eCOMMONS

Loyola University Chicago

Loyola eCommons

Master's Theses

Theses and Dissertations

1993

Subjective experience of problem behaviors in adolescents

Paul Crowe
Loyola University Chicago

Follow this and additional works at: https://ecommons.luc.edu/luc_theses

 Part of the Psychology Commons

Recommended Citation

Crowe, Paul, "Subjective experience of problem behaviors in adolescents" (1993). *Master's Theses*. 3842.
https://ecommons.luc.edu/luc_theses/3842

This Thesis is brought to you for free and open access by the Theses and Dissertations at Loyola eCommons. It has been accepted for inclusion in Master's Theses by an authorized administrator of Loyola eCommons. For more information, please contact ecommons@luc.edu.

This work is licensed under a Creative Commons Attribution-Noncommercial-No Derivative Works 3.0 License.
Copyright © 1993 Paul. Crowe

LOYOLA UNIVERSITY CHICAGO

SUBJECTIVE EXPERIENCE OF PROBLEM BEHAVIORS IN ADOLESCENTS

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

DEPARTMENT OF PSYCHOLOGY

BY

PAUL CROWE

CHICAGO, ILLINOIS

MAY 1993

Copyright by Paul Crowe, 1993
All rights reserved.

ACKNOWLEDGMENTS

I wish to thank my committee members, Dr. Maryse Richards and Dr. Karen Wills, for their invaluable support and guidance with the preparation of this manuscript. I am also grateful to Dr. Maryse Richards and Dr. Reed Larson for providing me with the opportunity to participate in their research project.

This study was supported by NIMH grant number MH38324, "Stress in Daily Life During Adolescence," awarded to Reed Larson and Michael Reese Hospital, and NIMH grant number MH42618, "Effects of Maternal Employment on Young Adolescents," awarded to Maryse Richards.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

CHAPTER I

INTRODUCTION

Adolescence historically has been considered a period of turbulence. The combination of physical maturation and increasing societal demands and responsibilities during adolescence can create periods of distress for both adolescents and the persons around them. One factor that contributes to the popularly perceived notion of adolescence as a difficult period of the human lifespan is adolescent deviant or problem behavior. Consequently, a great deal of research has been conducted on adolescent problem behavior. Many different forms of adolescent problem behavior have been studied, but few of these have concentrated on the subjective daily experience of adolescents engaging in problem behavior. Most research on problem behavior relies on either survey or interview techniques. The present study was designed to review recent research on adolescent problem behavior and investigate several questions related to the experience of adolescents who engage in problem behaviors:

1) In what ways do adolescents who engage in problem behavior experience daily life differently than those who do not? Specifically, this study will assess the stimulation need, mood, and daily level of affect of adolescents who engage in problem behaviors, with and without their peers, compared to their non-problem behavior peers.

2) Is the subjective experience of the adolescent similar across different problem behaviors? Are all problem behaviors associated with similar subjective states? For example, do all problem behaviors lead to a reduction in feelings of boredom?

Problem Behavior Theories

Although various terms are used to describe problem behavior -- for example: reckless, risk-taking, and thrill-seeking behaviors, this paper will use the most common single phrase "problem behavior". After a review of several theories and definitions of problem behavior, I will provide an overview of factors related to problem behavior, an operational definition of problem behavior, and examples of problem behavior.

Jessor and Jessor (1977; Donovan & Jessor, 1985) define adolescent problem behavior as a broad category of behaviors that are socially defined as undesirable or inappropriate by institutions of adult authority, depart from regulatory norms typically applied to adolescence, and usually elicit some type of social control response or negative social sanction. While these behaviors are purported to serve many functions, the primary function of adolescent problem behavior is to serve as a marker (to the adolescent and society) of adult status. That is, by engaging in these behaviors, adolescents seek to show to their peers and to adult society that they are "adult". According to Jessor and Jessor, typical examples of adolescent problem behaviors are alcohol use, illicit drug use, precocious sexual behavior, and deviant, destructive or criminal activities (such as vandalism or shoplifting).

A different theory of adolescent problem behavior has been developed from recent research on adolescence. Arnett (in press) argues that if problem behaviors serve the function of symbolizing adult status (as Jessor and Jessor maintain), then behaviors which are prohibited at any age (such as marijuana use and vandalism) would have been found to be unrelated to behavior prohibited to adolescents but approved for adults (moderate drinking and sexual activity). Confirmed by Jessor's data but contrary to their theoretical model, problem behaviors that signify adult status (such as alcohol use) and those that are prohibited at any age (such as vandalism) were found to be highly correlated.

Factors Related to Problem Behaviors

In the past, research on adolescent problem behaviors typically concentrated on one problem behavior and two or three factors related to that specific problem behavior. For example, Holroyd & Kahn (1974) found heavy drug using adolescents of both genders as more inquisitive and nonconformist than their abstaining peers. Zelnik & Kantner (1980) demonstrated ethnic differences in premarital intercourse and pregnancies. Chandler (1973) found that chronic delinquents demonstrated a marked lag in their ability to successfully adopt the perspective of others. This type of research (isolating problem behaviors) remains popular today (for example, Smith & Udry, 1985).

Research during the past decade and a half has started to focus on the interrelationship among problem behaviors. Jessor and Jessor's social learning model termed "problem-behavior theory" (1977) proposes that problem behavior may well constitute a syndrome in adolescence. This notion was based on the positive association of problem behaviors, the negative association of conventional behaviors with problem behaviors, and the positive association of various problem behaviors with a number of personality and social environment variables that reflect unconventionality. The interrelationship between problem behaviors in adolescence has been supported by a number of other studies (Johnston, O'Malley, & Eveland, 1978; Donovan & Jessor, 1985; Irwin & Millstein, 1986; Newcomb & Bentler, 1988).

According to the Jessor and Jessor model (1977; 1985), the likelihood of problem behaviors during adolescence is said be determined by variables within three systems -- the Personality System, the Perceived Environment System, and the Behavior System. The variables within each system reflect either proneness towards problem behavior or controls against them. The variables from each system combine to form a dynamic state termed "proneness" which specifies the likelihood of problem behavior occurrence. Essentially, the proneness factors from each of the three systems combine to form an overall risk of

problem behaviors.

Once problem behaviors were considered to be a syndrome of behaviors (rather than unrelated), subsequent studies attempted to find a single factor related to proneness for problem behaviors. Donovan and Jessor (1985) found that a single factor accounted for the correlations between different problem behaviors. This factor has been hypothesized to reflect a general dimension of conventionality/ unconventionality in both the personality and social environments (Donovan, Jessor, & Costa, 1988). In addition, problem behavior among adolescents has been hypothesized to develop from a high sensation seeking need (Zuckerman, 1979; Pedersen, Clausen, & Lavik, 1989; Teichman, Barnea, & Rahav, 1989) and adolescent egocentrism (Elkind, 1967, 1985). This research suggests that problem behaviors may be meaningfully defined as behaviors that break adult-imposed rules and have the potential for immediate and serious consequences (Arnett, in press).

This paper will examine the subjective experience of two categories of problem behavior: alcohol use and delinquent behavior. These categories are comprised of a number of different behaviors; For example, within the category of delinquent behavior there are such diverse activities as vandalism, petty theft, truancy, and violent activity. Within the category of alcohol/drug use, the frequency and intensity of the use may vary, as well as what particular substance is being used (e.g., hard liquor versus beer, or marijuana versus heroin).

Adolescent Drug and Alcohol Use

Drug use among American youth is the highest in the industrialized world (Johnston, Bachman, & O'Malley, 1984). In 1986, Americans rated drugs as one of the nations most important problems. The President signed into law the Omnibus Anti-Drug Abuse Act and called for a "drug-free generation" (Boyd, 1986). Data indicate that 65% of high school seniors used an illicit drug, and 39% used illicit drugs other than marijuana.

Adolescent alcohol use is even more pronounced: fully 93% of the high school seniors had used alcohol and 72% had used it in the past month. Recent surveys have shown a decline in adolescent substance use (Johnston, Bachman, & O'Malley, 1989). Nonetheless, the use of alcohol, marijuana, and cocaine have been shown to increase throughout early to mid-adolescence, declining sharply only after the early 20's (Gans, Blyth, Elster, & Gaveras, 1990).

