



1992

## The Association of Adolescent Substance Use and the Daily Experience of Parents and Peers

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LOYOLA UNIVERSITY OF CHICAGO

THE ASSOCIATION OF ADOLESCENT SUBSTANCE  
USE AND THE DAILY EXPERIENCE OF PARENTS AND PEERS

A THESIS SUBMITTED TO  
THE FACULTY OF THE GRADUATE SCHOOL  
IN CANDIDACY FOR THE DEGREE OF  
MASTER OF ARTS

DEPARTMENT OF PSYCHOLOGY

BY

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CHICAGO, ILLINOIS  
JANUARY, 1992

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## CHAPTER I

### INTRODUCTION

Interest in the issue of substance use in the United States has reemerged and intensified in recent years (Newcomb & Bentler, 1989). The creation of a cabinet level post of Drug Enforcement Coordinator by the president to deal with this problem, as well as drugs repeatedly named as the most significant issue during the 1988 presidential election both attest to the current level of concern surrounding this subject. The intensity of this interest has spawned preventive interventions (such as mass media campaigns) which are not only unsupported by psychological research, but may contradict it (Newcomb & Bentler, 1989).

Although interest in drug use by adolescents was particularly intense during the early 1970's due to the widespread perception that youth were out of control (with "youth culture" purported to be behind such problems), only modest strides have been made in the past 20 or so years to understand what causes adolescents to use drugs. Limitations arising which have hindered an understanding of this phenomenon have been 1) inadequate research methodology (Larson, Csikzentmihalyi & Freeman, 1984), 2) research which has been atheoretical in nature (Jessor & Jessor, 1977), 3)

and the fact that many studies appear to be replications of well identified previous findings.

Further consideration of correlates of adolescent substance use appear important due to recent findings from longitudinal studies which indicate that not all substance use is detrimental (Newcomb & Bentler, 1989; Shedler & Block, 1980). "Normative experimentation" has been found to be associated with more positive mental health than either abstinence or heavy use (Shedler & Block, 1990). These researchers, in agreement with Newcomb and Bentler (1988), argue that such behavior be considered normative due to its prevalence and the role it plays in normal adolescent experimentation.

The present study attempted to determine whether heavier adolescent substance users experience parents and peers differently than adolescents who report less use. This study also probed whether adolescents who become involved with chemical substances earlier (especially those that use drugs) have more disrupted family experience. The questions posed by this study are significant because the immediate daily experience of adolescents has never been studied in relation to substance use. Nearly all studies of adolescent substance use have relied on paper and pencil questionnaires to assess the quality of the parent child relationship. Paper and pencil questionnaires which measure the overall quality of a relationship may not be an optimal method for investigation



of relationships, due to their inherent complexity. The use of the Experience Sampling Method (ESM) enables daily interactions between subjects and their parents and peers to be analyzed to provide an assessment of the quality of these interactions.

Alcohol is included with illicit drugs in this study because its use can be very destructive and because it is part of the problem behavior syndrome (Barnes, 1984; Barnes & Welte, 1986; Jessor, Chase & Donovan, 1980; Jessor & Jessor, 1977). The negative effects of alcohol may easily outweigh the effects of those drugs for which the current "war on drugs" is now being waged (Barnes, 1984). The number of traffic deaths which result from drinking and driving is only the most salient example of the negative impact alcohol has on society (Straus & Horan, 1980). The terms substance use and substance abuse will be used to refer to the consumption of both alcohol and illicit drugs.

### Substance Use During Adolescence

Adolescence is a logical starting point for the study of substance use for a number of reasons. Adolescence is the period during which most people first experiment with drugs and alcohol, allowing the initiation of use to be studied. Recent data indicate that by the end of high school a majority of students (55%) have tried alcohol and a significant proportion (31%) have used alcohol in the past month (Wetzel,

1987). In this same sample 23% had tried marijuana. The vast majority of individuals between 18 and 25 were described as drinkers (91%) and 60% had tried marijuana. Rates of use by rural appear to be comparable to these levels of use (Lasseby and Carlson, 1980; Napier, Carter & Pratt, 1981) and correlates of use by rural adolescents are the same as those found in non-rural samples (Lasseby & Carlson, 1980; Sarvela & McClendon, 1983).

Overall, substance use in the United States has changed in the past 20 years. There has been an overall decline in use of alcohol and a shift toward beer and wine and away from "hard" liquor. Straus and Horan (1980) in their review of the literature indicate that illicit drug use by high school students peaked in the late 1970's and has continued to decline since this time. However, changing health concerns, increased recognition of the negative long term impact of heavy use, and the association of adolescent substance use to other problem behaviors (the problem behavior syndrome) make adolescent substance use an important topic for study.

Until recently, research in this area appeared to assume that adolescent alcohol and drug use were associated linearly with adolescent problems. Recent findings suggest, however, that not all types and levels of substance use are necessarily problematic for adolescents (Shedler & Block, 1990). These findings consequently indicate that future research should investigate both linear and quadratic trends relevant to

substance use among adolescents. Quadratic trends indicate curvilinear associations found in the data. These recent findings indicate that adolescents who experiment with drugs and alcohol may be more mentally healthy than those who abstain from use or those who are more involved with substances.

Adolescent substance use provides a useful starting point from which the effects of socialization on development, and specifically the development of psychopathology during adolescence, may be investigated. In their studies, the Jessors (Jessor, Chase & Donovan, 1980; Jessor & Jessor, 1977) and Barnes (Barnes, 1984; Barnes & Welte, 1986) have noted the relationship of drug and alcohol use to deviant behavior. The association found among these behaviors has been termed the Problem Behavior Syndrome (Jessor & Jessor, 1977). Barnes (1984) found that moderate-heavy and heavy adolescent drinkers had gotten into trouble more often at school and with police. These same adolescents had more difficulties with friends because of their drinking, were more likely to have run away from home, and were more likely to lie to get something they wanted or to have purposely beaten someone up. Barnes (1984) describes the theory underlying the Problem Behavior Syndrome:

"The underlying assumption...that youthful alcohol abuse is not best characterized as a unitary disease entity. Rather, it was proposed that alcohol abuse is a multifaceted social phenomenon and occurs in the context of other problem behaviors. (Furthermore, alcohol abuse and other problem behaviors may have common causal factors within the context of the parental socialization process.")

