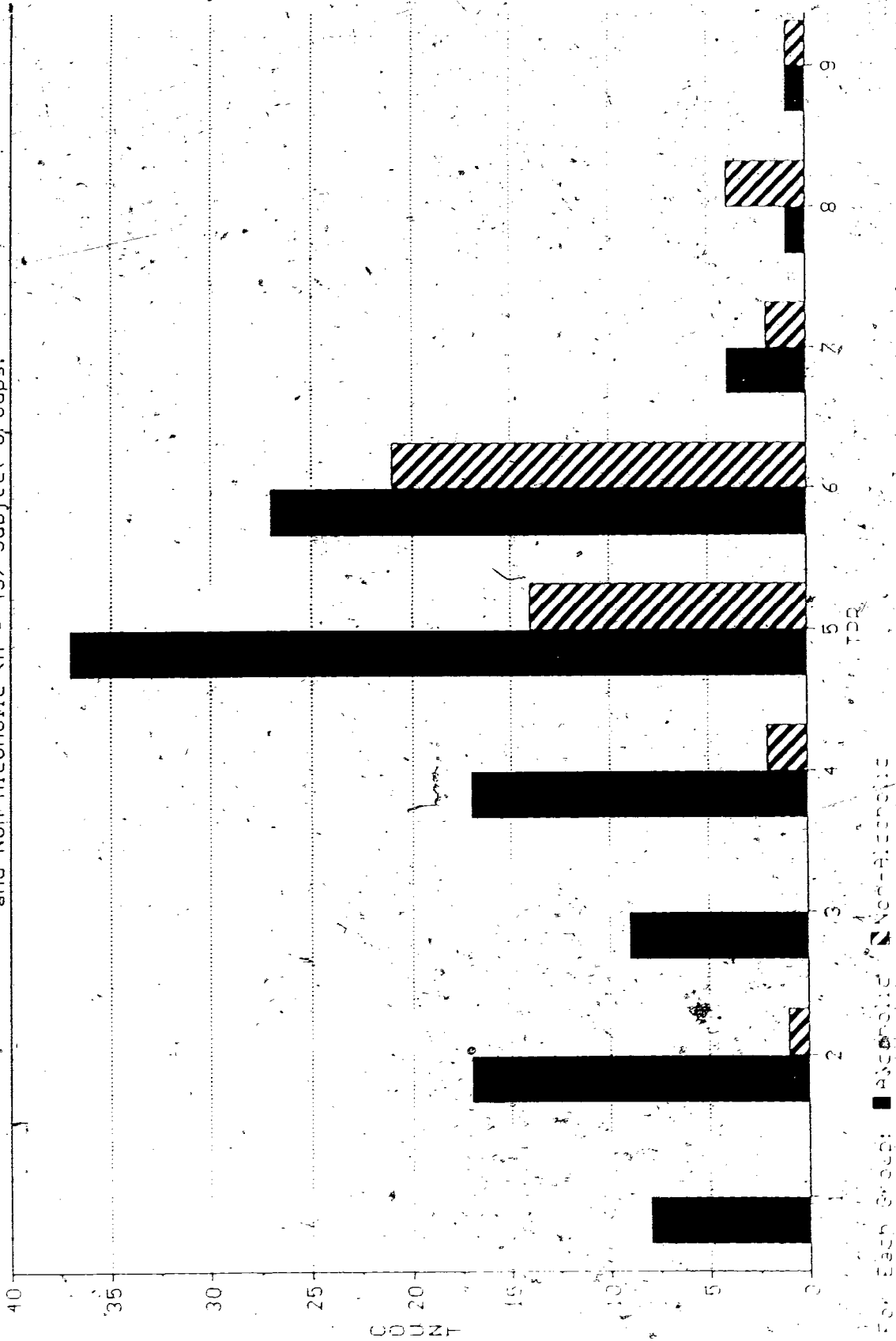
The predicted difference in level of ego development between alcoholic (adjusted mean TPR = 4.5) and non-alcoholic (adjusted mean = 5.4) subjects was significant; alcoholics scored approximately one stage lower than non-alcoholics. In comparison to the modal stage of ego development (Conscientious-Conformist, TPR = 5) reported by Holt (1980) and Browning (1987), alcoholic subjects scored 1/2 stage below and non-alcoholic scored 1/2 stage above. However, since modified SCT instructions were used in the present study, this comparison may not be valid. It will be recalled that Jurich and Holt (1987) reported that the use of modified SCT instructions increased the mode to the Conscientious stage (TPR = 6). Comparing the present results to the Jurich and Holt study, alcoholics scored 1 1/2 stages below and non-alcoholics scored 1/2 stage below the modal level. Clearly, more research is needed to clarify the issue of population norms with respect to the use of the modified SCT instructions and until then, comparisons of this nature are tentative.

As predicted, male alcoholics (adjusted mean TPR = 4.2) scored lower on Loevinger's SCT than their female counterparts (adjusted mean TPR = 5.2). The obvious conclusion is that distinctions between males and females, between male alcoholics and female alcoholics, and between alcoholics and non-alcoholics can be made on the basis of level of ego development. However, although significant differences were obtained, several observations suggest that the results are not wholly consistent with arguments presented previously (Assumptions 2, 3, 4, and 12).

Briefly, it was proposed in these assumptions that as a result of a disparity between arrested ego development and evolving biopsychosocial demands, stress would ensue. Alcoholism was assumed to emerge as a chronic and extreme attempt on the part of the individual to ameliorate this stress. It was further argued that since females tend to develop at a faster rate than males, they would be more likely, on average, to be at a higher level of ego development when a traumatic event resulting in developmental arrest occurred. It was also noted that Cloninger (1987) had reported that traits such as sociopathy and impulsivity (indicative of the Impulsive stage) were characteristic of male alcoholics, and traits such as fear of dependence and need for control (indicative of the next stage, the Self-Protective stage) were characteristic of female alcoholics. Therefore, it was expected that female alcoholics would be at a higher stage of ego development than male alcoholics, but both groups would be at a lower stage than non-alcoholic subjects.

Even though the results of Part I appear to lend support to these predictions, there are inconsistencies. Although the difference was significant, alcoholics were only one stage lower than non-alcoholics and did not cluster at the lower stages of ego development as expected. More importantly, the TPR scores of alcoholic subjects were distributed across the entire range of ego stages from Impulsive to Integrated (TPR = 1 to 9) and 57.9% of the alcoholic sample scored at or above the mean adjusted TPR score for non-alcoholic subjects (see Figure 3).

Figure 3. Distribution of Mean Adjusted TPR Scores for Alcoholic (n = 121) and Non-Alcoholic (n = 45) Subject Groups.



These data do not fit the assumptions outlined previously. Although it is apparent that alcoholics in this study are a more diverse group with respect to ego development than anticipated, there is a more critical issue. A major theme of this study has been that developmental arrest at a low stage of ego development would be conducive to later alcoholism. However, the diversity of ego development stages represented by alcoholic subjects suggests that developmental arrest was not a definitive factor in the onset of alcoholism for the majority of the alcoholic sample (i.e., alcoholic subjects scoring at or above the mean adjusted TPR score for non-alcoholics). Although developmental arrest may indeed promote later alcoholism in those subjects at the lower stages of ego development, it does not explain the onset of alcoholism in subjects at higher stages.

In summary, the results do not support the hypothesized role of developmental arrest in the onset of alcoholism and other factors need to be explored. Following a discussion of Parts II and III, several methodological and theoretical issues which may have contributed to the unexpected findings will be addressed.

Part II

In Part II, alcoholic subjects were grouped by sex and high or low ego development. It had been predicted that male alcoholics, and alcoholics of both sexes at low ego development, would report an earlier onset of regular drinking, an earlier onset of problem drinking, a longer interval from the onset of regular drinking until first help, higher levels of alcohol dependence, more trouble with the law, and shorter periods of abstinence. However, other than a significant main effect for sex on age of onset of regular drinking, main effects and interaction effects for sex and level of ego

development on the six dependent variables were not significant. These non-significant findings will be discussed following an examination of the significant main effect for the onset of regular drinking.

While it had been predicted that a low level of ego development would promote an earlier onset of regular drinking, the only significant result was for sex. Alcoholic males reported having begun regular drinking earlier (adjusted mean age = 17.8 years) than alcoholic females (adjusted mean age = 21.8 years), a difference of four years. This sex difference corresponds closely with findings from Filstead's (1984) sample in which alcoholic males began regular drinking five years earlier than alcoholic females. It is possible that social influences (i.e. cultural values, role-modeling, peer pressure, etc.) delay the onset of regular drinking in females (Schuckit, 1984; Cloninger, Christiansen, Reich, and Gottesman, 1978). For example, Konovsky and Wilsnack (1982) have reported that following an evening of social drinking, males tended to have more positive self-concepts whereas females reported that their self-concepts had become more negative. Whereas social attitudes appear to strongly encourage male drinking and is often related to masculinity (most notably in the media), female drinking is often considered "unladylike" (Cox, 1987).

In a review of research using balanced placebo designs to investigate the stress dampening effects of alcohol, Sher (1987) noted that "the perceived social consequences of intoxication might be viewed as negative by women and consequently a woman's belief that she had consumed alcohol might result in increased stress." (p. 241). Even though other factors such as genetic predisposition and neurochemical differences need to be considered, it appears that social attitudes against alcohol consumption by

females may contribute more to delaying the onset of regular drinking in females than high ego development.

Although the remaining predictions were not statistically significant, several observations pertaining to sex differences warrant further discussion. First, even though a sex difference in the onset of problem drinking was not significant in this study, Filstead (1984) has reported that the onset of problem drinking was approximately five years earlier in male than in female alcoholics. Cloninger (1987) has also reported a sex difference in the onset of alcoholism and has distinguished two alcoholic types: Type I, more common in females, is characterized by later onset (usually after age 25); Type II, more common in males, is characterized by earlier onset (usually before age 25). Therefore, two independent studies have reported gender differences in the onset of problem drinking which were not replicated in the present study.

It was also found that the onset of problem drinking in the present sample (males = 23.7; females = 25.7) was earlier than in Filstead's sample (males = 32.2; females = 37.0), a difference of 8.5 years for males and just over 11 years for females. In summary, neither the gender difference or the overall later onset of problem drinking reported by Filstead (1984) was replicated in this study.

A second observation pertains to the length of time from the onset of regular drinking to the time when professional help is first sought. Even though male alcoholics reported having begun regular drinking four years earlier than female alcoholics, a significant sex difference was not found for the interval from regular drinking to first seeking help. This seems to suggest that the progression from regular drinking through to problem

drinking and subsequent professional help may follow a similar time course for both sexes regardless of the age when they began regular drinking.

Filstead (1984), on the other hand, has reported a time compression of experience for female alcoholics. When comparing the amount of time to move from regular drunkenness (as opposed to regular drinking) to first help, Filstead (1984) reported that male alcoholics took almost twice as long (5.9 years) as females (3.2 years). Therefore, even though male and female alcoholics in the present study do not differ significantly on the interval between regular drinking and first help, they may differ on the interval between the onset of problem drinking and first help; female alcoholics may seek some form of professional help sooner following the onset of problem drinking than males. If so, it is incorrect to conclude that the progression from regular drinking through to problem drinking and first help follows a similar time course for both sexes. Unfortunately, Filstead did not report the T value for his comparison and it is difficult to determine if his finding is statistically significant.

To further explore the time compression of experience for females reported by Filstead (1984), an analysis of covariance (with age and education as covariates) comparing the interval from the onset of problem drinking to first help for male and female alcoholics was conducted (see Tables 14 and 15).

Table 14. Means (M), standard deviations (SD), and adjusted means (AM) for Sex on the interval from onset of problem drinking to first professional help.

	<u>M</u>	<u>SD</u>	<u>AM</u>
<u>Male</u> (n = 85)	8.0	5.75	7.8
<u>Female</u> (n = 34)	7.2	6.18	7.6

Table 15. Analysis of covariance^a table for Sex (male, female) on the interval from onset of problem drinking to first professional help.

<u>Source</u>	<u>Sum of Squares</u>	<u>Mean Square</u>	<u>df</u>	<u>F</u>	<u>p value</u>	<u>Regress Coeff</u>
Sex	1.388	1.388	1	0.05	0.8309	
Covar	550.721	275.360	2	9.08	0.0002	
Ed	51.613	51.613	-	1.70	0.1945	-0.281
Age	550.620	550.620	-	18.16	p < .00005^b	0.205
Error	3486.032	30.313	115			

^aCovariates = education, age.

^bBold-faced p values indicate significance at the corrected level of $\alpha = .0083$.

The results indicate that the difference in intervals between male (adjusted mean = 7.8 years) and female (adjusted mean = 7.6 years) alcoholics was not significant (Of the two covariates, only age was significant.). The time compression of experience for female alcoholics reported by Filstead (1984) was not confirmed in the present study. Rather, the evidence supports the conclusion that, although male alcoholics reported beginning regular drinking four years earlier than females, both sexes appear to follow a similar time course from the onset of regular drinking through to problem drinking and seeking first help.

