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ALCOHOL CONSUMPTION AND EMOTIONAL OVER-INVOLVEMENT  
IN THE ROMANTIC RELATIONSHIPS OF COLLEGE STUDENTS

By

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## **ABSTRACT**

### **ALCOHOL CONSUMPTION AND EMOTIONAL OVER-INVOLVEMENT IN THE ROMANTIC RELATIONSHIPS OF COLLEGE STUDENTS**

**By**

**Larry D. Holmes**

**This study was designed to explore the relationship between addictive processes manifested in alcohol use/abuse and those in romantic relationships among college students, and is primarily specific to the developmental period of late adolescence. From an initial conceptualization of an infatuation or emotional over-involvement continuum, a construct validity study resulted in a measurement model of infatuation through confirmatory factor analytic procedures.**

**Subjects completed self-report measures regarding alcohol consumption and problems associated with alcohol, and measures tapping constructs postulated to be on the continuum of infatuation (codependency, love addiction, and limerence) and romantic love. Love addiction did not emerge as a construct separate from romantic love in this study, whereas limerence and codependency did appear to be separate constructs from love/love addiction. Significant gender differences were found for alcohol consumption, codependency and frequency of infatuations. Alcohol consumption and**



**problems associated with alcohol use/abuse predicted scores  
only on codependency.**

**This work is lovingly dedicated to the memory of my father,  
Owen Holmes, without whose love and incessant inspiration  
and motivation for my success this project would have been  
much more difficult.**

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## INTRODUCTION

Although much research (e.g., Levay & Kagle, 1983; Critelli, Myers, & Loos, 1986) has been done on dependency in romantic relationships, little research has yet explored the association between alcohol usage and the tendency to become infatuated or overly-involved/emotionally dependent in romantic relationships.

Some early literature explored the relationship between early attachment dysfunction with the mother and alcoholic etiology. Lolli (1956) viewed alcoholism primarily as a disorder of the love disposition. He stated that:

Although physiological events may facilitate its origin, it [alcoholism] is rooted in a distortion of the early mother-child relationship. It represents the abnormal survival in the adult of a need for the infantile normal experience of unitary pleasure of body and mind. The alcoholic rediscovers this experience in the course of intoxication. He cannot resist its gratification, however illusory and temporary it turns out to be, and this is the basis of alcohol addiction.  
(p. 106)

Lolli (1956) describes love, warmth, and tenderness as

hunger linked emotions. He saw alcohol as a beverage "closely linked with the beverage milk which quenches the infant's thirst, satisfies his hunger, and gives him the security and power of mother's love. Alcohol gives the alcoholic adult what milk gives the normal infant" (p. 100).

Several researchers in the 1960's and 1970's explored the relationship between dependency and alcoholism (eg., Blane, 1968, 1971; Tremper, 1972). Blane (1971) postulated that dependency conflict wherein a dominant state of urgent personal need exists, is part of a personality dynamic that is important in the etiology of alcoholism. Blane (1968) described three different types of alcoholics according to their solution to these conflicts regarding dependency. The "dependent alcoholic" seeks direct gratification of strong dependent needs, the "counter-dependent" alcoholic attempts to gratify dependent needs indirectly and covertly, and the "dependent-independent" alcoholic fluctuates between denying and demonstrating dependent needs. The study of how this dependent need state is manifested specifically in romantic relationships was not a focus of this research.

More recently, Weinberg (1986) studied the interaction between alcohol use and love relationships among a small (n=46) sample of male homosexuals. This author concluded that in this sample love relationships did not necessarily affect alcohol consumption in general, except in cases where stresses and strains in the relationship would often

increase consumption. Additionally, it was found that reductions in alcohol use were often the result of feeling secure in the relationship. These findings regarding increases and decreases in consumption would most certainly apply to heterosexual love relationships as well.

The impetus for this study and a previous pilot study (described in more detail below) came from the statements of alcoholics and drug addicts at a local mental health center detoxification unit. Many of these inpatients spoke of intense and dramatic love affairs, often not lasting very long and frequently ending in bitter breakups that left them devastated. After observing the great amount of apparent infatuation and/or emotional over-involvement experienced by those with either heavy drinking problems or diagnosed alcoholism, I hypothesized that there might also be a tendency among the non-alcoholic population to become increasingly infatuated and/or emotionally dependent/over-involved with corresponding increases in alcohol consumption.

A pilot study was conducted in order to determine if there is a positive relationship between alcohol consumption and tendencies to be overly-involved in romantic relationships. In that particular study a significant positive relationship was not found but a trend was discovered, giving impetus to the present study. The pilot study had several significant methodological problems

including a very small sample size ( $n=28$ ), and only one measure of the dependent variable (infatuation). Additionally, the scales used to measure infatuation in that study, the Rubin L1 and L2 Scales (Rubin, 1970), reportedly measure intensity of loving and liking (respectively) rather than infatuation per se. The constructs of liking and loving are undoubtedly related to infatuation and one of the purposes of the present study is to explore these relationships. A description of these 3 constructs is given below.

In the pilot study it is also highly likely that social influences that may be related to social desirability affected the results of the testing and may have helped obscure a significant relationship between the two variables. For example it was observed that during the testing administration, a group of male subjects were conferring with each other and marking responses on the lowest end of the Likert-type scale. Apparently, these subjects had a socially influenced reason to appear as if they didn't "care too much" about their romantic partners. Alternatively, it is possible that they really didn't care very much about their partners. In any case, this phenomenon of marking answers in a similar manner due to social influences may be related to social desirability, and may have helped obscure a stronger relationship than was found in that study.

## REVIEW OF THE LITERATURE

### I. Infatuation Defined for the Purpose of This Study

What is infatuation? In the working model or conceptualization used to initiate this study, infatuation represents a continuum ranging from a superficial emotional state based on physical attraction (e.g., "crush") to a full-blown addictive state where the object of desire becomes all-consuming. Terms used to label points on the infatuation continuum also include limerence (Tennov, 1979), codependency, and love addiction. At the lowest end of the continuum the emotional state of superficial infatuation ("crush") and limerence are probably reflective of normal social/developmental processes, whereas at the high end of the continuum, codependency and love addiction are more reflective of dysfunctional/psychopathological processes (see Figure 1). For the purposes of this study it was useful to think of the points of the continuum as running from healthy psychological processes at the low end, to unhealthy processes at the high end, but this study was not designed to empirically validate this idea. It must be kept in mind that there is substantial overlap between the concepts/constructs (as points on the continuum), and one of the purposes of this study was to help delineate and clarify

what these concepts/constructs represent and how they relate to each other. It was not a specific purpose of this study to attempt to prove that the continuum exists as depicted by the model. The model was fashioned as a beginning point for this exploratory line of research.

Clinical studies abound in the literature regarding love and related concepts, but empirical studies are rarely reported concerning the measurement of love and related concepts (Timmreck, 1990), and development of sound research methods that can produce data on a subject difficult to quantify has faced many problems. In addition to exploring the relationship between alcohol consumption and emotional over-involvement in romantic relationships, it was my hope that this study will contribute empirical data to a literature that has been composed primarily of clinical observations.

According to the literature review, infatuation on all levels appears to be a state in which the object of affection or desire is perceived idealistically. Werman and Jacobs (1983) examined Thomas Hardy's The Well Beloved and contended that infatuation is described in great detail. On pages 450 and 451, they listed the following characteristics of infatuation that they believe were revealed in Hardy's book:

- 1) The experience is intense, irrational, and dream-like. The lover feels himself to be in a state of

ecstasy--that is, in a state of consciousness in which he is in the grip of intense, pleasurable feelings or sensations, while his cognitive and perceptual functions are markedly diminished.

2) The Beloved is appealing, alluring, beautiful, and cool.

3) The fantasy of the idealized love-object exists as a mental representation long before the object is encountered.

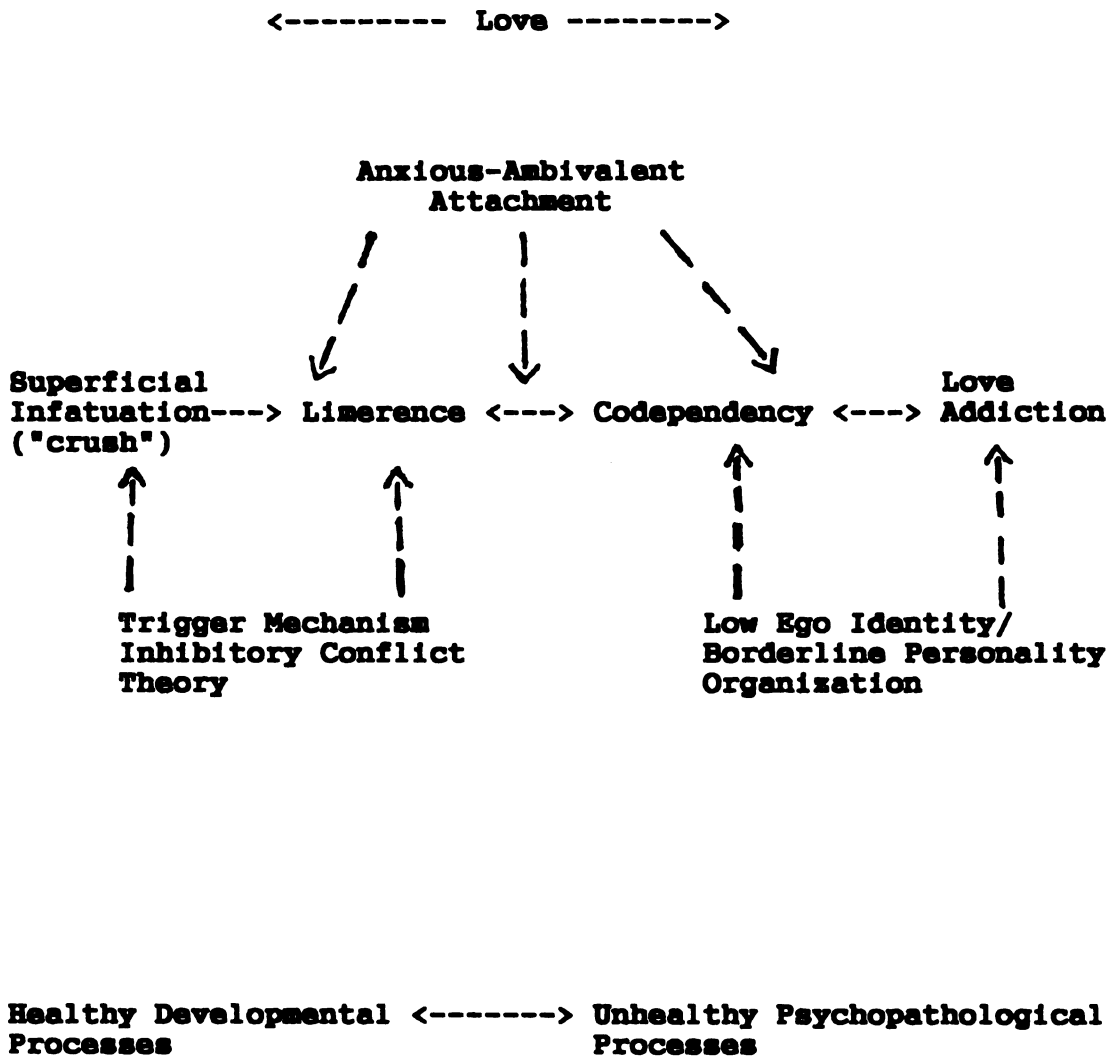
4) The infatuation is typically precipitated by some discrete, usually physical, trait of the object which is experienced as a part object.

5) The infatuation is fundamentally ambivalent, carrying within it the seeds of its own negation in the form of the unconscious, frequently hostile, search for, and inevitable discovery of, the intolerable flaw in the Beloved....

6) The experience of infatuation is both intoxicating and painful. It tends to fulfil a fantasy and yet it seeks to avoid that fulfillment;...

Figure 1

Diagram of the Infatuation Continuum and it's Relationship  
with Corresponding Theories





## II. Limerence as an Essential Component of the Construct

The formulation that appears to capture the essence of the emotional state of infatuation is Dorothy Tennov's (1979) concept of limerence. Limerence is a state of being in love or of falling in love. On pages 23 and 24 she lists the attributes of the state of limerence in full bloom as:

- [1] intrusive thinking about the object of your passionate desire (the limerent object or "LO"), who is a possible sexual partner
- [2] acute longing for reciprocation
- [3] dependency of mood on LO's actions or, more accurately, your interpretation of LO's actions with respect to the probability of reciprocation
- [4] inability to react limerently to more than one person at a time (exceptions occur only when limerence is at a low ebb-early on or in the last fading)
- [5] some fleeting and transient relief from unrequited limerent passion through vivid imagination of action by LO that means reciprocation
- [6] fear of rejection and sometimes incapacitating but always unsettling shyness in LO's presence, especially in the beginning and whenever uncertainty strikes.
- [7] intensification through adversity (at least, up to a point)
- [8] acute sensitivity to any act or thought or condition that can be interpreted favorably, and an

extraordinary ability to devise or invent "reasonable" explanations for why the neutrality that the disinterested observer might see is in fact a sign of hidden passion in the LO

[9] an aching of the "heart" (a region in the center front of the chest) when uncertainty is strong

[10] buoyancy (a feeling of walking on air) when reciprocation seems evident

[11] a general intensity of feeling that leaves other concerns in the background

[12] a remarkable ability to emphasize what is truly admirable in LO and to avoid dwelling on the negative, even to respond with a compassion for the negative and render it, emotionally if not perceptually, into another positive attribute

Limerence is described as involving an emotional energy that feeds both on the potential of a relationship and the uncertainty about whether one will develop or last. In Tennov's conceptualization, love, limerence and sexual passion are relatively independent of each other, with sex itself not being the main focus of limerence. However, Tennov believes that sexual attraction is, in most cases, an essential component of limerence. She believes that limerence usually lasts about 2 years and may be transformed into love or "affectional bonding," which she defines as involving genuine caring and concern. A trademark of all

types/levels of infatuation, including limerence, is that after some idiosyncratic threshold level is passed, infatuation is involuntary. One interesting question is whether some people are more limerent than others characterologically in a quantitative sense, in that they may have a lower threshold to become limerent than others.

In the development of a scale of limerence, Steffen, McLaney and Hustedt (1982) described limerence as a construct that is essentially on a continuum, with highly limerent people differing substantially from those with a low level of limerence. These authors state that highly limerent people rate themselves as less dominant, less self-confident, less predictable, and less cunning than people with a low level of limerence. Additionally, Steffen et al. (1982) believe that highly limerent people probably feel less in control of their relationship than do those that are less limerent. For various methodological reasons Steffen (1993) revised the limerence scale and found that younger respondents tended to be more limerent than older respondents. Steffen also reported that females tend to be more limerent than males.

Steffen (1993) described a "dark side" to limerence in that some highly limerent people may become totally obsessed with the LO, as in the case of John Hinckley's obsession with Jodie Foster. People such as John Hinckley are often described as "stalkers" in the popular press, and Steffen

(1993) suggests that they may fit the DSM-III-R (American Psychiatric Association, 1987) criteria for the erotomanic subtype of those with Delusional (Paranoid) Disorder (297.10).