It is also important to study adolescent substance use from a developmental perspective due to findings which indicate that the earlier an adolescent becomes involved with drugs or alcohol, the more likely this individual is to continue on to more serious levels of use (Newcomb and Bentler, 1989). It is recognized that not all substance use is problematic and that intervening with non-problematic users may be destructive in its own right (Newcomb & Bentler, 1989). As a result, findings which differentiate early and heavy substance users from adolescents who engage in lighter and later experimentation with drugs and alcohol are needed.

Finally, the study of substance use by adolescents is also important due to the its association with continuing consequences for later life (Jessor & Jessor, 1977; Newcomb & Bentler, 1988). In addition to the problem behaviors noted above, adolescent substance abusers are less interested in school (Babst, Miran & Koval, 1976) receive lower grades in school and are less likely to plan to attend college (Wechsler & Thum, 1973) than those who drink at moderate levels. Recent findings from a large longitudinal study (Newcomb & Bentler, 1988, 1989) have also indicated heavy use and the use of certain drugs during adolescence can have a serious and negative impact on later development. Heavy drug users tend to get involved precociously in work and family roles and tend to forsake educational pursuits. Poly-drug users have more failed marriages and suffer from job instability.

A methodological difficulty in adolescent substance use research is differentiating substance use from abuse (Horan & Straus, 1980). Unlike adults, adolescents rarely show physical signs of substance abuse such as physical dependence or withdrawal (Barnes, 1984). As a result, the definition of substance abuse focuses on problems resulting from substance use and the number of times an individual is intoxicated in the past year (Jessor & Jessor, 1977; Jessor, Chase & Donovan, 1980; Barnes, 1984). However, involvement on any level with certain substances (heroin, PCP or crack-cocaine for example) may represent problem use due to the danger posed by the use of the substance itself.

Although alcohol and drug use are being grouped together in this paper, studies have shown that the use of different substances (alcohol vs. marijuana for example) may reflect different levels of substance use (Kandel, 1975; Jessor, Chase & Donovan, 1980). Jessor, Chase & Donovan (1980) found that one pathway to "hard" drug use was characterized by the following sequence of use: cigarettes, alcohol, marijuana, problematic alcohol consumption and illicit drug use. They found that very few adolescents become involved with more "advanced" substances without first experimenting or using less addictive drugs.

## Adolescence

Adolescence is a transitional period during which there is a shift in the parent child relationship. It has been suggested that adolescents give up many dependencies of childhood and move toward a more independent and autonomous adult self (Blos, 1962; Rae, 1980). One premise of the present study is that the shift, which occurs during this period, may leave some adolescents vulnerable to substance abuse.

The literature on the separation-individuation process of adolescence has been marked by a division between the psychoanalytic and research literatures. Research in this area has tended to focus on the psychoanalytic claim that adolescence is normatively marked by conflict or "storm and stress" (Blos, 1963). This tumult is said to result from the adolescent's attempt to pull away from his or her parents. Although research has found that adolescence is not necessarily marked by conflict (Bandura, 1964; Montemayor, 1983; Rutter, Graham, Chadwick & Yule, 1976), focus on this aspect of Blos' work has occurred to the exclusion of consideration of other aspects of his theory (Hill & Holmbeck, 1986). Specifically, Blos (1962, 1963) attempts to explain why adolescents begin to pull away from their parents during this period and how, when this process miscarries, delinquency (and substance abuse) frequently result.

Increase in the intensity of drives and a reactivation

of primary object relations make the adolescent's role in the family somewhat precarious according to Blos. The adolescent simultaneously experiences an increase in sexual impulses and more extreme feelings of dependency on his or her parents. This experience of adult (genital) sexuality coupled with the intense experience of dependency cause the adolescent to begin to gradually disengage. This disengagement allows the adolescent to function in more independent, mature and age appropriate ways. Healthy adolescents turn their interests into appropriate peer and heterosocial relationships outside of the family.

The optimal separation-individuation is described as a decrease in emotional dependency on parents without a loss of love or respect by an adolescent for his or her parents. Research has supported the idea that the separation-individuation process may best occur when the adolescent feels a strong sense of love and support from his or her parents (Pipp, Shaver, Jennings, Lamborn & Fischer (1985). Such a relationship may allay fears of separation by the adolescent, allowing the separation process to continue. There does appear to be agreement in research and theoretical literatures that for healthy development to occur, adolescents, particularly young adolescents, need to feel that their parents are supportive and emotionally available to them (Pipp et al., 1985; Rae, 1980).

Blos (1963) provides clinical descriptions of adolescents

unsuccessful in their attempt to individuate in a healthy manner. This frequently occurs when an adolescent is unable to seek support from his or her parents during this process, or when the adolescent seeks to defend against the experience of intense dependency needs by rejecting his/her parents. These adolescents frequently turn precociously to adult-like behavior and to an extreme peer orientation, in an attempt to fill the void. This precocious development is frequently cited as an explanation for adolescent substance abuse (Kandel, 1975). In short, Blos' argues that much of the behavior associated with adolescent substance use may originally result from disruptions in the parent-child relationship. Such a position, that the parent-adolescent relationship lies at the root of adolescent substance use, is implicit in Jessor and Jessor's (1977) contention that extreme peer orientation noted in adolescent substance users result from a disturbed parent-child relationship.

### The Influence of Peers

A large body of literature has accumulated which documents the influence peers have on the initiation of adolescent substance use (Winfrey, 1985). Specifically, Norem-Hebeisen & Hedin (1983) argue that use by peers "exert an undeniable influence" on adolescent substance use. Similar conclusions have been drawn by Sarvela & McClendon (1983) in their research. Peer use is correlated with personal use of



alcohol and marijuana by adolescents as well as other substances in large national and statewide samples as well as rural samples (Babst, Miran & Koval, 1976; Brook, Whiteman & Scovell Gordon, 1981; Jessor, Chase & Donovan, 1980; Kandel, 1974; Lassey and Carlson, 1980; Linn, 1971; Sarvela & McClendon, 1983; Wechsler & Thum, 1973). Peer influence has been among the most consistent findings of drug research over the past 20 years (Winfrey, 1985). Norem-Hebeisen & Hedin (1983) argue that the consistency and strength of such findings indicate that adolescent prevention and treatment programs must be based on peer influence if they are to be successful.