In summary, the results do not support the assumption that level of ego development mediates those variables tested in Part II. The only significant difference found was for sex on the onset of regular drinking. Whereas male alcoholics reported beginning regular drinking four years earlier than female alcoholics, sex differences on the remaining variables were not statistically significant. Although Filstead (1984) and Cloninger (1987) have reported gender differences among alcoholics related to the onset of regular drinking and problem drinking, and the interval from the

onset of problem drinking to seeking first professional help, the results of the present study do not support their findings.

Part III

In Part III, scores on a measure of personality (PRF) of alcoholic subjects at the Impulsive, Self-Protective, and Conformist stages of ego development were compared. Speaking on the relationship between personality and ego development, Loevinger (1976) has argued:

Ego development is presented as the 'master trait' in personality, as the frame that provides more specific traits with their meaning and-around which the whole edifice of personality is constructed. (p. 41)

Furthermore, as previously noted, Valliant and McCullough (1987) have argued that Loevinger's measure of ego development is the best designed and most empirically based method of assessing the postulated correspondence between personality and ego development stages.

Therefore, as argued previously (Assumption 9), personality traits in alcoholics were expected to reflect their level of ego development, and several studies on personality and alcoholism appeared to support this contention (see Table 2). Specifically, alcoholics at the Impulsive, Self-Protective, and Conformist stages of ego development were expected to score higher (or lower, depending on the trait in question) on those personality traits which reflected their level of ego development. However, not only could these three groups not be distinguished by personality traits expected to reflect their level of ego development, they could not be distinguished by any of the 20 personality traits measured by the PRF (see Table 13).

This finding raises the question of whether ego is the master trait of personality, at least among alcoholics, and whether certain traits should be more prominent at different stages of ego development. To examine this further, a second multivariate analysis was undertaken, this time with the alcoholic sample grouped according to Low (TPR = 1 to 3, $n = 31$), Medium (TPR = 4 and 5, $n = 52$), and High (TPR = 6 to 9, $n = 31$) levels of ego development¹⁴; and with age and education as covariates. A Bonferroni correction was used to control for family-wise error in the univariate analyses with the 20 PRF personality scales and the two covariates. The corrected level of significance for the univariate tests was $\alpha = .0025$. The contribution of the two covariates, age and education, was significant and covaried with the following PRF scales: AGgression; HArmavoidance; PLay; and Understanding (see Table 16). Again, the groups could not be distinguished by PRF personality traits when grouped by Low, Medium, and High levels of ego development (see Figure 4).¹⁵

¹⁴Four alcoholic subjects included in Part II were excluded from both Part III and the present analyses because of incomplete data on the PRF.

¹⁵Means and standard deviations for PRF scores of each group are provided in Appendix E.2.

Table 16. Multivariate analysis of covariance^a for PRF scores of alcoholic subjects at Low (n = 31), Medium (n = 52), and High (n = 31) levels of ego development.

a) Covariates

		<u>F</u>	<u>df</u>	<u>p value</u>
LRATIO	0.416076	2.48	40, 180.00	p < .00005^b
TRACE	1.14041	-	-	
TZ ²	103.778	-	-	
CHISQ	59.68	-	20.936	p < .00005
MXROOT	0.450396	-	-	0.0001

PRF Scale ^c	<u>Sum of Squares</u>	<u>Mean Square</u>	<u>df</u>	<u>F</u>	<u>p value</u>
AG	1782.84	891.422	2, 109	11.08	p < .00005
HA	946.899	473.450	2, 109	8.14	0.0005
PL	950.218	475.109	2, 109	8.84	0.0003
UN	1660.89	830.443	2, 109	7.63	0.0008

b) Multivariate analysis of covariance for alcoholic subjects at low, medium, and high levels of ego development

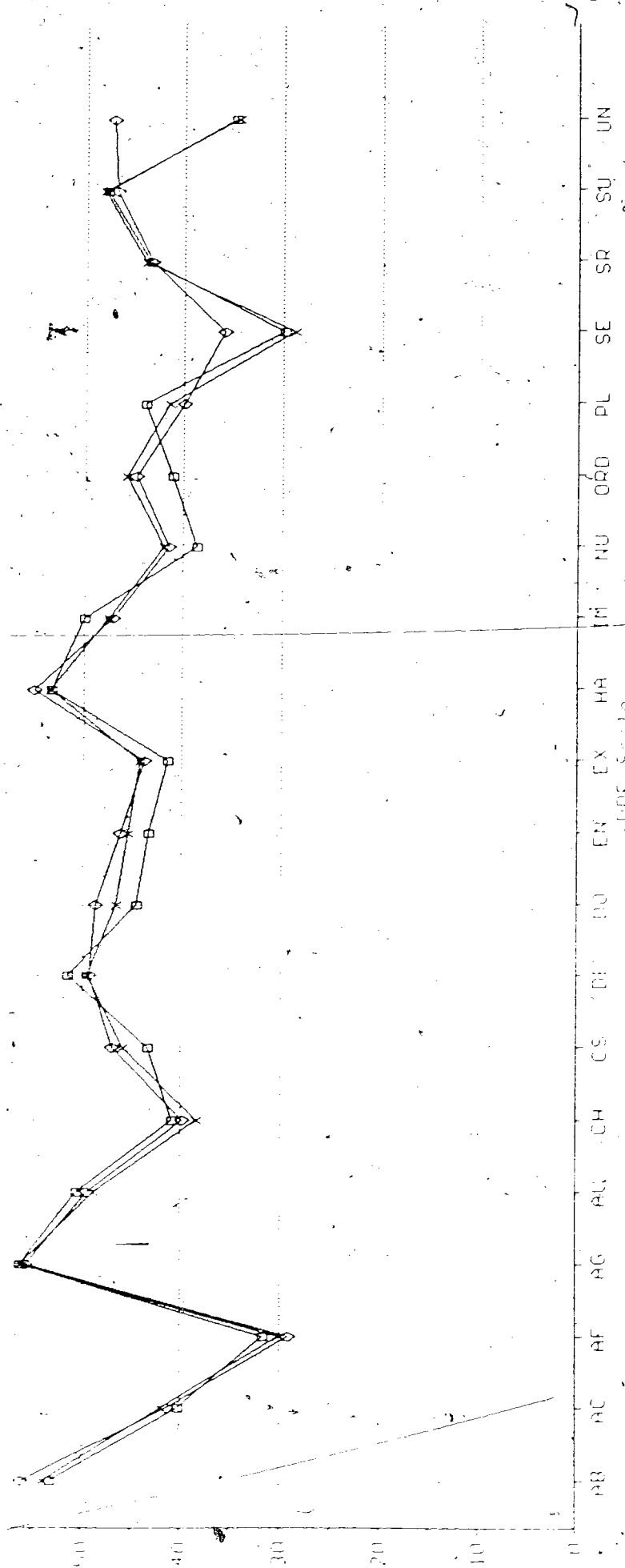
		<u>F</u>	<u>df</u>	<u>p value</u>
LRATIO	0.614970	1.24	40, 180.00	0.1751
TRACE	0.565646	-	-	
TZ ²	51.4738	-	-	
CHISQ	27.21	-	20.936	0.1616
MXROOT	0.297064	-	-	0.0804

^aCovariates = education, age.

^bBold-faced p values indicate significance at the corrected level of $\alpha = .0025$.

^cRefer to pp. 28-9 for a list of PRF scale names.

Figure 4. Mean PPF Scores of Alcoholic Subjects at Low, Medium, and High Levels of Ego Development.



Low Ego Group: OHI SOT OLS SUT SPAC S

Both this and the previous analysis in Part III suggest that level of ego development in alcoholics is not reflected in those personality traits measured by the PRF. This is not to say that the PRF is incapable of distinguishing subtypes of alcoholism. Nerviano (1976), Zivich (1981), and Nerviano and Gross (1983) have reported between five and eight alcoholic personality subtypes based on PRF scores. Furthermore, personality trait differences on the PRF between hospitalized alcoholics and non-alcoholics have been reported by Hoffmann (1970). To determine if similar personality differences between alcoholics ($n = 34$) and non-alcoholics ($n = 40$) in the present study existed, a third multivariate analysis with age and education as covariates was undertaken. Age and education were found to covary with the following PRF scales: Aggression; Harmavoidance; Play; and Understanding (see Table 17). The results indicate that alcoholics and non-alcoholics can be distinguished on the PRF. However, using a Bonferroni corrected level of significance with a value of $\alpha = .0025$, the only significant univariate comparison for the PRF scales was for Affiliation (see Figure 5)¹⁶. Alcoholics scored lower (mean score = 30.2) on this scale than non-alcoholics (mean score = 35.9).

In comparison, Hoffmann (1970) reported significant differences between non-alcoholics and hospitalized alcoholics on 14 of the 20 PRF personality scales (excluding the two validity scales). Moreover, whereas Hoffman reported that his sample of alcoholics scored higher on Affiliation than non-alcoholics, the reverse was found in this study. In the present study, the lower mean score on this scale for alcoholics in comparison to

¹⁶Means and standard deviations for PRF scores of each group are provided in Appendix E:3.

non-alcoholics suggests that alcoholics enjoy being with people less than non-alcoholics; accept others less readily; and make less effort to encourage and maintain friendships.

Table 17. Multivariate analysis of covariance^a for PRF scores of Alcoholics (n = 114) and Non-Alcoholics (n = 40).

a) Covariates

		<u>F</u>	<u>df</u>	<u>p value</u>
LRATIO	0.446747	3.25	40, 262.00	p < .00005^b
TRACE	1.02082			
IZ	134.748			
CHISQ	91.89		25.099	p < .00005
MIXROOT	0.417798			p < .00005

<u>PRF Scale</u>	<u>Sum of Squares</u>	<u>Mean Square</u>	<u>F</u>	<u>df</u>	<u>p value</u>
AG	1956.19	978.096	12.55	2, 150	p < .00005
HA	830.282	415.141	6.93	2, 150	0.0013
PL	1139.35	569.676	10.98	2, 150	p < .00005
UN	2583.19	1291.60	10.65	2, 150	p < .00005

b) Multivariate analysis of covariance for alcoholics versus non-alcoholics

		<u>F</u>	<u>df</u>	<u>p value</u>
TSQ	86.5421	3.78	20, 131	p < .00005

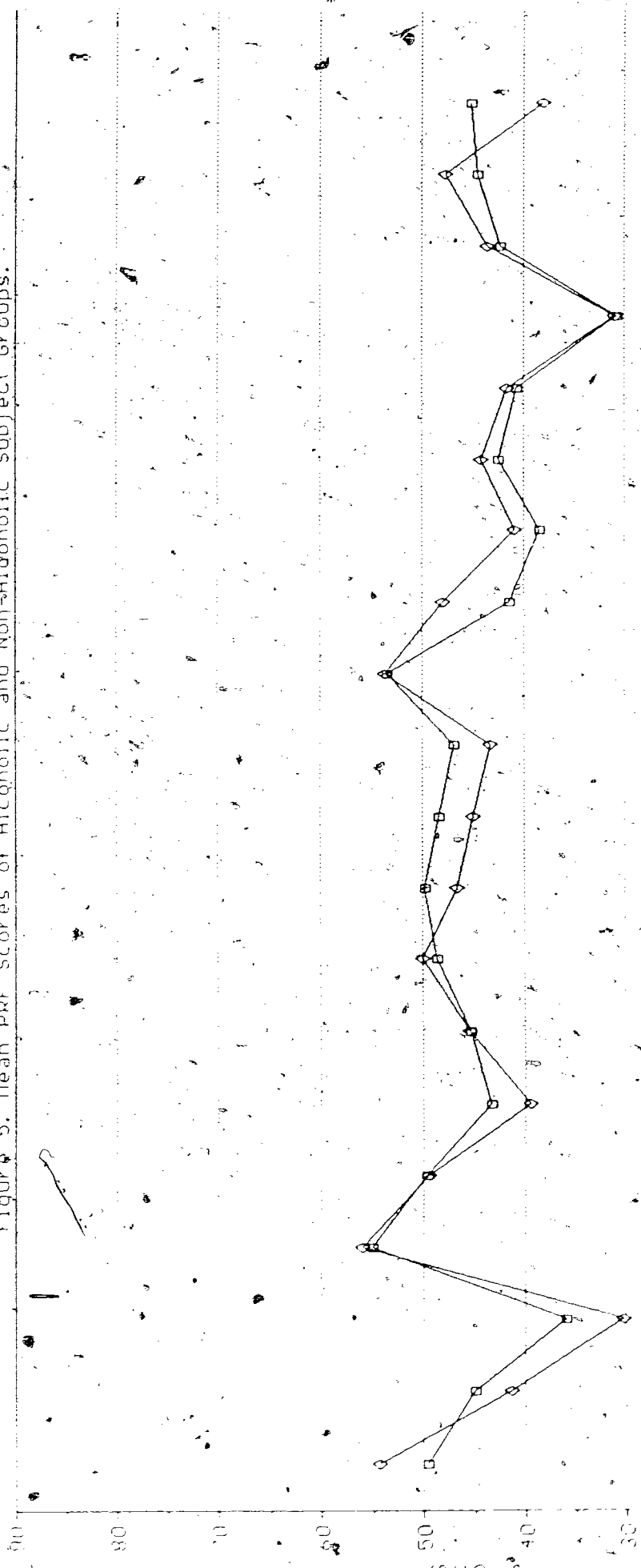
<u>PRF Scale</u>	<u>Sum of Squares</u>	<u>Mean Square</u>	<u>df</u>	<u>F</u>	<u>p value</u>
AF	787.311	787.311	1, 150	12.04	0.0007

^aCovariates = education, age.