Hendrick and Hendrick (1983) state that "some people are in a state of limerence much of the time, others some of the time, and other people never experience the state at all" (p. 113). These authors describe falling in love as becoming involved in a profound set of emotional experiences that appear to be similar if not identical to Tennov's concept of limerence. Physical symptoms may include dry mouth, pounding heart, flushed face, and knotted stomach. Additionally "The mind may race, and fantasy, especially about the loved one, is rampant. Motivation to work, play, indeed for anything except the lover, may fall to zero" (p. 102).

### III. Types of Love

There are so many types and formulations of love that for the purpose of this study it was decided to focus primarily on Rubin's (1970) formulation of romantic love for several theoretical reasons. First, he developed a scale of romantic love (L1 scale) from a definition of love as "love between unmarried opposite-sex peers, of the sort which could possibly lead to marriage" (p. 266), with the idea of distinguishing it clearly from other types of love such as filial love and love of God. Second, the scale was designed from an eclectic theoretical orientation involving components of love incorporating Freud's (1955) concept of love as sublimated sexuality, Harlow's (1958) postulation of love's relationship with attachment behavior, and Fromm's (1956) breakdown of the components of love into care, responsibility, respect, and knowledge. Third, Rubin's conceptualization was chosen because the scale he developed had reportedly high internal consistency and good discriminant and construct validity.

Rubin (1970) distinguishes loving from liking and has developed 2 different scales that tap these constructs (the L1 and L2 scales, respectively). His conception of liking involves components of favorable evaluation and respect for the targeted individual, as well as perceiving that the person is similar to oneself. He defines love as an "attitude held by a person toward a particular other person,

involving predispositions to think, feel, and behave in certain ways toward that other person" (p. 265). Rubin describes love as an interpersonal attitude that has affiliative and dependent needs, a predisposition to help, and exclusiveness and absorption.

Other major formulations of love include Lee's (1973) "colors of love" including eros (erotic love), ludus (love as a game), storge (love as an extension of friendship), mania (romantic love), pragma (practical love) and agape (altruistic or unconditional love), and Walster and Walster's (1978) passionate and companionate love. In this formulation, passionate love is intense, exciting, short-lived, sexually-driven romantic love. Companionate love is the "affection we feel for those with whom our lives are deeply intertwined" (p. 9), and is less transient and intense than passionate love.

#### IV. Love and Addictive Processes

Stanton Peele (Peele & Brodsky, 1975) differentiates genuine love and addiction in relationships. He describes genuine love as a commitment to mutual growth and fulfillment and as being the opposite of the desperate self-seeking dependency that is addiction. In this conceptualization, love addiction involves two underdeveloped egos merged into what D. H. Lawrence called an egoisme a deux. A former client of a colleague once referred to his first romantic relationship as "mutual child placement," which gives an adequate americanized title to D. H. Lawrence's concept. When a person approaches another with the aim of filling a void in him/herself, the relationship quickly becomes the center of the person's life.

In developing a scale to measure love addiction (not the one used in this study), Hunter, Nitschke, and Hogan (1981) described 4 main criteria of the concept:

- a) wanting the partner to fill a felt void in one's life,
- (b) wanting the reassurance of constancy of the partner,
- (c) feeling that the partner is necessary to make life bearable, and
- (d) feeling that the sole source of one's gratification, and pleasure is one's partner. (p. 582)

According to Timmreck (1990), the dynamics involved in substance abuse/addiction are seen as similar to those governing love addiction. In this way people can feel as

helpless without their lost loves as a drug addict might be without his/her fix. Peele and Brodsky (1975) describe this process wherein fear of withdrawal creates an ever-present craving. A general behavioral interpretation could be that over time a person may develop a conditioned response to the powerfully good feelings associated with love, which may in turn increase the probability of that response being repeated. Timmreck (1990) believes that the idea of a person "falling in love with love itself" may have some merit. It may be that the person falls in love with the feelings and related sexual excitement more than with the person. "When love seems sure and/or attractions become intense, emotional guards are dropped and love and trust are allowed to run unchecked" (p. 522).

Therefore, according to the working model, at the far end of the infatuation continuum is the all-consuming desire of addiction that is desperate, self-seeking and dependent.



## V. The Concept of Codependency

Although the concept of codependency has suffered considerable criticism (eg., Morgan, 1991; Harper & Capdevila, 1990; Lisansky-Gomberg, 1989), it may still be useful to discuss it's relationship to the concept of infatuation. "Codependent" is a relatively recent metaphor used to describe family members of alcoholics, with there being substantial variability in the amount of codependency within an alcoholic's family. In the past codependent individuals were called "para-alcoholic" or "co-alcoholic" (Harper & Capdevila, 1990). The concept of codependency has met with much warranted criticism. Morgan (1991) stated that most articles about codependency are descriptive and not empirical, and that there is a dearth of psychological inquiry into the concept. Harper and Capdevila (1990) criticized the concept of codependency for lacking an operational definition and that "no two authors in the CD [Chemical Dependency] field adhere to the same definition" (p. 285). Lisansky-Gomberg (1989) has been critical of the fact that within some conceptions, codependency has been expanded "so that it encompasses virtually the entire population of the United States" (p. 120). Recently Fischer, Spann and Crawford (1991) have developed a measure of codependency based on a working definition formulated from a review (Spann & Fischer, 1990). Eighteen overlapping characteristics were reduced to three basic areas. These

authors define codependency as a "[p]Psychosocial condition that is manifested through a dysfunctional pattern of relating to others. This pattern is characterized by: extreme focus outside of self, lack of open expression of feelings, and, attempts to derive a sense of purpose through relationships" (p. 27). In clinical environments, relationships of alcoholics are often described as being codependent because of the extreme focus on the other, and emotional dependency/over-involvement that are often correlates of these relationships. According to Wright and Wright (1991), the currently dominant view in the literature is that codependency is a personality syndrome closely related to addictive love.

## VI. Inhibitory Conflict Theory

Why would greater consumption of alcohol lead to greater tendencies to be infatuated/overly-involved in a romantic relationship? This is a very difficult question and it is not a goal of this study to answer this in whole, but to shed light on the mechanisms that may be involved in the relationship between the two constructs. Lolli (1960) described alcohol as a depressant of mental functions that "tips the emotional balance of the individual in directions favoring the expression of drives which are more or less controlled during sobriety" (Lolli, 1949, p. 414). With increased consumption of alcohol, the drive to fill a void and/or affiliate with a potential romantic partner may be less controlled. According to Steele (1986), alcohol has a cognitive constricting effect (alcohol myopia) that makes social behaviors more extreme by blocking a form of response conflict. Alcohol myopia is defined by Steele and Josephs (1990) as "a state of shortsightedness in which superficially understood immediate aspects of experience have a disproportionate influence on behavior and emotion, a state in which we see the tree, albeit more dimly, but miss the forest altogether" (p. 923). These authors state that alcohol myopia leads to excess in situations that would normally involve response or inhibition conflict if the person were sober. In a normal sober situation, a response motivated by salient, strong cues is also inhibited by other

strong cues that require further processing to comprehend. Additionally, it is clear that alcohol myopia increases with dosage (e.g., Jones & Vega, 1972).

"Inhibitory response conflict" involves a struggle between the impulse to engage in a social response (e.g., arguing, flirting) and the pressures not to respond in that way. "....[W]hen both impulses and inhibitions are powerful, conflict between them is strong, and alcohol makes the response more extreme by impairing the cognition needed to inhibit behavior" (p. 50). Steele and Southwick (1985) performed a meta analysis wherein each published study of alcohol's effect on a social, or socially significant behavior was rated (validated against independent judges) as to whether the behavior was under high or low inhibitory conflict. The designation of low conflict was assigned to situations in which the instigating internal and situational cues were weak and/or "the relevant inhibiting situational cues, response contingencies, and standards of behavior were weak" (p. 22). High conflict situations were designated as those situations in which conflicting response pressures were stronger, and more equal in relative strength. It must be kept in mind that the judgment of whether the behavior was under high or low conflict was made after the fact (during the meta-analytic study) and is a weakness in this analysis. They concluded that:

[O]ver low conflict tests, intoxicated subjects

behaved only a tenth of a standard deviation more extremely than their sober controls, whereas over high-conflict tests they were a full standard deviation more extreme. The effect of conflict increased with alcohol dosage, was shown not to be mediated by drinking expectancies, and generalized with few exceptions across the 34 studies and 12 social behaviors [e.g., aggression, drinking, eating, risk taking, and sexual interest] included in this analysis. (p. 18)

The authors caution that the studies in the analysis do not provide direct evidence that these effects resulted from alcohol's impairment of cognitive functioning, which they claim is the basic assumption in their model.

According to inhibitory conflict theory (Steele, 1986; Steele & Josephs, 1990) wherever cues exist for a particular response, in this case infatuation, the individual may get locked into it because of alcohol's impairment of perception and thought (alcohol myopia). And as discussed above, once the threshold is reached and the person becomes limerent or infatuated, there is no turning back, as the reaction is no longer under voluntary control. This theory then could account for the effects of alcohol consumption on the points lowest on our continuum, superficial infatuation and possibly limerence. Alcohol myopia may increase both the quantity of infatuation experiences as well as the intensity of those experiences.

Another factor to keep in mind is that alcohol and other drugs are frequently used to "self-medicate" psychological/emotional pain. If one is in emotional upheaval over a real or potential romantic relationship, whether it be codependent, limerent, addictive, etc., increased alcohol consumption may be used as a way of temporarily self-medicating the pain and consequently attempting to reduce the accompanying psychological/emotional distress.

## VII. Attachment Theory

Hazan and Shaver (1987) describe variation in early social experience as producing relatively enduring differences in relationship styles, and state that the same three attachment styles described in the infant literature (i.e., secure, avoidant, and anxious-ambivalent) are manifested in adult romantic love. Shaver and Hazan (1988) suggest that the approach to love described within theories of romantic love is similar to the concept of anxious-ambivalent attachment. These authors argue that anxious-ambivalent attachment corresponds to mania. Mania, as described by Lee (1973) is a type of love wherein the manic lover is possessive, jealous and where "the slightest lack of response or enthusiasm from the beloved becomes an occasion for anxiety and resentment. Each tiny sign of warmth or approval brings instant relief, but no lasting satisfaction. The manic lover's appetite for attention and affection is virtually insatiable" (p. 89). Hendrick and Hendrick (1989) found this relationship to be true using a number of measures of love. Feeney and Noller (1990) found that anxious-ambivalent subjects obtained high scores on a number of scales reflecting their extreme approach to love, including Mania, Obsessive Preoccupation, Emotional Dependence, Reliance on Partner, and Agape.

According to a study by Hazan and Shaver (1987), anxious-ambivalent lovers described their romantic

relationships as involving obsession, emotional extremes, jealousy, extreme sexual attraction, and desire for reciprocation and union. Such lovers find it easy to fall in love and often find themselves beginning to fall in love. They seldom find what they would call real love. In a study by Levy and Davis (1988), a principal components factor analysis showed an Anxious Attachment factor defined primarily by a positive loading on the Anxious/Ambivalent attachment style and the Manic lovestyle. According to Levy and Davis, this factor appears to represent the needy yearning for romantic attachment combined with insecurity about being loved and accepted that has been described as limerence by Tennov (1979), and anxious-romantic attachment (Hindy & Schwartz, 1984).

In a study with adolescents, Kwakman, Zuiker, Schippers, and de Wuffel (1988) did not find that the quality of attachment with parents was related to the amount of alcohol use or to problem drinking. However, these authors state that adolescents who are anxiously attached, distrust parental support, do not explore, and who experience a basic distrust in their social relationships, are prone to develop damaging drinking habits. These adolescents reported that they drank most often to facilitate social contact that could lead to maladaptive drinking patterns. Although these researchers did not find a relationship between anxious attachment to parents and



amount of alcohol use nor problem drinking, I believe that this does not rule out the possibility that people who are attached in an anxious-ambivalent manner in romantic relationships may have a greater tendency to consume more alcohol. The increased tendency to consume alcohol could be generated as a way to reduce the emotional/psychological stress experienced from the uncertainty, ambiguity, and turmoil involved in limerence, codependency or love addiction. Additional research in this area is warranted.

### VIII. Ego Identity Problems and Borderline Personality

Rosen (1981) discusses 3 stages of recovery for alcoholics: (1) detoxification; (2) the period of giving up drinking, of attaining and maintaining sobriety; (3) the stage that begins when personality and value changes within the individual appear. He described a self-selected group of 3rd stage recovering alcoholics as seeking out psychotherapy to deal with increasingly ego-dystonic personality conflicts. Alcoholics Anonymous (AA) describes these conflicts as character defects. Many of these 3rd stage patients have a borderline personality organization, if not full-blown Borderline Personality Disorder (BPD). Rosen (1981) describes many of these 3rd stage patients as having problems with separation-individuation and with using the splitting defense typical of alcoholics with BPD. In describing the etiology of BPD in psychoanalytic terms, Mahler (1971) presented clinical evidence that during the rapprochement subphase of the separation-individuation process, patients who will later develop borderline personality experience ego fixation. This rapprochement crisis then reinforces deep ambivalence and the splitting of the object world into good and bad.

Sperling (1987) stated that marked difficulties in achieving the consolidation of an autonomous ego identity gives the rapprochement child problems achieving differentiation and object constancy. These problems can

result in borderline type character pathology. In explanation of the etiology of a desperate love style, Bergman (1980) believes that if there is manifest unresolved identity diffusion in adulthood, especially in the context of feeling love objects as being inconsistent, one may attempt to recapture some of the primitive gratifications and consistency characteristics of the earliest feeling of fusion with the maternal object. According to Sperling (1987):

While experienced [desperate love], there are prevailing qualities such as a feeling of fusion with the lover, much idealization and diminished interpersonal reality testing to construe the relation and the lover as completely gratifying, a seemingly insatiable need for reciprocal affection, anxiety at separations, a sense of urgency, and diffuse ego boundaries. (p. 601)

Using his Desperate Love Scale, Sperling (1985) found a negative correlation between the tendency toward desperate love and ego identity. Gaoni and Shreibaun (1985) describe a specific pattern of pathological infatuation involving a vicious cycle of courtship and rejection within a relationship. This pattern is regarded by the authors as a stress situation that may cause a person with borderline personality organization to develop borderline personality symptomatology.

The argument made above links ego identity problems and borderline personality organization with the tendency to try to fill an empty void with a symbiotic fusion in a romantic relationship. Many of the alcoholics/alcohol abusers and drug addicts who motivated the development of this line of research probably had borderline-type pathology and ego identity problems. People with these problems may fit into the infatuation continuum with higher scores on constructs at the far end (codependency and love addiction), as well as having higher alcohol consumption scores.

## STATEMENT OF THE PROBLEM

It is clear from the foregoing literature review that there has been a dearth of empirical investigation in this line of research, namely in the study of how addictive processes or tendencies are manifested in different realms. This has been at least partially due to difficulties in quantifying love and related concepts in an empirically satisfying manner.