Although peer influence has clearly been a robust finding, the literature has provided little indication why certain individuals are affected while others are not. One set of explanations has focused on the social context of substance use. Peers are viewed as crucial to the substance use initiation process, providing information on how to obtain alcohol and drugs, how to use them, as well as framing the effects of the substances as pleasurable (Linn, 1971; Kandel, 1974). Defining the experience as pleasurable may be particularly important due to recent findings which indicate that mood does not become more positive when marijuana has been used and level of activation (or energy level) may actually decrease (Larson, Csikszentmihalyi & Freeman, 1984). Second, the importance of peers in obtaining substances which

are illegal, may make clear the reason peer use is so strongly related to personal substance use (Jessor & Jessor, 1977; Linn, 1971). Third, the risk associated with engaging in an illegal behavior may require peer support for such socially disapproved behaviors (Sarvela & McClendon, 1983).

Research on the influence of peers on personal substance use has indicated how peers may be involved in the initiation of alcohol and drug use, but not why some adolescents appear to seek out or associate with peers who are substance users. Arguments put forth to explain these findings include the generation gap (Kandel, 1974), rites of passage (Norem-Hebeisen & Hedin, 1983) and youth subculture (Winfrey, 1985).

Rather than focusing attention on the correlation between peer and personal substance use, a number of studies have looked at whether adolescents who are relatively more influenced by peers than parents tend to be heavier substances users. This is a useful question for two reasons. First, because of the finding that peer substance use strongly correlates with personal use and second, due to the shift in salience from family to peers, adolescent susceptibility to peer pressure may increase. This shift may result in greater susceptibility to deviant behavior in general and substance use in particular (Rae, 1980). Adolescents who are more peer oriented are more likely to make decisions in accord with their peer's wishes, while those that are more parent oriented are more likely to make choices in line with their parent's

wishes (Larson, 1972). Also, Silverberg and Steinberg (1986) in a study of adolescent autonomy, found that adolescents who were more emotionally disengaged from their parents were more susceptible to peer pressure. Studies of this question have consistently found that adolescents who are more peer oriented are more likely to use both alcohol and other drugs than teenagers who are more parent oriented (Winfrey, 1985).

### Family Variables

Although findings in the area of family relationships and adolescent substance use have not been as robust as correlations between peer and personal use (Jessor and Jessor, 1977; Newcomb and Bentler, 1989), findings in this area may be more significant for understanding the etiology of adolescent drug and alcohol use. Individuals that turn away from their families, who use drugs and are more peer than parent oriented, may do so as a result of their family experience (Rae, 1980). Knowledge of family variables which may predispose adolescents to substance use would help guide prevention programs, particularly primary prevention programs aimed at helping adolescents to avoid initial use.

A number of studies have noted the greater prevalence of alcohol use (Wechsler and Thum, 1973) and drug use (Braught et al., 1973; Jurich et al., 1980; Silverberg & Small, 1991; Turner, Irwin & Millstein, 1991) in adolescents from single family homes. Adolescents from these homes also are more

likely to be involved in more serious levels of substance use than adolescents from intact homes. It is unclear from this literature what it is about being from a non-intact home which may predispose individuals to become involved with drugs and alcohol. It may be the combination of less emotional availability of the parent for the child and less physical availability leading to less parental supervision.

One study has probed the mechanism whereby individuals from single parent families are more likely to be substance users. Longitudinal research by Newcomb and Bentler (1988) provides evidence that

"family disruption leads to disenchantment with traditional values and the development of deviant attitudes, which in turn provide the foundation for drug use." (pg. 418).

In their path analysis family disruption (operationalized as single parent family status) correlated more strongly with deviant attitudes than substance use (at time 2 of their longitudinal study) and deviant attitudes (at time 2) correlated with substance use (at time 3). Wechsler and Thum (1973) offer a similar interpretation, that family disruption fosters deviant attitudes which result in substance use.

Single parents may have greater difficulty supervising or engaging their children in warm, supportive relationships. Transmission of values may be more difficult in these families, predisposing these adolescents to "deviant" attitudes. The divorce literature has indicated that changes in the parent-child relationship do occur, and can be

particularly problematic for mother-son relationships (Heatherington, 1986).

Investigations of adolescent substance use have indicated that disruption in the parent child relationship, either in the form of lax or absent parental control or a relationship experienced as less close or supportive by the adolescent, are associated with more substance use. A lack of control by parents or greater permissiveness by parents has been associated with more serious levels of drug use especially when parents use drugs themselves (Brook et al., 1980). It is also associated with marijuana use by males (Jessor and Jessor, 1977). Galli (1977) found that adolescents with moderately "dominant" parents were found to have the "best" attitudes toward drugs and the least drug use when compared to individuals with parents rated low in "dominance" who used more drugs. Parents who set fewer limits (Turner, Irwin & Millstein, 1991) and those who are less aware of their adolescent's whereabouts and activities are more likely to have children that use drugs (Silverberg & Small, 1991).

In addition to this indirect support for the parent child relationship as etiologically important for adolescent substance use, a number of studies have investigated this relationship, and the family relationship more directly. Adolescents who use alcohol feel less close to their parents than those who do not use or use less alcohol (Wechsler & Thum, 1973). Adolescents who drink more are also more likely

to feel that they have been rejected by their parents than those who drink less (Pendergast & Schaefer, 1974). As noted above, a close relationship with ones parents has also been found to be associated with less alcohol use, especially in later adolescence (Lassey & Carlson, 1980). Those adolescents who use drugs also feel less close to their parents (Jessor & Jessor, 1977), experience their mother as less warm and experience less positive reinforcement (Brook, Whiteman & Gordon, 1980) than adolescents who do not use or are involved in less serious levels of use. Less overall family cohesion has also been noted among heavier adolescent drug users (Babst, Miran & Koval, 1976) as has an unstable family life for marijuana use (Napier, Carter & Pratt, 1981). Greater emotional detachment was found to be related to the number of substances used (Turner, Irwin & Millstein, 1991). Reviewing the literature on adolescent substance use, Jurich et al. (1985) argue that adolescent substance abusers "lack recognition, love and trust (in their families)... and therefore become more peer oriented because of the vacuum in their life" (page 145).