^bBold-faced p values indicate significance at the corrected level of $\alpha = .0025$.

Refer to pp. 28-9 for a list of PRF scale names.

Figure 5. Mean PPF Scores of Alcoholic and Non-Alcoholic Subject Groups.



With respect to the difference between the findings reported by Hoffman (1970) and those reported in the present study, it appears that the subject samples are markedly different in personality. Since Hoffman did not provide PRF scores for the non-alcoholic group in his report, it is difficult to establish whether this inconsistency is a function of differences between alcoholic samples, between non-alcoholic samples, or a combination of both; an examination of the mean PRF scale scores (see Figure 5 and Appendix E.3) indicates that the non-alcoholic sample may have responded atypically. Non-alcoholics' scores on PRF scales Affiliation, Nurturance, and Sentience were more than one SD ($SD = 10$) below the mean and in the same direction as alcoholics' scores on the same scales.

Whichever the case may be, the utility of the PRF for distinguishing alcoholics from non-alcoholics appears questionable, especially since the measure is reported to distinguish between these groups on 16 scales in one study and only 1 scale in the present study. Although the differences between alcoholic and non-alcoholic groups in each study were statistically significant, the inconsistency suggests that personality factors alone are insufficient to explain how alcoholics differ from non-alcoholics, or why some individuals become alcoholic. Moreover, neither study addresses the issue of whether the reported personality differences are premorbid, a consequence of, or a correlate of alcoholism.

In summary, the first two of three multivariate analyses with the PRF suggest that the level of ego development in alcoholics is not reflected in the personality traits measured by the PRF. Although Loevinger (1976) has claimed that ego is the master trait of personality, the influence of ego in determining the extent to which personality traits are prominent in alcoholic individuals appears to be minimal. Unfortunately, the size of the non-

alcoholic sample was insufficient to determine if similar results could be obtained with non-alcoholics.

Commenting on the characteristics of ego stages, Loevinger (1976) has argued that:

No such function arises, all at once in one stage and perishes in the passage to the next. Impulsiveness, self-protection, conformity, and so on are terms that apply more or less to everyone. . . . Though stage names suggest characteristics that are usually at a maximum at that stage, nothing less than the total pattern defines a stage. (p. 15)

Therefore, it was expected that although alcoholics at any stage would show some evidence of impulsivity, harmavoidance, conformity, etc., those alcoholics at the Impulsive, Self-Protective, and Conformist stages should score highest (or lowest, depending on the trait in question) on those PRF scales reflecting characteristics of that stage. That is, alcoholic subjects at the Impulsive stage were expected to score highest on the PRF Impulsivity scale, alcoholics at the Self-Protective stage were expected to score highest on the PRF Harmavoidance scale, and so on. However, as an example, PRF Impulsivity scores for alcoholics at the Impulsive stage of ego development (mean score = 48.1) were not significantly different than scores for alcoholics at the Self-Protective (mean score = 50.6) and Conformist (mean score = 45.5) stages. The relationship between ego stage and personality traits does not appear to be as strong as Loevinger has argued.

Finally, although the results of the third multivariate analysis and the results reported by Hoffmann (1970) suggest that personality differences on the PRF exist between alcoholic and non-alcoholic subjects, the findings are inconsistent, and in the present study the difference was negligible. While personality may contribute to alcoholism, its role appears to vary between subject samples, and quite possibly between individual subjects. Rather

than viewing personality in a simple cause-effect relationship, it may be more productive to consider personality as one factor in a dynamic interplay between the individual and the environment. In certain individuals, at certain times, and in certain situations, specific personality traits or profiles may contribute to a greater or lesser degree to alcoholism. The same traits in different individuals, at different times, and in different situations may produce quite different results. Conversely, different traits and situations may be associated with similar outcomes. This may explain the inconsistency between the Hoffmann (1970) study and the present study.

Ego Development and Alcoholism Revisited

Examining the results of Parts I, II, and III as a whole, the following picture emerges. Alcoholic subjects scored approximately one stage lower on ego development than non-alcoholic subjects. Even though this difference was statistically significant, one has to consider whether it is clinically significant. Had the difference been greater, it may have been reasonable to propose that individuals in the general population at low levels of ego development would be at greater risk for alcoholism and conversely, individuals at higher levels of ego development would be at less risk¹⁷. However, the results of the present study indicate that even though there is a one stage difference between the two groups, subjects in both groups were found to represent the entire range of ego development stages; non-alcoholic subjects were found at the lower end of the spectrum and alcoholic subjects were found at the higher end. This degree of overlap

¹⁷Even so, there is still the question of whether a lower level of ego development in alcoholics is a premorbid condition which promotes alcoholism or a symptom of the alcoholic condition.

precludes further speculation that a low level of ego development, as measured by Loevinger's SCT, singularly lends itself to an increased risk for alcoholism.

In Part II, alcoholic subjects were assigned to either high or low ego development groups on the basis of their scores on Loevinger's SCT. The results indicate that comparisons between these groups on the six dependent variables were not significant. Finally, the results of Part III did not provide any evidence that alcoholics at different stages of ego development could be distinguished by their scores on any of the PRF scales. Since these findings have failed to confirm many of the assumptions tested in this study, the question arises: What role, if any, does ego development play in alcoholism? By way of attempting to answer this, several methodological and theoretical issues are addressed.

Methodological Issues

It is inevitable in psychological research that test items will be interpreted slightly differently by various subjects. In the present study, the dependent variables may have been ambiguous for the subjects. Subjects were asked, for example, at what age they began to drink regularly. The term 'regular' is admittedly ambiguous but solutions to this problem tend to create as many difficulties as they solve. For example, defining 'regular' to subjects to mean a certain number of drinks, with a particular alcohol content, consumed with a specified frequency, would likely result in a data set which does not reflect subjects' experience. Furthermore, the following questions have to be asked: Is one ounce of 40% alcohol twice a week more or less regular than two 12-ounce glasses of 6% alcohol three times a week? Is there a difference between individuals who drink 20 ounces of alcohol

within a month but do it only on weekends and individuals who consume the same amount over the same time but do so at a rate of one ounce every other day and slightly more on weekends?. Since differences undoubtedly exist (although there is no evidence to suggest that one definition describes 'regular' more adequately than another), and subjects were required to look back several years in their drinking history, it was decided to allow subjects to subjectively define 'regular'. Similar problems arose with defining 'problem drinking' and again subjects were allowed to subjectively define what problem drinking was. Unfortunately, there is no way to determine post hoc how different these subjective definitions may have been or what their impact was on the study. Furthermore, comparisons between the results of the present study and other studies which use similarly ambiguous definitions are difficult. Possible solutions include: more precise definitions; excluding the variables in question; and replacing retrospective judgements with concurrent judgements. These solutions are considered in the following discussion.

Operational definitions appear to provide the solution with the highest scientific merit; however, apart from the difficulty of arriving at a consensus among researchers, a more salient problem emerges in alcoholism research. As argued above, concepts such as regular drinking and problem drinking are ultimately subjective in nature and are likely to be as different among subjects as concepts such as elation and anguish. Moreover, while constructs such as alcoholism and heart disease are clinical realities with more or less precise definitions, a psychologist or physician would have a difficult time establishing post hoc the time of onset for these conditions. Similarly, while regular drinking and problem drinking are clinical realities, their onset is difficult to determine. The difficulty of this

task is compounded for subjects who are requested to look back several years into their drinking history (Greenwald, 1980). Consequently, subjective definitions of these variables are likely to be no more inaccurate than precise operational definitions.

The second alternative involves excluding from the study those variables, such as the age at onset of regular or problem drinking, which cannot be defined with precision. However, this may result in a loss of valuable information pertaining to factors leading up to, and subsequent to, the onset of alcoholism.

The third alternative overcomes the problems of the two previous alternatives by replacing the retrospective judgements of subjects with concurrent judgements. To accomplish this, a group of subjects would need to be monitored from a young age to determine which social and psychological changes contribute to the onset and subsequent experience of alcoholism. Although a longitudinal approach to addiction is not novel (cf. Schuckit, 1985; Vaillant, 1983; Polich, Armor, and Braiker, 1980), it is not often utilized (Wijngaart, 1990, in press). This is due in part to the excessive expenditure of time and other resources required to follow a group of individuals who may or may not become alcoholic. Nevertheless, a longitudinal study is the approach most likely to uncover the factors involved in the onset of alcoholism, relapse, prognosis, and remission.

The design of the present study may also have contributed to the several non-significant findings among the alcoholic sample. Subjects in Part II were assigned to one of four groups depending on their sex and whether they scored at a high or low level of ego development. However, by grouping subjects into only high or low levels of ego development, the impact which a particular stage may have had on an individual's experience

with alcoholism may have been obscured. Ideally, to examine the impact of different stages on individuals of each sex, an equal number of male and female subjects representing each of Loewinger's ego stages would be required.

The sampling procedure may also have contributed to the non-significant findings in Part II. To limit the possible confounding effect of treatment and to ensure that alcoholic subjects were comparable with respect to the phase of their addiction, only alcoholics from detoxification centers were solicited for their participation in the study. Alcoholics who were drinking but whose condition did not warrant medical attention, alcoholics whose condition warranted medical attention but who nevertheless opted against it, alcoholics who were currently abstinent and not in need of detoxification, and alcoholics in detoxification who chose not to participate were not included in the study. Consequently, the findings reported above pertain only to the experience of alcoholics in detoxification centers who chose to participate in the study. Had the sampling of alcoholics in this study been wider in scope, predicted differences on the dependent variables may have been obtained.

Similarly, the sampling of non-alcoholics may have attenuated the differences between groups. With respect to level of ego development, the mean TPR for non-alcoholics was one-half stage below the modal ego stage reported by Jurich and Holt (1987) when modified SCT instructions were used. Furthermore, three of the mean PRF scale scores for non-alcoholics (Affiliation, Nurturance, and Sentience; see Figure 5 and Appendix E.3) were more than one SD ($SD = 10$) below the mean and in the same direction as alcoholics' scores on the same scales. Had the sampling of non-alcoholic subjects been both wider in scope and more extensive, these anomalies may

not have emerged and differences between groups on these variables may have been greater.

Finally, it can be argued that the results were distorted by the use of the revised instructions for Loevinger's measure of ego development provided by Jurich and Holt (1987). Since subjects were asked to respond as maturely as they could, there is the possibility that differences within the alcoholic sample and between the alcoholic and non-alcoholic samples were attenuated. However, there are several arguments which support the use of the instructions provided by Jurich and Holt.

First, by using Loevinger's standard instruction, there is the possibility of added error variance resulting from differences in subjects' response style. While some may respond in a meaningful way, others may not. By specifying to subjects that they are to respond maturely, the error variance resulting from inconsistent response sets is reduced.

Second, since all subjects received this instruction, any inflation of scores is likely to be uniform. Consequently, any existing differences with respect to level of ego development should still be present; as the results of Part I indicate, a significant difference between alcoholic and non-alcoholic subjects was found, although it was less than predicted.

Finally, a variant of the argument against instructing subjects to respond maturely is that subjects may fake good on Loevinger's measure. However, as previously noted, differences between subject groups were found which suggests that faking good did not influence the difference between group scores. However, this observation provides only modest support for the instructions used and a stronger case can be argued by returning to Loevinger's theory.

Although Loevinger has argued that her construct is the master trait of personality, her measure is not a personality test but rather a measure of personality development. Whereas personality tests are designed to measure typical performance, the same does not necessarily apply to measures of development. Ego is a synthesizing entity which provides a structure through which individuals understand themselves, and their world. Therefore, the instruction to respond maturely can only have the effect of encouraging individuals to provide the maximal response that their ego structure allows. If Loevinger's standard instructions are used, individuals may respond in a maximal fashion, a typical fashion, or they may respond from a level of ego development lower than that which they typically function at. Nevertheless, regardless of which instruction is provided, it is unlikely that they can respond at an ego level above that which they have a structure for.

Empirical evidence in support of the contention that subjects cannot fake good on Loevinger's measure is provided by Redmore (1976). In a series of test-retest studies, Redmore administered the SCT to 146 subjects, first with the standard instructions, and second with the instruction to either fake good or fake bad. In the intervening time between test and retest, subjects attended one or several lectures on ego development (sentence stem responses were not discussed). Redmore reported that whereas most of the subjects asked to fake bad were able to lower their ego stage score, most of those asked to fake good either stayed at the same stage or raised their score by half a stage.