This study was designed to begin to explore the relationship between addictive processes manifested in alcohol use/abuse and those in romantic relationships. The tendency to become overly-involved or addicted in relationships and to become overly dependent or addicted to alcohol may at least be partially linked by a basic personality proneness to addiction in general. Stanton Peele (Peele & Brodsky, 1975) describes a person with this tendency as being:

...predisposed to addiction to the extent that he cannot establish a meaningful relationship to this environment as a whole, and thus cannot develop a fully elaborated life. In this case, he will be susceptible to a mindless absorption in something external to

himself, his susceptibility growing with each new exposure to the addictive object. (p. 61)

Miller (1987) gives an account of Peele's social-psychological explanation of addictive tendencies wherein people learn dysfunctional behaviors in response to the inability to cope with stress and these behaviors temporarily make it appear as if the problems have gone away. This relieving of anxiety can itself become addicting and therefore the dysfunctional behavior is reinforced and repeated. These dysfunctional behaviors include addiction to love, alcohol, drugs, food, cigarettes, religion, stress, gambling, over-spending, television, and athletic activities.

The purpose of this study is to examine how addictive tendencies may be manifested in two of these areas, love and alcohol use. The purpose is not to explore the etiology of addiction or proneness to addiction, nor is this study aimed at ruling in or out biological explanations of etiology. The motivation for this line of research is the desire to understand the extent to which the tendency to use/abuse alcohol is also manifested in the tendency to use/abuse romantic relationships.

Alcohol use is measured in this study by a standard Quantity, Frequency, Type scale. Alcohol abuse/dependence is measured by matching answers on the Information on Drinking Questionnaire (taken from the Drinking and Drug History

Questionnaire-Revised by Zucker, Noll & Fitzgerald, 1989) to the diagnostic criteria in the DSM-III-R (American Psychiatric Association, 1987). The tendency to be overly-involved/dependent in romantic relationships is measured by instruments tapping constructs on the infatuation continuum (codependency, love addiction, and limerence).

To my knowledge research in this specific area has not been conducted. Furthermore, the literature in the general area of infatuation in love relationships has for the most part been compiled from clinical observations. It is hoped that this study will contribute empirical data to this literature.

## HYPOTHESES

Specific hypotheses are as follows:

1. With the consumption of higher amounts of alcohol there will be a tendency to score higher on all measures of infatuation on our continuum (limerence, codependency, and love addiction.
2. It is anticipated that relative to men, women will score higher on all measures of infatuation on the continuum, as well as on the love measure.
3. The measures used in this study will show construct validity in that factor analysis will yield meaningful dimensions.

An attempt will be made to develop a measurement model of infatuation using confirmatory factor analysis.



## METHOD

### SUBJECTS

Subjects were 141 male students and 271 female students recruited from psychology undergraduate courses at Michigan State University, who received credit in their class for participating. Four hundred and twelve subjects completed the study. These subjects were tested in groups of approximately 50 at a time over a three week period.

### PROCEDURE

Subjects were seated in alternate seats with an empty seat between subjects, to decrease the effects of social influences caused by viewing neighbors' answers, as happened in the pilot study. Ten measures were administered with an approximate testing time of one hour to one hour and a half. The testing was preceded by a 10 minute introduction that included instructions for completing the questionnaires (see Appendix A). When subjects had completed their questionnaires, the forms were checked by the primary investigator or a research assistant for missing data or other errors. Subjects who had missing data were asked to complete those items when appropriate. On measures examining

romantic relationship issues concerning particular partners, subjects were asked to answer the questions concerning either their current romantic relationship or if they were not currently involved, their most significant relationship within the last 3 to 4 years. Those subjects who had never been involved in a romantic relationship were asked to fill out the questionnaires that were applicable to them. Subjects who abstain from drinking alcohol were asked to write "I don't drink" on the two alcohol measures and to fill out the questionnaire as well. Subjects whose mother or father is an alcohol abstainer were also asked to write "My mother [or father] doesn't drink" on the appropriate questionnaires. Subjects were also asked to fill out a consent form (see Appendix B), and a personal background questionnaire concerning their age, sex, family income level and parental education level, etc. (see Measures section below for complete details). The questionnaires were administered in different orders to prevent the items of one scale from systematically affecting responses to subsequent scales. Counterbalancing was achieved by using 3 orders of questionnaire presentation and rotating the sequential position of questionnaires in a standard ABC design. The number of subjects within each order ended up being fairly equal (Order 1 = 129, Order 2 = 149, Order 3 = 132).

## MEASURES

## **I. ALCOHOL MEASURES**

### **A. Measuring the quantity of alcohol consumed**

A standard alcohol quantity, frequency, type questionnaire was used to measure alcohol consumption (see Appendix C). The questionnaire used in the pilot study and used here with slight revision, was one used in research involving sons of alcoholics at Indiana University in Bloomington, Indiana. Subjects were asked about their drinking practices in the past 6 months. A sample item is: "How often did you drink wine coolers in the last 6 months?" The answers to this question range from A (every day) to E (less than once a week). Another sample question is: "When you drank wine coolers, how many did you usually have at one time, on the average?" Answers to this question range from A (8 or more wine coolers) to E (one or fewer wine coolers). The questionnaire is scored by multiplying quantity times frequency for each of the types of alcohol investigated (beer, wine coolers, wine, and liquor) and adding these totals together for a cumulative scale score (Dielman, Leech, Miller & Moss, 1991).

This 12-item measure has been slightly revised from the questionnaire used in the pilot study by the addition of 2 items concerning beer consumption. This was done to give an equal number of questions concerning beer, wine, wine coolers, and liquor drinking practices. Additionally, the ceiling was raised from 8 to 16 for the greatest amount of

beer (item #3), wine coolers (#6), wine (#9) and liquor (#12) drank at any one particular time, with each other option for that question also raised correspondingly.

It is well known in the alcohol literature that any self-report questionnaire concerning alcohol consumption will be subject to distortions caused by denial (eg., Midanik, 1982; Richman & Warner, 1985). It should be kept in mind that these distortions will probably have the effect of giving lower alcohol consumption amounts at the upper end of the alcohol consumption continuum as it exists in reality on this questionnaire.

#### B. Measuring the degree of alcohol problems

The Information on Drinking questionnaire (Zucker, Noll & Fitzgerald, 1989) was used to measure the extent of alcohol problems for the subject himself/herself. This is an adaptation from the "Information on Drinking and Other Drug Use" questionnaire used by Robert A. Zucker in the Michigan State-University of Michigan Longitudinal Study. It is part of a self-report questionnaire designed to explore drinking and drug use patterns, and problems associated with drinking and other drugs. The section of the questionnaire used in this study includes a few questions concerning quantity of alcohol consumed, and questions concerning problems associated with drinking alcohol. A sample item is "How old were you the first time you ever drank enough to get drunk?" The general problem question is "Have you ever had any of

the following happen because of your drinking" (e.g., Missed school or time on job, Lost friends)? The respondent answers with yes or no. If the answer is yes, the respondent is asked how many times, and at what age was the first and also the most recent occurrence. An algorithm is then used to diagnose abuse, or mild, moderate, or severe dependence according to DSM III-R (American Psychiatric Association, 1987) criteria (see Appendix D).

### C. Measuring paternal alcoholism

The Short Michigan Alcoholism Screening Test-Fathers Version (F-SMAST)(Sher & Descutner, 1986) was used to screen for paternal alcoholism. This is an adaptation of the 13 item Short Michigan Alcoholism Screening Test (SMAST) (Selzer, Vinokur, & Van Rooijen, 1976) for children to assess their father's drinking practices. A sample item is "Was your father able to stop drinking when he wanted to?" The scale is answered in a yes-no format. A cut-off score of 5 (5 and above) is seen as indicative of paternal alcoholism. The authors report that this scale has good internal consistency (coefficient alpha = .87), good test-retest agreement using a cut score of 5 ( $k = .86$ ,  $Y = .89$ ) and good intersibling agreement ( $k = .79$ ,  $Y = .87$ ). The authors report that the scale also shows concurrent validity with both the Family History-Research Diagnostic Criteria (FH-RDC) (Endicott, Andreasen, & Spitzer, 1975), and with father's scores on the SMAST (see Appendix E). (For more

information on the validity of this scale see Crews & Sher, 1992.)

#### D. Measuring maternal alcoholism

The Short Michigan Alcoholism Screening Test-Mothers Version (M-SMAST)(Sher & Descutner, 1986) was used to screen for maternal alcoholism. This scale is exactly the same as the F-SMAST except that it has been adapted for children to assess their mother's drinking practices. The authors report that this scale has good internal consistency (coefficient  $\alpha = .74$ ), although not as good as with the F-SMAST. They also report very good test-retest agreement using a cut score of 5 ( $k = 1.00$ ,  $Y = 1.00$ ) and good intersibling agreement ( $k = .85$ ,  $Y = .92$ ). The authors report that the scale also shows concurrent validity with both the Family History-Research Diagnostic Criteria (FH-RDC) and with mother's scores on the SMAST (see Appendix F). (For more information on the validity of this scale see Crews & Sher, 1992.)

## **II. INFATUATION AND LOVE MEASURES**

### A. Measuring limerence

From a scale designed by Steffen, McLaney and Hustedt (1982) and based on Tennov's (1979) concept of limerence, Feeney and Noller (1990) took the original 42 items of the measure they used, performed a principal axis analysis and eliminated 9 items based on low communalities. The remaining

33 items were factor analyzed and yielded 4 factors accounting for 41.98% of the total variance. These factors were interpreted as Obsessive Preoccupation, Self-Conscious Anxiety, Emotional Dependence, and Idealization. Feeney & Noller (1990) state that factor scores on these factors are what is necessary for an understanding of the concept of limerence, so that no total score for limerence was used. A sample item is "I feel awkward, confused, and shy when I am around someone to whom I am strongly attracted." The measure is scored on a Likert-type scale (1-strongly disagree to 6-strongly agree), items for each factor were summed for a total factor score, with several items being reverse scored. Each subject then received four scores from this measure (see Appendix G).

#### B. Measuring romantic love

The Romantic Love Scale (L1)(Rubin, 1970) was included in order to see how the concept of romantic love relates to the points on the infatuation continuum. This is a 13-item measure of romantic love based on affiliative and dependent needs (eg., If I could never be with \_\_\_\_\_, I would feel miserable), a predisposition to help (eg., If \_\_\_\_\_ were feeling badly, my first duty would be to cheer him (her) up), and exclusiveness and absorption (eg., I feel that I can confide in \_\_\_\_\_ about virtually everything). The test uses a 9-item Likert-typed scale (1-not at all true; disagree completely to 9-definitely true; agree completely)

with higher scores indicating greater amount of love towards the partner. This scale was reported to have high internal consistency with coefficient alpha's of .84 for women and .86 for men. The author states that the scale has content, construct, concurrent/convergent, discriminant, and predictive validity. Content validity was shown in that an attempt was made to include items that were grounded in the existing theoretical and popular ideas of romantic love. Construct validity was attested to by the fact that love for one's dating partner was only slightly correlated with love for one's same-sex friend, and was uncorrelated with scores on the Marlowe-Crowne Social Desirability Scale (Crowne & Marlowe, 1960). Concurrent/convergent validity was shown in that love scores were highly correlated with respondents' reports of whether or not they were "in love," and with an estimation of the probability that they would marry their current dating partners. Discriminant validity was demonstrated in that the love scale had high internal consistency and was only moderately correlated with the liking scale ( $r = .60$  for men and  $r = .39$  for women). Additionally, liking scores were only moderately correlated with respondents' reports of whether or not they were "in love," and with estimates of the likelihood that they would marry their current dating partners. Lastly, in a separate study, predictive validity was reportedly shown in that college dating couples who loved each other to a high degree



(as indicated by their love scale scores), were found to spend more time gazing into each others' eyes than couples who loved each other to a lesser degree (see Appendix H). (For more information on the reliabilities and validities of the scale see Rubin, 1970.)

#### C. Measuring love addiction

The Attitudes to Close Relationships Scale (Love Addiction) (Feeney & Noller, 1990) was used to measure the degree of addictive love tendencies. This measure was developed from the criteria of Peele and Brodsky (1975), and items adapted from Cowan and Kinder (1985). It consists of 13 items (eg., I find that longing for or pursuing a partner is usually much more exciting than feeling sure of a partner's love), 3 of which are reverse scored. The measure is scored on a Likert-type scale ( 1-strongly disagree to 6-strongly agree). In factor analysis of the scale, Feeney and Noller (1990) found 2 othogonal factors that explained 34.90% of the total variance. These factors were interpreted as Reliance on Partner and Unfulfilled Hopes (see Appendix I).

#### D. Measuring codependency

The Spann-Fischer Codependency Scale (Fischer, Spann & Crawford, 1991) was constructed based on a definition of codependency "as a dysfunctional pattern of relating to others with an extreme focus outside of oneself, lack of expression of feelings, and personal meaning derived from

relationships with others" (p. 87). It is a 16 item measure using a 6-point Likert-typed scale (1-strongly disagree to 6-strongly agree) wherein higher scores reflect greater codependency. In development of the scale, Spann and Fischer reported internal consistency Cronbach alphas of .73 and .80 for 2 of the groups. The authors reported that the scale demonstrated content, construct and concurrent/convergent validity. Content validity was shown both through expert review of the definition, and through the fact that the factor loading patterns supported the validity of the concept. The definitional elements of codependency formed coherent patterns in the factor loadings as suggested by the definition. Construct validity was shown in that known groups (recovering codependents vs. self-identified active codependents) differed significantly on the measure. Concurrent/convergent validity was demonstrated by the fact that some measures thought to be related to codependency were related, but not so highly that they could be considered duplicates of codependency. Lastly, discriminant validity was reportedly shown in that measures thought to be unrelated to codependency were unrelated to this measure (see Appendix J). (For more information on the reliabilities and validities of this scale see Fischer, Spann & Crawford, 1991.)

### **III. SOCIODEMOGRAPHIC MEASURE**

**A. Gathering demographic and general relationship information**

A Personal Background Questionnaire was used to assess participants' age, sex, race, college major, family income and parents' highest level of education completed, number of love relationships, length of the longest love relationship, whether or not they were in a romantic relationship at the time of the study, number of infatuations, and time periods for the first and most recent infatuations. The definition of infatuation was written by the primary investigator by combining various aspects of infatuation from the literature review (see Appendix K).

Note: The measures as they appear in the appendix were slightly modified in some cases by the addition of spaces between items/questions, and the insertion of blanks for responses, on the actual forms the subjects filled out. Additionally, the names of the questionnaires were often abbreviated in order not to bias the subjects responses due to ideas they may have gotten from the name of the questionnaire (e.g., Alcohol Quantity Frequency Type Scale = AQFT Questionnaire, Romantic Love Scale L1 = The R-L Questionnaire). Other very minor changes were also made.

## RESULTS

### Missing Data and Outliers

Before beginning analyses, all variable files were screened for missing data and outliers. Missing data that were replaced were estimated with a series mean procedure wherein missing values were replaced with the mean for the entire series. No more than five percent of the values were estimated in this manner for any of the variables. Missing data were not replaced for all the variables in the study. Outliers were defined as nonadjacent values falling outside a normal curve superimposed upon the frequency distribution histogram for each variable. No outliers were removed unless they were obviously not possible or extremely improbable of being correct (eg., age of first infatuation = 1, length of longest love relationship for a 19 year old = 282 months). No more than 2 of these improbable outliers were removed for any of the variables. Approximately 90% of the variables were not affected by this procedure.