#### RATIONALE

The literature cited suggests that a significant factor underlying adolescent substance use is the parent child-relationship. Adolescents with disrupted relationships with their parents are more likely to use both alcohol and

marijuana. Research has indicated that strong parent-child relationships may provide a buffer for adolescent substance use. A weak parent-child relationship is also associated with more extreme peer involvement which has in turn been associated with both alcohol and substance use during adolescence. In addition, recent research has indicated that adolescent experimentation with substances is normative and that those who engage in limited use may be psychologically healthier than those who abstain or engage in heavy use.

### HYPOTHESES

Based on the literature cited above, the following hypotheses were proposed:

- 1) Heavier users of alcohol and drugs will spend less time with their parents and families than those who report less use.
- 2) Compared to students reporting less use, heavier users will report less positive moods and express a greater wish to be with others when with parents.
- 3) Heavier users will report feeling less accepted by their parents when with them than lighter users.
- 4) Heaviest alcohol and marijuana users will report a greater difference between overall measures of their moods when with parents compared to when with peers. Lighter and moderate users will report less of a difference between their feelings when with parents and peers.

5) Adolescents who use substances earlier (in lower grades) will report more disrupted experience of family than those who initiate substance use at a later time.



## CHAPTER II

### METHOD

#### Sample

The sample for this study was drawn from a larger longitudinal sample of 483 adolescents (Larson & Richards, 1989). The present study utilized data from the first two waves of data collection from time three of this larger study, totalling 142 participants from two midwestern suburban communities. One of these communities is working class (Community A), while the other is primarily middle class (Community B). During one week of each academic semester, data were collected at the high schools in these two communities.

Gender was nearly equally represented in the sample (females N= 73, males N= 69). Participants from Community A make up 52% of the sample (N=74) and those from Community B 48% (N=68). The grade breakdown is as follows grade 9 20% (N=28), grade 10 27% (N=39), grade 11 30% (N=42), grade 12 23% (N=33). A breakdown of grade by gender by community is presented in Table 1.

Table 1

Sample by Community, Grade and Gender

	Community A				Community B				Total				
	9th	10th	11th	12th	9th	10th	11th	12th	9th	10th	11th	12th	
Girls	5	11	10	12	8	9	15	3	13	20	25	15	73
Boys	6	11	5	8	9	8	12	10	15	19	17	18	69
Total	11	22	15	20	17	17	27	13	28	39	42	33	142

N= 142

## Procedure

The data were obtained as part of a large longitudinal research project investigating adolescence. The primary focus of the original study was mood fluctuation during early adolescence. The present study, a follow-up of the original sample, utilized a subset of cross-sectional data from time three of the larger study. This study utilized a multifaceted approach to data collection which included the ESM (Larson & Csikszentmihalyi, 1983), an interview, one questionnaire for parents and several questionnaires for the adolescents to complete. The present study made use of the data provided by the ESM and two short questionnaires completed by the adolescents.

The ESM utilizes pagers, similar to those used by physicians, as a means of collecting accurate data regarding individual's daily experience. Subjects are asked to fill out one page in a booklet of identical sheets each time they receive a signal. Because participants are asked to complete the sheet as soon after receiving a signal as possible, these data provide an accurate indication of their activities, thoughts and affective states, with less retrospective bias. Due to the randomness of the signals, the picture of daily activities provided by this method is assumed to be representative of the daily activities of the adolescents in the study.

The longitudinal data for the larger research project were collected approximately four years after the original data collection. For a thorough description of the procedure and methodology of the original study see Larson (1989). All of the participants from time one of the longitudinal study who were available at the high schools in the communities were invited to participate. The invitation meetings were carried out in small groups by one or two staff members from the research project. Students were asked to participate, given a letter with a brief description of the present study and consent form for their parents to sign. Of students available at the high schools, approximately 80% agreed to participate.

Participants were trained to carry the pagers and booklet of self report forms in small groups by research staff members on the first day of data collection. At this meeting students were informed that they would receive seven to eight signals daily, one at a random time in every two hour block of time between 7:30 a.m. and 10:30 p.m. on school nights and 8:30 a.m. and 12:30 a.m. on weekends. Use of the self report form was reviewed in detail by the staff member. Confidentiality of the data was stressed at this meeting and stickers were provided along with the booklet so that the completed pages could be "taped" shut, ensuring further confidentiality. At the end of the training session participants filled out a practice self report form allowing the staff member to be sure the adolescents understood how to complete it correctly.

Questionnaires were administered after the week of paging in groups. The battery of questionnaires required approximately 75 minutes to complete. Among these questionnaires was one measuring alcohol involvement and one measuring drug involvement. Both of these were adapted from the Drug and Alcohol Use questionnaire used by Jessor, Chase and Donovan (1980) in their national study of adolescent substance use. Amount and frequency of use, age of initiation, and problems associated with use were among variables assessed by this questionnaire.

## Measures

### ESM Variables

A review of the reliability and validity of the ESM have been reported previously (Csikszentmihalyi & Larson, 1987; Larson & Csikszentmihalyi, 1983). Reliability of the method appears adequate; the frequency of activities measured by this method is strongly correlated with those from time budget studies using diaries (Csikszentmihalyi & Larson, 1987). In a previous study utilizing the same sample, Larson (1989) found that the stability of the measures over the course of a week appear adequate. Csikszentmihalyi & Larson (1987) also report on the consistency over a two year period for high school students who were retested, indicating statistically significant consistency over this period.

Construct validity of the ESM has been investigated for

this sample by correlating average ESM ratings with other person variables (Larson, 1989). Average affect was correlated with Kovac's Children's Depression Inventory scores ( $r=-.34$ ,  $p<.001$ ), with self esteem ( $R=.21$ ,  $p<.001$ ) and teacher's ratings of students moods ( $R=.28$ ,  $p<.001$ ) (Larson, 1989).

### Subjective Experience Variables

All subjective experience variables were measured in a particular companionship context. That is, the variable measuring frustrated with friends provided a mean score of each adolescents response to the item measuring frustration when with friends for every adolescent in the sample. In addition, all subjective experience variables were z-scored to normalize within subjects. It was necessary to normalize within subjects due to subjective experience being measured within a given context. Z-scoring allows the subjective experience of respondents to be measured in context without being influenced by overall trends in responses to these items.