Alcohol use has been well documented by the Centers for Disease Control (CDC, 1983) as a major factor in motor vehicle accidents involving adolescents by contributing to reckless driving. According to the CDC in 1983, alcohol was a contributor to 42% of the fatal motor vehicle accidents among 16-24-year-olds. The rate of alcohol use was considerably lower for drivers in all other age groups (Simpson, Mayhew, & Warren, 1982; Jonah, 1986). Alcohol use has been associated with a number of other negative behaviors. Collins and Schlenger (1988), found that the acute effects of alcohol were significantly associated with incarceration for a violent offense. Newcomb and McGee (1989) found that adolescent alcohol use was significantly associated with delinquent behavior and that alcohol use predicted increased delinquent behaviors over time.

Drug use/abuse during adolescence has been linked with a number of other problem behaviors including increased risk-taking, decreased prosocial behavior, use of multiple or harder drugs, and emotional and physical problems. Adolescents who engage in substance use (including both alcohol and illicit drugs) are more likely to engage in risk-taking behaviors (including more severe substance use) because alcohol and drug use tends to impair the ability to think logically, lower the resistance to peer pressure, and disinhibit reckless behavior such as dangerous driving (Irwin and Millstein, 1986). As adolescents increase drug involvement, attitude and performance at school and other conventional activities tends to decline (Holroyd & Kahn, 1974).

Kandel et al. (1975,1984) have demonstrated that the use of so-called gateway drugs (especially cigarettes, alcohol, and marijuana) by adolescents tends to facilitate the progress towards the use of harder, more dangerous drugs (i.e. cocaine, heroin, and hallucinogens). This sequential model implies that gateway drugs are precursors to harder drug use, although the progression is far from inevitable. However, recent research indicates that the sequential model fails to adjust for the availability and expense of different drugs. For example, Brecher (1986) found that the sequence was interrupted when harder drugs (such as cocaine) become less expensive, more available, and easier to acquire than softer drugs (such as marijuana). This implies that initial drug use may not be substance specific but linked to a larger drive or need to alter consciousness (Siegel, 1989).

Research indicates that adolescent polydrug users, in comparison to nonpolydrug users, were more likely to indicate self-ratings of lazy, bored, rejected, and unhealthy (Wright, 1985). The same study also found that adolescent polydrug users had a higher frequency of serious suicidal thoughts and delinquent behavior. There was no indication whether emotionally and behaviorally disturbed adolescents tended to become polydrug users, or whether polydrug use contributed to emotional and physical disturbance, or both.

Besides these effects, alcohol and other drugs also affect the physical well being of the user, especially if used excessively. Even moderate alcohol use has negative effects on cognitive function, nutrition, and fetal development (de la Fuente, 1987). Chronic alcohol use has been shown to effect the chemical composition of the brain resulting in mental and emotional disturbances (Alling, 1983).

Adolescent Delinquent Behavior

The proportion of adolescents who engage in delinquent and/or criminal acts have been found to range from about one-quarter (Levine & Kozak, 1979) to over three-quarters (Farrington, 1989), depending on factors such as the time interval in question and urban or

nonurban settings. The prevalence rates of delinquent behavior are especially high for early adolescents (Farrington, 1989; Murphy, 1986). Moreover, arrests for such offenses as vandalism and larceny theft are far more common for adolescents than adults (Wilson & Herrnstein, 1985) even though offenders in this age group are more likely to be cautioned rather than arrested and prosecuted. Even when other factors (such as education, occupation, and quality of home life) are controlled, the association of age with criminal behavior persists.

Adolescent delinquency also greatly increases the probability of incarceration or conflict with legal institutions. This probability is even greater if the age of onset of delinquent behavior occurs early (Tolan, 1987). Delinquent behavior at school has been shown to be highly related to dropping out of school, which in turn has several severe consequences. Disciplinary problems, poor academic performance, and poor academic attitude have been identified as among the major risk factors indicating a high probability of dropping out of high school (Hahn, 1987). This, in turn, has several negative effects: high school dropouts contribute disproportionately to social statistics on unemployment, poverty, and crime (Muuss, 1990).

Experience Sampling Method

Most of the research done on adolescent problem behavior has relied upon survey information. The Experience Sampling Method (ESM; Larson & Csikszentmihalyi, 1983) provides a new technique for the study of adolescent problem behavior. ESM involves monitoring peoples' behavior (unobtrusively) by having them carry pagers for a period in order to get a sample of their daily lives. Each time the individuals are paged, about seven or eight times a day, they are asked to complete a self-report form regarding their current activities and subjective states. The benefits of employing ESM are threefold.

First, surveys usually rely on information collected in settings far removed from the context of problem behavior. With this type of methodology, bias due to demand characteristics, response sets, and selective forgetting may be substantial (Goodstadt, Cook, & Grunson, 1978; Hochhauser, 1979). ESM reduces some of the problems associated with surveys by looking at behaviors as they happen -- thus, one may observe how problem behaviors are embedded in daily life.

Second, ESM allows the examination of the external circumstances associated with behaviors. Therefore, one may examine the time of day, environment, and social composition associated with different thoughts and actions. Employing ESM, Larson, Csikszentmihalyi, and Freeman (1984) found that adolescent alcohol use was primarily reported in the context of weekend social gatherings. Marijuana use was reported across a wider range of situations and usually involved a smaller group.

Third, ESM allows the examination of subjective states associated with behaviors. Therefore, one may examine the true subjective effects of drugs, the frequency of actual euphoria, and the frequency of positive or negative experience associated with various behaviors. Larson et al. (1984) found that alcohol use was associated with a happy and gregarious subjective state and that marijuana use was associated with an average state that differed much less from ordinary experience.

Daily Experience of Problem Behavior Adolescents

Research using ESM has found that adolescents who engage in problem behaviors tend to experience their daily lives differently than adolescents who do not engage in problem behaviors. Csikszentmihalyi and Larson (1984) found that adolescents who engage in drug use tend to swing rapidly between extremely low (when engaging in "traditional" behaviors) and high (when drinking alcohol) mood states. Moreover, the mood states are more extreme than their peers -- from absolute dejection to complete

exhilaration. Positive states were associated with behaviors outside (and often contrary to) adult wishes. The use of disciplined skills, such as classwork or learning a musical instrument, typically invoked a state of extreme boredom. Marijuana and alcohol use were also found to take place under different external circumstances and were associated with different subjective states.

Research on the subjective experience of adolescents who engage in delinquent behaviors shows that those adolescents who engage in delinquent acts tend to have a poorer academic self-concept, and poor relationships with parents and school (Leung & Lau, 1989). The same study also found a that frequency of delinquent behaviors was positively related to self-concept of social and physical ability. Moreover, adolescents who perceived parental or social approval of delinquent behaviors were more likely to engage in future delinquent behaviors.

This study will attempt to answer two larger questions regarding problem behaviors: First, in what ways do adolescents who engage in problem behavior differ from their peers? For example, do adolescents who engage in problem behaviors have a higher or lower daily mood level than their peers? Past research has indicated that problem behaviors are associated with a number of personality factors (Donovan & Jessor, 1985; Zuckerman, 1979; Holroyd & Kahn, 1974; Chandler, 1973). This suggests that the subjective state of adolescents who engage in problem behaviors is indeed different than their peers. Second, what is the subjective experience of the problem behavior adolescent across different behaviors? For example, are different problem behaviors associated with different subjective states? Previous literature provides evidence both ways: that different problem behaviors are experienced differently (Larson, Csikszentmihalyi, & Freeman, 1984) and similarly (Jessor & Jessor, 1977).

Based on previous research, I hypothesize that adolescents who engage in problem behaviors will have a greater need for stimulation (Zuckerman, 1979; Satinder & Black, 1984; and Arnett, 1990), greater mood variability, and a lower overall level of affect than their peers (Larson, Csikszentmihalyi, & Freeman, 1984). The association of problem behaviors with adolescent peer groups has led to the next hypothesis. Relative to peers who do not commit problem behaviors, adolescents who engage in problem behaviors should experience a greater difference in moods while with versus without their peers. Specifically, it is hypothesized that adolescents who engage in problem behaviors will report greater boredom, less arousal, and lower affect when with adults and alone than their non-problem behavior peers. This effect should be reversed when the problem-behavior adolescent is with peers.

Larson, Csikszentmihalyi, & Freeman, (1984) provide evidence that not all problem behaviors are associated with identical subjective experiences. However, other research indicates that there may be common elements to the subjective experience of problem behaviors. Problem behaviors have been hypothesized to serve (among other things) both as a relief from boredom (Zuckerman, 1979) and as a means of expressing independence (Jessor & Jessor, 1977). Based on this literature, I hypothesize that while engaging in problem behaviors, adolescents will report higher levels of excited and affect along with a reduction in feelings of in control.