### Demographic Characteristics

Because of the anticipated importance of male-female differences on many of the variables studied here, sociodemographic and descriptive statistics are broken down into male and female categories in the tables. Table 1

presents the sociodemographic characteristics of the subjects used in this study. Of note is the substantial sample homogeneity with respect to age, which is indicated by the means and standard deviations, and was expected due to the nature of the population sampled, primarily undergraduate underclassmen (68% of the sample). Under college major, in addition to the three largest groups (psychology, no preference, and pre-med/physiology) the "other" category includes the additional 61 types of majors (eg., business, marketing, economics, etc.) listed on the personal background questionnaire.

Table 2 displays information regarding religious and ethnic characteristics of the sample. With regard to ethnicity, the majority (84%) of the sample were Caucasian, rendering analyses of ethnic differences on the dependent variables of interest in this study statistically inappropriate, in terms of generalizability to the population at large.

Table 3 depicts the socioeconomic characteristics of the sample. Of note is that a majority (58%) of the subjects in this sample come from families with a total family income over \$60,000. Less than 4% of the subjects in the sample come from families with a total family income of less than \$19,999.

#### Descriptive Statistics

Table 4 provides information regarding alcohol-related

lifetime diagnoses among the subjects in the study sample. Based on subject's answers on the information on drinking questionnaire and the alcohol quantity, frequency, type scale, subjects were assigned to one of six groups. All subjects who indicated on the alcohol questionnaires that they didn't drink, marked all "e's" on the quantity, frequency, type scale, and reported no symptoms on the information on drinking questionnaire were classified as "abstainers." Any subject who reported any symptoms was given the diagnosis based on the reported symptoms. Subjects who were not abstainers and did not meet DSM III-R criteria for alcohol abuse or dependence based on the algorithm described earlier were classified as "no diagnosis." The diagnostic categories were labeled alcohol abuse, and either mild, moderate, or severe dependence (see Appendix L). According to the protocol in using the algorithm based on DSM-III-R criteria, any subject whose classification appeared to be inaccurate was labeled "questionable diagnosis" and then decisions about diagnosis were made as a clinical judgment by the primary investigator after thorough examination of all relevant data. There were approximately 120 subjects whose diagnosis was marked "questionable." For the purpose of attaining inter-rater reliability of these diagnoses, twenty subjects who were initially given "questionable diagnoses" were randomly chosen and were blindly re-diagnosed by a senior clinician on the staff of

the Michigan State-University of Michigan Longitudinal Study. Percent agreement for exact match of diagnosis was 70%. The percent agreement for agreement within one level of classification was 100%, and percent agreement of the decision of diagnosis versus no diagnosis was 90%. The correlation (Pearson R) between the final diagnosis/classification given and the diagnosis/classification given based on strict adherence to the algorithm was  $r = .84$ .

Table 5 presents descriptive information regarding romantic relationship characteristics of the sample. It should be noted that any differences on these variables between men and women should be interpreted with caution given the mean age of 19.5 years. Some interesting patterns in the data did emerge, however. The length of the subject's longest romantic relationship was measured in months, while the number of infatuations are approximations wherein the mean of the interval for each of the nine choices on the personal background questionnaire was used as the total score for each subject.

Table 1

**Sociodemographic Characteristics of the Sample (N = 412)**

		<u>M</u>	<u>SD</u>	<u>Range</u>
<b><u>Age</u></b>		19.50	2.16	16-46
<b>Men</b>		20.04	2.32	16-35
<b>Women</b>		19.21	2.01	17-46

	<b>N</b>	<b>% of sample</b>
<b><u>Sex</u></b>		
<b>Men</b>	141	34.2
<b>Women</b>	271	65.8

	<b>Male</b>	<b>% of group</b>	<b>Female</b>	<b>% of group</b>
<b><u>Major</u></b>				
<b>Psychology</b>	25	17.7	62	22.9
<b>No Preference</b>	12	8.5	38	14.0
<b>Pre-med/Physiology</b>	10	7.1	15	5.5
<b>Other</b>	94	66.7	156	57.6
<b><u>Class</u></b>				
<b>Freshman</b>	42	29.8	109	40.2
<b>Sophomore</b>	38	27.0	91	33.6
<b>Junior</b>	36	25.5	51	18.8
<b>Senior</b>	20	14.2	13	4.8
<b>5th year Senior</b>	5	3.5	7	2.6



Table 2

**Religious and Ethnic Characteristics of the Sample (N = 412)**

	Male (N = 141)		Female (N = 271)	
	<u>n</u>	% of group	<u>n</u>	% of group
<b><u>Ethnicity</u></b>				
Asian	7	5.0	8	3.0
Black	7	5.0	18	6.6
Hispanic	2	1.4	4	1.5
Native American	0	--	4	1.5
White	122	87.1	235	86.7
Other	2	1.4	2	.7
Missing	1	.7	0	--
<b><u>Religion</u></b>				
Greek Orthodox	1	.7	3	1.1
Jewish	9	6.4	19	7.0
Protestant	29	20.6	53	19.6
Roman Catholic	59	41.8	99	36.7
Other	24	17.0	56	20.7
None	19	13.5	40	14.8

Table 3

Socioeconomic Characteristics of the Sample (N = 412)

	Male (N = 141)		Female (N = 271)	
	<u>n</u>	% of group	<u>n</u>	% of group
<u>Father Education</u>				
Less than high school	5	3.6	16	5.9
High school degree	19	13.6	59	21.8
Some college	23	16.4	45	16.6
4 year college degree	41	29.3	76	28.0
Masters degree	38	27.1	49	18.1
Ph.D., M.D., etc.	14	10.0	26	9.6
<u>Mother Education</u>				
Less than high school	5	3.6	11	4.1
High school degree	28	20.0	52	19.2
Some college	45	32.1	87	32.1
4 year college degree	38	27.1	60	22.1
Masters degree	21	15.0	53	19.6
Ph.D., M.D., etc.	3	2.1	8	3.0
<u>Total Family Income</u>				
Less than \$19,999	4	2.9	12	4.5
\$20,000 to \$39,999	17	12.1	37	13.8
\$40,000 to \$59,999	31	22.1	68	25.3
\$60,000 to \$79,999	35	25.0	70	26.0
\$80,000 and over	53	37.9	82	30.5

**Table 4**

**Descriptive Statistics Pertaining to Alcohol Diagnoses in  
the Study Sample (N = 141 Men and 271 Females)**

	<u>n</u>	% of group	% of group receiving dx
<b>MEN</b>			
<b>Abstainers</b>	15	10.6	--
<b>No Diagnosis</b>	40	28.4	--
<b>Abuse</b>	23	16.3	26.7
<b>Dependence-Mild</b>	30	21.3	34.9
<b>Dependence-Moderate</b>	23	16.3	26.7
<b>Dependence-Severe</b>	10	7.1	11.6
<b>WOMEN</b>			
<b>Abstainers</b>	12	4.4	--
<b>No Diagnosis</b>	125	46.1	--
<b>Abuse</b>	47	17.3	35.1
<b>Dependence-Mild</b>	48	17.7	35.8
<b>Dependence-Moderate</b>	33	12.2	24.6
<b>Dependence-Severe</b>	6	2.2	4.5

**Note: Diagnoses based on DSM III-R criteria**

Table 5

**Descriptive Romantic Relationship Characteristics of the  
Study Sample (N = 412)**

	<u>M</u>	<u>SD</u>	<u>Range</u>
<b><u>Number of romantic love relationships</u></b>			
Men	2.97	2.52	1-20
Women	2.84	2.60	1-32
<b><u>Length of longest romantic relationship<sup>a</sup></u></b>			
Men	16.28	14.92	1-82
Women	19.36	15.64	0-84
<b><u>Number of infatuations<sup>b</sup></u></b>			
Men	10.54	9.06	0-30
Women	6.43	7.12	0-30
<b><u>Age of first infatuation</u></b>			
Men	13.26	3.09	5-21
Women	13.79	2.73	5-20
<b><u>Age of last infatuation</u></b>			
Men	19.25	2.34	15-32
Women	17.71	1.74	11-22

<sup>a</sup>In months

<sup>b</sup>Based on approximations

### Confirmatory Factor Analysis

It was determined that the first step in the inferential analysis should be a construct validity study wherein a measurement model would be established with confirmatory factor analysis. After the measurement model was established the resulting constructs/factors would be treated as the major dependent variables in later analyses. This decision was made primarily because of the exploratory nature of this research and resulted in testing Hypothesis #3 before the other 2 hypotheses.

Confirmatory factor analysis was used rather than exploratory factor analysis for many reasons. Since confirmatory factor analysis creates a measurement model that indicates which measurements are supposed to assess each construct and then tests that model (J. E. Hunter, personal communication, Spring, 1992), this model is directly linked to reliability theory and the theory of construct validity. Two major problems with exploratory factor analysis are that it typically underfactors, or produces fewer factors than there are underlying factors in the data, and it also has no "residual cluster" for bad items, resulting in bad items being forced into the clusters (Hunter & Gerbing, 1982). Using confirmatory factor analysis results in bad or contaminated items being eliminated from the measurement model. For a detailed discussion of the pros and cons of using exploratory and confirmatory factor

analytic procedures see Hunter (1980) or Hunter and Gerbing (1982).

It was determined to use the "CFA" component of the software program "Package" (Hunter & Cohen, 1969) which utilizes centroid oblique multiple groups analysis, rather than full information maximum likelihood analytic methods such as used in LISREL (Joreskog & Sorbom, 1978), to run the confirmatory factor analysis. For a detailed discussion of the arguments indicating that centroid multiple groups analysis is most often the preferred method, see Hunter (1977).

Establishment of a measurement model that best fits the data using "CFA" in this study involved beginning with the four main dependent variables (romantic love, love addiction, limerence, and codependency) as the four factors in the initial measurement model to be tested, and then after examination of the item-factor correlation matrix, decisions were made regarding how many factors or constructs to retain, and which items, or measurements of the constructs, to retain and which ones to remove from the model. Items which had low item-factor correlations on the factor they were initially assigned to, or were contaminated were eliminated from the next "run" or next measurement model. After the initial measurement model was tested, it was determined to merge the constructs of romantic love and love addiction because of the very extensive overlap of the

high factor loadings between the two factors (see Appendix M for the initial item-factor correlations). This merged factor was labeled love/love addiction for subsequent models tested. This result was not entirely unexpected because of the tendency in previous research involving love styles for high factor correlations and merging between some styles (eg., Thompson & Borrello, 1987). Six subsequent models were tested before it was determined that a best-fitting model had been reached. It should be noted that in the process of determining which items to retain and which ones to remove from a factor, the standard of items loading .45 or higher was adopted as an initial criterion for retention, unless the item was contaminated by similar loadings on one or more factors. A conservative approach was taken regarding item deletion in that items were retained that had factor loadings of more than about .20 on the factor, after a thorough content analysis revealed that the item tapped an essential component of the construct, and it was also not contaminated by high loadings on other factors. For example, the item "I hide my true feelings from someone to whom I am strongly attracted, because I fear rejection" was retained on the limerence factor with a factor loading of .41 because it directly taps the "fear of rejection" component that is essential to the concept of limerence. Two further examples were "Sometimes I get focused on one person to the extent of neglecting other relationships and responsibilities" and "I

often put the needs of others ahead of my own," both of which had factor loadings of .39 on the codependency factor. These items were retained because they tap the "extreme focus outside of oneself" dimension of codependency and were not contaminated with other factors.

Table 6 presents the final factor correlations for the three factors retained in the final measurement model; love/love addiction, limerence, and codependency. The standard score coefficient alphas for the three factors were .75, .79, and .77, respectively. Appendix N gives the final item-factor correlations for each of these factors.

#### Gender Differences

The software program SPSS-X was used for all analyses involving the main dependent variables following the confirmatory factor analysis and creation of the final measurement model. Table 7 illustrates the descriptive statistics involving love/love addiction, limerence, and codependency, broken down between males and females. Both visual inspection of the normal probability plots and the detrended normal probability plots regarding these variables, and statistical tests of normality, revealed fairly normal distributions except for male scores on love/love addiction,  $K-S \text{ (Lilliefors)} = .08 \text{ (141, } p < .05)$ . As is clear from visual inspection of Table 7, there was significant heterogeneity of variance between male and female scores on all 3 of the main dependent variables



(Levene statistic: love/love addiction = 5.44,  $p < .05$ ; limerence = 5.47,  $p < .05$ ; codependency = 7.71,  $p < .01$ ). Despite this statistical significance, it was decided that because of the large sample size and normality of the distributions, no data transformations would be necessary to account for the heterogeneity problem.

Table 8 displays the results of t-tests performed to test for gender differences on each of the main dependent variables, as well as on other key dependent variables in the study. The variables displayed are codependency (Cod), love/love addiction (L/LA), limerence (Lim), alcohol consumption (Cons), approximated number of infatuations (Inf), and number of romantic love relationships (R L). The first four tests listed were run as one-tailed (directional) tests, while the last 2 tests were two-tailed (non-directional) tests. Under the Men and Women columns are given the means, with the standard deviations underneath the mean values in parentheses. The statistic D denotes the actual raw score difference between the means for males and females on each of the dependent variables. The standard score mean difference (d) is also regarded as a measure of the effect size. For comparing the standard deviations between men and women, the statistic v is given and is simply a comparison ratio. The F values given are another way of testing whether the variances of the distributions are homogeneous. These were determined by squaring the

standard deviations for both men and women, and then dividing the larger value by the smaller one to get an F ratio. It is clear from Table 8 that there was significant heterogeneity of variance for all of these dependent variables except for the number of romantic love relationships (R L) The last column of Table 8 lists the confidence intervals for the point biserial correlation between the binary variable (sex) and the various comparison (dependent) variables. It should be noted that the confidence intervals for the directional tests were given at the 90% level of confidence, and those for the non-directional tests were given at the 95% level of confidence.

The second hypothesis of this study, i.e., that women would score higher on all measures of infatuation on the continuum, held up only for codependency,  $t(410) = 2.86$ ,  $p < .01$ . Additionally, significant gender differences were found for alcohol consumption,  $t(410) = 3.73$ ,  $p < .001$ , and for the approximated number of infatuations,  $t(375) = 4.52$ ,  $p < .001$ , both resulting in men having significantly higher scores than women.

**Table 6****Confirmatory Factor Analysis Final Factor Correlations**

	Factor 1	Factor 2	Factor 3
Factor 1 (Love/love addiction)	1.00	.34	.38
Factor 2 (Limerence)	---	1.00	.46
Factor 3 (Codependency)	---	---	1.00

Table 7

Descriptive statistics for Love/love addiction, Limerence,  
and Codependency Following Confirmatory Factor Analysis

	<u>M</u>	<u>SD</u>	<u>Var</u>	<u>Range</u>	<u>Min</u>	<u>Max</u>
<u>Codependency</u>						
Men	37.21	7.92	62.69	39	17	56
Women	39.74	9.50	90.23	49	16	65
<u>Limerence</u>						
Men	72.74	11.76	138.30	58	45	103
Women	72.21	13.77	189.68	71	35	106
<u>Love/love addiction</u>						
Men	76.74	11.09	123.00	54	41	95
Women	76.60	9.74	94.79	57	44	101

Table 8

Independent Samples T-tests Exploring Gender Differences

	D. V.	Men	Women	D	d	t	v	F	Conf.r
<u>Directional Tests</u>									
Cod	37.21 (7.92)	39.73 (9.50)	2.52	.28	2.86**	1.20	1.49**	(.05, .21)	a
L/LA	76.74 (11.09)	76.60 (9.74)	-.14	-.01	-.12	.88	1.30*	(-.09, .08)	a
Lim	72.74 (11.76)	72.21 (13.71)	-.53	-.04	-.41	1.17	1.37*	(-.10, .06)	a
Cons	12.89 (7.05)	10.32 (5.74)	2.57	.41	3.73***	1.23	1.51**	(.11, .27)	a
<u>Non-directional Tests</u>									
Inf	10.54 (9.07)	6.43 (7.12)	4.11	.52	4.52***	1.27	1.62**	(.14, .35)	b
R L	2.97 (2.52)	2.84 (2.60)	.13	.05	.48	.97	1.06	(-.07, .12)	b

a 90% confidence interval

b 95% confidence interval

\*p &lt; .05, \*\*p &lt; .01, \*\*\*p &lt; .001.