Subjective experience variables measured adolescents response to questions on a four point unipolar scale asking how well the word presented described their present feelings (e.g. 1=a lot, 2=a bit, 3=does not or 4=definitely does not). Subjective experience variables examined included: motivation, in control, wish to be engaged in activity, frustrated,

ignored, accepted and lonely. Motivation appears to be very stable over the course of the week. Correlations of first and second half of the week scores was .62 ( $p < .001$ ) in an earlier study using the same sample (Larson, 1989).

Affect was measured as an aggregate of the means of the following 7 point bipolar questions: happy to unhappy, irritable to cheerful, friendly to angry. Arousal was similarly measured by determining the aggregate of the following two items (strong to weak and excited to bored. Correlations from a previous study using the same sample found that correlations of affect over the first and second half of the week ranged between .66 to .71 ( $p < .001$ ). Correlations for items measuring arousal ranged from .66 to .73 ( $p < .001$ ) (Larson, 1989)

A seven point bipolar scale was used to measure the degree to which respondents companions were experienced as friendly to unfriendly, and serious to joking, with these subjective experience terms as poles.

The item which measured companionship preference asked respondents to indicate if they would rather have been alone, with family, or with friends, as opposed to the companion they were with at the time they were signaled.

#### Companionship Variables

Companionship was measured by the ESM self report forms. The question measuring companionship used a checklist format

in which students were asked to check off the social interaction in which they were engaged. For example, if a student was with their father and one friend at the time of a signal he/she was asked to mark both of these categories. For purposes of the present study responses were then categorized into groups consisting of parents, family, friends.

#### Substance Use Variables

Level of drug and alcohol use were measured by paper and pencil questionnaires modified from one used by Jessor, Chase and Donovan (1980). Questions measuring frequency and amount of use were multiplied to determine the approximate amount of alcohol consumed by each participant. This method has been employed by Barnes (1984) and Barnes & Welte (1984). Each student then receives a score approximately equal to the amount of alcohol consumed. Barnes (1984) found that those who drank more alcohol engaged in more problem behaviors than those who drank less. Drug use was measured by adolescents' response to questions asking the frequency of drug use and the most recent use. Frequency of use is often used as a measure of involvement with drugs (see for example Shedler & Block, 1990; Silverberg & Small, 1991; Winfree, 1985). In addition, frequency of use is nearly always one aspect of scales developed to measure substance use (e.g. Kandel, 1974; Newcomb & Bentler, 1988). Age of initiation for both alcohol and



drugs was measured by a question which asked participants to check off the age of their first experience with these substances.

## CHAPTER III

### Results

#### Substance Use

The present study utilized two alcohol and three drug use variables. Although these variables differed somewhat in their measurement of the students' involvement with alcohol, as expected, these variables were strongly correlated (see Table 2). The alcohol use variables consisted of 1) the amount of alcohol used (measured by multiplying the frequency of alcohol use and the average amount used) and 2) the age of first use as the second variable. The three drug use variables, 1) frequency of use 2) most recent use and 3) age of first use of drugs, were strongly correlated. (see Table 2). The drug and alcohol use variables were also strongly related, except for age of initiation for drugs, which was not related to any of the other substance use variables.

Consistent with the literature on adolescent alcohol use, the present study found that the vast majority (80%) of students had tried alcohol at least once. However, only 34% of respondents in the present study reported having had at least one experience with illicit drugs, somewhat lower than levels of use found in other studies. It should be noted, however, that there were a significant number of students who

Table 2

Correlation Matrix of Substance Use Variables


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	Drink	Alcohol Firstuse	Drug Freq	Drug Lastime
Drink				
Alcohol Firstuse	-.56***			
Drug Frequency	.55***	-.36***		
Drug Lastime	.54***	-.36***	.90***	
Drug Firstuse	-.14+	.06	-.11	-.13+

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+p<.10, \*p<.05, \*\*p<.01, \*\*\*p<.000

Sample size (n) varies somewhat for each analysis due to ESM method. For present analyses n varies between 108 and 128 subjects.

did not respond to these items on the substance use questionnaires (16%, n= 24 for alcohol; 20%, n=31 for drugs).

The age of first use of alcohol, for those who had tried it, was 13 years. The most frequently used type of alcohol was beer with 31% (n=47) indicating they used it most frequently, followed by 20% (n=31) who drank wine or wine coolers, and 12% (n=18) who consumed hard liquor most frequently. Those who had tried alcohol reported that they tended to drink between one and four times per month. When they drank, they reported that they averaged nearly four drinks per episode.

The average age of first use for drugs was 14.5 years old, with a range of eight years old to seventeen years old. Those who reported drug use indicated that they used between one and several times per year. The most frequently used drug (other than alcohol) were amphetamines (e.g. speed) with 32% (n=37) reporting this as the most frequently used drug, 31% reported cocaine as their drug of choice, 30% reported marijuana and 30% use of tranquilizers most frequently. It should be noted that problems with the design of the questionnaire may have contributed to the low response to the question probing marijuana use, with students not being clear as to where to check off the frequency of marijuana use; previous studies have found this to be the most commonly used drug (Jessor and Jessor, 1977; Wetzel, 1987).

Preliminary Analyses: Alcohol (see Table 3)

The preliminary analyses consisted of 1) correlations investigating linear relationships among the variables and 2) partial correlations, which controlled for linear relationships. The latter were designed to investigate the curvilinear predictions that moderate drinkers and drug users (and those that initiated use at a more moderate age) would experience their parents more positively than those who used more and those that used fewer substances.

Consistent with the hypothesis regarding adolescent substance use and the amount of time spent with peers, the correlations indicated that those students who drank more alcohol spent more time with their friends. (See Table 3) Those who initiated use of alcohol at an earlier age also spent significantly more time with their friends.

Consistent with these hypotheses, adolescents who consumed more alcohol also tended to spend less time with their parents. Those who drank more and those who began drinking at younger ages also tended to report wishing to be alone less often and tended to report preferring to be with their family less frequently (Table 3).