CHAPTER II

METHOD

Sample

The sample consisted of adolescents in 9th through 12th grade from two different high schools on the Southwest side of Chicago; one community was lower middle class and the other was middle to upper class. The samples represented their respective community populations with few differences and were evenly distributed by gender, grade, and community (N = 202, 111 girls and 91 boys). The adolescents were participating in the study as a continuation of a larger longitudinal study (Richards Larson, 1989).

Procedure

The ESM employs electronic pagers that emit stimulus signals according to a random schedule. The pagers signaled either by sound or vibration. The subjects were instructed to use the vibrating signal during times that were inappropriate for audible disruptions (for example, school or church). When signaled, the respondents wrote down information regarding his or her current situation, activities, thoughts, and psychological states on a self-report questionnaire. The signals were sent at random times within two hour time blocks, between 7:30 a.m. and 9:30 p.m. and continuing later on Friday and Saturday nights until 11:30 or 12:30.

Prior to the start of the sampling period, the adolescents received instructions on the use of the pager and on completing the self-report forms. They were instructed to complete the forms as soon as possible after each signal. The adolescents were instructed not to

share their information with each other and were assured of its confidentiality. At the end of the week, the booklets and pagers were collected, the participants were interviewed, completed a set of questionnaires and were paid a sum for their participation.

Prior to analysis, the data from the self-report books were screened to eliminate respondents who gave questionable or inadequate reports. Books in which adolescents had filled less than fifteen pages were dropped from the study on the basis that they did not constitute a true sample of their experience. Overall, 6% of the adolescents were screened out of the final sample because of incomplete or unreliable data.

Measures

The measures of problem behavior by the adolescents from the self-report books consisted of the question "Have you used any alcohol or drugs since the last beep (signal?) and if so, what and how much?" The adolescents would then indicate what type and amount of alcohol and/or drugs they had used. Problem behavior by the adolescents was also determined by responses to the open-ended question "What are you doing right now?" The response to this question supplied examples of currently occurring delinquent behaviors. Vandalism, theft, and violent behavior are typical examples of behaviors coded as delinquent. Interobserver reliability for activity coding has been established (92%).

Other measures of the adolescents' experience used in this study which were derived from the self-report books included affect, arousal, choice, feeling of control, and boredom. Affect was examined by aggregated mean ratings of three 7-point semantic-differential scales (alpha = .89) on the dimensions of: happy-sad, cheerful-irritable, and friendly-angry. Arousal was examined in a similar manner by ratings of two 7-point semantic differential scales (alpha = .72) on the dimensions of: alert-drowsy and strong-weak. Perception of choice in activities was measured by ratings of a 10-point Likert scale ranging from "not at all" to "very much" in response to the question "How much choice did you have in this activity?" and feelings of being more or less in control were measured by a

4-point Likert scale in response to the question "Did you feel in control?" Boredom was measured by responses to a 7-point semantic differential scale on the dimension bored-excited.

In addition to the self-report booklets, the adolescents also completed a series of questionnaires and personality scales concerning themselves. Alcohol and drug use history was determined by both a 12-item drug questionnaire and a 13-item questionnaire (Jessor, Chase, & Donovan, 1980) which asked the adolescents about how much, how often, what kind, etc. of drugs and alcohol they used. Delinquent behavior history (for the past two years) was reported from the adolescents by completing a 12-item questionnaire, the Self-Report Delinquency Scale (SRD), which asked the adolescents how often they had engaged in various problem behaviors. This scale was adapted from a 14-item scale by Elliot and Voss (1974) which, in turn, was adapted from the Nye-Short checklist (Nye & Short, 1957).

Both the drug and alcohol scales were divided into two scales - one measuring drug/alcohol use behaviors, the other measuring behavioral problems related to drug/alcohol use. Items on the SRD that measured drug/alcohol use were excluded to avoid redundant data. Because some of the questions were on different metrics, all items were normalized via z-scores and then averaged. The five scales: drug use, problems associated with drug use, alcohol use, problems associated with alcohol use, and delinquency were each combined to form an overall index of problem behavior, the Problem Behavior Scale (PBS). For a summary of the scales, the items that went into them, and their reliability see Table 1.

Table 1

Problem Behavior Scales by Gender - Item Reliability

Name of Scale	Description	Boys' Alpha	Girls' Alpha
Drug Use	Drug use behavior; measured by how often, when last used, multiple drug use, and strongest effect from drugs (4 items)	.96	.95
Problems Associated with Drug Use	Problems with family, friends, school, police as a result of use and driving while on drugs (8 items)	.94	.96
Alcohol Use	Alcohol use behavior; measured by how often, when last used, amount on average, greatest amount, strongest effect, and frequency of drunkenness (6 items)	.96	.96
Problems Associated with Alcohol Use	Problems with family, friends, school, police as a result of use and driving while on intoxicated (8 items)	.92	.86
Delinquency	Measured by frequency of driving without a licence, petty theft, vandalism, skipping school, defying parents, theft, driving a car without permission, and beating someone up (8 items)	.76	.75
Problem Behavior Scale	Composed of the above five scales as an index of involvement in problem behaviors (5 items)	.95	.95

Note: All items were normalized and averaged (N Boys = 91, N Girls = 111).

Plan of Analysis

An analysis of variance showed that boys and girls significantly differed in problem behavior involvement as measured by the PBS, $F(1, 201) = 3.99$, $p < .05$. This resulted in a disproportionate number of boys in the high problem behavior group and girls in the low problem behavior group. Hence all analyses were conducted separately on boys and girls. Three problem behavior groups for each sex were formed based on the distribution of the problem behavior scale: Low problem behavior (lowest 33%, 30 boys and 35 girls), Moderate problem behavior (middle 33%, 30 boys and 39 girls), and High problem behavior (upper 33%, 31 boys and 37 girls). A summary of the characteristics of each group by sex is found in Table 2a and Table 2b.

The results of this grouping compare favorably with other definitions of problem behavior (see Donovan & Jessor, 1985; Grube & Morgan, 1990; Vingilis & Adalf, 1990) for both boys and girls. For example, a typical adolescent in the Low problem behavior group does not use any drugs, drinks rarely and never to the point of intoxication, experiences no trouble as a result of drinking, and rarely engages in delinquent behavior. A typical adolescent in the Moderate problem behavior group drinks alcohol regularly, and tends to do so to the point of intoxication. Adolescents in this group also engage in delinquent behaviors somewhat more frequently. A typical adolescent in the High problem behavior group has probably tried drugs and experienced a strong effect from them, drinks alcohol almost weekly to the point of intoxication, has experienced some behavioral problems as a result of drug/alcohol use, and engages in delinquent acts regularly.

Data were analyzed with three different types of analysis of variance: 1) repeated measures multivariate, 2) multivariate, and 3) univariate analyses of variance. The analyses were performed separately by gender. Multivariate analyses of variance (MANOVA) were performed on the dependent variables that were conceptually and statistically related.

Table 2a

Summary of Characteristics of Problem Behavior Groups - Boys

Variable & Responses	Percent of Group		
	Low	Moderate	High
Frequency of Drug Use			
Never	100	96.7	3.2
1-2 times ever		3.3	32.3
1-2 times a year			9.7
Several times a year			25.8
Almost every weekend			12.9
More than once a week			12.9
Everyday			3.2
Strongest Effect From Drugs			
Nonuse	100	96.7	3.2
Loose easy feeling		3.3	9.7
Moderately high			6.5
High			32.3
Very high			35.5
Became ill			3.2
Passed out			9.7
Behavioral Problem Related to Drug Use			
None	100	100	71.0
Some			29.0
Frequency of Alcohol Use			
Never	70.0	3.3	
Less than once a year	13.3	10.0	3.2
Less than once a month	13.3	20.0	12.9
About once a month	3.3	33.3	3.2
3-4 days a month		13.3	32.3
1-2 days a week		20.0	32.3
3-4 days a week			12.9
Everyday			3.2
Strongest Effect From Alcohol			
Nonuse	70.0	3.3	
Loose easy feeling	26.7	43.3	9.7
Moderately high	3.3	6.7	
Drunk		33.3	22.6
Ill		6.7	19.4
Passed out		6.7	48.4
Behavioral Problems Related to Alcohol Use			
None	100	73.3	58.1
Some		26.7	41.9