Therefore, it does not appear that the use of the instruction to respond maturely adversely affected the outcome of this study. While it may have inflated subjects' scores (a finding also reported by Jurich and

Holt, 1987), the inflation was likely minimal and uniform; thereby leaving existing group differences intact.

In summary, although the results indicate that the involvement of ego development in alcoholism is minimal, issues concerning operational definitions, research design, and sampling need to be resolved before accepting this conclusion. Alternatively, if these issues did not obscure the relationship between ego development and alcoholism, the theoretical assumptions upon which this study was premised need to be critically examined.

Theoretical Issues

Because of the lack of empirical support for the hypotheses in this study, the assumptions from which they were derived need to be critically re-evaluated. In particular, Assumptions 3 and 4 provided the basis for several of the hypotheses. To briefly summarize these assumptions, it was stated earlier that when ego development is arrested at a lower stage, the continuing increase of biopsychosocial demands (e.g., beginning school, puberty, employment, marriage, etc.) was expected to lead to an increasing disparity between the individual's ability to cope and the demands made on him/her. As the disparity increased, so would the level of stress experienced by the individual, and consequently alcohol consumption, because of its stress reducing properties, would become a new coping strategy. As stress continued to impact increasingly on the individual, this strategy in turn could become extreme, leading to alcoholism. However, the results of the present study do not support these assumptions and alternatives need to be explored.

First, it was argued that individuals arrested at a low level of ego development would experience stress as the disparity between their level of ego and biopsychosocial demands increased. When the level of stress became unmanageable, they would resort to excessive alcohol consumption which, in some cases, would evolve into alcoholism. However, the sample of alcoholics in this study was found to represent the entire range of ego stages from Impulsive to Integrated (TPR = 1 to 9). While this appears to suggest that ego development does not play a central role in alcoholism, it is possible that the relationship between stress and ego development has been misconstrued.

Stress has been reported to precede the onset of alcohol dependency by several researchers (Pearlin and Radabaugh, 1976; Sadava et al, 1978; Braucht et al, 1973; Browne and Finkelhor, 1986; Wurmser, 1978; Yeary, 1982; Morrissey and Schuckit, 1978; Bruns and Geist, 1984; Carman, 1979; Headlam et al, 1979; Newcomb et al, 1986a; Newcomb et al, 1986b; Newcomb and Bentler, 1986; Newcomb and Harlow, 1986). Clinical examples of stress which preceded the onset of alcoholism were also found in alcoholic subjects' responses on the 'Alcohol Use and Social History' Questionnaire to the question "Why do you think you started to drink?". Alcoholic subjects responded with answers such as: "...low income & surroundings & peer pressure..."; "Kicked out of the house, living on the street..."; "...to socialize more freely..."; "Inferiority complex, lack of direction in my life, and peer pressure."; "Get over shyness. To fit in."; "Temporary relief from pain (emotional), delays dealing with problems, social lubricant."; "Death of family friends, social and peer pressure, wanted to be accepted by associates, reduced shyness, especially with girls."; "...seemed to give me more self-confidence."; "...lack of self confidence.";

"...low social and self esteem," and "...to forget things." Several studies have reported that alcohol consumption temporarily reduces stress and facilitates coping (Newcomb and Harlow, 1986; Sher and Levinson, 1982; Shiffman and Wills, 1985; Wilson, 1987; Fingarette, 1985; Yankofsky et al., 1986; Hull, 1981; Neff and Husain, 1982; Berglas and Jones, 1978; Wright and Obitz, 1984; Donovan and O'Leary, 1979). Other researchers have suggested that alcohol consumption serves to reduce stress by increasing the individual's feeling of self-efficacy and altering the meaning of negative events (Wilson, 1987; Yankofsky et al., 1986; Steel et al., 1986).

In view of this, it was expected that individuals at lower levels of ego development would experience the greatest amount of stress because of their difficulty in coping with a complex adult world; this in turn would increase the likelihood of alcoholism. However, the crux of the matter may be the relative level of stress rather than the absolute level of ego development. While the disparity between ego level and biopsychosocial demands may lead to alcohol dependency in some cases, the impact of such demands is not an absolute or constant force for all individuals. Individuals at a particular level of ego development, but who are subject to different levels of biopsychosocial demands, are likely to experience different levels of stress. Therefore, individuals at a low level of ego development experiencing a low level of biopsychosocial demands would be no more at risk for alcoholism than individuals at a higher level of ego development experiencing greater biopsychosocial demands.

It is also possible that individuals at a low level of ego development facing complex biopsychosocial demands may be as stressed as individuals at a high level of ego development facing simple biopsychosocial demands. The former can be likened to a stress of desperation whereas the latter can

be likened to a stress of boredom. On the other hand, individuals at higher levels of ego development (post-Conformist) may experience another kind of stress. The majority of social demands are conformist in nature and individuals at a post-Conformist stage may be compelled by their higher level of ego development to nonconformity. This in turn can result in social condemnation which may lead to stress. Loevinger (1976) has commented that:

Persons driven to nonconformity by conscience are punished as harshly or more harshly by society as those incapable of conformity because of uncontrolled impulsiveness or those who choose nonconformity out of opportunism and self-interest.
(p. 27)

Following from this, ego development may mediate the onset of alcohol dependency but only if the disparity between it and biopsychosocial demands reaches a subjectively critical level. A longitudinal study in which level of ego development, current biopsychosocial demands and degree of subjective stress were measured would be needed to test this assumption. For example, it could be predicted that, in individuals where the disparity between ego development level and biopsychosocial demands increased, the level of stress and subsequent risk for alcohol or other drug dependencies would also increase.

A second consideration which may have contributed to the non-significant findings concerns the role of ego, or the ego process. The merit of the arguments discussed above concerning a disparity between level of ego development and biopsychosocial demands was premised on the implicit assumption that excessive stress was the inevitable outcome of such disparity which in turn could lead to alcoholism. In support of this, a plethora of studies has been presented, in addition to reports from alcoholic subjects in this study, that stress precedes the onset of alcoholism and

alcohol serves to reduce this stress. However, the question remains, is the source of this stress a result of the disparity between ego development level and biopsychosocial demands? By way of answering this question, a brief summary of the ego process (as opposed to ego development) follows.

Ego, in Loevinger's definition, is an active process providing individuals with a "frame of reference" or internal structure for their experience through which they perceive and understand themselves, their interactions with others and the world. In constructing this frame of reference, the ego process attempts to maintain a dynamic internal equilibrium by not only ascribing meaning to incoming information, but also by selectively gating out discordant and irrelevant information. The ability of ego to ascribe meaning to experience and gate out discordant or irrelevant information is of central importance.

As an example, consider two individuals in the same social setting, one at a low level of ego development and one at a high level of ego development. Because the individuals differ on level of ego development, one will ascribe meaning to incoming information from the environment in a simplistic, stereotypic fashion (lower level of ego development) and the other will ascribe meaning to incoming information in a complex manner (higher level of ego development). Both individuals will selectively gate out or distort information which is discordant with their frame of reference.

The conclusion drawn from this is that although both individuals are subjected to the same biopsychosocial demands, one individual interprets it in a simple and stereotypic manner whereas the other interprets the same demands in a more complex manner. Stress resulting from the same demands is lower in one instance and higher in the other, but in both cases the level of stress is commensurate with the individuals' level of complexity

through which they have ascribed meaning to the experience. In this analysis, level of ego development limits both the degree and type of stress individuals are capable of experiencing.

If this is the manner in which ego functions, then it is unreasonable to expect that stress which leads to alcoholism is a result of a disparity between level of ego development and biopsychosocial demands. This is not to say that stress does not lead to alcoholism, only that the source of the stress is likely not the disparity between arrested ego development and biopsychosocial demands, especially since alcoholic subjects were found at all ego stages.

Ego and Alcoholism

The original position which stated that a low level of ego development would lead to alcoholism if biopsychosocial demands became unmanageable has been qualified. The stress leading to alcoholism had been previously thought to be a result of a disparity between level of ego development and biopsychosocial demands. However, the source of the stress may not be solely from an ego level and biopsychosocial disparity especially if ego, regardless of level of development, limits the degree of complexity of the biopsychosocial demands being processed.

In view of these arguments, the model of alcoholism presented initially must be reformulated. The revised model presented in the following discussion differs significantly from the original model with respect to both its scope and its focus. The scope has been broadened to include all forms of addiction as well as alcoholism and to include multiple causes. It is further argued that disparity, adaptation, and subjectivity are crucial aspects of the addiction process. Although the revised model becomes less specific

and therefore more vague than the original model, it is argued that this vagueness is both justified and necessary to understand addiction.

Disparity and Addiction

In the original model, disparity was understood as the distance between the individuals' level of ego development and the biopsychosocial demands they were confronted with. However, the results indicate that such a disparity, if it exists, is not the only factor contributing to alcoholism. Alcoholics in the present study scored at all levels of ego development on Loewinger's measure suggesting that for many alcoholics, this specific disparity was probably not a definitive factor contributing to their condition.

This leaves the original question concerning the role of ego development in alcoholism unanswered and raises a further question: From what other sources does stress arise? In response to the first question, ego, but not necessarily level of ego development, may play a role in alcoholism and other addictions in the same way that it is involved in most aspects of daily life for addicts and non-addicts alike. As noted previously, the ego is a process which functions to selectively distort or gate out information discordant with the frame of reference it provides, and assimilates or accommodates other information. When ego fails to function in this manner, a new, more complex level of ego which can assimilate or accommodate the previously discordant information evolves. In instances where further development is no longer possible by reason of developmental arrest, or where the discordant information cannot be gated or distorted but is insufficient to warrant development to a higher ego stage, other ego defense mechanisms including psychopathology and addiction may be utilized. These strategies may be pursued by the individual,

independent of level of ego development, in an effort to maintain a dynamic internal equilibrium, the purpose and goal of ego.

This leads into the answer for the second question: What is the source of the stress leading to addiction, if not solely from an ego level and biopsychosocial demands disparity? Within the framework just presented, attempts to identify the source of the stress leading to addiction may be futile. Following a review of the literature on addiction research, Wijngaart concluded, "No simple relationships exist between cause and effect. Drug use is multiply determined;" (1990, in press). Therefore, while a disparity between level of ego development and biopsychosocial demands may promote addiction in some individuals, a host of other disparities are likely to contribute as well. Personality differences, physical and mental handicaps, traumatic experiences, demands by significant others to perform beyond one's capacity, etc., are examples of disparities between what one is and what one expects to be. These factors may have little or nothing to do with the level of ego development per se. Because of the large number of factors, or combination of factors, differing in duration and degree of impact on individuals, research which attempts to identify such factors may contribute little to an understanding of addiction.

Thus, a disparity between level of ego development and biopsychosocial demands is likely only one possible manifestation of a more general disparity between the individuals' perception of their psychological, physical, and social situation on one hand and their expectations on the other hand. Nevertheless, if such a disparity exists, stress may or may not result; if stress is a consequence of such a disparity, it may be of little significance to the individual or, in the extreme, it may have a major impact. If the stress has a major impact, the individual may be able to manage it or

may not. If the individual finds that the stress is unmanageable, several possibilities may result. Pathology of one form or another which functions to reduce the impact of the stress may develop. Alternatively, the individual may turn to one or more of several addictions of which alcoholism is only one example.

Adaptation and Addiction

In the original model, it was assumed that lower levels of ego development corresponded with less proficient coping skills, and alcohol consumption was understood to augment the adaptive function of an arrested ego. However, as argued in the previous section, the results indicate that level of ego development does not predict alcoholism. Vaillant and McCullough (1987) have also reported that level of ego development, in a sample including alcoholics and non-alcoholics, did not correlate significantly with several indicators of ego defense maturity. Therefore, the emphasis in the original model on the adaptiveness of higher levels of ego development is replaced in the following discussion with an emphasis on a general adaptive capacity of individuals independent of level of ego development.

As argued previously, the stress leading to addiction is likely no different from the type of stress experienced by many non-addicts. This is not to say that all individuals experience the same amount or type of stress, only that not everyone who experiences a particular stressor invariably becomes stressed or becomes an addict. Whether the stress is a result of physical or mental abuses, financial problems, occupational difficulties, personal idiosyncrasies, or death of a significant other, the question concerns not so much the type, source, or degree of stress as it does the

capacity of the individual's ego (independent of level of development) to adapt to the stressor. Social learning, physical disabilities, psychological handicaps, and hereditary factors, singularly or in combination, may diminish the capacity of the individual's ego to adapt. Alternatively, in the absence of such factors, the situation may be overwhelming and demand more than the individual is capable of.