Consistent with the hypotheses, partial correlations controlling for the linear relationship indicated a curvilinear relationship; those who drank a moderate amount, relative to their peers and those who initiated use at a moderate age tended to prefer to be with their parents more

Table 3

Correlations of Companionship and Subjective Experience  
Variables with Alcohol Use Variables

	Amount of Drinking	Age of First Use
Percentage of Time with:		
Family	-.16+	.06
Parents	-.03	-.05
Friends	.22**	-.24**
Preferring to be alone	-.17+	.17+
Preferring to be with family	-.15**	.07
WITH FAMILY		
Joking	-.11	.19+
In control	.05	-.17+
Ignored	-.22*	.10
Accepted	.22*	-.21*

	Amount of Drinking	Age of First Use
WITH PARENTS		
Affect	.14	-.19+
Joking	-.05	.21*
In control	.04	.17+
Frustrated	-.21*	.19+
Accepted	.20*	-.11
FRIENDS		
Affect	-.17+	.09
Motivation	.27**	-.18*
In control	-.19*	.25**
Frustrated	.20*	-.24**

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+p<.10, \*p<.05, \*\*p<.01, \*\*\*p<.000

Sample size (n) varies somewhat for each analysis due to ESM method. For present analyses n varies between 91 and 127 subjects.

frequently than those who tended to use either more or less alcohol (Table 4).

### Friends

Correlations indicated that adolescents who consumed more alcohol reported feeling less in control when with their friends. Time with friends was experienced as more frustrating for those who drank more and for earlier initiators. Heavier drinkers also tended to report lower affect when with their friends (Table 3). Contrary to the aforementioned hypotheses, correlations found that the subjective experience of heavier drinkers was not more positive when with their friends. This is the case even though heavier and earlier drinkers reported more involvement in the activity in which they were engaged, when with their friends.

As predicted, partial correlations, which controlled for the linear relationships, found that adolescents who drank a moderate amount of alcohol, relative to their peers, experienced more positive affect and reported feeling more in control when with their friends. In addition, these moderate drinkers reported being less engaged in activities with their peers relative to their heavier and lighter drinking peers (Table 4).

Those who initiated use at a more moderate age felt more frustrated, were less invested in activities when



Table 4

Partial Correlations of Time with and Subjective Experience Variables with Curvilinear Alcohol Use Variables

PARTIAL CORRELATIONS		
	Curvilinear Age of First Use	Curvilinear Amount of Drinking
<b>TIME WITH VARIABLES</b>		
Preferring to be with family	.16+	.21*
Joking with family	.10	.20*
Accepted with family	-.03	-.26**
<b>WITH PARENTS</b>		
Joking	.02	.17+
Frustrated	.18+	.18+
Accepted	.03	-.19+
<b>WITH FRIENDS</b>		
Affect	.13	.20*
Motivation in activity	-.21*	-.18*
<b>WITH FRIENDS</b>		
In control	.11	.17+
Frustrated	-.22*	-.07

+p<.10, \*p<.05, \*\*p<.01, \*\*\*p<.000

Sample size (n) varies somewhat for each analysis due to ESM method. For present analyses n varies between 88 and 124 subjects.

with their friends but experienced their peers as more joking relative to those who began drinking at younger and older ages (Table 4).

#### Parents and Family

The present correlational analyses did not support the hypotheses that heavier drinkers would report more negative experiences of time with family. Nearly all of the significant findings indicated the opposite relationship. Only a trend was found in the expected direction, which indicated that those who initiated use of alcohol later tended to experience their parents and family as more "joking" rather than "serious". Adolescents who drank more felt less ignored by their families than their peers who drank less. Heavier drinkers and those who initiated use earlier reported feeling more accepted by their parents and families than those who drank less and they felt less frustrated when with their parents. Earlier initiators felt more in control when with their families than those who began drinking at later ages (Table 3).

Partial correlations, which controlled for the linear relationships, indicated that adolescents who drank a moderate amount, relative to their peers, preferred to be with their family more than those who reported more or less use. These moderate drinkers also experienced their family as more joking rather than serious but reported feeling less accepted with their families. A trend indicated that those who began to

drink at a more moderate age reported that they preferred to be with their families more frequently than those who initiated use at a younger age and than their older peers (Table 4).

Those adolescents who indicated that they consumed a moderate amount of alcohol, relative to their peers, tended to experience their parents as less accepting, felt more frustrated when with them, both findings are opposite to the expected hypotheses. Moderate drinkers reported their parents as more joking compared to those who drank more and those that drank less alcohol (Table 4).

#### Preliminary Analyses: Drugs

##### Parents and Family

The hypothesis that those participants who used drugs more often spent significantly less time with their parents and family was strongly supported by these correlations. Those who reported more use, who used drugs more recently and those who initiated use at an earlier age spent less time with their parents and family (Table 5).

The hypotheses that more frequent drug users would report a more negative subjective experience when with their families were not supported. Earlier initiators reported feeling less ignored by their families and less lonely when with their parents and families. Heavier users reported feeling more in control with their families, less ignored and more accepted

Table 5

Correlations of Time with and Subjective Experience Variables  
with Drug Use Variables

	Drug Use Frequency	Most Recent Drug Use	First Drug Use
<b>TIME WITH VARIABLES</b>			
Time with family	-.32**	-.35***	.33***
<b>WITH PARENTS</b>			
Time with parents	-.22*	-.25**	.29*
<b>WITH FAMILY</b>			
In control	.18+	.20+	-.13
Ignored	-.19+	-.16	.30**
Accepted	.20+	.16	-.10
Lonely	-.17	-.12	.21*
<b>WITH PARENTS</b>			
Friendly	.17+	.17	-.21*
In control	.16	.18+	-.12
Frustrated	-.18+	-.23*	.17

	Drug Use Frequency	Most Recent Drug Use	First Drug Use
<b>WITH PARENTS</b>			
Ignored	-.11	-.10	.26*
Lonely	-.12	-.07	.21+
<b>FRIENDS</b>			
Aroused	.16+	.20*	-.20*
Motivated in activity	.17+	.17+	-.18+
In control	-.28**	-.29**	.28**
Frustrated	.23*	.20*	-.20*

+p<.10, \*p<.05, \*\*p<.01, \*\*\*p<.000

Sample size (n) varies somewhat for each analysis due to ESM method. For present analyses n varies between 88 and 124 subjects.

when with their parents and families. Those who reported more recent use felt more in control as well. When with their parents they reported feeling less frustrated and more friendly than those who used drugs less frequently (Table 5).

Partial correlations investigating curvilinear relationships, which controlled for the linear relationships, found that moderate drug using adolescents spent more time with their families than those who reported more and those that reported less use. Moderate users also tended to report spending more time with their parents. Those who initiated use of drugs at a more moderate age felt least ignored, felt more friendly when with their families but felt less accepted relative to those who initiated use at younger or older ages. Those who reported that they used drugs moderately recently, relative to their peers, tended to report feeling more in control when with their parents and families. Those who initiated use at a moderate age reported feeling less ignored when with their parents (Table 6).