Driving Without a Licence			
Never	56.7	13.3	29.0
Once or twice	30.0	43.3	25.8
Several times	13.3	16.7	12.9
Very often		26.7	32.3
Petty Theft (under $5)			
Never	86.7	23.3	29.0
Once or twice	13.3	46.7	45.2
Several times		26.7	22.6
Very often		3.3	3.2
Vandalism			
Never	76.7	33.3	38.7
Once or twice	16.7	30.0	29.0
Several times	6.7	20.0	29.0
Very often		16.7	3.2
Truancy			
Never	93.3	76.7	29.0
Once or twice		23.3	35.5
Several times	3.3		29.0
Very often	3.3		6.5
Defying Parents			
Never	46.7	36.7	32.3
Once or twice	70.0	40.0	38.7
Several times		16.7	22.6
Very often	3.3	6.6	6.5
Theft (over $5)			
Never	93.3	60.0	48.4
Once or twice	6.7	30.0	32.3
Several times		6.7	12.9
Very often		3.3	6.5
Driving a Car Without Permission			
Never	86.6	63.3	54.8
Once or twice	6.7	20.0	22.6
Several times		13.3	12.9
Very often	6.7	3.3	9.7
Beat Someone Up			
Never	70.0	60.0	35.5
Once or twice	26.7	30.0	38.7
Several times		10.0	12.9
Very often	3.3		12.9

Table 2b

Summary of Characteristics of Problem Behavior Groups - Girls

Variable & Responses	Percent of Group		
	Low	Moderate	High
Frequency of Drug Use			
Never	100	100	27.0
1-2 times ever			21.6
1-2 times a year			10.8
Several times a year			27.0
Almost every weekend			8.1
More than once a week			2.7
Everyday			2.7
Strongest Effect From Drugs			
Nonuse	100	100	27.0
Loose easy feeling			21.6
Moderately high			8.1
High			8.1
Very high			18.9
Became ill			2.7
Passed out			13.5
Behavioral Problem Related to Drug Use			
None	100	100	86.5
Some			13.5
Frequency of Alcohol Use			
Never	65.7		
Less than once a year	22.9	15.4	2.7
Less than once a month	8.6	43.6	10.8
About once a month	2.9	23.1	16.2
3-4 days a month		17.9	24.3
1-2 days a week			43.2
3-4 days a week			2.7
Everyday			
Strongest Effect From Alcohol			
Nonuse	65.7		
Loose easy feeling	34.3	41.0	5.4
Moderately high		10.3	13.5
Drunk		17.9	16.2
Ill		12.8	24.3
Passed out		17.9	40.5
Behavioral Problems Related to Alcohol Use			
None	100	89.7	62.2
Some		10.3	27.8

Driving Without a Licence			
Never	60.0	38.5	21.6
Once or twice	34.2	46.2	29.7
Several times	2.9	15.4	29.7
Very often	2.9		18.9
Petty Theft (under $5)			
Never	88.6	59.0	21.6
Once or twice	11.4	30.8	43.2
Several times		10.3	29.7
Very often			5.4
Vandalism			
Never	82.9	64.1	51.4
Once or twice	14.2	33.3	37.8
Several times	2.9	2.6	10.8
Very often			
Truancy			
Never	97.1	79.5	37.8
Once or twice	2.9	17.9	48.6
Several times			5.4
Very often		2.6	8.1
Defying Parents			
Never	65.7	56.4	27.0
Once or twice	20.0	30.8	35.1
Several times	14.3	10.3	32.4
Very often		2.6	5.4
Theft (over $5)			
Never	94.3	94.9	62.2
Once or twice	5.7	2.6	27.0
Several times		2.6	10.8
Very often			
Driving a Car Without Permission			
Never	97.1	94.9	67.6
Once or twice	2.9	5.1	24.3
Several times			8.1
Very often			
Beat Someone Up			
Never	91.4	87.2	73.0
Once or twice	8.6	7.7	21.6
Several times		5.1	5.4
Very often			

Preliminary analyses indicated that the dependent variables used in each MANOVA were significantly correlated (coefficients ranged from .66 to .16 for affect, arousal, in control, excited, and their standard deviations). Feelings of choice and standard deviations of choice were unrelated to the other dependent variables and were considered separately for purposes of analysis. Because of the relationship between age and problem behavior, developmental level was included as an independent variable (two levels: 9th, 10th grade & 11th, 12th grade).

To determine the overall differences between the problem behavior groups in their subjective daily experience, four MANOVAs and four univariate analyses of variance (ANOVA) were performed on the dependent variables. The differences in mood between the problem behavior groups based on companionship were analyzed by four repeated measures MANOVAs and four repeated measures ANOVAs by selecting for times when the adolescents reported being in school, with friends, or alone. A second series of repeated measures MANOVAs and ANOVAs tested the hypotheses regarding the subjective experience of adolescents who reported engaging in problem behaviors by selecting times when problem behaviors were reported by them to times when problem behaviors were not reported. Finally, a descriptive report of a high problem behavior adolescent will be provided by illustrating significant variables and behaviors reported by the adolescent during the sampling period.

CHAPTER III

RESULTS

Problem Behavior and Overall Daily Experience

This series of analyses was designed to assess the difference of overall daily experience. It was hypothesized that adolescents in the high problem behavior group would report greater overall boredom, more negative overall affect, and greater variability in their moods.

For adolescent girls, subjective daily experience as related to the PBS was assessed with two two-way MANOVAs with first, affect, arousal, excited, in control, and second, the standard deviations of these as the dependent variables. Two two-way ANOVAs were employed with choice and the standard deviation of choice as the dependent variable. For all analyses, grade and problem behavior group were the independent variables. No results, multivariate or univariate, were significant. This indicates that, for adolescent girls, overall subjective daily experience is not related to level of problem behavior involvement.

Boys' subjective daily experience and its relationship with problem behavior was assessed using the same four analyses mentioned above. A multivariate main effect for problem behavior status emerged for the standard deviations of affect, arousal, excited, and in control, F (8, 166) = 2.06, $p < .05$. Standard deviation of in control was the only significant univariate effect, F (2, 85) = 7.17, $p < .001$. To further understand the relationship of problem behavior involvement with variability in feelings of being in control, a post-hoc Scheffe test was performed. The result indicated that boys who were in the high problem behavior group experienced significantly greater variability in their

feelings of being in control than boys who were in the low problem behavior group ($p < .05$, Figure 1).

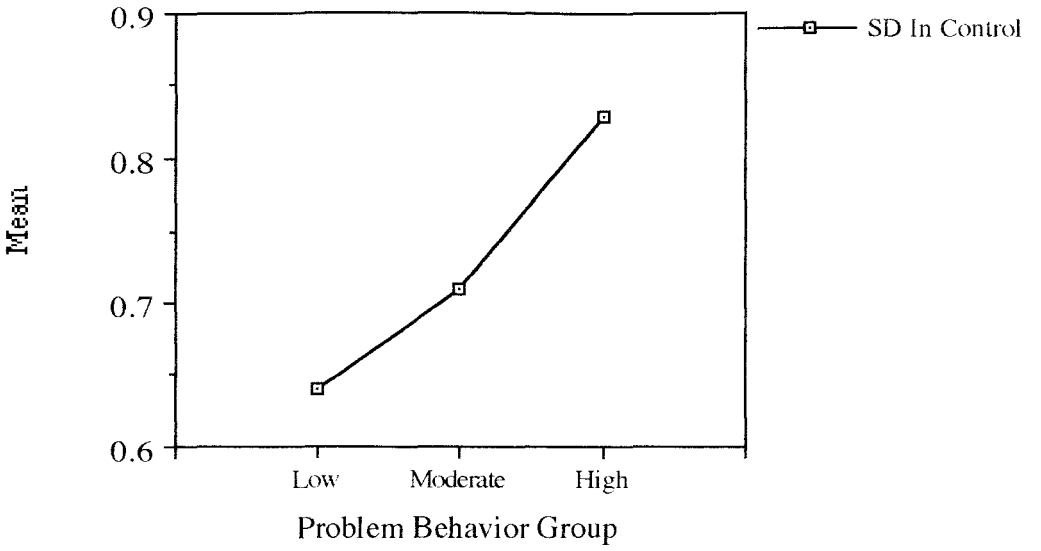
The MANOVA with affect, arousal, excited, and in control as dependent variables, along with the ANOVAs with choice and the standard deviation of choice as the dependent variable were not significant. Thus, for the overall experience of adolescent boys, problem behavior involvement was only related to greater variability in some moods.