Cod = codependency

L/LA = love/love addiction

Lim = limerence

Cons = alcohol consumption

Inf = approximated number of infatuations

R L = number of romantic love relationships

Note: The F value given above is a ratio of the variances and is provided as a test for homogeneity of variance.

### Correlations Among the Major Variables in the Study

Table 9 lists the correlations (Pearson R) among the major independent and dependent variables in the study. It should be noted that the correlations between the 3 factors that emerged from the confirmatory factor analysis are somewhat different from those correlations given in Table 6 because the correlations given in Table 6 were corrected for attenuation.

The variables listed in Table 9 are love/love addiction (L/LA), limerence (Lim), codependency (Cod), number of romantic love relationships (R L), the longest romantic love relationship (Long), the approximated number of infatuations (Inf), age of first infatuation (Fstinf), age of last infatuation (Lstinf), alcohol consumption (Cons), alcohol diagnosis (AlcDx), father's education level (Fathed), mother's education level (Mothed), and total family income (Totinc).

Since many of the correlations given in Table 9 are not related to this study's hypotheses, an exhaustive elaboration of the relationships among these variables is precluded at this time. It may be useful first to explore the correlations related to the first hypothesis in the study, that with the consumption of higher amounts of alcohol there will be a tendency to score higher on all measures of infatuation on the continuum; limerence, codependency, and love addiction.

Alcohol consumption was not significantly related to love/love addiction, codependency, or limerence when considering the Pearson correlations. In fact, scores on the love/love addiction factor and on the limerence factor actually declined with increasing amount of alcohol consumed. It should be kept in mind that the love/love addiction factor is certainly not a valid measure of the construct of love addiction and therefore analyses involving this factor should be interpreted carefully. Interestingly, increasing problems with alcohol as indicated by the alcohol diagnosis variable did significantly predict codependency scores ( $r = .09$ ,  $p < .05$ , one-tailed) and the number of romantic love relationships ( $r = .13$ ,  $p < .01$ , two-tailed). Importantly, problems with alcohol and alcohol consumption were highly correlated as expected ( $r = .65$ ,  $p < .001$ , one-tailed). More closely related to hypothesis 1 is the relationship between alcohol consumption and the approximated number of infatuations. Consideration of the Pearson correlation indicates that the number of infatuations significantly increased with alcohol consumption ( $r = .11$ ,  $p < .05$ , one-tailed). Related to this phenomenon, increasing problems with alcohol also was significantly positively related to the number of infatuations ( $r = .11$ ,  $p < .05$ , two-tailed).

#### Multiple Regression Analysis

Since there were significant gender differences found

on several of the key variables in this study, it was decided to run multiple regression analyses on relationships among variables related to Hypothesis 1, while controlling for effects of gender. This technique would be a more powerful test of the relationship between alcohol consumption, problems associated with alcohol use, and the main dependent variables in the study, after the confirmatory factor analysis.

Tables 10, 11, and 12 display the results of multiple regressions predicting codependency, limerence, and love/love addiction (respectively) from alcohol consumption, variables related to problems with alcohol use, and gender. These three tables are broken down into four parts with the first section (a) giving data relevant to the multiple regression predicting the pertinent dependent variable from alcohol consumption and gender. The second section (b) concerns the data relevant to the multiple regression predicting the dependent variable from problems associated with alcohol as designated by the six levels of problems given in Table 4 and Appendix L, and gender. The third section (c) includes data regarding the independent variables of alcohol use (binary, use vs. abstention) and gender, predicting the dependent variable, and the fourth section (d) displays the data from the multiple regression predicting the dependent variable from the binary variable of diagnosis vs. no diagnosis, and gender.



The use of multiple regression procedures proved to be a good decision, providing a better picture of analyses related to Hypothesis 1. Although the Pearson correlation between alcohol consumption and the main dependent variables; codependency, limerence, and love/love addiction were insignificant, when controlling for the effects of gender it was found that alcohol consumption did significantly predict codependency scores (see Table 10). Additionally, whether a person drinks alcohol or abstains, whether they have an alcohol diagnosis or not, and problems associated with alcohol use also significantly predicted codependency with effects of gender being controlled. No significant results were found when limerence and love/love addiction were the dependent variables. The first hypothesis of this study, i.e., that with the consumption of higher amounts of alcohol there will be a tendency to score higher on all measures of infatuation on the continuum; limerence, codependency, and love addiction, held up only for codependency.

Table 13 gives the data from the multiple regression predicting the approximated number of infatuations from alcohol consumption, while controlling for gender. Although the Pearson correlation between alcohol consumption and the number of infatuations was significant, inspection of Table 13 shows that this relationship is really insignificant, when the effects of gender are controlled.

Table 9

Correlations (Pearson R) Between Variables in the Study

	L/LA	Lim	Cod	R L	Long	Inf	Fstinf	Lstinf
L/LA	1.00	.11*	.14**	-.04	.06	-.04	-.07	-.16**
Lim	.11*	1.00	.50***	-.10*	-.20***	.14**	-.15**	.03
Cod	.14**	.50***	1.00	-.10*	-.06	.03	-.04	.02
R L	-.04	-.10*	-.10*	1.00	.05	.17**	.01	.15**
Long	.06	-.20***	-.06	.05	1.00	-.02	.02	.15**
Inf	-.04	.14**	.03	.17**	-.02	1.00	-.49***	.32***
Fstinf	-.07	-.15**	-.04	.01	.02	-.49***	1.00	.03
Lstinf	-.16**	.03	.02	.15**	.15**	.32***	.03	1.00
Cons	-.07	-.01	.07	.08	-.02	.11*	.04	.10*
AlcDx	.02	.01	.09*	.13**	-.01	.11*	.06	.14**
Sex	-.01	-.02	.13**	-.02	.09	-.24***	.09	-.35***
Age	-.13*	-.11*	-.06	.22***	.18***	.09	.13*	.70***
Class	-.12*	-.15**	-.03	.01	.23***	.04	.09	.48***
Fathed	.01	.04	-.08	-.04	-.14**	.04	-.09	-.08
Mothed	-.06	.03	-.08	.03	-.06	.08	-.06	-.05
Totinc	-.01	-.01	-.03	.01	-.05	.08	-.05	-.06

Table 9 cont.

\*p &lt; .05, \*\*p &lt; .01, \*\*\*p &lt; .001

Table 9 continued

	Cons	AlcDx	Sex	Age	Class	Fathed	Mothed	Totinc
L/La	-.07	.02	-.01	-.13*	-.12*	.01	-.06	-.01
Lim	-.01	.01	-.02	-.11*	-.15**	.04	.03	-.01
Cod	.07	.09*	.13**	-.06	-.03	-.08	-.08	-.03
R L	.08	.13**	-.02	.22***	.01	-.04	.03	.01
Long	-.02	-.01	.09	.18***	.23***	-.14**	-.06	-.05
Inf	.11*	.11*	-.24***	.09	.04	.04	.08	.08
Fstinf.	.04	.06	.09	.13*	.09	-.09	-.06	-.05
Lstinf.	.10*	.14**	-.35***	.70***	.48***	-.08	-.05	-.06
Cons	1.00	.65***	-.19***	-.03	-.01	.15**	.03	.16**
AlcDx	.65***	1.00	-.11*	.02	.07	.05	.01	.05
Sex	-.19***	-.11*	1.00	-.18***	-.17***	-.12*	.03	-.08
Age	-.03	.02	-.18***	1.00	.52***	-.14**	-.12*	-.14**
Class	-.01	.07	-.17***	.52***	1.00	-.04	-.08	-.06
Fathed	.15**	.05	-.12*	-.14**	-.04	1.00	.52***	.42***
Mothed	.03	.01	.03	-.12*	-.08	.52***	1.00	.31***
Totinc	.16**	.05	-.08	-.14**	-.06	.42***	.31***	1.00

\*p < .05, \*\*p < .01, \*\*\*p < .001

Table 10

Summary of Multiple Regressions Predicting Codependency  
Scores from Alcohol Consumption, Gender, and Problems with  
Alcohol (N = 412)

Predictor	<u>Beta</u>	<u>t</u>	<u>R</u>	<u>F</u>
<u>a: Regression Predicting Codependency from Alcohol</u> <u>Consumption While Controlling for Effects of Gender (n =412)</u>				
Consumption	.10	1.99*	.16	5.67**
Gender	.15	3.05**		
<u>b: Regression Predicting Codependency from Problems with</u> <u>Alcohol While Controlling for Effects of Gender (n = 412)</u>				
Problems	.10	2.11*	.17	5.90**
Gender	.14	2.94**		
<u>c: Regression Predicting Codependency from Alcohol Use While</u> <u>Controlling for Effects of Gender (n = 412)</u>				
Use vs. Abst.	.10	2.03*	.16	5.74**
Gender	.12	2.45*		
<u>d: Regression Predicting Codependency from Alcohol Diagnosis</u> <u>While Controlling for Effects of Gender (n = 412)</u>				
Dx vs. No Dx	.13	2.72**	.19	7.41**
Gender	.15	3.01**		

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

Table 11

Summary of Multiple Regressions Predicting Limerence Scores  
from Alcohol Consumption, Gender, and Problems with Alcohol  
(N = 412)

Predictor	<u>Beta</u>	<u>t</u>	<u>R</u>	<u>F</u>
<u>a: Regression Predicting Limerence from Alcohol Consumption</u> <u>While Controlling for Effects of Gender (n = 412)</u>				
Consumption	-.01	-.19	.02	.09
Gender	-.02	-.42		
<u>b: Regression Predicting Limerence from Problems with</u> <u>Alcohol While Controlling for Effects of Gender (n = 412)</u>				
Problems	.01	.10	.02	.08
Gender	-.02	-.37		
<u>c: Regression Predicting Limerence from Alcohol Use While</u> <u>Controlling for Effects of Gender (n = 412)</u>				
Use vs. Abst.	.05	.91	.05	.49
Gender	-.02	-.49		
<u>d: Regression Predicting Limerence from Alcohol Diagnosis</u> <u>While Controlling for Effects of Gender (n = 412)</u>				
Dx vs. No Dx	.03	.52	.03	.14
Gender	-.01	-.19		

Table 12

Summary of Multiple Regressions predicting Love/love addiction Scores from Alcohol Consumption, Gender, and Problems with Alcohol (N = 412)

Predictor	<u>Beta</u>	<u>t</u>	<u>R</u>	<u>F</u>
<u>a: Regression Predicting Love/love addiction from Alcohol Consumption While Controlling for Effects of Gender (n =412)</u>				
Consumption	-.07	-1.47	.07	1.09
Gender	-.02	-.41		
<u>b: Regression Predicting Love/love addiction from Problems with Alcohol While Controlling for Effects of Gender (n=412)</u>				
Problems	.02	.46	.02	.11
Gender	.00	-.07		
<u>c: Regression Predicting Love/love addiction from Alcohol Use While Controlling for Effects of Gender (n = 412)</u>				
Use vs. Abst.	.03	.52	.03	.14
Gender	-.01	-.19		
<u>d: Regression Predicting Love/love addiction from Alcohol Diagnosis While Controlling for Effects of Gender (n = 412)</u>				
Dx vs. No Dx	.01	.29	.02	.05
Gender	.00	-.09		

Table 13

Summary of the Multiple Regression Predicting the  
Approximated Number of Infatuations from Alcohol Consumption  
and Gender (N = 411)

Predictor	<u>Beta</u>	<u>t</u>	<u>R</u>	<u>F</u>
Gender	-.23	-4.47***	.50	12.58***
Consumption	.07	1.29		

\*\*\*p < .001

## DISCUSSION

### **Characteristics of the sample**

The subjects in this sample were college students (mean age = 19.5) coming from psychology classes at Michigan State University. The vast majority were Caucasian (84%), and were in the middle to upper middle class range (58% had a family income of over \$60,000). Additionally, there was poor representation of those from lower SES families with less than 4% of the subjects coming from families with a total family income under \$19,999. Thus the generalizability of the findings discussed above should probably be limited to middle/upper middle class college students and is a problem in the design of this study.

Of further interest is that all subjects were tested at the end of the term wherein the motivation to be thorough and honest may have been less than normal, due to the emotional and mental strain of the semester. This may have contributed to higher measurement error than would normally be the case. Many of these students were probably procrastinators, since they had put off signing up for study participation in order to complete course requirements until the last few weeks of the semester. Alternatively, many of



these students may have had other reasons (eg., time and requirement conflicts) for having delayed fulfilling their course requirements until the time of this study.

Although higher consumption rates and consequent problems related to drinking of alcohol might be expected on a college campus, it still was surprising that 53% of this sample were diagnosed with either abuse or dependence. One theoretical explanation that may account for some of this surprising finding is Zucker's (1994) description of the type of alcoholism labeled "developmentally limited alcoholism." This type of alcoholism is characterized by life-stage specific deviance "that is a normative part of the process of adolescence for a large subset of individuals, that is heavily interwoven with a normative task of adolescence that involves the transition from dependence upon parents to dependence upon peers..." (p.14). Many of the people who met the criteria for diagnosis of alcohol dependence or abuse in this sample may fit into a developmentally limited pattern or trajectory wherein their problems with alcohol will fade away when they enter young adulthood and have to negotiate the demands and responsibilities of job and family.

A recent and as yet unpublished study at Harvard University conducted by Dr. Henry Wechsler found similar percentages of problematic drinking of alcohol on college campuses, lending some collaborative evidence to our

surprising results. According to a newspaper account in the Lansing State Journal, it was found that 50% of college men and 39% of college women from a sample of 17,592 students at 140 colleges in 40 states met the criteria for being a "binge drinker." The definition of "binge drinking" used in this study was "those who consumed five drinks one after the other at least once in the previous two weeks" for men, while "[F]or women, the definition was four drinks."

A large percentage of these "binge drinkers" would certainly meet the DSM-III-R criteria for alcohol abuse or dependence.

#### **Nature of the infatuation model**

It was not a specific purpose of this study to attempt to prove that the infatuation continuum exists as depicted by the initial model shown in Figure 1. This model was designed as a starting point for developing a construct validity study involving the constructs of limerence, romantic love, love addiction, and codependency. Our purpose was to see how these constructs relate to each other and to validate them as being separate, but interrelated concepts. The study appears to have been at least partially successful in that the three separate constructs that emerged unscathed from the confirmatory factor analysis were fairly highly correlated with each other (see Table 6) but probably not so much as to be considered identical conceptualizations. This fact contributes to the idea of the concurrent/convergent validity of these constructs. Additionally, these constructs

had fairly high standard coefficient alphas, and the thorough content analysis of items performed during the iterative process of developing a measurement model contribute to the idea of content validity.