### Friends

Correlations indicated that when more frequent drug users were with their friends they felt more investment in their activity. However this was the only subjective experience which was significant in the predicted direction when the students were with their friends. The remainder of the significant findings were in the direction opposite of that

Table 6

Partial Correlations of Time with and Subjective Experience Variables with Curvilinear Drug Use Variables

	Frequency of Drug Use	Most Recent Drug Use	First Drug Use
<b>TIME WITH VARIABLES</b>			
Time with family	.19*	.09	.09
Time with parents	.18+	.01	.04
<b>FAMILY</b>			
Friendly	.08	.14	.24*
In control	.16	.19+	.11
Ignored	.08	-.03	-.45***
Accepted	.04	.01	-.19+
<b>PARENTS</b>			
In control	.14	.18+	.11
Ignored	.08	-.05	-.45***

+p<.10, \*p<.05, \*\*p<.01, \*\*\*p<.000

Sample size (n) varies somewhat for each analysis due to ESM method. For present analyses n varies between 77 and 108 subjects.

predicted (Table 5).

More frequent, most recent and earlier initiating drug users felt less in control when with their friends. More frequent and most recent users reported feeling more frustrated and more aroused when with their friends. Earlier initiators also felt more aroused and frustrated when with their friends (Table 5).

### Regressions

Regressions were computed to examine the data on both the linear and curvilinear dimensions. To discover whether these factors are critical in the prediction of alcohol and drug use the linear and curvilinear time spent with and subjective experience variables were included in the regression equation to determine whether they predicted a significant amount of the variance.

### Alcohol

The first regression involved predicting the amount of alcohol consumed. The variables included in the equation were the linear and curvilinear forms of: feeling frustrated with friends, investment in activities with friends, feeling ignored with family, feeling accepted with parents. This regression indicated that those students who drank more spent more time with friends, felt less ignored by their family and felt more frustrated with their friends. Together



Table 7

Stepwise Regression Explaining Alcohol Use

<u>Variable</u>	<u>R</u>	<u>R<sup>2</sup></u>	<u>F<sup>a</sup></u>	<u>B<sup>b</sup></u>
Time with friends	.22	.05	.45	.22
Ignored by family	.31	.09	4.20	-.21
Frustrated with friends	.35	.13	3.13	.18

<sup>a</sup> F is a test of the incremental change in R with each additional variable. All are significant at the .05 alpha level.

<sup>b</sup> Standardized Beta Coefficient.

these variables accounted for 12.6% of the variance (see Table 7).

The next regression involved predicting the age students first drank alcohol. The linear and curvilinear forms of: feeling ignored by family, amount of time spent with friends and feeling frustrated with friends were included in the regression equation. Those who spent more time with friends and those who felt moderately ignored when with their family began drinking earlier. Together accounted for 11.7% of the variance (see Table 8).

#### Drug Use

The variables used to predict the frequency of drug use were the linear and curvilinear forms of the amount of time with family, feeling in control and frustrated with friends. This analysis found that time spent with family and the curvilinear square of this variable, the amount of frustration reported when with their friends and the square of this variable significantly predicted drug use. Together these variables accounted for 21.5% of the variance (see Table 9).

The next regression predicted the most recent use of drugs. The linear and curvilinear forms of: the amount of time with family, feeling in control and frustrated with friends, and feeling frustrated with parents were included in the regression equation. Those who used drugs most recently

Table 8

Stepwise Regression Explaining Age of Initiation for Alcohol

Variable	R	R <sup>2</sup>	F <sup>a</sup>	B <sup>b</sup>
Time with friends	.29	.08	8.75	-.29
Curvilinear ignored by family	.34	.12	3.99	.19

<sup>a</sup> F is a test of the incremental change in R with each additional variable. All are significant at the .05 alpha level.

<sup>b</sup> Standardized Beta Coefficient.

Table 9

Stepwise Regression Explaining Frequency of Drug Use

Variable	R	R <sup>2</sup>	F <sup>a</sup>	B <sup>b</sup>
Time with family	.33	.11	12.26	-.33
Curvilinear Time with family	.50	.25	3.08	.46
Frustration with friends	.40	.16	6.05	.23
Curvilinear Frustration with Friends	.48	.23	3.55	.23
Control with friends	.45	.20	4.54	-.20

<sup>a</sup> F is a test of the incremental change in R with each additional variable. All are significant at the .05 alpha level.

<sup>b</sup> Standardized Beta Coefficient.

Table 10

Stepwise Regression Explaining Most Recent Drug Use

Variable	R	R <sup>2</sup>	F <sup>a</sup>	B <sup>b</sup>
Control with friends	.29	.09	7.71	-.29
Time with family	.35	.12	3.57	-.20
Frustrated with parents	.40	.16	3.50	-.20

<sup>a</sup> F is a test of the incremental change in R with each additional variable. All are significant at the .05 alpha level.

<sup>b</sup> Standardized Beta Coefficient.

felt less in control with friends, spent less time with family and felt less frustrated with parents (see Table 10).

The final regression predicted the age of first drug use. The linear and curvilinear forms of: feeling in control and feeling frustrated with friends, the amount of time with family and feeling ignored with parents were included in the regression equation. Those who felt least ignored when with family, who spent less time with their family, and felt least in control when with friends used drugs earliest. Those who felt moderately ignored with family tended to use drugs later. Together these variables accounted for 24% of the variance (Table 11).

Table 11

Stepwise Regression Explaining Age of Initiation for Drugs

Variable	R	R <sup>2</sup>	F <sup>a</sup>	B <sup>b</sup>
Ignored with family	.28	.08	6.67	.28
Curvilinear ignored with family	.49	.24	5.58	-.36
Time with family	.38	.15	5.86	.26
Control with friends	.43	.18	3.11	.19

<sup>a</sup> F is a test of the incremental change in R with each additional variable. All are significant at the .05 alpha level.

<sup>b</sup> Standardized Beta Coefficient.

## CHAPTER IV

### Discussion

The findings of the present study supported few of the hypotheses. In contrast to expectations, heavier drinkers and drug users felt more negatively with their peers and somewhat more positively with their parents and family.