Along this same line of thought, an argument can be made that there is nothing addictive per se about drugs such as alcohol and there is nothing about the genetic or psychological makeup (e.g., level of ego development, personality) of individuals that predisposes them to become alcoholic. Rather, the crucial factor is the individuals' ability to adapt to stressors present in the environment, an ability which does not appear to be measured by Loevinger's SCT.

When the adaptive capacity is insufficient to manage the stress, the individual may turn to one of a host of behaviors including neurotic styles (cf. Shapiro, 1965), and/or addict behaviors such as television viewing, exercise, or drug use. Which of these behaviors is selected depends largely on a complex interaction of what is available, what is socially acceptable or modeled within the individual's environment, what is compatible with the individual's life style and conscience, and what functions to effectively (albeit temporarily) reduce the impact of the stress and re-establish some semblance of equilibrium for the ego. Thus, addiction is viewed as a functional and adaptive response to a life situation in which the adaptive capacity of the individual is diminished or otherwise insufficient to manage stress.

Previously, several studies were presented (see Assumption 5) which reported that alcohol use facilitates coping. Alcohol has also been found to

reduce stress by altering the meaning of the stressor and or increasing the individual's feeling of self-efficacy. Although it is often the case that addict behaviors introduce stress, it is argued that the stress which is alleviated by the behavior is subjectively greater than the stress it creates.

Evidence was also presented that stress, anxiety, and depression predate alcohol and other substance abuse in adolescents and young adults (see Assumption 4). Alcoholic subjects in the present study reported that stressors including abuse, feelings of inferiority, shyness, lack of direction in life, wanting to be accepted by others, low income and poor social environment, and a need to forget led them to abuse alcohol. Although this evidence does not establish a causal link between stress and alcoholism, the clinical reports referred to above suggest that some form of relationship exists between stress and addiction.

Finally, there is evidence that difficulties adapting to stress predate the onset of alcoholism. In a review of the literature on psychophysiological vulnerability to alcoholism, Tartar, Alterman, and Edwards (1985) have reported that specific temperamental traits may predispose certain individuals to later alcoholism. Evidence of hyperactivity, low attention span-persistence, heightened emotionality, nonconformity, and deficits in soothability, the facility to be calmed after experiencing emotional distress were reported in pre-alcoholics. These factors can be understood as contributing not only to the individual's stress level (e.g., hyperactivity, low-attention span-persistence, and nonconformity) but also to the individual's difficulty in adapting to stress (e.g., heightened emotionality, and deficits in soothability).

A major drawback of the Tartar et al review is that the authors' focus was exclusively on individuals who later became alcoholics and

consequently, the findings are limited to that population. Therefore, rather than concluding that such characteristics are limited to alcoholics, it is argued that among individuals experiencing difficulty in adapting to stress, only a proportion subsequently chose to adopt excessive alcohol consumption as an adaptive measure. Others with similar difficulties may have chosen excessive involvement with other drugs or activities more appropriate to their unique personal and social situation, but for the same purpose: to adapt, or aid the ego in re-establishing an equilibrium, by reducing the perceived disparity. Moreover, such traits as those identified by Tartar et al (1985) are likely only several of a host of factors which singularly, or in combination, limit an individual's capacity to adapt to stress (Tartar and Edwards, 1987).

In summary, evidence has been presented which indicates that: certain individuals have difficulty adapting to stress; stress precedes alcohol abuse; and alcohol consumption can reduce stress. Although this evidence lends support to the position that addiction is an adaptive response for certain individuals who have difficulty adapting to stress resulting from some form of disparity, it does not address the subjective experience of the individuals. In the following section, it is argued that insight into the individuals' subjective experience, especially as it pertains to their perception of themselves and their world, is a prerequisite to understanding addiction.

Subjectivity and Addiction

'Adapt' and 'stress', terms not uncommon in psychological research, are nevertheless elusive concepts. According to *Webster's Dictionary* (1984), to 'adapt' means, "to make fit or suitable by changing or adjusting". This

definition appropriately describes the ego process of assimilating, accommodating, gating out or selectively distorting incoming information for the purpose of making it conform to an individual's present frame of reference. When this process is insufficient to manage the incoming information, it is not difficult to appreciate how the psychophysiological effects of alcohol or other drug consumption can assist in adaptation by altering the individual's perception of self and/or the incoming information.

However, what is not evident in this description is that the meaning of incoming information, the concept of the self to which this meaning is applied, and the expectation that the self feels necessary to achieve are ultimately subjective. That is, individuals subjectively define who they are, what the world means to them, how that impacts upon them, and who they should be in that world. As noted previously, Loevinger has argued that individuals select what is environment to them. Regardless of the objective reality of these components, the crucial issue is the individuals' subjective reality. Following from this, three points need to be made. First, an individual's subjective interpretation of reality is socially influenced (cf. the symbolic interactionist approach of Cooley, 1909; and Mead, 1969). Second, subjective reality may or may not reflect objective reality; an individual may unrealistically expect more or less of himself. Third, if there is disparity between the individuals' concept of self and their place in the world on one hand, and who they should be or what they should achieve on the other, stress is likely to be experienced.

Examples of such disparity may clarify the argument. First, consider individuals who perceive, correctly or incorrectly, demands made on them by parents or significant others to perform academically at a level beyond their ability. Alternatively, this demand may have been internalized so that

self expectations exceed ability. Students who perform academically at a level above their classmates may nevertheless be devastated by an A- grade if their self expectations are unrealistic. Second, consider individuals who, as a result of some form of abuse as a child, have developed a self concept and expectations which are markedly lower than what others perceive. When others such as parents, educators, or employers make demands which appear to be reasonable in view of their perception of the individuals' abilities, the individuals may feel that they are somehow inadequate.

In both scenarios, if individuals perceive a disparity between the way in which the self is subjectively defined and what they subjectively feel is expected of them in order to be accepted by others, stress is likely to be experienced. Evidence that this disparity is greater in heroin addicts than non-addicts has been reported by Alexander and Dibb (1975). Compared to non-addict families, a greater disparity was found between addicts' ideal self and descriptions of the addicts by both themselves and their parents. Alexander and Dibb have proposed that the greater disparity in addicts between self-perceptions and the ideal self diminishes their self-esteem and inhibits the formation of ego identity.

Considering stress, *Webster's Dictionary* (1984) defines it as, "a physical, chemical, or emotional factor that causes bodily or mental tension and may be a factor in disease causation". A serious shortcoming in several of the studies on stress and alcoholism cited previously is that events are identified as stress whereas the definition of stress clearly emphasizes that such events have to "cause bodily or mental tension". The death of a parent provides an example of the importance of an individual's subjective interpretation of the event. In one instance, the death may be extremely traumatic, especially if the individual was emotionally dependent on the

parent. In another instance, the death may produce little stress, especially if the relationship between the individual and parent was distant. In a third instance, the death, rather than being stressful, may provide relief for the individual especially if he/she had been severely abused by the parent. Therefore, identifying events which are assumed to be stressful may be meaningless if the individual's subjective interpretation of the event is ignored. Moreover, with the passage of time, the negative impact of the event is likely to lessen. Additionally, the amount of time needed to adapt to the event undoubtedly varies from individual to individual.

Consequently, a stressful event, or series of events, occurring several years prior will likely vary in degree of impact on present functioning from individual to individual.

Finally, as previously argued, it is not simply the stress, but rather the individual's difficulty in successfully managing the stress that may contribute significantly to alcoholism or other addict behaviors. Stress, in a general sense, can be considered adaptive in that it motivates individuals to adjust their concepts of the world, the self, and what the self should be in relation to that world. Lowering one's expectations, increasing productivity, and/or altering the meaning ascribed to the world are all methods for decreasing the disparity and related stress. In the extreme, when an equilibrium cannot be re-established, alternative strategies such as addiction may be adopted.

In summary, factors including level of ego development, socioeconomic status, level of education, environmental background, physiological genetic traits, stressful life events, and personality, in isolation or in combination, may or may not contribute in a significant way to the onset of an addiction. What does contribute significantly are the following three factors: the individual's subjective reality; the stress which ensues

when there is a disparity between the subjective concept of self and the subjective criteria of what the self and the world should be; and the capacity to manage the stress resulting from that disparity.

Attempts to identify specific events, personality factors, genetic anomalies, etc., common to alcoholism and other forms of addiction are likely to be unsuccessful if the subjectivity of individual experience is ignored. In the past, this has often been the case with addiction research. Factors have been identified which appear to differentiate between addicts and non-addicts, but the results are inconclusive for several reasons. Such findings do not establish causality. The findings do not determine if the factors are prior to or a consequence of the addiction (Tuite and Luiten, 1986; Nerviano and Gross, 1983; Conley and Prioleau, 1983; Segal, Huba, and Singer, 1980). The findings do not determine if the factors are a consequence of social reaction to the addiction (Alexander, 1990). The findings do not account for why some individuals exhibiting these factors do not become addicted and why some individuals who do not exhibit these factors do become addicted. This last point is especially salient with respect to those studies which have attempted to identify psychophysiological markers in pre-alcoholics (Tartar, Alterman, and Edwards, 1985).

What can be concluded from these studies is that a variety of individuals from different environments abuse drugs for various reasons. Following a review of addiction research, Wijngaart (1990, in press) has argued:

Drug use varies from culture to culture, from group to group, from individual to individual, from time to time in the same individual, and from generation to generation. Different individuals take different drugs in different amounts at different times for different reasons, and this occurs in different social and cultural contexts with different results. (p. 70)

Therefore, it is argued that individuals who become addicted are a diverse group sharing one common feature: they have used alcohol or other drugs excessively to help alleviate an otherwise seemingly unmanageable stress. The stress which is experienced by these individuals is considered to be a consequence of a disparity between who they 'are' and who they 'want or expect to be'. Although socially influenced, the experience of stress, its unmanageability, the concept of self, and the expectations they hold for themselves are understood to be ultimately subjective in nature.

A Proposal for Further Research in Addiction

From the preceding discussions in which the importance of disparity, adaptive capacity, and subjectivity were argued, five conclusions have been drawn:

- 1) Stress and disparity are multiply determined.
- 2) Individuals' experience of that stress and disparity, as well as the experience of themselves and the world, are ultimately subjective.
- 3) Individuals differ in terms of the efficacy of their adaptive capacity. Furthermore, adaptive capacity must be understood in the context of the individuals' subjective experience.
- 4) Individuals who experience stress may choose to become involved with drugs activities to alleviate that stress if such involvement is viable. In situations where individuals perceive the stress to be extreme and unmanageable, the level of involvement may evolve into addiction.

5) Considering the preceding points, research, including the present study, in which attempts are made to identify objective causal factors is unlikely to provide an understanding of addiction.

Therefore, in view of these points, the preceding arguments, and the importance which has been placed on subjectivity, several pertinent questions need to be posed to the addict. These questions would address: 1) the individual's perception of the self and the world; 2) the impact of the world on the self, and the self on the world; 3) the expectations of the self in relation to fitting into that world; 4) the type and degree of stress experienced by the individual; and 5) the individual's ability to manage that stress.

Typically, this information is obtained by presenting questions such as these to persons in the form of a questionnaire or semi-structured interview. However, it is unreasonable to expect that individuals, even the most psychologically insightful, are able to provide in-depth, detailed answers to these questions on demand. These questions are not likely the type that individuals have pondered at length, or would feel comfortable elaborating on in a questionnaire or brief interview. Moreover, addicts may not be immediately conscious of the various factors (past, present, and future) which have contributed to their particular situation, or the way in which these factors interact.

If such approaches do not adequately address the experience of an addict, the validity and utility of the information obtained are questionable and an alternative approach is necessary. Considering the issues raised previously, it is argued in the following discussion that an alternative

approach using idiographic, longitudinal, and transactional design features is more appropriate.

Because of the emphasis placed on the subjective and unique experience of the individual addict, it is argued that idiographic research is more appropriate than a nomothetic approach (Allport, 1961; Shapiro, 1966; Chassin, 1967). In opposition to an idiographic approach, it can be argued that by focusing on individual addicts, it is difficult to detect those factors common to the group of addicts as a whole. However, two considerations argue against this opposition.

First, addiction research in the past has generally failed to uncover common factors. For example, several of the factors which have been proposed include powerlessness (Scoufis and Walker, 1982; Markowitz, 1983), alienation (Simon, 1986), lack of purpose and meaning in life, depression, self-derogation (Harlow, Newcomb, and Bentler, 1986), guilt, (McFadden, 1987), loneliness, (Allen, Peterson, and Whipple, 1981), a variety of 'stressful' life events (Morrissey and Schuckit, 1978; Pearlin and Radabaugh, 1976; Sadava, Thistle, and Forsyth, 1978; Browne and Finkelhor, 1986; Yeary, 1982; Bruns and Geist, 1984), and various psychophysiological factors (Tartar, Alterman, and Edwards, 1985). A host of personality subtypes of alcoholism have also been reported including, for example: compulsive; impulsive; aggressive paranoid; asocial/schizoid; avoidant/schizoid; submissive; and narcissistic psychopathic (Nerviano, 1976; Nerviano and Gross, 1983). It is interesting to note that these personality subtypes accounted for only about one-half of the subject samples studied (Nerviano and Gross, 1983). In the present study, personality scores on the PRF differed markedly from those scores obtained with a different alcoholic subject sample (cf. Hoffmann, 1970). Furthermore, whereas impulsiveness

has been reported as a hallmark trait of alcoholism (Lacey and Evans, 1986), alcoholics in the present study did not differ significantly from non-alcoholics on the PRF Impulsivity scale (IM). It is also noteworthy that alcoholic subjects in the present study were quite diversified in terms of level of ego development.