Mood and Companionship

This set of analyses was designed to assess whether adolescents who engage in frequent problem behavior experienced time with peers, alone, and parents differently than those who do not. It was hypothesized that adolescents in the high problem behavior group would report greater boredom, less arousal, and lower affect when with parents and alone than their low problem behavior peers. Initially, this study had planned to include parental companionship as part of these analyses. Unfortunately, preliminary analyses indicated that adolescents who were in the high problem behavior groups reported very few times with their parents. In order to avoid an unacceptable level of missing data, moods in the context of school were substituted for mood with parents. This alteration, while not ideal, is acceptable in that both contexts theoretically represent a situation of imposed structure by authority figures.

For adolescent girls, two repeated measures MANOVAs with affect, arousal, excited, in control, and the standard deviations of these as the dependent variables were performed with companionship (peers, alone, and school) as the within-groups factor along with problem behavior group and grade as the between-groups factors. Two repeated measures ANOVAs with choice and the standard deviations of choice were also performed using the aforementioned within and between-groups factors. A problem

Figure 1
Daily Variability in Boys' Feelings of In Control by Problem Behavior



behavior group by grade between-groups multivariate effect emerged for average reports of affect, arousal, excited, and in control, F (8, 190) = 2.13, $p < .05$. Difference in mean reports of excited across companionship was the only significant univariate effect, F (2,97) = 7.01, $p < .01$. Post-hoc analyses indicate that young girls in the high problem behavior group tend to be more bored when alone than older girls in the high problem behavior group, F (1, 36) = 2.77, $p < .10$ (Figure 2). A between-groups multivariate effect for problem behavior status emerged for the standard deviations of affect, arousal, excited, and in control, F (8, 184) = 1.99, $p < .05$. Difference in standard deviation of affect across companionship was the only significant univariate effect, F (2,94) = 3.47, $p < .05$. Post-hoc analyses indicated no significant differences. A significant companionship by grade by problem behavior group interaction was also found for mean feelings of choice, F (4, 202) = 2.97, $p < .05$. Follow-up analyses indicated that only older female adolescents experienced difference in choice, F (2, 54) = 3.33, $p < .05$. A post-hoc Scheffe indicated that girls in the high problem behavior group reported experiencing significantly less feelings of choice while in school than girls in the low problem behavior group ($p < .05$, Figure 3). These results suggest that problem behavior involvement is related to how adolescent girls experience different companionships.

Boys' involvement with problem behavior and its relationship with moods during different companionships was assessed using the same analyses as for the girls. No results both, multivariate or univariate, were significant. This indicates that, for adolescent boys, experience of different companionships is not related to level of problem behavior involvement.

Figure 2
High Problem Behavior Girls' Feelings of Excited When Alone by Grade

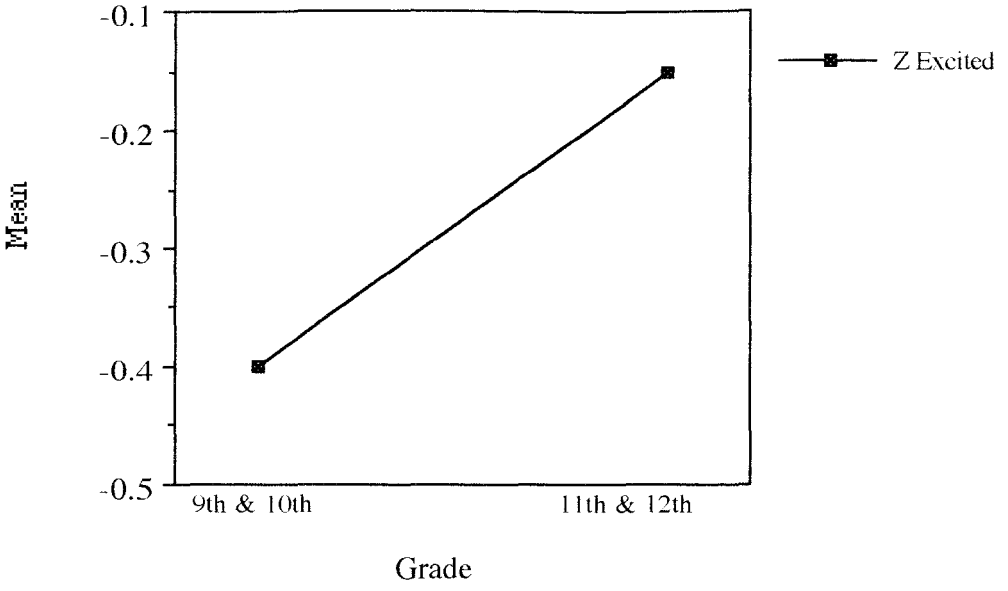
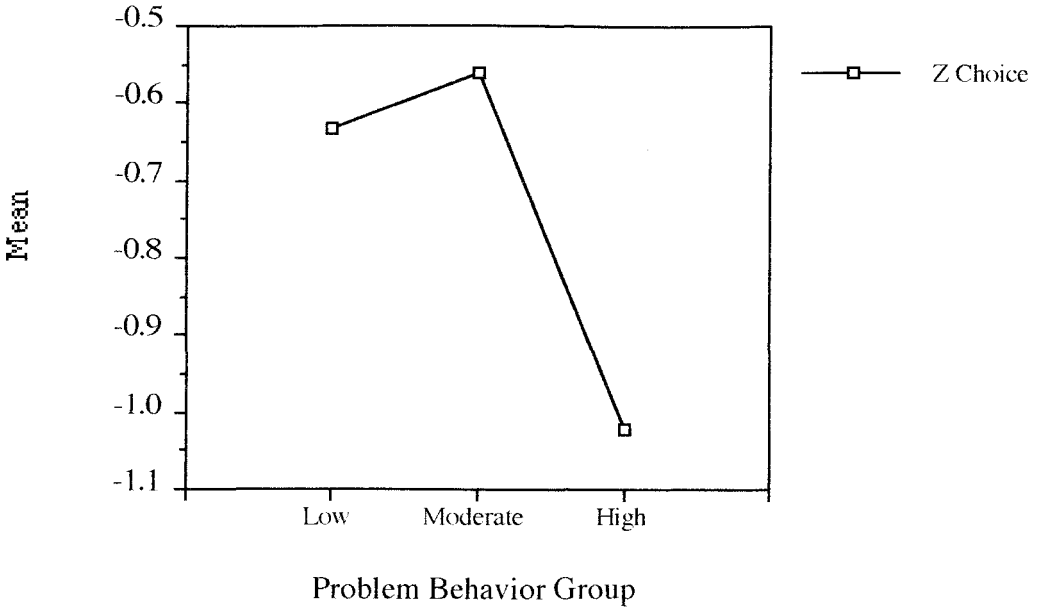


Figure 3
Older Girls' Feeling of Choice in School by Problem Behavior Status



Problem Behavior Adolescents' Daily Experience

A final series of repeated measures MANOVAs and ANOVAs tested the hypotheses regarding the subjective experience of adolescents of both genders who reported engaging in problem behaviors during the sampling period. This was done by selecting times when problem behaviors were reported by them and comparing these to times when problem behaviors were not reported. Every member of this subsample (N = 48) came from the high problem behavior groups. It was hypothesized that while engaging in problem behaviors, these adolescents will report higher levels of excited and affect along with a reduction in feelings of in control.

Two repeated measures MANOVAs with affect, arousal, excited, in control, and the standard deviations of these as the dependent variables were performed with behavioral status (engaging in problem behaviors versus not) as the within-groups factor along with sex and grade as the between-groups factors. Two repeated measures ANOVAs with choice and the standard deviations of choice were also performed using the aforementioned within and between-groups factors. A significant within-subjects multivariate effect was found for mean levels of affect, arousal, excited, and in control, $F(4, 37) = 2.86$, $p < .05$. Significant univariate effects were found for affect, $F(1,44) = 6.15$, $p < .05$, and excited, $F(1,44) = 10.86$, $p < .01$ (Figure 4). A significant three-way interaction of behavioral status by grade by sex was also found, $F(1,19) = 4.70$, $p < .05$. Follow-up analyses indicated that older adolescents who engaged in problem behavior reported less variability in feelings of choice when they were actively engaged in a problem behavior, $F(1,16) = 19.05$, $p < .001$ (Figure 5). Other analyses were not significant.