The hypotheses regarding time spent with friends and parents/family were supported with heavier drinkers spending more time with their friends, although not less time with their parents or family. More frequent drug users spent less time with their families as predicted, but not more with their friends. Given these findings, it is particularly interesting that heavier substance users felt more positively with family and not more negatively.

In opposition to the hypotheses, time spent with parents and family was experienced more positively by those who drank more and took drugs more frequently. Specifically, heavier drinkers and drug users felt more accepted, less frustrated and less ignored, when with their parents and family. Those who initiated use of alcohol and drugs earlier experienced their parents and family as more joking as opposed to serious. They also tended to feel more in control when with their parents and family.



In contrast, when with their friends, heavier drinkers felt more frustrated, experienced lower affect and felt less in control. Nevertheless, they spent more time with their friends and were more motivated in their activities when with their friends. Similarly, more frequent drug users felt more frustrated and less in control with their friends. They also tended to feel more aroused and motivated in their activities with their friends.

The results of the present study are surprising given the literature on adolescent drinking and drug use. This literature indicates that adolescent substance users feel less close to their parents (Pendergast & Schaefer, 1974; Turner, Irwin & Millstein, 1991; Wechsler & Thum, 1973) and that their families are marked by less cohesion than families of those adolescents that drink less. At the same time heavier substance using adolescents are more peer oriented than their lighter using peers. Given these previous findings it is not surprising that the present study found that heavier drinkers spent more time with their friends and heavier drug users spent less time with their parents and families. However, the way that heavier substance users felt in these different contexts is surprising. Both heavier drinkers and more frequent drug users tended to feel slightly more positive when with their parents and slightly more negative when with their friends.

One explanation for these surprising findings may be that

the variables used in this study which measured the adolescent's relationships (with parents/family and friends) may be measuring an aspect of these relationships other than "closeness". The subjective experience of heavier drinking and drug using adolescents when with their parents and friends therefore may not be positively correlated with how close they feel to them, as the present study predicted. The degree of closeness experienced by adolescents may be related to issues other than how they felt in a given context, such as the amount of support and guidance provided. The heavier drug using adolescents in this study may have felt somewhat better when with their parents and family but the amount of time spent with them suggests that there was something missing from this relationship.

The parent-adolescent relationship of substance abusing students may be marked more by disengagement and lack of support rather than overt discord. Recent research by Baumrind (1991) found that the parenting style of problem drinking and drug using adolescents was marked by a less directive and more permissive parenting style. These families were more disorganized than those who did not abuse substances. The heaviest drinking and drug using adolescents were rated as less competent. Her findings also indicate that competence was related to the parenting style as well, with authoritative parenting being related to the most competence and authoritarian, nondirective and disengaged parenting style

related to less competence. Baumrind (1991) states that "the success of authoritative parents in protecting their adolescents from problem drug use and in generating competence should be emphasized..." and that her data "affirm the continuing importance of parents to the healthy development of their adolescents." (pg.91)

In her study, Baumrind (1991) described authoritative parents as those that are both highly demanding and highly responsive to their adolescent children. Both directiveness and responsiveness to their children were important to development of competent children according to Baumrind. In contrast, non-directive families were rated as very non-restrictive but responsive to their adolescents. Non-directive parents allowed considerable self-regulation and avoided confrontation with their adolescents. Unengaged families were neither responsive nor demanding with their adolescents. These families were also rated as disorganized by independent raters. The findings of the present study may suggest that those who are more involved with substance use, while not experiencing time with their parents negatively, simply may not be deriving direction or support either and therefore do not seek more time with their family.

Another recent study (Turner, Irwin & Millstein, 1991) reported similar findings with parent limit setting being negatively related to the number of substances used by adolescents. Poor parental monitoring, or not knowing the

whereabouts, friends, and activities of adolescents was found to be related to both marijuana and alcohol use as well as number of times drunk (Silverberg & Small, 1991).

As expected, heavier drinking and drug using students in the present study appeared to value their time and relationship with their peers. However, as noted, the time they spent with their friends appeared to be experienced somewhat more negatively than similar time experienced by those that drink and use drugs less frequently. It is possible that the social skills of these adolescents are not as well developed as their peers who use less drugs and alcohol. It is possible, that the disengaged relationships with their families did not facilitate the social skills necessary for satisfying relationships. As a result of family relationships being unsatisfying, these teens may have invested more in their peer relationships, but greater investment in these relationships did not mean that time with their friends will be entirely satisfying. Although the literature on adolescent substance use focuses on the role of modeling and peer pressure that friends play in adolescent substance use, recent articles have noted poor peer relationships in those adolescents who use drugs and alcohol (Macdonald & Czechowicz, 1986; Reid, Martinson & Weaver, 1987). In addition to poor peer relationships, Macdonald and Weaver (1986) argue that low self-esteem and inadequate social skills are symptoms of child and adolescent substance use.

Given the present findings, the quality of adolescents' interpersonal relationships is an area which deserves further investigation.

There are a number of limitations to the generalizability of the findings. First, given samples similar to the present, a sample skewed toward less drug and alcohol use with few heavy users, it may be useful to group the data into abstainers, moderate/experimenters and heavy users. Findings from the present study (Philbin, Kizior, Richards, 1991) suggest that abstainers may represent a group significantly different from their peers who use substances.

The generalizability of the findings are also hampered by the limited socioeconomic, ethnic and racial diversity of the sample. Recent studies have indicated that African American adolescent attitudes toward alcohol use differ, and that they were more concerned about their parents' rather than friends' disapproval. White adolescents' attitudes toward drinking were more influenced by their friends' disapproval (Ringwalt & Palmer, 1990). Similarly, adolescent substance use rates may differ among other ethnic groups as well as across socioeconomic status (Morales, 1984).

Due to the present findings future research should look at the relationship between adolescents' ratings of their relationships and their subjective experience in different social situations. Also, given recent findings regarding the role of parenting style and parental status (single vs. intact

variables would appear beneficial to the understanding of substance use during adolescence.

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The final copies have been examined by the director of the thesis and the signature which appears below verifies the fact that any necessary changes have been incorporated and that the thesis is now given final approval by the Committee with reference to content and form.

The thesis is therefore accepted in partial fulfillment of the requirements for the degree of Master of Arts.

12-10-91  
Date

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