Therefore, it is apparent that alcoholics and other addicts are, as a population, remarkably diverse. There appears to be little that can be said about this population with respect to specific personality traits, psychophysiological factors, life events, or even level of ego development, that applies to each individual addict. As someone once commented, every classification is an injustice (anonymous, cited in Loevinger, 1976).

Second, a research approach that attempts to uncover common factors in groups of addicts will inevitably overlook the salient factors contributing to an individual's unique life experience. Spotts and Shontz (1985) have argued that:

No amount of large-scale research can reveal the nature and intention of a *single individual's* commitment to drug use. These appear only when persons are studied as wholes. What the study of persons reveals is not a display of symptoms covering a common disease process, as the disease model leads one to expect, but sets of ingenious variations on a few basic, indeed universal, themes of human life. (p. 1547)

In the present context, three of these themes are understood to be: a disparity between what one *is* and what one expects or wants *'to be'* in their world; the adaptive capacity of individuals relative to the demands they perceive; and the individuals' subjective interpretation of the self, their world, and the interaction of the two. It is proposed that although these themes are universal, they are manifested uniquely in the individual and are likely to be obscured by large-scale research.

In view of these considerations, the argument that idiographic research may not be able to uncover those factors common to the population of addicts as a whole appears misguided. Rather, it is argued that previous nomothetic research in addiction has fallen short of its goal, not simply because it has focused on commonalities, but paradoxically, because it has been both too narrow and too general. It has been too narrow because it has focused on specific factors (e.g., personality, life events, and psychophysiology), and it has been too general because it has failed to take into account how such factors are uniquely manifested in the individual. In contrast, an idiographic approach allows for an exploration of the manifestation of universal themes at the level of the individual addict.

The research would also need to be longitudinal; cross-sectional, retrospective research requiring individuals to convey information about circumstances and events which occurred several years prior is suspect. Monroe (1982) has reported that retrospective self-report data is plagued with distortion and as much as 60% of events occurring in the most recent 4-month period were under-reported. Greenwald (1980) has argued that, because of cognitive biases, the ego continually fabricates and revises personal history. In the years following a particular event, an individual's account of that event evolves in a way which is consistent with his/her current frame of reference. Therefore, in addition to information being under-reported, retrospective accounts of personal experiences may reflect an individual's present state as much as the event or experience in question.

Returning to the results of the present study, it was found that age covaried positively with three of the dependent variables in Part II (age at onset of regular drinking, age at onset of problem drinking, and number of years from onset of regular drinking to first help for drinking problem). The

covariation with age observed for these variables indicates that older subjects reported a later onset of regular drinking and problem drinking, and a longer interval between the onset of regular drinking and first help for their drinking problem. While cohort effects provide one possible explanation, it is possible that cognitive biases and distortions, as suggested by Greenwald (1980) and Monroe (1982), influenced subjects' recall of these events. Because the events in question are often further removed for older subjects', they may have recalled that these events occurred later in life than was actually the case.

A longitudinal design provides several advantages over cross-sectional research. First, it allows the investigator to observe and question the individual about current, ongoing events rather than having to rely on inaccurate historical accounts. The questions presented at the beginning of this section provide a starting point and framework for the investigation but would not be limiting. Second, a longitudinal study provides the investigator with the opportunity to explore the dynamics associated with the development of addiction. Finally, in light of the in-depth and personal questions being asked, a longitudinal study compliments an idiographic approach by providing the investigator with an opportunity to develop a trusting and personal relationship with the subjects. Ideally, the goal of such an investigation is to understand, as thoroughly as possible, the individual's subjective experience of which addiction is a part, while limiting the influence of such an intrusion on the individual's day to day functioning.

Preferably, the subject sample would be composed of a small number of subjects who currently use drugs at more than a casual level of involvement but who are below dependent and addictive levels of involvement. Since it is unlikely that all of the sample will become addicted,

the investigator has the opportunity to explore the differences between those individuals who later progress to addiction and those who remain at the same level of involvement or who subsequently return to a lower level of involvement.

Finally the research would be undertaken within a transactional model (Sameroff, 1975; Sameroff and Chandler, 1975) as opposed to a simple cause-effect model. The focus of the research, implicit in the questions presented at the beginning of this section, would be on the individual's subjective interpretation of the impact of the world on him/her, the impact he/she assumes to have on the world, and how these effects alter the impact of both the individual and his/her world over time.

As difficult as this research may be to conduct, there does not appear to be an easier, less involved approach which would allow researchers to acquire an understanding of the subjective life of an addict in particular, and addiction in general. Remarking on the counselling provided to addicts, one addict has stated:

In the ideal programme the approach is strictly individual, because all drug users are different. The counsellors have to find out who someone really is and what he or she really needs, what is best for the client. That is extremely difficult.
(cited in Wijngaart, 1990, in press, p. 61)

Although this individual was speaking in reference to addiction counselling programmes, the comment is especially salient to addiction research. An understanding of addiction is a prerequisite to understanding what can be done to assist the addict. Therefore, an appropriate method which allows addicts to impart their experience is necessary for psychological research in addiction.

CONCLUSION

In conclusion, the results of Parts I - III do not support the assumptions of the original model tested in this study. The level of ego development and the assumed disparity between it and biopsychosocial demands do not appear to play a definitive role in the onset of alcoholism among alcoholics in detoxification centers. In Part I, alcoholic subjects were found to represent the entire range of Loevinger's ego development stages. As a group, alcoholics in this study were only one stage lower in ego development than non-alcoholics. Although this difference was statistically significant, it may not be clinically significant because of the degree of overlap between the two groups on this variable.

In Part II, significant differences between alcoholics at high and at low levels of ego development were not found on any of the following variables: age at onset of regular drinking; age at onset of problem drinking; the interval from onset of regular drinking to first professional help; the number of incidents with the law; and the longest period of abstinence. Moreover, in Part III, alcoholic subjects grouped at different levels of ego development could not be distinguished on the basis of their scores on the PRF, a measure of personality. It appears that personalty traits do not reflect the level of ego development of alcoholic subjects in this study.

Sex differences in Part II were limited to the age at onset of regular drinking; male alcoholics reported beginning regular drinking four years earlier than alcoholic females. Of particular interest was the finding that male and female alcoholics did not differ significantly on the length of time from the onset of problem drinking until first going to a professional for

help with their drinking. This finding contradicts the compression of experience for female alcoholics reported by Filstead (1984).

Following from these findings, several methodological and theoretical issues which may have contributed to the unexpected results were discussed. Subsequently, the original model was revised and it was argued that three factors contribute significantly to the onset and subsequent experience of addiction: 1) the individual's subjective reality; 2) the stress which ensues when there is a disparity between the subjective concept of self and the subjective criteria of what the self and the world should be; and 3) the capacity to manage the stress resulting from that disparity.

An alternative approach to addiction research which could provide an opportunity to explore these factors was proposed. It was argued that this research would necessarily have to be idiographic and longitudinal in design. Furthermore, the research would need to focus on concurrent rather than retrospective judgements, and on transactional rather than simple cause and effect relationships between the addict and his/her environment.

Appendix A

ALCOHOL USE AND SOCIAL HISTORY¹⁸

Date: _____

1. Age: _____
2. Sex: _____
3. Occupation: _____
4. Education: _____
5. At what age did you start drinking regularly? _____
6. Besides alcohol, what other mood-altering drugs have you typically used?

7. Have you ever been injured as a result of your drinking? (YES) (NO)
8. a) What number of times have you been in trouble with the law? _____
b) What proportion of these times were a result of alcohol? _____
9. What number of times have you had problems at work as a result of drinking? _____
10. What number of times have you had family problems as a result of your drinking (e.g., with parents, brothers, sisters, spouse, children)? _____
11. Circle one of the following. Are you: (1) married; (2) single; (3) separated; (4) divorced; (5) a widow or a widower; (6) remarried; (7) other?

12. What is your monthly income? _____

¹⁸Not all of the questions in this measure were analyzed in the present study.

- 13.¹⁹ How old were you when alcohol first became a problem for you? _____
14. How old were you when others first began to tell you your drinking was becoming a problem? _____
15. How old do you think you were when you became alcoholic? _____
16. How old were you when you first tried to get help (e.g., from medical professionals, detoxification or treatment centers, social worker, nurse, priest/minister, psychologist, psychiatrist, Alcoholics Anonymous, etc.)? _____
17. How many days have you been at this center? _____
18. How long have you been abstinent this time? _____
19. What was your longest period of abstinence since you realized you had a problem? _____
20. a) In a sentence or two, what types of events or things usually led (leads) you to use alcohol? (Longer answers are welcomed.)
- b) In a sentence or two, what does alcohol do for you? (Longer answers are welcomed.)
21. Because I am trying to understand your experience as best as I can, is there anything you can tell me about what it is like to be an alcoholic? For example:
- a) Why do you think you started to drink?
- b) Why do you think drinking became a problem for you?
- c) Do you think you are unable to control your drinking? Why or why not?
- d) Do you think you will be able to drink "normally" again? Why or why not?
- e) Please explain to me what your life was like before you stopped
- _____

¹⁹Bold numbered items were given to alcoholic subjects only.

drinking.

f) What has your drinking cost you? (e.g., in terms of family, friends, job, self-esteem, etc.)

g) What is your life like now?

h) How has A.A. or other forms of treatment helped you?

i) Is there anything else you can tell me that will help me to understand your experience?

Appendix B

Sample items from the *Alcohol Dependence Scale* (Skinner and Horn, 1984)²⁰ are presented below (N.B. ADS items refer to the preceding 12 months.). Scoring values are in brackets following each item choice; higher full scale scores indicate higher levels of alcohol dependence.

1. How much did you drink the last time you drank?
 - a. Enough to get high or less (0)
 - b. Enough to get drunk (1)
 - c. Enough to pass out (2)

4. Do you get physically sick (e.g. vomit, stomach cramps) as a result of drinking?
 - a. No (0)
 - b. Sometimes (1)
 - c. Almost every time I drink (2)

8. As a result of drinking, have you seen things that were not really there?
 - a. No (0)
 - b. Once (1)
 - c. Several times (2)

11. Do you carry a bottle with you or keep one close at hand?
 - a. No (0)
 - b. Some of the time (1)
 - c. Most of the time (2)

15. Do you drink through out the day?
 - a. No (0)
 - b. Yes (1)

18. Do you almost constantly think about drinking or alcohol?
 - a. No (0)
 - b. Yes (1)

²⁰The *Alcohol Dependence Scale* is available from the Addiction Research Foundation, 33 Russel Street, Toronto, Canada.

Appendix C

Sentence Completion Test

This is a test of personal maturity. Please complete each sentence in as adult and mature manner as you can.

1. When a child will not join in group activities...
2. Raising a family...
3. When I am criticized...
4. A man's job...
5. Being with other people...
6. The thing I like about myself is...
7. My mother and I...
8. What gets me into trouble is...
9. Education...
10. When people are helpless...
11. Women are lucky because...
12. A good father...
13. A girl has a right to...
14. When they talked about sex, I...
15. A wife should...
16. I feel sorry...
17. A man feels good when...
18. Rules are...
19. Crime and delinquency could be halted if...
20. Men are lucky because...
21. I just can't stand people who...
22. At times she (he)^d worried about...

23. I am...
24. A woman feels good when...
25. My main problem is...
26. A husband has a right to...
27. The worst thing about being a woman (man)...
28. A good mother...
29. When I am with a man (woman)...
30. Sometimes she (he) wished that...
31. My father...
32. If I can't get what I want...
33. Usually she (he) felt that sex...
34. For a woman a career is...
35. My conscience bothers me if...
36. A woman (man) should always...

^dSentence stems with bracketed words indicate changes for the male form of the SCT. All other stems are used on both male and female forms.

Appendix D

Subject responses on the 36 items of the SCT

Following are examples of alcoholic subjects' responses to the 36 SCT items. Nine protocols, representing each of Loevinger's nine stages of ego development (TPR = 1 to 9), have been selected. The subject's sex, age, and TPR are provided for each protocol. In brackets, following each item response, is the ego level rating for that particular response. Note that the ratings for individual item responses correspond to the following ego stages and TPRs:

<u>Rating</u>	<u>Corresponding ego stage and TPR</u>
2 =	Impulsive (TPR = 1)
D =	Self-Protective (TPR = 2)
D 3 =	Transition from Self-Protective to Conformist (TPR = 3)
3 =	Conformist (4)
3 4 =	Transition from Conformist to Conscientious (TPR = 5)
4 =	Conscientious (TPR = 6)
4 5 =	Individualistic (TPR = 7)
5 =	Autonomous (TPR = 8)
6 =	Integrated (TPR = 9)
R5 =	Response is omitted or too fragmentary to be meaningful. For such responses, a rating of 3 (Conformist) is given (Loevinger and Wessler, 1970).