Probably the most important finding of this part of the overall study was that codependency emerged as a strong construct separate from the others, and contributes some validity to a construct that has had many critics and opponents, as discussed in detail in the literature review. This empirical finding may give added impetus to those investigators who want to include the construct of codependency in their research. One important consideration is that one can be codependent towards both sexes, whereas one is usually limerent or loving in a romantic sense with only one sex. From a clinical viewpoint, one may imagine that a person who is codependent may possibly be predisposed to limerent reactions or addictive love processes.

Why did the measure of love addiction merge with the measure of romantic love in the factor analysis? The answer to this question must be dealt with both from a statistical framework and from a conceptual one, which are probably interrelated. Statistically, the scale used to measure the construct of love addiction was an exploratory measure used initially by Feeney and Noller (1990). There wasn't any reported information regarding the reliability and validity of the scale and consequently it is not totally surprising

that it merged with the romantic love scale. Additionally, the romantic love scale's definitional component of "exclusiveness and absorption" may have helped contaminate this scale with the love addiction scale in the initial measurement model. Addictive love processes may also be very similar to what Stendahl (cited in Tennov, 1979) called the 2nd crystallization stage of limerence in which the intensity of the idealization is at a peak. This conceptual overlap may have contributed to contamination of the love addiction scale with the limerence scale in the initial model. Finally, the romantic love scale's definitional component of "predisposition to help" may have contributed to contamination with the codependency scale.

Feeney and Noller (1990) in describing scores on Rubin's (1970) romantic love measure, believed it was useful to describe low scores as indicative of avoidance of intimacy. For the purposes of this study where we examined the combined love/love addiction scale in analyses, it may be best to imagine that lower scores indicate avoidance of intimacy, scores in the middle to reflect affectional bonding, and higher scores to indicate more addictive processes. In fact, it may be that love addiction per se does not exist as a separate construct from romantic love, but on a continuum of romantic love, higher scores may be thought of as indicative of addiction to love. This idea is corroborated by the merger of the love addiction scale with

the romantic love scale in the factor analysis and the definitional overlap described above.

As discussed in the literature review, infatuation *per se* can best be described by the limerence construct, which is very similar to the concepts of mania and passionate love. As a result of this construct validity study, it makes more empirical sense to rename the infatuation continuum something like the "emotional over-involvement" or "emotional intensity" continuum and to think of codependency as being a related construct, perhaps not actually on the continuum in two dimensional space.

#### **Effects of gender on dependent variables**

The gender differences found in this study for codependency were not surprising based on the origin of the definition and stereotypical gender role socialization processes in our society that stress womens' dependent role upon men. The findings in this study were similar to the results found by Fischer, Spann and Crawford (1991) and contrary to the results found by Roberts (1990). Cowan and Warren (1994) also found gender differences with women scoring higher than men on 2 of 8 codependency scales in their study.

With regard to gender differences for limerence, the results of this study are inconsistent with the findings of Steffen (1993) who found that females tended to be more limerent than males. Surprisingly, our finding is

inconsistent with the strong gender differences for approximated number of infatuations based on our definition used in this study. Apparently, at least with our sample of primarily young middle class college students, men have a greater number of infatuations than women, but statistically have similar levels of limerent intensity in their romantic relationships.

Since the original measures of romantic love and love addiction merged in this study, it is probably not too useful to compare our finding of no gender differences based upon the love/love addiction factor, with those of other studies using separate measures of the two constructs. However, it may be interesting to consider several fairly recent aspects of the study of gender differences of these constructs. From a clinical orientation, Simon (1982) stated that women are probably more susceptible to love addiction than men due to women having been taught through conditioning to put more emphasis on relationships in our culture. With regard to romantic attitudes, Pedersen and Shoemaker (1993) found no gender differences on 5 romantic attitude scales. Other recent research in the literature has concentrated on gender differences broken down into factor analytic study of attitudes and behaviors in romantic relationships (eg., Simmons, Wehner & Kay, 1989).

Finally, this study's finding of significant gender differences in alcohol consumption is consistent with

findings in the literature reporting that men drink more than women (Rabow, Watts, Hernandez & Sappington, 1992). Additionally, our finding of men having a more variable pattern of drinking is also consistent with the literature although within group variability (heterogeneity) for womens' drinking patterns may be increasing (Taylor & St. Pierre, 1986; Martin & Casswell, 1988).

#### **Relationships between alcohol consumption and problems with the infatuation variables**

It may be useful to explore the relationship between alcohol consumption and problems associated with alcohol use with each of the constructs measured by the main dependent variables separately.

In conjunction with Peele's (Peele & Brodsky, 1975) theories regarding proneness to addictive behavior often being manifested in different areas, the finding that alcohol consumption and problems associated with alcohol use significantly predicted codependency scores with this population gives at least partial support to these ideas. Referring to Figure 1, it was postulated that codependency and love addiction are pathological processes that exist at the far end of the infatuation continuum and reflect a general addictive orientation to relationships. With regard to codependency then, there does appear to be a positive relationship between addictive processes regarding alcohol use and those associated with relationships with others.

This finding may at least partially be linked to other theories discussed in the beginning of this paper. Since codependency by definition involves genetic association with alcoholism, there are probably biological as well as social and psychological explanations for increased consumption of and problems associated with alcohol, with the codependent population. It may also be true that many codependents have low ego identity problems and borderline personality organization as well. Additionally, it could be hypothesized that many people who are codependent may be attached to their romantic partners in an anxious-ambivalent manner. From the literature review, to refresh the reader's memory, Hazan and Shaver (1987) postulated that the same three attachment styles described in the infant literature (i.e., secure, avoidant, and anxious-ambivalent) are also manifested in adult romantic love.

The other construct associated with addictive/psychopathological processes and postulated to be placed at the far end of the infatuation continuum is love addiction. Because of the fact that love addiction as a construct did not hold up with the measure used in this study, it precludes us from an analysis of the relationships between this construct and alcohol use. Since the concept of romantic love merged with that of love addiction, it is also not possible to consider it as a construct separate from love addiction for the purposes of in-depth analyses



regarding associations with alcohol use.

Since limerence was not positively associated with alcohol consumption or with problems associated with alcohol use, there exists at least some support for the notion of limerence as more reflective of normal healthy developmental processes, with this population. Another possible implication of this finding is that one may be highly limerent without having severe psychopathology as argued by Tennov (1979). It remains to be seen how the relationship between limerence and alcohol use changes throughout the life span.

The fact that the number of times one experiences infatuation is not significantly associated with alcohol consumption tends to at least partially refute predictions based upon inhibitory conflict theory, again with this population. Since there were very strong differences between men and women on both of these variables, further in-depth analysis of the relationships between them is warranted. Additionally, it is important to consider how these relationships change over time.

Finally, it may be useful in further research in this area to conceptualize the personality constructs of limerence, love addiction, and codependency as being antecedent to alcohol consumption and/or problems associated with alcohol use. As discussed in the sections on attachment theory and inhibitory conflict theory in the literature

review, alcohol may be used as a way of decreasing the distress caused from problematic or intense romantic relationships in general, whether they are described as limerent, addictive, or codependent, apart from considerations of etiology. Therefore, further exploration of the relationship between these constructs as the independent variables and alcohol use/abuse as the dependent variables is warranted.

#### **Future directions**

Both the exploratory nature of this study, as well as the interesting and provocative results, lend themselves to a wealth of future research. One of the most important and conceptually interesting results was that the construct of love addiction, as measured by the scale we used, did not emerge as a separate construct apart from romantic love, limerence, and codependency. Since the concept of love addiction has been addressed often in the clinical literature and there is a dearth of empirical investigation regarding it, it may be useful to attempt to develop a measure that would tap the construct of love addiction and discriminate it from the above-mentioned constructs. However, since empirical investigations are scarce regarding love addiction, this may in itself indicate the difficulty of this task. Additionally, as described above, love addiction may not actually exist as a separate construct from romantic love, but may be represented by

higher scores on a romantic love continuum/dimension. In future research, it would be important to explore causal relationships among these constructs by using path analytic methods, lending further clarification of the processes involved in relationships.

Expansion of the sample used in this study would be necessary in order to study the relationship between alcohol use and romantic relationships over the life span, both cross-sectionally and longitudinally. From a developmental perspective, it is imperative to keep in mind that the subjects involved in the current study were primarily in the stage of late adolescence, and were in college. This developmental period is characterized by early attempts at dating and looking for mates and is driven by a higher tendency to become infatuated than in later developmental periods. These considerations are important to keep in mind when analyzing and thinking about the results of the present study.

Additionally, including many subjects from all SES and racial groups and/or inclusion of students in other disciplines will yield data that is generalizable to a wider range of populations. One idea is to sample 3 groups of subjects, including alcoholics and drug addicts who have been in treatment in one group, a second group consisting of subjects with various psychiatric diagnoses (eg., schizophrenia, bi-polar disorder, major depression), and a

control group consisting of subjects matched with subjects in the other groups on sociodemographic variables.

Addition of a scale measuring adult attachment styles as described in the section on attachment theory would be a strong addition to the research area currently under investigation. One hypothesis is that anxious-ambivalent lovers would score higher on measures of codependency, love addiction, and limerence than those in the other categories. A measure tapping either ego identity and/or self-esteem would also be useful. One might hypothesize that ego identity and self-esteem will be negatively associated with codependency and love addiction.

Exploration of transgenerational patterns involving parental alcohol history, romantic love styles, codependency, adult attachment styles and alcohol use/abuse will also undoubtedly be a fruitful avenue for future research. This could be followed by further factor analytic exploration of relevant scales. Finally, inclusion of a measure that yields information on drug use other than alcohol may help clarify the effect of many different types of drug use/abuse on one's relationships and vice versa.

## APPENDICES

## APPENDIX A

## SCRIPT FOR INSTRUCTIONS TO SUBJECTS

Hi, my name is Larry Holmes and I am a Clinical Psychology Graduate Student. Please sit in alternate seats, there should not be anyone sitting in the seat next to you. Before you begin you should know that the purpose of this study is to look at personality characteristics and their relationship to drinking (alcohol) behavior. This experiment will take approximately an hour to an hour and a half, and involves filling out questionnaires in manila envelopes that we will distribute after the instructions are given. The questionnaires ask questions about your personal background, your use of alcohol, your parents' use of alcohol, and attitudes you have about relationships with others, including romantic relationships. Before you begin, please read the informed consent sheet, and if you agree to be in the study, sign the consent sheet. You should be aware that the results of this study will be kept in strict confidence and you will remain anonymous. When you turn in your completed questionnaires, we will pull the informed consent sheet from your packets and after that there will be no way to trace your questionnaires back to you. Do not put your name anywhere except on the consent form.

Please follow the instructions at the top of each questionnaire very carefully. There are a total of 10 questionnaires. Please mark your answers on the questionnaire directly and then transfer your responses to the appropriate scantron sheet before beginning the next questionnaire. Please be careful that you are transferring your answers from the questionnaire to the scantron correctly. For eight of the questionnaires you will mark your answers on one of two scantron sheets. On the questionnaire, "Personal Reaction Inventory," mark your answers on the brown scantron sheet. On the "Information on Drinking" and "Personal Background Questionnaire," please write your responses directly on the form and don't transfer the answers to any scantron sheet. These two questionnaires have NO SCANTRON printed at the top of the form. For all other questionnaires, mark your answers on the blue scantron sheet in the order that is written on the blackboard. Continue answering without a break on the scantron sheet until you are finished with the questionnaires. Please look at the form "General Instructions," if you have any questions about completing the forms, or ask one of the experimenters.

Before you begin answering the questionnaires, be sure to enter your identification number on the scantron sheets. Your identification number is written in the upper left hand

corner on the envelope in which you received the questionnaires. Please enter your identification number in the boxes labeled "section" on the scantron sheets and fill in the bubbles underneath as well.

If you don't drink alcohol, please write "I don't drink" directly at the top of the appropriate questionnaires and answer each question. If one or both of your parents don't drink, write that at the top of the questionnaire(s) regarding your mother or father's drinking history. Please answer each question on these forms as well.

When you have finished filling out the questionnaires and scantron sheets, please form a line along the wall and wait while we check your forms. Please remain quiet while you are waiting in line. If you put both the scantron sheets and the NO SCANTRON questionnaires at the top of your pile of forms, it will help us check your forms faster. Don't forget to have your credit cards stamped before you leave.

After the results of this study are determined, feel free to contact me and I will discuss the results with you. Also, after we have finished running the study, I will talk with anyone who wants to know more about the study and the ideas/theories behind it. Thanks for participating in this experiment.

## APPENDIX B

## INFORMED CONSENT

1. I have freely consented to take part in a scientific study being conducted by: Larry Holmes-Clinical Psychology Graduate Student

Under the supervision of: Dr. John McKinney-Professor of Psychology

2. I understand that the purpose of this study is to look at personality characteristics and their relationship to drinking behavior. I have been told that the questionnaires in this study ask for information about my 1) personal background (e.g., sex, age, parent education, etc.), 2) use of alcohol, 3) parents' use of alcohol, 4) personal attitudes about myself in relationship to others.
3. Participation in this experiment usually takes 1 to 1 and 1/2 hours and is done in one session.
4. The study has been explained to me and I understand the explanation that has been given and what my participation will involve.
5. I understand that I am free to discontinue my participation in the study at any time without penalty.
6. I understand that the results of this study will be treated in strict confidence and that I will remain anonymous. Within these restrictions, results of the study will be made available to me at my request.
7. I understand that my participation in the study does not guarantee any beneficial results to me.
8. I understand that, at my request, I can receive additional explanation of the study after my participation is completed.
9. If I have any questions or concerns about the study I know that I may contact Larry Holmes at 353-4503.



**Signed:** \_\_\_\_\_

**Date:** \_\_\_\_\_

## APPENDIX C

## ALCOHOL QUANTITY, FREQUENCY, TYPE SCALE

Please answer the following questions as accurately and honestly as possible. All information will be used for research only and will be kept strictly confidential. Circle the letter of the response that most closely describes your drinking practices in the past 6 months. Enter your choice on the scantron sheet.