These results provide strong evidence that problem behavior adolescents experience times when and when not engaging in problem behaviors quite differently. These adolescents reported significantly higher feelings of affect and excited, and lower variability

Figure 4
Problem Behavior Adolescents' Feelings of Affect and Excited by Type of Behavior

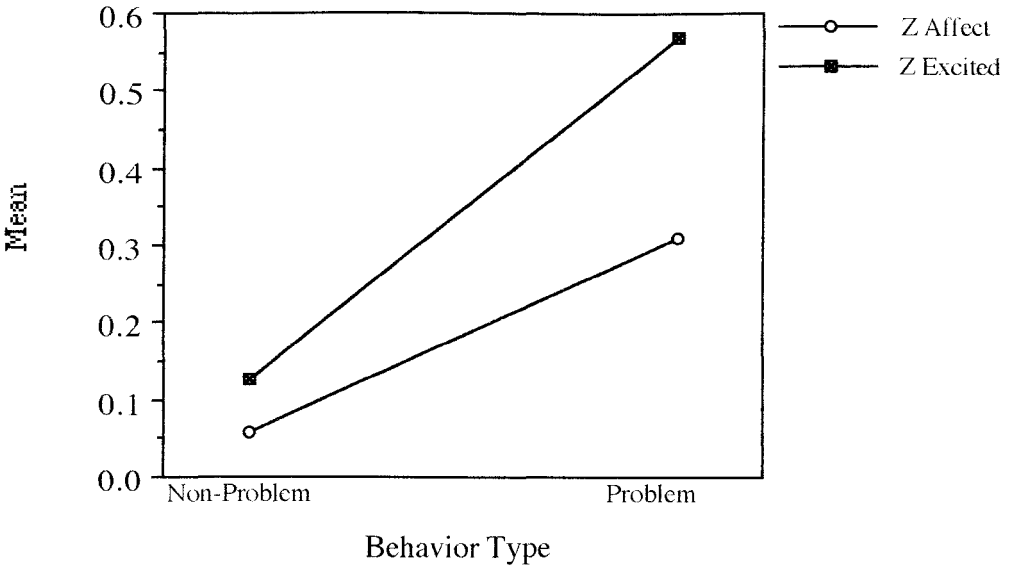
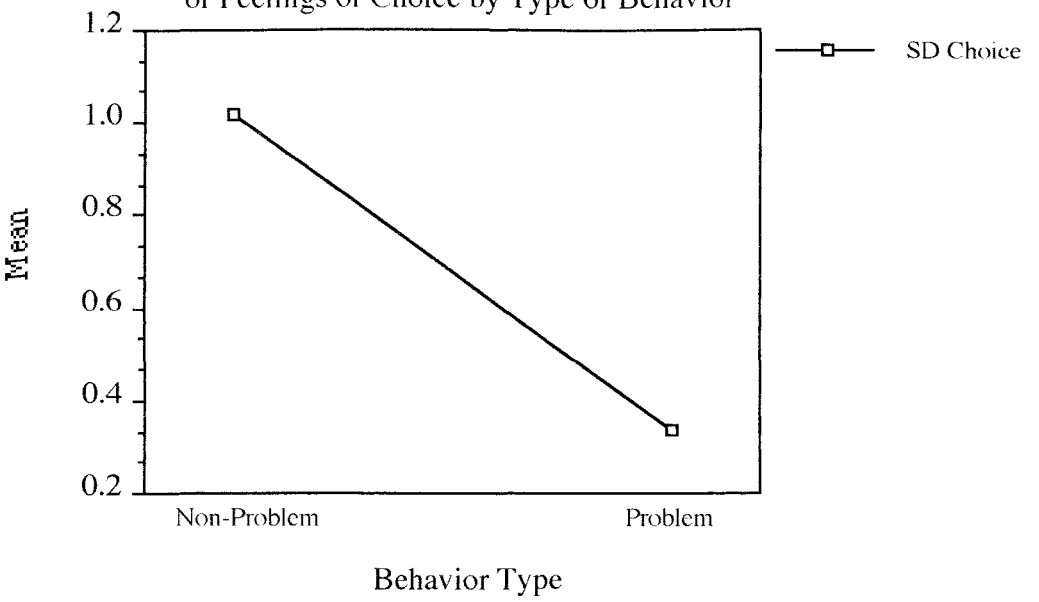


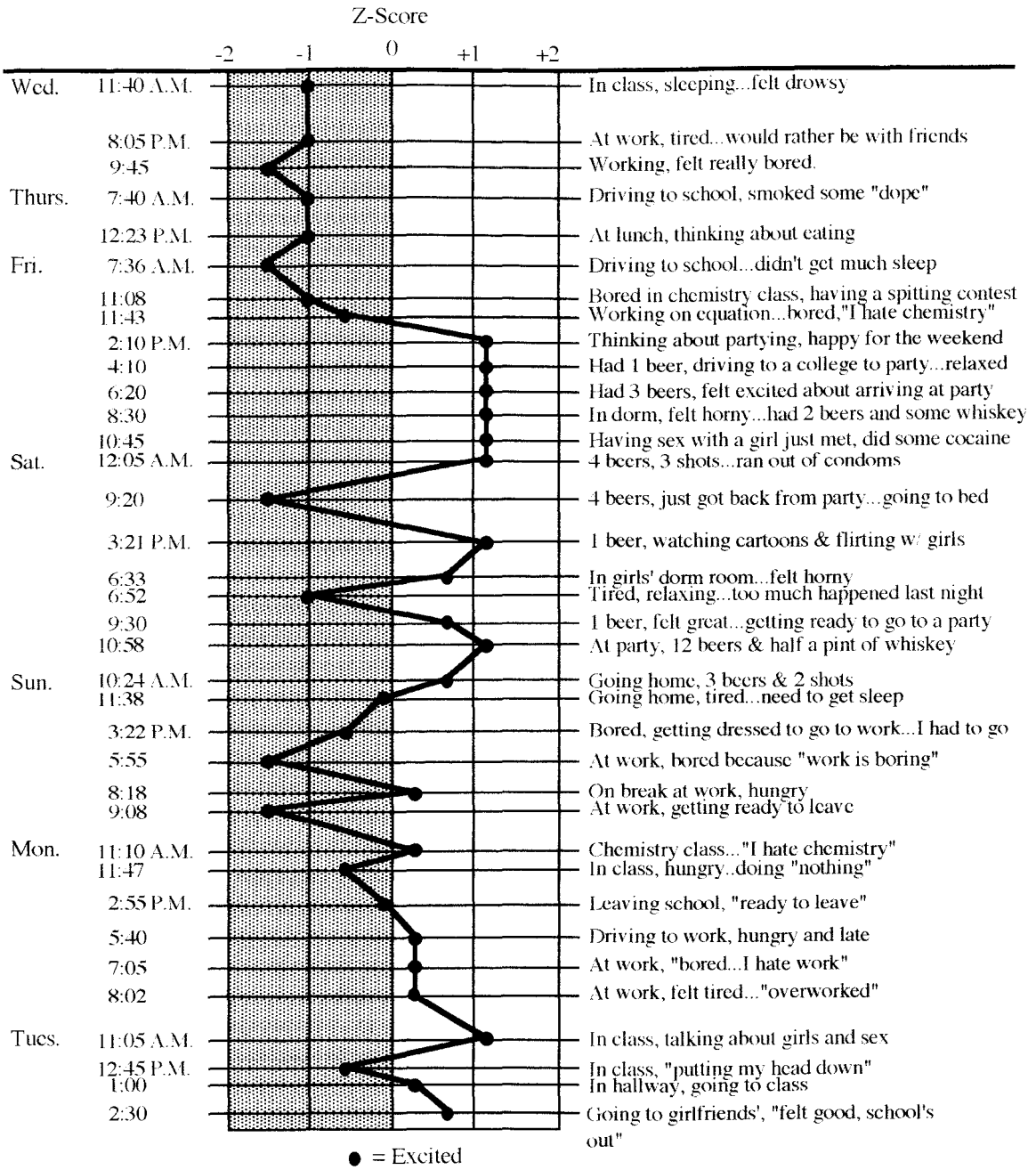
Figure 5
Older Problem Behavior Adolescents' Variability of Feelings of Choice by Type of Behavior



in feelings of choice, while actively engaging in problem behaviors. To illustrate the subjective differences these adolescents experience between problem and non-problem behaviors, Figure 6 provides a descriptive report of a week in the life of a typical high problem behavior adolescent boy. The figure graphs the boy's self-reports of excited, which were converted to z-scores to eliminate differences due to overall response tendencies, across a variety of times, locations, behaviors, and companionship over the course of the sampling period.

Figure 6

A Week in the Life of a High Problem Behavior Adolescent



CHAPTER IV

DISCUSSION

There are two themes in this study. The primary theme is the analysis of the subjective experience of problem behavior adolescents and how that compares to the subjective experience of their peers. The secondary theme is the usefulness of combining self-reports of multiple aspects of problem behavior into a single, overall index of problem behavior (the PBS).