Sex: male
Age: 30
TPR: 1
Stage: Impulsive

1. When a child will not join in group activities... get the child invold (3)
2. Raising a family... wife and children (2)
3. When I am criticized... I get shy (3)
4. A man's job... to supärt (D/3)
5. Being with other people... to have freinds (2)
6. The thing I like about myself is... I know my problem (3/4)
7. My mother and I... dont get along very well (3/4)
8. What gets me into trouble is... alcohol (2)
9. Education... going to school (2)
10. When people are helpless... I try to help them (3)
11. Women are lucky because... men and wemen are ecual in different ways (4)
12. A good father... never really had one (3/4)
13. A girl has a right to... fair play in averything (3/4)
14. When they talked about sex, I... talk with them (3)
15. A wife should... be a wife (3)
16. I feel sorry... for people like me (2)
17. A man feels good when... he lives a good life (3)
18. Rules are... not to be broken. (3)
19. Crime and delinquency could be halted if... it all ready is. (2)
20. Men are lucky because... they are men. (3)
21. I just can't stand people who... jude me. (3)
22. At times he worried about... who is he? (3)
23. I am... what I am. (3)

24. A woman feels good when... she is a women. (3-4)
25. My main problem is... alcohol. (2)
26. A husband has a right to... his aqumulations (D)
27. The worst thing about being a man... I don't know (3)
28. A good mother... supartive. (3-4)
29. When I am with a woman... I feel good. (3)
30. Sometimes he wished that... again who is he? (3)
31. My father... dont know him. (3-4)
32. If I can't get what I want... I dont get it. (D-3)
33. Usually he felt that sex... who is he? (3)
34. For a woman a career is... a job and family. (D-3)
35. My conscience bothers me if... I have a hangover. (2)
36. A man should always... be a man. (3-4)

Sex: male
Age: 39
TPR: 2
Stage: Self-Protective

1. When a child will not join in group activities... they are slow (3)
2. Raising a family... is important (3)
3. When I am criticized... I hate it. (3)
4. A man's job... is never done (3)
5. Being with other people... is important (3)
6. The thing I like about myself is... outlook (3)
7. My mother and I... are friends (3/4)
8. What gets me into trouble is... drinking (3)
9. Education... is very important (3)
10. When people are helpless... they should be helped (3)
11. Women are lucky because... there is men (3)
12. A good father... does not drink (D)
13. A girl has a right to... life (3/4)
14. When they talked about sex, I... lissined (3)
15. A wife should... be a friend (3/4)
16. I feel sorry... barjie (D)
17. A man feels good when... he does a good job. (3)
18. Rules are... made to be broken. (D/3)
19. Crime and delinquency could be halted if... people cared (D/3)
20. Men are lucky because... there are women (3/4)
21. I just can't stand people who... say no. (D)
22. At times he worried about... the weather (3)
23. I am... happy that I stoped drinking (3)
24. A woman feels good when... she is shopping (2)

25. My main problem is... bozz (2)
26. A husband has a right to... have friends (3)
27. The worst thing about being a man... work. (2)
28. A good mother... takes care of the kids (2)
29. When I am with a woman... I like to talk. (3)
30. Sometimes he wished that... he would win 6-49 (3)
31. My father... is a nice man. (D)
32. If I can't get what I want... I take it (D)
33. Usually he felt that sex... was nice (3)
34. For a woman a career is... very important (3)
35. My conscience bothers me if... I lie (3)
36. A man should always... stand up for himself (3.4)

Sex: male
Age: 56
TPR: 3
Stage: Transition from Self-Protective to Conformist

1. When a child will not join in group activities... I would let him make his own choice (3/4)
2. Raising a family... not interested (3/4)
3. When I am criticized... I can accept constructive criticism (3/4)
4. A man's job... there is no such thing (4)
5. Being with other people... can be enjoyable or boring (4)
6. The thing I like about myself is... not much (2)
7. My mother and I... were close (3)
8. What gets me into trouble is... bad judgment (4)
9. Education... is necessary (3)
10. When people are helpless... help them (3)
11. Women are lucky because... I don't think they are lucky (3/4)
12. A good father... is necessary for a family (3)
13. A girl has a right to... do her own thing (3)
14. When they talked about sex, I... joined the conversation (3)
15. A wife should... be a wife (3)
16. I feel sorry... for underprivileged people (3)
17. A man feels good when... accomplishes something (3/4)
18. Rules are... made to be broken (D/3)
19. Crime and delinquency could be halted if... crime is promoted by the establishment (2)
20. Men are lucky because... not so (3)
21. I just can't stand people who... talk too much (3)
22. At times he worried about... himself (3)
23. I am... a Canadian citizen (3)

24. A woman feels good when... she feels loved (3/4)
25. My main problem is... alcohol (2)
26. A husband has a right to... run the household (3)
27. The worst thing about being a man... extra pressure (3)
28. A good mother... some are - some are not (R5)
29. When I am with a woman... I usually like it (3)
30. Sometimes he wished that... he was caught (D)
31. My father... was some times an asshole (3)
32. If I can't get what I want... I can become devious and get it. (D)
33. Usually he felt that sex... is good (D/3)
34. For a woman a career is... good (D/3)
35. My conscience bothers me if... I neglect a friend (3/4)
36. A man should always... be a man (3/4)

Sex: male
Age: 35
TPR: 4
Stage: Conformist

1. When a child will not join in group activities... SHYNESS, INTROVERTED. (3)
2. Raising a family... IS A VERY STRESSFUL EXPERIENCE. (3/4)
3. When I am criticized... I ACCEPT AND APPRECIATE IF IT IS CONSTRUCTIVE. (3/4)
4. A man's job... IS HIS LIVELIHOOD. (3)
5. Being with other people... GIVES SATISFACTION AT TIMES. (3)
6. The thing I like about myself is... IM TRYING TO CHANGE. (4)
7. My mother and I... ARE VERY GOOD FRIENDS. (3/4)
8. What gets me into trouble is... ACOHOL AND DRUGS. (2)
9. Education... NECESSARY FOR UNDERSTANDING. (2)
10. When people are helpless... I FEEL BAD AND EMPATHYISE. (4)
11. Women are lucky because... THEY HAVE LONGER LONGEVITY. (3)
12. A good father... DOES NOT HAVE TO LIVE WITH FAMILY TO BE GOOD. (3/4)
13. A girl has a right to... SPEAK HER MIND AND TELL IT LIKE IT IS. (3)
14. When they talked about sex, I... LOVE IT. (D/3)
15. A wife should... SHARE AND GROW IN A RELATIONSHIP. (4/5)
16. I feel sorry... FOR MYSELF AT TIMES. (3)
17. A man feels good when... HE FEELS HE IS ACCOMPLISHING SOMETHING (3/4)
18. Rules are... SOMTiMES HARD TO FOLLOW. (3/4)
19. Crime and delinquency could be halted if... MORE ATTENTION WAS PAID TO EDUCATION. (4)
20. Men are lucky because... THEY HAVE MORE FREEDOM. (3/4):
21. I just can't stand people who... MAKE A COMMITMENT AND DONT FOLLOW THROUGH. (3-4)

22. At times he worried about... FINANCES, LOVE, INTIMACY. (3/4)
23. I am... SOMEWHAT RESENTFUL AND HURT. (3/4)
24. A woman feels good when... SHE IS MADE TO FEEL IMPORTANT. (3/4)
25. My main problem is... MYSELF AND COMMITMENT. (3/4)
26. A husband has a right to... EXPECT A 50/50 DEAL. (3/4)
27. The worst thing about being a man... OF THE 80'S IS ROLE DEFINITION
(4)
28. A good mother... WILL SPEND TIME AND BE PATIENT. (3/4)
29. When I am with a woman... I LIKE TO BE INTIMATE. (D)
30. Sometimes he wished that... I WOULD LISTEN MORE AND ACT. (3)
31. My father... IS A VERY SPECIAL PERSON. (3)
32. If I can't get what I want... I TRY ANOTHER APPROACH. (3/4)
33. Usually he felt that sex... WAS VERY IMPORTANT. (3)
34. For a woman a career is... NOT ALWAYS A PRIORITY. (3)
35. My conscience bothers me if... I LIE, CHEAT, STEAL, (3)
36. A man should always... BE PREPARED FOR CHANGE. (3)

Sex: female
Age: 38
TPR: 5
Stage: Transition from Conformist to Conscientious

1. When a child will not join in group activities... he has emotional problems of some form, perhaps mild, or severe. (4)
2. Raising a family... can be a wonderful experience. (3/4)
3. When I am criticized... I feel hurt. (3)
4. A man's job... should not consume his identity. (4)
5. Being with other people... is something I love. (3)
6. The thing I like about myself is... I am compassionate (3/4)
7. My mother and I... are strangers (3)
8. What gets me into trouble is... impulsiveness (4)
9. Education... can be the key to many doors (4)
10. When people are helpless... they need to acquire strength and confidence. (5)
11. Women are lucky because... often they can rely on men for what they perceive as security. (3/4)
12. A good father... will always "be there" when his child needs him. (3)
13. A girl has a right to... her emotions (3)
14. When they talked about sex, I... felt embarrassed and uncomfortable (3/4)
15. A wife should... not feel she SHOULD be anything. (4)
16. I feel sorry... for old people who are almost crippled (3)
17. A man feels good when... he feels his home is secure in every aspect. (3/4)
18. Rules are... there for a reason. (3/4)
19. Crime and delinquency could be halted if... we began by bringing up our children more securely. (3/4)
20. Men are lucky because... they still have managed to "RULE" (D)
21. I just can't stand people who... are aggressive and violent (3)

22. At times she worried about... getting caught drinking. (1)
23. I am... concerned for the future of our world. (4)
24. A woman feels good when... a man shows her attention in a flattering way. (3)
25. My main problem is... booze & pills. (2)
26. A husband has a right to... his feelings (3-4)
27. The worst thing about being a woman... is that there still exists a double standard. (3)
28. A good mother... is one who spends quality time with her children (3-4)
29. When I am with a man... I like to feel I can be myself. (4-5)
30. Sometimes she wished that... the grass really WAS greener on the other side (3-4)
31. My father... never loved me. (3)
32. If I can't get what I want... I am disappointed, or perhaps angry (3-4)
33. Usually she felt that sex... was dirty. (3)
34. For a woman a career is... great if she's in the field she enjoys (3-4)
35. My conscience bothers me if... I don't pray at least once a day (3)
36. A woman should always... maintain her identity. (5)

Sex: female
Age: 35
TPR: 6
Stage: Conscientious

1. When a child will not join in group activities... he should be gently encouraged. (e. I or the child along to park etc. (4)
2. Raising a family... is a tremendous responsibility (3)
3. When I am criticized... I get angry and defensive (4 5)
4. A man's job... is something he should enjoy & be proud of (3 4)
5. Being with other people... scares me (D 3)
6. The thing I like about myself is... the way I give of myself to others - I really care about people. (4)
7. My mother and I... don't get along (3 4)
8. What gets me into trouble is... my self pity and temper. (4)
9. Education... should be something you want - not are forced to get. (D)
10. When people are helpless... I feel the need to help them or reassure them. (4)
11. Women are lucky because... they can always get what they want even though it may not always make them happy. (4)
12. A good father... means unconditional love. (4)
13. A girl has a right to... say no. (3)
14. When they talked about sex, I... interrupted because I figured I knew it all. (4 5)
15. A wife should... not have to nag. (3)
16. I feel sorry... when I realize how many people I've hurt. (4 5)
17. A man feels good when... a woman he loves feels good and vice versa. (4)
18. Rules are... there for a reason - not always a good one but never the less followed (4)
19. Crime and delinquency could be halted if... people in general was not so judgemental (4)

20. Men are lucky because... they usually get what they want as long as their woman is happy. (D)
21. I just can't stand people who... purposely hurt others. (4)
22. At times she worried about... - how her life would turn out. Will she be happy? (4)
23. I am... not happy. (3)
24. A woman feels good when... she's with a man she loves - who loves her. (4)
25. My main problem is... self esteem - I have none. (4)
26. A husband has a right to... feel responsible for his family (4)
27. The worst thing about being a woman... is being looked at as an object but stupid men. (3 4)
28. A good mother... shouldn't ridicule her children (4)
29. When I am with a man... I find I am too eager to please. (4)
30. Sometimes she wished that... she could do it all over again (4)
31. My father... loves me no matter what (3)
32. If I can't get what I want... I get angry and blame other people (3 4)
33. Usually she felt that sex... was expected. (3 4)
34. For a woman a career is... second to her family (4)
35. My conscience bothers me if... I remember something I did when drinking that's awful. (D)
36. A woman should always... keep herself as clean & attractive as possible. (3 4)