1. How often did you drink beer in the last six months?
  - A. Every day
  - B. 5 or 6 days a week
  - C. 3 or 4 days a week
  - D. 1 or 2 days a week
  - E. Less than once a week
2. When you drank beer, how many beers did you usually have at one time, on the average?
  - A. 8 or more beers
  - B. 6 or 7 beers
  - C. 4 or 5 beers
  - D. 2 or 3 beers
  - E. 1 or fewer beers
3. What is the greatest amount of beer you have had at any one particular time over the last six months?
  - A. 16 or more beers
  - B. 11 to 15 beers
  - C. 7 to 10 beers
  - D. 3 to 6 beers
  - E. 2 or fewer beers
4. How often did you drink wine coolers in the last six months?
  - A. Every day
  - B. 5 or 6 days a week
  - C. 3 or 4 days a week
  - D. 1 or 2 days a week
  - E. Less than once a week
5. When you drank wine coolers, how many did you usually have at one time, on the average?
  - A. 8 or more wine coolers
  - B. 6 or 7 wine coolers
  - C. 4 or 5 wine coolers
  - D. 2 or 3 wine coolers
  - E. 1 or fewer wine coolers

6. What is the greatest number of wine coolers you have had at any one particular time in the last six months?

- A. 16 or more wine coolers
- B. 11 to 15 wine coolers
- C. 7 to 10 wine coolers
- D. 3 to 6 wine coolers
- E. 2 or fewer wine coolers

7. How often did you drink wine in the last six months?

- A. Every day
- B. 5 or 6 days a week
- C. 3 or 4 days a week
- D. 1 or 2 days a week
- E. Less than once a week

8. How much wine did you usually have at one time, on the average?

- A. 8 or more glasses
- B. 6 or 7 glasses
- C. 4 or 5 glasses
- D. 2 or 3 glasses
- E. 1 or fewer glasses

9. What is the greatest amount of wine you have had at any one particular time in the last six months?

- A. 16 or more glasses
- B. 11 to 15 glasses
- C. 7 to 10 glasses
- D. 3 to 6 glasses
- E. 2 or fewer glasses

10. How often did you drink liquor in the last six months?

- A. Every day
- B. 5 or 6 days a week
- C. 3 or 4 days a week
- D. 1 or 2 days a week
- E. Less than once per week

11. When you drank liquor how many drinks did you usually have at one time, on the average?

- A. 8 or more drinks
- B. 6 or 7 drinks
- C. 4 or 5 drinks
- D. 2 or 3 drinks
- E. 1 or fewer drinks

12. What is the greatest amount of drinks of liquor you have had at any one time in the last six months?

- A. 16 or more drinks
- B. 11 to 15 drinks
- C. 7 to 10 drinks
- D. 3 to 6 drinks
- E. 2 or fewer drinks

## APPENDIX D

## INFORMATION ON DRINKING

Please answer these questions as honestly as you can about your drinking of alcoholic beverages. All information will be used for research only and will be kept strictly confidential. If you are not sure of the answer to a question please answer the best you can. Please try to answer each item.

1. How old were you the first time you ever drank enough to get drunk?

\_\_\_\_\_ years old

2. In the last six months, think of the 24 hour period when you did the most drinking; this would be a day somewhere in the period between \_\_\_\_\_, \_\_\_\_\_ and now.  
(month) (year)

On that day, how many drinks did you have? (A drink is a 12 oz. can, bottle, or glass of beer, a 4 oz. glass of wine, a single shot, or a single mixed drink).

_____	30 or more drinks
_____	25 - 29 drinks
_____	20 - 24 drinks
_____	15 - 19 drinks
_____	10 - 14 drinks
_____	7 - 9 drinks
_____	5 - 6 drinks
_____	3 - 4 drinks
_____	1 - 2 drinks
_____	none

2b. Approximately when did this happen? \_\_\_\_\_, \_\_\_\_\_  
(month) (year)

2c. Now answer the question for any time in your life before these last six months. In the 24 hour period when you did the most drinking, how many drinks did you have?

_____	30 or more drinks
_____	25 - 29 drinks
_____	20 - 24 drinks
_____	15 - 19 drinks
_____	10 - 14 drinks
_____	7 - 9 drinks
_____	5 - 6 drinks
_____	3 - 4 drinks
_____	1 - 2 drinks
_____	none

2d. Approximately when did this happen? \_\_\_\_\_, \_\_\_\_\_  
 (month) (year)

**ANSWER KEY FOR QUESTIONS BELOW:**

1	2	3-5	6-10	11-20	21-50	51-100
101-250	251-500	501-1000	1000+	(more than 1000)		

Now some questions about outcomes people sometimes have because of drinking. Have you ever had any of the following happen because of your drinking?

	<u>Yes</u>	<u>No</u>	How many	Age	Age
	(check one)		times	first	most
			(approx.	time	recent
			see key)		time
1. Missed school or time on job	_____	_____	_____	_____	_____
2. Thought I was drinking too much	_____	_____	_____	_____	_____
3. Gone on a binge of constant drinking for 2 or more days	_____	_____	_____	_____	_____
4. Lost friends	_____	_____	_____	_____	_____
5. My spouse or others in my family (my parents or children) objected to my drinking	_____	_____	_____	_____	_____
6. Felt guilty about my drinking	_____	_____	_____	_____	_____
7. Divorce or separation	_____	_____	_____	_____	_____
8. Took a drink or two first thing in the morning	_____	_____	_____	_____	_____
9. Restricted my drinking to certain times of day or week in	_____	_____	_____	_____	_____

	<u>Yes</u>	<u>No</u>	How many	Age	Age
	(check one)		times	first	most
			(approx.	time	recent
			see key)	time	time

order to control it  
or cut down, (like  
after 5 PM, or only  
on weekends, or only  
with other people)

- |  |       |       |       |       |       |
|--|-------|-------|-------|-------|-------|
| 10. Been fired or laid off   | _____ | _____ | _____ | _____ | _____ |
| 11. Once started drinking, kept going till completely intoxicated  | _____ | _____ | _____ | _____ | _____ |
| 12. Had a car accident when I was driving  | _____ | _____ | _____ | _____ | _____ |
| 13. Kept on drinking after I promised myself not to  | _____ | _____ | _____ | _____ | _____ |
| 14. Had to go to a hospital (other than accidents)   | _____ | _____ | _____ | _____ | _____ |
| 15. Had to stay in a hospital overnight  | _____ | _____ | _____ | _____ | _____ |
| 16. Had the shakes "the morning after"   | _____ | _____ | _____ | _____ | _____ |
| 17. Heard or saw or felt things that weren't there (hallucinations), several days after stopped drinking | _____ | _____ | _____ | _____ | _____ |
| 18. Had blackouts (couldn't remember later what you'd done while drinking)                               | _____ | _____ | _____ | _____ | _____ |
| 19. Been given a ticket for drunk driving (DWI or DUIL)  | _____ | _____ | _____ | _____ | _____ |
| 20. Had a jerking or fits(convulsions)   | _____ | _____ | _____ | _____ | _____ |

	<u>Yes</u> (check one)	<u>No</u> (check one)	How many times (approx. see key)	Age first time	Age most recent time
several days after stopping drinking					
21. Been given a ticket for public intoxica- tion, drunk and disorderly, or other nondriving alcohol arrest	_____	_____	_____	_____	_____
22. Had the D.T's (delirium tremens, shakes, sweating, rapid heart, etc.) within 2-3 days after stopped drinking	_____	_____	_____	_____	_____

## APPENDIX E

SHORT MICHIGAN ALCOHOLISM SCREENING TEST-FATHER'S VERSION  
(F-SMAST)

Please answer the following questions as accurately and honestly as possible. All information will be used for research only and will be kept strictly confidential. If you are not sure of the answer to a question please answer the best you can. Answer A for Yes or B for No and transfer your answer to the scantron sheet.

- |  | Yes<br>(1) | No<br>(2) |
|--|------------|-----------|
| 1. Do you feel your father has been a normal drinker?  | ___        | ___       |
| 2. Did your mother, grandparent, or other near relative ever complain about your father's drinking?                        | ___        | ___       |
| 3. Did your father ever feel guilty about his drinking?  | ___        | ___       |
| 4. Did friends and relatives think your father was a normal drinker?   | ___        | ___       |
| 5. Was your father able to stop drinking when he wanted to?  | ___        | ___       |
| 6. Has your father ever attended a meeting of Alcoholics Anonymous?  | ___        | ___       |
| 7. Has your father's drinking ever created problems between him and your mother (or step-parent) or another near relative? | ___        | ___       |
| 8. Has your father ever gotten into trouble at work because of drinking?   | ___        | ___       |
| 9. Has your father ever neglected his obligations, family, or work for two or more days in a row because he was drinking?  | ___        | ___       |
| 10. Has your father ever gone to anyone for help about his drinking?   | ___        | ___       |



11. Has your father ever been in a hospital  
because of drinking? \_\_\_\_\_
12. Has your father ever been arrested for  
drunken driving, driving while intoxicated,  
or driving under the influence of alcoholic  
beverages? \_\_\_\_\_
13. Has your father ever been arrested, even  
for a few hours, because of other drunken  
behavior? \_\_\_\_\_

## APPENDIX F

**SHORT MICHIGAN ALCOHOLISM SCREENING TEST-MOTHER'S VERSION  
(M-SMAST)**

Please answer the following questions as accurately and honestly as possible. All information will be used for research only and will be kept strictly confidential. If you are not sure of the answer to a question please answer the best you can. Please answer A for Yes or B for No and transfer your answer to the scantron sheet.

- |  | Yes<br>(1) | No<br>(2) |
|--|------------|-----------|
| 1. Do you feel your mother has been a normal drinker?  | _____      | _____     |
| 2. Did your father, grandparent, or other near relative ever complain about your mother's drinking?                        | _____      | _____     |
| 3. Did your mother ever feel guilty about her drinking?  | _____      | _____     |
| 4. Did friends and relatives think your mother was a normal drinker?   | _____      | _____     |
| 5. Was your mother able to stop drinking when she wanted to?   | _____      | _____     |
| 6. Has your mother ever attended a meeting of Alcoholics Anonymous?  | _____      | _____     |
| 7. Has your mother's drinking ever created problems between her and your father (or step-parent) or another near relative? | _____      | _____     |
| 8. Has your mother ever gotten into trouble at work because of drinking?   | _____      | _____     |
| 9. Has your mother ever neglected her obligations, family, or work for two or more days in a row because she was drinking? | _____      | _____     |
| 10. Has your mother ever gone to anyone for help about her drinking?   | _____      | _____     |

11. Has your mother ever been in a hospital  
because of drinking? \_\_\_\_\_
12. Has your mother ever been arrested for  
drunken driving, driving while intoxicated,  
or driving under the influence of alcoholic  
beverages? \_\_\_\_\_
13. Has your mother ever been arrested, even  
for a few hours, because of other drunken  
behaviors? \_\_\_\_\_

## APPENDIX G

## ROMANTIC RELATIONSHIPS (LIMERENCE)

Read the following statements and place the number in the spaces provided that best describe you according to the following list: 1= Strongly Disagree; 2= Moderately Disagree; 3= Slightly Disagree; 4= Slightly Agree; 5= Moderately Agree; 6= Strongly Agree.

1. I admire everything, no matter how trivial, about the person to whom I am strongly attracted.
2. When I am strongly attracted to someone, I can recall vividly what they said and did, and I find that I relive every word and gesture.
3. When something gets in the way of my involvement with someone to whom I am strongly attracted (parent's objections, geographical separation, etc.), I make little effort to overcome these obstacles.
4. When I am strongly attracted to someone, I can remember the specific reason for my initial attraction.
5. I find that I overemphasize the positive characteristics of someone to whom I am strongly attracted.
6. Even when I am strongly attracted to someone, I do not become emotionally dependent on them.
7. I find that people and places often vividly remind me of the person to whom I am strongly attracted.
8. I have experienced a sudden intense attraction for someone I hardly knew.
9. I sometimes feel my heart flutter or my face become pale or flushed when I am with someone to whom I am strongly attracted.
10. When strongly attracted to someone, I find myself interpreting the meaning of their every action, looking for clues about their feelings toward me.
11. Even when strongly attracted to someone, I would not change my appearance in order to please or impress them.
12. When I quarrel with someone to whom I am strongly attracted, I find that my feelings of attraction are intensified.
13. I feel awkward, confused, and shy when I am around someone to whom I am strongly attracted.
14. When I think back to the person(s) to whom I was attracted in the past, I feel that my initial view of them was quite balanced and objective.
15. I hide my true feelings from someone to whom I am strongly attracted because I fear rejection.
16. I spend a lot of time imagining myself doing things with someone to whom I am strongly attracted.

17. When someone to whom I am strongly attracted admits to feeling the same way about me, I feel that I couldn't be happier.
18. When I am near someone to whom I am strongly attracted, I am sometimes afraid to be myself in case they see my flaws and mistakes.
19. When I discover that someone toward whom I am strongly attracted does not feel the same about me, I accept this calmly and without feeling hurt.
20. When I think that the feelings of someone to whom I am strongly attractive are diminishing, my own feelings increase in intensity.
21. When I am strongly attracted to someone, I find that I am obsessed with hopes or thoughts of that person returning my love.
22. I have missed what was going on at work or school because I was lost in thought about someone to whom I was strongly attracted.
23. I sometimes get jealous when I see someone to whom I am strongly attracted in a situation with another person that I feel only I should be in.
24. When strongly attracted to someone, I find that my difficulties in life no longer seem worrisome.
25. I find that the reality of my relationships seldom matches up with my needs and longings.
26. When I am around someone to whom I am strongly attracted, I find that their mood has little effect on my own feelings.
27. When I am uncertain about how someone to whom I am strongly attracted feels about me, I experience a great fear of rejection.
28. When I am strongly attracted to someone, I want more than anything for them to return my feelings.
29. I am extremely nervous and worried that my behavior around someone to whom I am strongly attracted may damage our relationship.
30. When I am strongly attracted to someone, I find that thoughts of that person constantly intrude when my mind should be on other things.
31. When I am with or near the person to whom I am strongly attracted, I find that my heart beats faster.
32. When I am strongly attracted to someone, I find that they become the center of all my thoughts.
33. When strongly attracted to someone, I show my feelings in a straightforward and unambiguous way.
34. In the past, I have gone out of my way to increase my chances of meeting someone to whom I felt attracted.
35. When strongly attracted to someone I find that everything about that person seems special and wonderful to me.

36. When I telephone someone to whom I am strongly attracted, I feel anxious and afraid that I won't be able to find the right thing to say.
37. When I am around a person to whom I am beginning to feel strongly attracted, I feel confident and self-assured.
38. I tend to minimize or overlook the obvious faults in someone to whom I am strongly attracted.
39. When strongly attracted to someone I find that my mood goes up and down a lot, especially if I am unsure of their feelings toward me.
40. When I am strongly attracted to someone, other things in my life (work, other relationships, etc.) tend to be pushed to the side.
41. I have been strongly attracted to someone who did not feel the same way about me or know of my feelings.
42. When I am strongly attracted to someone, I spend a lot of time planning just what I should say or do in their presence.

## APPENDIX H

## THE ROMANTIC LOVE SCALE L1

Please respond to the following statements about your current romantic love relationship as accurately and honestly as possible. Do not respond to the questionnaire if you have never been involved in a romantic relationship. If your present relationship is not particularly significant or if you are not currently involved, then answer to the best of your ability about your most significant relationship within the last 3 to 4 years. On a scale of 1 to 9, circle the number most closely corresponding to your level of agreement with the statement. 1 signifies "not at all true" and 9 "definitely true."