In exploring how involvement in problem behavior relates to overall subjective experience and experience across different companionships, this study found several gender differences. For adolescent girls, involvement with problem behavior was not related to overall differences in self-reported feelings of happiness, arousal, excitement, and control or choice over activities. However, it was related to overall differences in feelings of excitement when in school, alone, and with friends. Moreover, this relationship appears to be mediated by developmental level. Younger girls in the high problem behavior group tended to report feeling less excited when they were alone compared to older high problem behavior girls. Older girls in the high problem behavior group reported less choice while in school compared to their same-age peers. For adolescent boys, no differences in experience in relation to problem behavior were found except an overall difference in the variance of self-reports of feelings of being in control. The results indicated that boys who were highly involved in problem behaviors experienced significantly greater variability in their feelings of being in control than boys in the low problem behavior group.

Pager reports of problem behavior provided insight as to how these behaviors are experienced. The experience of problem and "normal" behaviors differed in both boys and girls who were highly involved with problem behaviors. These adolescents reported significantly higher affect and feelings of excitement while engaging in problem behaviors compared to self-reports of their non-problem behavior. Interestingly, these adolescents also reported significantly less variability in feelings of choice while engaging in problem behaviors. Their average feelings of choice did not differ by behavior.

The descriptive report of a high problem behavior adolescent provides insight into how these adolescents experience both daily events and delinquent behavior (Figure 6). This graph represents one week of self-reports from a 17-year-old boy who engaged in a number of problem behaviors over the sampling period. The amount of alcohol and/or drug use shown on the graph was based on the adolescent's reports of how much he had consumed since the last pager signal. As one can see, the adolescent's time spent in school and at work are generally experienced with both resentment and boredom. During the weekend, he spent almost all of his time "partying" at a university. With the exception of one time when he was smoking marijuana on the way to school, he felt almost uniformly excited when engaging in problem behaviors. Besides drinking a great deal over the weekend, he also engaged in risk-taking behavior; He reported having sex with a casual acquaintance and, later on in the evening, running out of condoms. Interestingly, the adolescent also reported great excitement when thinking about his impending weekend spree. This suggests an additional cognitive component in that the anticipation of exciting events may lead to greater feelings of excitement.

These results can certainly be interpreted in light of sensation-seeking literature (Zuckerman, 1979). Young adolescent girls highly involved in problem behavior reported feeling less excited when they were alone. Because these adolescents have a greater need for excitement, they reported experiencing periods of solitude as more boring than their

peers did. However, this effect was not found for older girls in the high problem behavior group. This suggests that female adolescents who start engaging heavily in problem behaviors at an earlier age may possess a greater need for sensation. However, this question needs to be assessed longitudinally. The finding that high problem behavior adolescent boys experience greater variability in feelings of control, while interesting, raises a problem with the measure that affects the interpretation of this result. The question, "Do you feel in control?" might be interpreted in two ways. The question could have been interpreted both as feelings of self-control over one's own behavior, or as feelings of control over environmental or situational factors. Depending on how the question was understood or experienced by the subjects, two different conclusions may be implied. First, if the latter interpretation of the question is assumed, the finding of variability of feelings of in control in high problem behavior boys might imply a greater dissatisfaction with adult structured activities and which could result in greater perceived choice with peers. However, if this were the case the analysis of experience by companionship would have shown a difference between times with peers and times in school. The question was most likely interpreted in the former way, lending support to sensation seeking theory. Adolescents driven to satisfy an overriding sensation seeking need might indeed experience greater variability, more peaks and valleys, than other adolescents. Comparison of the distribution of feelings of in control by problem behavior group supports this notion; While the ranges of the distributions for each group were comparable, boys in the high problem behavior group reported a greater frequency of different feelings of in control. Finally, high problem behavior boys and girls reported greater happiness and greater excitement while engaging in problem behaviors. Compared to "normal" behaviors, problem behaviors seem to have provided these adolescents with an escape, an easy way to relieve tedium.

While the majority of the results point to the influence of sensation seeking needs on the subjective experience of problem behavior adolescents, one finding points to the role of the peer group in the relationship between problem behavior and daily experience. Older girls in the high problem behavior group reported feeling less choice while in school. While this finding may also be interpreted in light of sensation seeking theory; Because older high problem group girls are bored with organized curriculum, they experience less feelings of choice. However if this was the case, the predicted difference in feelings of excited across different companionships would have surfaced. More than likely, this finding suggests a disenfranchisement with institutions of adult authority, consistent with the psychosocial model of Jessor and Jessor (1977). That is, because these adolescents are enmeshed in a peer group that is unconventional, they perceive institutions of adult authority as limiting. Older girls who are highly involved with problem behavior may feel that they did not choose to be involved in school, that they are forced to be there. An alternative explanation may be that their personal experience with adults has been unsatisfying, leading to a disenfranchisement with adult institutions. Related to this, adolescents who reported problem behavior during the sampling period reported less variability in feelings of choice while actively engaged in these behaviors. Besides indicating that these adolescents feel less ambivalence about their choice to engage in problem behavior, this result also suggests that increased variability of choice during "normal" behaviors might be due to the experience of peer versus adult structured activities. Because problem behavior usually precludes adult interaction or supervision, they may be experienced as an activity that is personally selected.

In conclusion, adolescents who engage in problem behaviors do not, for the most part, experience daily life very differently than their peers who do not engage in problem behaviors. The main effect of companionship may have been so strong that many of the differences between the problem behavior groups based on companionship were

insignificant. The differences that were found pointed to the roles of sensation seeking need, the importance of peers in involvement in problem behavior, and possible disenfranchisement with adult structured activity. Adolescents who engage in a high frequency of problem behaviors reported several interesting and significant variations in their experience depending on whether or not they were actively engaged in problem behaviors. However, several limitations of this study need to be addressed. First, causality cannot be established with the current design. Whether problem behavior leads to differences in subjective experience or differential experience leads to problem behavior proneness remains unclear. This question could be best addressed by looking at these adolescents longitudinally. Second, the degree of underreporting of problem behaviors on both the questionnaires and self-report booklets cannot be assessed. Although all of the adolescents who reported problem behaviors during the sampling period were in the high problem behavior group (thus providing some cross-validation), these measures would be well supplemented by parental or teacher reports. Additional concerns regarding the PBS are addressed below.

The Problem Behavior Scale

The majority of past attempts to create an overall index of problem behavior have been relatively simplistic. For example, the Multiple Problem Behavior Index (MPBI, Jessor, Donovan, & Costa, 1991) uses only five components: the number of times drunk in the past 6 months, the frequency of marijuana use, the highest frequency of other illicit drug use, general deviant behavior (an aggregate of the frequency of lying, theft, and aggression in the past year), and the number of cigarettes smoked per day. Consequently, this index ignores a number of aspects of problem behavior. First, the MPBI ignores the intensity of drug and alcohol use. Adolescents who get severely intoxicated or pass out everytime they use drugs or alcohol are certainly more involved in problem behavior. By

ignoring the intensity of intoxication, the MPBI is neglecting an important aspect of problem behavior. Second, the MPBI does not consider the behavioral consequences of drug use. Trouble with parents, school, teachers, or the police as a result of drug use as well as driving while intoxicated are certainly an indication of greater problem involvement. Third, the MPBI ignores some delinquent behaviors that are indicative of problem behavior involvement. In particular, skipping school is an important aspect of problem behavior that the MPBI neglects to include. Finally, the MPBI also suffers from some of the same problems as the PBS that are discussed below.

The PBS was an attempt to develop a scale that would provide a more comprehensive index of problem behavior involvement than previous scales. The validity of combining the variables that went into the scale is evident both from previous research on problem behavior as a syndrome and the comparatively high inter-item reliability. The scale was also positively correlated with self-reports during the pager sampling period. However, two concerns must be expressed regarding the PBS. First, gender differences have been shown in general patterns of problem behaviors. For example, boys commit far more delinquent, destructive acts than girls (Farrington, 1989). These gender differences more than likely contributed to the significant gender difference on the PBS. Further attempts to construct an overall scale of problem behavior must take gender differences in behavioral choice into account.

Second, although one of the strengths of the PBS was the combination of multiple aspects of problem behavior involvement, additional consideration should be given to the fact that not all problem behaviors are equally deviant or problematic. For example, defying one's parents should probably not be given the same weight as vandalism or physical violence. The later two are certainly more problematic than the former, and give evidence of greater problem behavior involvement. Perhaps a system that weights problem behaviors, based on both potential harm to oneself or others and stimulus value of the

behavior, would be more appropriate. Conversely, one might assume that the most deviant behaviors occur less frequently even in adolescents who are highly involved in problem behaviors. The greater frequency of less deviant acts by these adolescents may provide a natural weighting system. Nonetheless, the PBS takes a step in the right direction by considering multiple aspects of problem behaviors, including both the frequency and intensity of the deviant experience.