Sex: female
Age: 43
TPR: 7
Stage: Individualistic

1. When a child will not join in group activities... he or she usually is afraid of rejection (4)
2. Raising a family... has never interested me particularly (3-4)
3. When I am criticized... I become defensive. (4-5)
4. A man's job... pays more than a woman's. (3-4)
5. Being with other people... makes me nervous (D-3)
6. The thing I like about myself is... I try hard, very loyal, loving (5)
7. My mother and I... compete (D)
8. What gets me into trouble is... my honesty and very strongly held views (4)
9. Education... very important for your future. (3-4)
10. When people are helpless... they become extremely vulnerable. (3-4)
11. Women are lucky because... they are not men. (3)
12. A good father... supports and loves his family (3-4)
13. A girl has a right to... chose her own destiny (4-5)
14. When they talked about sex, I... tend to change the subject. (3)
15. A wife should... be faithful (3)
16. I feel sorry... for the homeless (3)
17. A man feels good when... he's loved and babied. (3)
18. Rules are... to ensure order (4)
19. Crime and delinquency could be halted if... we eliminated the chasm between rich & poor (3)
20. Men are lucky because... they earn more money than women. (3)
21. I just can't stand people who... are ill informed and bigoted (4)
22. At times she worried about... her life and where its going (4-5)

23. I am... an alcoholic (3)
24. A woman feels good when... she respects herself. (3 4)
25. My main problem is... alcohol dependency (3)
26. A husband has a right to... a loyal and faithful wife (3)
27. The worst thing about being a woman... is being a woman (3)
28. A good mother... raises her children to be self sufficient and confident!
(4.5)
29. When I am with a man... I ask him about his family, his job, etc. (3)
30. Sometimes she wished that... this nightmare was over, it's just beginning
(4)
31. My father... loved me. (3)
32. If I can't get what I want... I will try a different approach or review the
whole situation (4 5)
33. Usually she felt that sex... was pretty good (D 3)
34. For a woman a career is... either a necessity or a choice (4)
35. My conscience bothers me if... lie or betray a confidence (4)
36. A woman should always... loving towards her family (3)

Sex: male
Age: 27
TPR: 8
Stage: Autonomous

1. When a child will not join in group activities... he ought to be asked 'why not?' & an alternate activity proposed. (3/4)
2. Raising a family... is a very important social activity. (4)
3. When I am criticized... I take it to heart, even though I realize, intellectually, that perhaps I shouldn't. (3 4)
4. A man's job... , unfortunately, frequently becomes his definition, i.e. 'I am a ---' rather than, 'I am a man who ---.' (5)
5. Being with other people... is frequently awkward, often enjoyable, and usually, if one is so disposed, avoidable. (4/5)
6. The thing I like about myself is... I realize I can grow & change. (4)
7. My mother and I... get along as well as any other mother & son I know, and better than most. (3-4)
8. What gets me into trouble is... procrastination (small-t trouble, I don't get into big-T trouble any more.) (4)
9. Education... is the process by which people grow from cradle to grave. (4.5)
10. When people are helpless... they've been dead for at least several minutes. (4.5)
11. Women are lucky because... it's probably easier for them to find a sexual partner. (3)
12. A good father... is a very difficult thing to be, and is perhaps the thing to which it is most worthy for a man to aspire. (5)
13. A girl has a right to... a great many things, some distinct from those to which a boy has a right, others not. (4/5)
14. When they talked about sex, I... probably felt self-conscious, uncomfortable, inexperienced, and or interested. (4/5)
15. A wife should... be every bit as loyal to her husband as he is to her. (4)
16. I feel sorry... that perceptions can't be shared. (4)
17. A man feels good when... his family expresses pride in something he has done. (4)

18. Rules are... necessary explanatory guidelines, but ought not to be mistaken as being more than this. (4)
19. Crime and delinquency could be halted if... all aspects of society were exactly correct to render them distasteful to all members of society. (R5)
20. Men are lucky because... traditional society has evolved to place them in a position of comparative strength power. (4-5)
21. I just can't stand people who... attempt to enforce their individual views on others. (4-5)
22. At times he worried about... the effects of his social policies on society's future. (3-4)
23. I am... a good deal less energetic than I'd like to be. (4)
24. A woman feels good when... her family shows pride in what she does (has done). (4)
25. My main problem is... my lack of energy & ambition. (4)
26. A husband has a right to... expect his wife to be no more or no less loyal to him than he is to her. (4-5)
27. The worst thing about being a man... is that advances toward women are so frequently mistakenly interpreted as sexual, and that when such an advance is sexual, it's almost always rebuffed. (4)
28. A good mother... is a very difficult thing to be, and has traditionally been a less-respected achievement than it deserves to be. (5)
29. When I am with a woman... I feel more at ease, less subject to competition, than when with a man. (4-5)
30. Sometimes he wished that... he had the power to affect the thinking of others. (D)
31. My father... has changed a great deal in some respects, and not much at all in other respects, since my earliest memories of him. (5)
32. If I can't get what I want... I attempt to ascertain what I must do to change this. (4-5)
33. Usually he felt that sex... was a very underrated experience. (3-4)
34. For a woman a career is... every bit as important as it is for a man, but less important than she may think, just as it is for a man. (4-5)
35. My conscience bothers me if... I inadvertently cheat someone, or accidentally give them incorrect information. (4)
36. A man should always... grow. (4)

Sex: female
Age: 37
TPR: 9
Stage: Integrated

1. When a child will not join in group activities... you should ask her why & encourage her to participate but not push. (4)
2. Raising a family... is something most people do. (3)
3. When I am criticized... I distance myself from my defensiveness in order to try to hear what the person says. I need time to respond, depending on the criticism. (5)
4. A man's job... is no longer a man's job. (3/4)
5. Being with other people... can be satisfying & energizing, but not all the time. (4)
6. The thing I like about myself is... my perseverance. (4)
7. My mother and I... understand the good & bad of each other & work on the good to determine our relationship. (5)
8. What gets me into trouble is... my inability, at times, to get out of my own head. (4.5)
9. Education... is life long. (4.5)
10. When people are helpless... they need nourishment to find their own strength. (5)
11. Women are lucky because... their conditioning & or genetics has encouraged, generally, the capacity to be bold in the area of feeling they be. (5)
12. A good father... is responsible & loving. (4)
13. A girl has a right to... explore her world & make mistakes so long as her safety of mind & body are not jeopardized. (4/5)
14. When they talked about sex, I... thought they were foolish. (3)
15. A wife should... along with a husband, maintain a desire to communicate honestly with one another, and respect each others differences as well as similarities. (5)
16. I feel sorry... when any one of us loses the ability or desire to be honest with themselves. (4)
17. A man feels good when... , beyond gender, his activity or being is wholehearted. (5)

18. Rules are... guidelines, not laws & should be followed according to ones conscience. (4)
19. Crime and delinquency could be halted if... it was a perfect world. (3-4)
20. Men are lucky because... it's still predominately their show over the majority of the globe. (4)
21. I just can't stand people who... never try, simply whine. (4)
22. At times she worried about... being alcoholic. (3)
23. I am... more than an alcoholic; I am a multifaceted person with strengths as well as weaknesses. (4)
24. A woman feels good when... she "is" or "does" outside of gender, through being & doing whole heartedly. (see #17) (5)
25. My main problem is... as yet unclear to me. (4)
26. A husband has a right to... nothing more nor anything less than what a wife has a right to. (4)
27. The worst thing about being a woman... are the culturally inherited dependency traits. (4)
28. A good mother... , like a good father, is responsible & loving. (4)
29. When I am with a man... I quickly determine whether or not I'm attracted, & if its mutual & adjust accordingly. (5)
30. Sometimes she wished that... she didn't seem to have to do things the hard way through her own doing. (5)
31. My father... was sick with alcoholism from a very early age & lived & died 2 tragic life with brief moments of velour. (5)
32. If I can't get what I want... I check out the next best possibility. (3/4)
33. Usually she felt that sex... under optimum circumstances with the right person is one of the more delicious sensations available & a communication like no other. But very private. (6)
34. For a woman a career is... a career. (3)
35. My conscience bothers me if... I deceive myself & others or love beneath my assumed potential. (5)
36. A woman should always... be true to herself as best she can. (3-4)

Appendix E

Appendix E.1

Means (M) and standard deviations (SD) of PRF scores for alcoholic subjects at Impulsive (Imp), Self-Protective (SP), and Conformist (Con) stages of ego development. Refer to pp. 36-7 for a list of PRF scale names.

PRF Scale	Imp (n = 7)		SP (n = 24)		Con (n = 16)	
	M	SD	M	SD	M	SD
AB	50.6	8.7	53.9	8.8	55.9	4.8
AC	41.4	4.4	39.9	7.7	41.5	9.3
AF	33.9	6.7	31.0	9.1	30.1	6.7
AG	58.4	6.9	55.6	10.4	54.1	9.8
AU	46.7	11.3	51.7	9.1	49.3	5.7
CH	40.9	7.2	40.9	7.7	40.6	10.7
CS	43.9	4.7	43.3	6.8	44.3	9.2
DE	54.9	3.3	50.5	10.4	50.1	8.3
DO	49.3	7.3	43.1	8.5	45.6	8.3
EN	46.1	8.8	42.5	10.1	49.4	10.2
EX	44.0	14.0	40.8	10.1	41.6	11.7
HA	52.1	5.7	53.5	6.9	52.3	7.5
IM	48.1	5.4	50.6	10.2	45.5	12.6
NU	39.3	5.3	38.4	9.8	43.6	7.9
OR	41.1	12.6	41.1	9.6	45.9	10.6
PL	46.3	7.4	43.3	7.2	39.8	7.8
SE	32.1	4.7	29.1	10.1	29.0	11.2
SR	46.4	6.6	42.6	7.6	43.8	6.1
SU	56.7	8.9	45.3	10.1	48.8	7.5
UN	36.9	6.4	34.1	10.6	33.0	3.8

Appendix E.2

Means (M) and standard deviations (SD) of PRF scores for alcoholic subjects at Low, Medium, and High levels of ego development. Refer to pp. 36-7 for a list the PRF scale names.

PRF Scale	Low (n = 31)		Medium (n = 52)		High (n = 31)	
	M	SD	M	SD	M	SD
AB	53.2	8.8	53.9	7.5	56.0	8.9
AC	40.3	7.1	41.9	7.6	41.4	10.0
AF	31.7	8.6	30.0	7.5	29.1	8.8
AG	56.3	9.7	56.1	9.8	55.7	9.7
AU	50.6	9.7	48.8	8.8	49.5	11.8
CH	40.9	7.5	38.4	9.5	39.8	10.3
CS	43.4	6.3	45.9	7.8	46.9	10.7
DE	51.5	9.4	49.5	10.3	49.4	9.5
DO	44.5	8.6	46.6	8.9	48.7	9.5
EN	43.4	9.8	45.4	10.0	46.2	7.7
EX	41.5	10.9	44.3	13.2	43.8	12.7
HA	53.2	6.6	53.3	8.4	55.0	9.0
IM	50.0	9.3	47.4	12.4	47.1	13.0
NU	38.6	8.9	42.0	8.1	41.5	9.4
OR	41.1	10.1	45.8	9.6	44.8	10.9
PL	43.9	7.3	41.5	7.4	39.9	10.9
SE	29.8	9.2	28.8	10.4	35.8	7.3
SR	43.5	7.4	43.9	8.6	43.3	6.2
SU	47.8	10.8	48.2	9.6	46.8	9.1
UN	34.9	9.7	34.5	13.2	47.2	7.8

Appendix E.3

Means (M) and standard deviations (SD) of PRF scores for Alcoholic (Alc) and Non-Alcoholic (Non-Alc) subject groups. Refer to pp. 36-7 for a list the PRF scale names.

PRF Scale	Alc (n = 40)		Non-Alc (n = 114)	
	M	SD	M	SD
AB	54.3	8.2	49.6	7.5
AC	41.3	8.2	44.9	6.6
AF	30.2	8.2	35.9	7.7
AG	56.0	9.7	55.1	8.9
AU	49.5	9.8	49.7	9.6
CH	39.5	9.2	43.3	8.4
CS	45.5	8.4	45.4	8.5
DE	50.0	9.8	48.6	9.0
DO	46.6	9.0	49.8	8.6
EN	45.1	9.4	48.5	7.2
EX	43.4	12.4	47.0	10.4
HA	53.7	8.1	53.5	8.0
IM	48.1	11.7	41.5	11.0
NU	40.9	8.8	38.5	6.7
OR	44.2	10.2	42.6	10.8
PL	41.7	7.9	40.7	6.7
SE	31.0	9.7	30.8	8.9
SR	43.6	7.6	42.4	6.4
SU	47.7	9.7	44.6	7.9
UN	38.1	12.3	45.2	9.8

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