1. If my partner were feeling badly, my first duty would be to cheer him (her) up.

Not at all      1   2   3   4   5   6   7   8   9      Definitely  
true; disagree      true; agree  
completely      completely

2. I feel that I can confide in my partner about virtually everything.

Not at all      1   2   3   4   5   6   7   8   9      Definitely  
true; disagree      true; agree  
completely      completely

3. I find it easy to ignore my partner's faults.

Not at all      1   2   3   4   5   6   7   8   9      Definitely  
true; disagree      true; agree  
completely      completely

4. I would do almost anything for my partner.

Not at all 1 2 3 4 5 6 7 8 9 Definitely  
true; disagree true; agree  
completely completely

**5. I feel very possessive toward my partner.**

Not at all      1   2   3   4   5   6   7   8   9      Definitely  
true; disagree      true; agree  
completely      completely

6. If I could never be with my partner, I would feel miserable.

Not at all      1   2   3   4   5   6   7   8   9      Definitely  
true; disagree      true; agree  
completely      completely

7. If I were lonely, my first thought would be to seek my partner out.

Not at all      1   2   3   4   5   6   7   8   9      Definitely  
true; disagree      true; agree  
completely      completely

8. One of my primary concerns is my partner's welfare.

Not at all      1   2   3   4   5   6   7   8   9      Definitely  
true; disagree      true; agree  
completely      completely

9. I would forgive my partner for practically anything.

Not at all      1   2   3   4   5   6   7   8   9      Definitely  
true; disagree      true; agree  
completely      completely

10. I feel responsible for my partner's well-being.

Not at all 1 2 3 4 5 6 7 8 9 Definitely  
true; disagree true; agree  
completely completely

11. When I am with my partner, I spend a good deal of time just looking at him (her).

Not at all      1   2   3   4   5   6   7   8   9      Definitely  
true; disagree      true; agree  
completely      completely

12. I would greatly enjoy being confided in by my partner.

Not at all      1   2   3   4   5   6   7   8   9      Definitely  
true; disagree      true; agree  
completely      completely

13. It would be hard for me to get along without my partner.

Not at all      1   2   3   4   5   6   7   8   9      Definitely  
true; disagree      true; agree  
completely      completely



## APPENDIX I

## ATTITUDES TO CLOSE RELATIONSHIPS (LOVE ADDICTION)

Read the following statements and place the number in the spaces provided that best describes you according to the following list: 1=Strongly Disagree; 2=Moderately Disagree; 3=Slightly Disagree; 4=Slightly Agree; 5=Moderately Agree; 6=Strongly Agree. In the following questions, "partner" refers to someone of the opposite sex with whom you have (or might wish to have) an intimate relationship.

1. I feel the happiest and the most alive when I am involved with a partner.
2. Even though it annoys my friends, I am likely to change plans with them if a request from someone of the opposite sex gets in the way.
3. I find myself fairly "good company," and don't mind spending time alone when I have free evenings.
4. When I am involved with a partner, I want us to be together all the time and to share every aspect of our lives.
5. My general well-being and my feelings about myself are much more positive when I have a partner around.
6. When I am involved with a partner, I regard them also as a friend and I would want to continue the friendship even if our involvement were to end.
7. I spend too much time daydreaming about the opposite sex or devising plans to get a partner.
8. I feel quite secure and satisfied with my life even if there is no partner to share it with.
9. I tend to avoid going to social gatherings when I know that almost all the other people will be couples.
10. When it comes to partners, I always end up finding something about them that puts me off, and I am never really satisfied.
11. When I am involved with a partner, I still make some time to see other people or to take part in activities outside the relationship.
12. I find that longing for or pursuing a partner is usually much more exciting than feeling sure of a partner's love.
13. When I am involved with a partner, I sometimes get possessive or jealous if they develop new interests and friendships.

## APPENDIX J

## SPANN-FISCHER CODEPENDENCY SCALE

Read the following statements and place the number in the spaces provided that best describes you according to the following list: 1=Strongly Disagree; 2=Moderately Disagree; 3=Slightly Disagree; 4=Slightly Agree; 5=Moderately Agree; 6=Strongly Agree.

1. It is hard for me to make decisions.
2. It is hard for me to say "no".
3. It is hard for me to accept compliments graciously.
4. Sometimes I almost feel bored or empty if I don't have problems to focus on.
5. I usually do not do things for other people that they are capable of doing for themselves.
6. When I do something nice for myself I usually feel guilty.
7. I do not worry very much.
8. I tell myself that things will get better when the people in my life change what they are doing.
9. I seem to have relationships where I am always there for them but they are rarely there for me.
10. Sometimes I get focused on one person to the extent of neglecting other relationships and responsibilities.
11. I seem to get into relationships that are painful for me.
12. I don't usually let others see the "real" me.
13. When someone upsets me I will hold it in for a long time, but once in a while I explode.
14. I will usually go to any lengths to avoid open conflict.
15. I often have a sense of dread or impending doom.
16. I often put the needs of others ahead of my own.

## APPENDIX K

## PERSONAL BACKGROUND QUESTIONNAIRE

Demographic Information:

- 1) What is your sex? male \_\_\_\_\_ female \_\_\_\_\_
- 2) What is your age? \_\_\_\_\_
- 3) What is your major? \_\_\_\_\_
- 4) Class: Freshman \_\_\_\_\_ Sophomore \_\_\_\_\_  
Junior \_\_\_\_\_ Senior \_\_\_\_\_  
5th Year Senior \_\_\_\_\_
- 5) Are you? Black \_\_\_\_\_ White \_\_\_\_\_  
Hispanic \_\_\_\_\_ Asian \_\_\_\_\_  
Native American \_\_\_\_\_ Other \_\_\_\_\_
- 6) What is your religion?  
Protestant \_\_\_\_\_ Roman Catholic \_\_\_\_\_  
Greek Orthodox \_\_\_\_\_ Jewish \_\_\_\_\_  
None \_\_\_\_\_ Other \_\_\_\_\_
- 7) What was your father's highest level of education?  
a) less than high school      d) 4 year college degree  
b) high school degree      e) Master's degree  
c) some college      f) Ph.D., J.D., M.D.,  
D.D.S., etc.
- 8) What was your mother's highest level of education?  
a) less than high school      d) 4 year college degree  
b) high school degree      e) Master's degree  
c) some college      f) Ph.D., J.D., M.D.,  
D.D.S., etc.
- 9) What is the total income of your family? (Give your best guess)

less than \$19,999 \_\_\_\_\_  
 \$20,000-\$39,999 \_\_\_\_\_  
 \$40,000-\$59,999 \_\_\_\_\_  
 \$60,000-\$79,999 \_\_\_\_\_  
 \$80,000 and over \_\_\_\_\_

Please answer the following questions as accurately and honestly as you can.

10) How many romantic love relationships have you been involved in? \_\_\_\_\_

- |         |          |
|---------|----------|
| a) none | d) three |
| b) one  | e) four  |
| c) two  | f) five  |

If more than five, state approximately how many. \_\_\_\_\_

11) Are you currently involved in a romantic love relationship? Yes No

12) How long did your longest romantic love relationship last (in months)?

(If you are currently in a romantic love relationship, state how long it has lasted up until now.)

\_\_\_\_\_

13) Based on the following brief definition, how many times have you been infatuated with someone?

An emotional state where the object of desire is perceived unrealistically. It involves idealization of the person's positive qualities and avoidance of his/her negatives. The feeling is intense, irrational, persistent and sometimes can be all-consuming. The person is perceived as being appealing, alluring, beautiful and cool. Usually this feeling is accompanied by physical attraction and sexual desire and a longing for reciprocation of these same feelings from the person. Often the intensity of focus and feelings pushes other concerns into the background.

\_\_\_\_\_ 30 or more times  
\_\_\_\_\_ 25-29 times  
\_\_\_\_\_ 20-24 times  
\_\_\_\_\_ 15-19 times  
\_\_\_\_\_ 10-14 times  
\_\_\_\_\_ 7-9 times  
\_\_\_\_\_ 5-6 times  
\_\_\_\_\_ 3-4 times  
\_\_\_\_\_ 1-2 times  
\_\_\_\_\_ never

14) How old were you when you experienced infatuation with someone for the first time? \_\_\_\_\_

15) How old were you the last time you were infatuated with someone? \_\_\_\_\_

## APPENDIX L

## DIAGNOSTIC CLASSIFICATIONS REGARDING LIFETIME ALCOHOL USE

(1) Abstainers: Subjects who indicated on both alcohol questionnaires that they didn't drink, marked all "e's" on the quantity, frequency, and type scale, and reported no symptoms on the information on drinking questionnaire.

(2) No Diagnosis: Subjects who were not classified as abstainers and also did not meet DSM III-R criteria for alcohol abuse or dependence.

(3) Abuse: Subjects who met the criteria for diagnosis of alcohol abuse.

(4) Dependence-Mild: Subjects who met the criteria for diagnosis of mild dependence.

(5) Dependence-Moderate: Subjects who met the criteria for diagnosis of moderate dependence.

(6) Dependence-Severe: Subjects who met the criteria for diagnosis of severe dependence.

Note: All diagnostic classifications are based on lifetime alcohol use with specific diagnoses being based on DSM III-R criteria.

Factor		Love Addiction											
Item #	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>	<u>9</u>	<u>10</u>	<u>11</u>	<u>12</u>	<u>13</u>
L A	46	52	6	12	14	51	74	32	23	53	46	36	38
R L	69	114	75	34	86	117	34	28	34	15	14	38	-13
Lim	50	35	22	17	36	65	72	72	26	30	4	5	16
Cod	33	55	18	43	59	40	32	48	-27	30	24	10	16
Factor		Romantic Love											
Item #	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>	<u>9</u>	<u>10</u>	<u>11</u>	<u>12</u>	<u>13</u>
L A	20	34	59	48	35	51	35	46	49	33	28	46	31
R L	60	46	36	20	43	15	31	38	10	21	37	20	9
Lim	23	34	14	35	36	28	15	19	17	13	13	3	17
Cod	16	33	-6	17	21	25	30	19	12	10	29	12	22
Factor		Limerence											
Item #	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>	<u>9</u>	<u>10</u>	<u>11</u>	<u>12</u>	<u>13</u>
L A	45	34	20	34	38	20	34	43	23	26	45	9	21
R L	23	29	18	23	2	7	17	22	24	22	21	21	25
Lim	13	18	39	17	27	3	11	22	25	17	29	50	38
Cod	26	28	29	13	0	10	6	5	36	36	41	32	-5
Item #	<u>14</u>	<u>15</u>	<u>16</u>	<u>17</u>	<u>18</u>	<u>19</u>	<u>20</u>	<u>21</u>	<u>22</u>	<u>23</u>	<u>24</u>	<u>25</u>	<u>26</u>
L A	38	29	41	37	31	31	34	8	14	31	24	24	42
R L	19	12	26	31	20	28	12	22	34	33	28	15	22
Lim	48	39	53	31	57	29	46	55	34	39	34	36	32
Cod	32	39	27	50	43	19	29	41	25	2	21	32	28
Item #	<u>27</u>	<u>28</u>	<u>29</u>	<u>30</u>	<u>31</u>	<u>32</u>	<u>33</u>	<u>34</u>	<u>35</u>	<u>36</u>	<u>37</u>	<u>38</u>	<u>39</u>
L A	22	19	27	17	13	9	13	17	43	23	40	36	37
R L	28	29	22	22	20	19	23	15	25	28	20	24	21
Lim	28	29	31	40	36	18	41	17	20	33	29	29	29
Cod	0	3	-6	25	30	8	17	8	14	9	17	37	38
Item #	<u>40</u>	<u>41</u>	<u>42</u>										
L A	32	44	46										
R L	10	23	24										
Lim	29	25	29										
Cod	57	35	39										

Factor Item #	Codependency												
	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>	<u>9</u>	<u>10</u>	<u>11</u>	<u>12</u>	<u>13</u>
L A	31	41	37	26	44	32	29	41	26	33	49	26	20
R L	38	21	18	39	38	35	27	25	24	27	23	25	23
Lim	25	24	40	29	23	36	39	23	36	32	32	37	28
Cod	14	72	65	37	36	60	42	52	52	38	31	27	38
Item #	<u>14</u>	<u>15</u>	<u>16</u>										
L A	39	27	25										
R L	20	21	11										
Lim	32	34	30										
Cod	37	28	38										

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L A = love addiction  
 R L = romantic love  
 Lim = limerence  
 Cod = codependency

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Note: The measure of the Love addiction factor was the Attitudes to Close Relationships scale (Appendix I), for Romantic Love it was the Romantic Love Scale (L1, Appendix H), for Limerence the Romantic Relationships scale (Appendix G) and for Codependency the Spann-Fischer Codependency Scale (Appendix J).

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Additional Note: The item-factor loadings given above are correlations. To get the correlation multiply the number given by .01.



## APPENDIX N

## FINAL ITEM-FACTOR LOADINGS

Factor	Love Addiction												
Item #	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>	<u>9</u>	<u>10</u>	<u>11</u>	<u>12</u>	<u>13</u>
L/L A	--	80	45	--	--	67	--	--	18	--	--	36	--
Lim	--	12	10	--	--	46	--	--	13	--	--	9	--
Cod	--	56	22	--	--	34	--	--	-27	--	--	7	--
Factor	Romantic Love												
Item #	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>	<u>9</u>	<u>10</u>	<u>11</u>	<u>12</u>	<u>13</u>
L/L A	37	39	28	--	--	--	35	50	44	32	35	43	--
Lim	12	30	5	--	--	--	11	7	11	15	17	2	--
Cod	14	28	-4	--	--	--	28	13	10	7	28	10	--
Factor	Limerence												
Item #	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>	<u>9</u>	<u>10</u>	<u>11</u>	<u>12</u>	<u>13</u>
L/L A	--	--	12	--	12	--	--	--	--	--	--	23	15
Lim	--	--	48	--	29	--	--	--	--	--	--	54	40
Cod	--	--	23	--	-3	--	--	--	--	--	--	33	-6
Item #	<u>14</u>	<u>15</u>	<u>16</u>	<u>17</u>	<u>18</u>	<u>19</u>	<u>20</u>	<u>21</u>	<u>22</u>	<u>23</u>	<u>24</u>	<u>25</u>	<u>26</u>
L/L A	30	5	18	--	16	23	17	19	--	--	--	15	--
Lim	41	41	52	--	59	33	61	51	--	--	--	41	--
Cod	26	35	24	--	39	17	26	32	--	--	--	27	--
Item #	<u>27</u>	<u>28</u>	<u>29</u>	<u>30</u>	<u>31</u>	<u>32</u>	<u>33</u>	<u>34</u>	<u>35</u>	<u>36</u>	<u>37</u>	<u>38</u>	<u>39</u>
L/ L A	13	16	1	9	6	5	7	--	--	10	--	--	--
Lim	23	26	34	33	42	24	39	--	--	29	--	--	--
Cod	0	5	-2	29	29	11	15	--	--	9	--	--	--
Item #	<u>40</u>	<u>41</u>	<u>42</u>										
L/L A	--	--	--										
Lim	--	--	--										
Cod	--	--	--										
Factor	Codependency												
Item #	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>	<u>9</u>	<u>10</u>	<u>11</u>	<u>12</u>	<u>13</u>
L/L A	--	8	16	19	--	34	22	33	17	17	25	--	7
Lim	--	19	34	19	--	14	27	10	24	26	20	--	19
Cod	--	68	65	34	--	55	48	60	48	39	35	--	35

Item #	<u>14</u>	<u>15</u>	<u>16</u>
L/L A	9	--	8
Lim	27	--	22
Cod	35	--	39

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L/L A = love/love addiction

Lim = limerence

Cod = codependency

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Note: The measure of the Love addiction factor was the Attitudes to Close Relationships scale (Appendix I), for Romantic Love it was the Romantic Love Scale (L1, Appendix H), for Limerence the Romantic Relationships scale (Appendix G) and for Codependency the Spann-Fischer Codependency Scale (Appendix J).

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Additional Notes: The item-factor loadings given above are correlations. To get the correlation multiply the number given by .01.

The spaces left blank indicate items that were deleted from the original measures in the course of completing the final measurement model.

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