REFERENCES

Alling, C. (1983). Alcohol effects on cell membranes. Substance and Alcohol Actions /Misuse, 4, 2-3, 67-72.

Arnett, J. (1990). Contraceptive use, sensation seeking, and egocentrism among adolescence. Journal of Youth and Adolescence, 19, 171-180.

Arnett, J. (in press). Reckless behavior in adolescence: A developmental perspective. Developmental Review,

Boyd, G. M. (1986, September 15). Reagan signs anti-drug measure; hopes for "drug-free generation." New York Times, p. B10.

Brecher, E. M. (1986). Drug laws and drug enforcement: A review and evaluation based on 111 years of experience. Drugs and Society, 1, 1-27.

Chandler, M. J. (1973). Egocentrism and antisocial behavior. Developmental Psychology, 9, 326-332.

Centers for Disease Control. Patterns of alcohol use among teenage drivers in fatal motor-vehicle accidents--United States 1977-1981. MMWR 1983;32:344-347.

Collins, J. J., & Schlenger, W. E. (1988). Acute and chronic effects of alcohol use on violence. Journal of Studies on Alcohol, 49, 6, 516-521.

Csikszentmihalyi, M., & Larson, R. (1984). Being Adolescent. Basic Books: New York.

de la Fuente, R. (1987). Alcoholism and alcohol abuse: A complete view. Salud-Mental, 10, 4, 45-51.

Donovan, J. E., & Jessor, R. (1985). Structure of problem behavior in adolescence and young adulthood. Journal of Consulting and Clinical Psychology, 53, 890-904.

Donovan, J. E., & Jessor, R., & Costa, F. M. (1988). Syndrome of problem behavior in adolescence: A replication. Journal of Consulting and Clinical Psychology, 56, 5, 762-765.

Elkind, D. (1967). Egocentrism in adolescence. Child Development, 38, 1025-1034.

Elkind, D. (1985). Egocentrism redux. Developmental Review, 5, 218-226.

Elliot, D. S., & Voss, H. L. (1974). Delinquency and Dropout. Lexington, MA: D.C. Heath and Company

Farrington, D. P. (1989). Self-reported and official offending from adolescence to adulthood. In M. W. Klein (Ed.), Cross-National Research in Self-Reported Crime and Delinquency. Boston: Kluwer.

Gans, J., Blyth, D., Elster, A., & Gaveras, L. L. (1990). America's adolescents: How healthy are they? Volume 1. Chicago: American Medical Association.

Goodstadt, M., Cook, G., & Gruson, V. (1978). The validity of reported drug use: The randomized response technique.International Journal of Addiction, 13, 359-367.

Hanh, A. (1987). Reaching out to America's dropouts: What to do? Phi Delta Kappan, 69, 256-263.

Hochhauser, M. (1979). Bias in drug abuse survey research. International Journal of Addiction, 14, 675-687.

Holroyd, K., & Kahn, M., (1974). Personality factors in student drug use. Journal of Consulting and Clinical Psychology, 42, 236-243.

Irwin, C. E., & Millstein, S. G. (1986). Biopsychosocial correlates of risk-taking behavior during adolescence. Journal of Adolescent Health Care, 7, 82S-96S.

Jessor, R., Chase, J. A., & Donovan, J. E. (1980). Psychosocial correlates of marijuana use and problem drinking in a national sample of adolescents. American Journal of Public Health, 70, 6, 604-613.

Jessor, R., & Jessor, S.L., (1977). Problem Behavior and Psychosocial Development: A Longitudinal Study of Youth. New York, Academic Press.

Johnston, L. D., O'Malley, P. M., & Eveland, L. K. (1978). Drugs and delinquency: A search for causal connections, in D. B. Kandel (Ed.) Longitudinal Research on Drug Use: empirical findings and methodological issues, 137-156, Washington, DC, Hemisphere.

Johnston, L. D., Bachman, J. G., & O'Malley, P. M. Use of licit and illicit drugs by America's high school students, 1975-84. U.S. Dept. of Health and Human Services publication No. 85-1394. Rockville, MD, National Institute on Drug Abuse, 1984.

Johnston, L. D., O'Malley, P. M., & Bachman, J. G. (1989). Drug use, drinking, and smoking: National survey results from high school, college, and young adult populations. National Institute on Drug Abuse (DH HS Publication ADM 89-1638). Washington, DC: U,S. Government Printing Office.

Jonah, B. A., (1986). Accident risk and risk-taking behavior among young drivers. Accident Analysis and Prevention, 18, 255-271.

Kandel, D. & Logan, J. A. (1984). Patterns of drug use from adolescence to young adulthood: 1. Periods of risk for initiation, continued use, and discontinuation. American Journal of Public Health, 74, 660-666.

Kandel, D. (1975). Stages in adolescent involvement in drug use. Science, 190, 912-914.

Larson, R. (1989). Beeping children and adolescents: A method for studying time use and daily experience. Journal of Youth and Adolescence, 18, 511-530.

Larson, R., Csikszentmihalyi, M., & Freeman, M. (1984). Alcohol and marijuana use in adolescents' daily lives: A random sample of experiences. International Journal of the Addictions, 19, 367-381.

Larson, R., & Csikszentmihalyi, M. (1983). The experience sampling method. In H. Reis (Ed.), New Directions for Naturalistic Methods in the Behavioral Sciences. San Francisco: Jossey-Bass.

Leung, K., & Lau, S. (1989). Effects of self-concept and perceived disapproval of delinquent behavior in school children. Journal of Youth and Adolescence, 18, 4, 354-359.

Levine, E. M., & Kozak, C. (1979). Drug and alcohol use, delinquency, and vandalism among upper middle class pre- and post-adolescents. Journal of Youth and Adolescence, 8, 91-101.

Murphy, D. J. (1986). Customers and thieves: An ethnography of shoplifting. Dorset, England: Gower.

Muuss, R. E. Adolescent behavior and society. New York, McGraw-Hill.

Newcomb, M. D., & Bentler, P. M. (1988). Consequences of adolescent drug use: Impact on the lives of young adults. Newbury Park, Sage.

Newcomb, M. D., & McGee, L. (1989). Adolescent alcohol use and other delinquent behaviors: A one-year longitudinal analysis controlling for sensation seeking. Criminal Justice and Behavior, 16, 3, 345-369.

Nye, F., & Short, J. Jr. (1957). Scaling delinquent behavior. American Sociological Review, 22, 326-331.

Nye, F., & Short, J. Jr. (1957). Scaling delinquent behavior. American Sociological Review, 16, 3, 345-369.

Pedersen, W., Clausen, S. E., & Lavik, N. J. (1989). Adolescent alcohol use and other delinquent behaviors: A one year longitudinal analysis controlling for sensation seeking. Criminal Justice and Behavior, 16, 3, 345-369.

Satinder, K. P., & Black, A. (1984). Cannabis use and sensation seeking orientation. Journal of Psychology, 116, 101-105.

Siegel, R. K. (1989). Intoxication: Life in pursuit of artificial paradise. New York, Dutton.

Simpson, H. M., Mayhew, D. R., & Warren, R. A. (1982). Epidemiology of road accidents involving young adults: Alcohol, drugs and other factors. Drug and Alcohol Dependence, 10, 35-63.

Smith, E. A., & Udry, J. R. (1985). Coital and non-coital sexual behaviors of White and Black adolescents. Journal of Public Health, 75, 1200-1203.

Teichman, M., Barnea, Z., & Rahav, G. (1989). Sensation seeking, state and trait anxiety, and depressive mood in adolescent substance abusers. International Journal of the Addictions, 24, 87-99.

Tolan, P. H. (1987). Implications of age of onset for delinquency risk. Journal of Abnormal Child Psychology, 15, 1, 47-65.

Wright, L. S. (1985). High school polydrug users and abusers. Adolescence, 20, 853-861

Zuckerman, M. (1979). Sensation seeking: Beyond the optimal level of arousal. Hillsdale, N.J.: Lawrence Erlbaum Associates.

;

The thesis submitted by Paul Crowe has been read and approved by the following committee:

Dr. Maryse H. Richards, Director
Associate Professor, Psychology
Loyola University Chicago

Dr, Karen Wills
Assistant Professor, Psychology
Loyola University Chicago

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.

4-16-93
Date

Director's Signature