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IS THE YLS A VALID PREDICTOR OF JUVENILE RECIDIVISM?

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IS THE YLS A VALID PREDICTOR OF JUVENILE RECIDICISM ?

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ABSTRACT

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Differential treatment, or providing individualized services to juvenile offenders that closely match their unique needs and strengths has been shown to be effective in reducing criminal recidivism (Dowden & Andrews, 2000). Implementing a differential treatment approach within a court system requires a valid, systematic way to assess criminogenic risk factors in young offenders. A number of instruments have been developed to accomplish this task. The primary goal of this study was to validate a popular risk assessment instrument, the Youth Level of Service Inventory (YLS), at court intake. The study draws upon an ecological model and contributes to the risk assessment literature in that it is the first study of its kind to use prospective, longitudinal data to validate the YLS on a "pipeline" sample. Results indicate that the YLS predicts recidivism at intake significantly better than chance alone. However, its predictive power and practical utility are limited.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

Introduction

Juvenile justice experts and court systems across the United States have recognized the need for an appropriate match between youth offenders and the sanctions and treatments they receive. Often referred to as "differential treatment," this concept has led to the development of instruments to measure the risks and needs of individual offenders.

The goal of this project was to validate the Youth Level of Service inventory. This instrument is congruent with the ecological model, assessing youth at four different ecological levels (Dalton, et al., 2001). Specific areas measured by the instrument are: prior and current offenses, family circumstances and parenting, education/employment, peer relations, substance abuse, leisure/recreation, personality and behavior, and attitudes/orientation. In the original YLS framework, youth are classified as either low, medium, high or very high risk for recidivism (Andrews & Bonta, 1998). Eventually these risk scores can be used by intake divisions as part of a comprehensive and standardized case management and differential treatment plan.

In order to validate the instrument, 300 new cases were assessed at intake. At six months those cases were

checked for recidivism. It was expected that offenders scoring lower on the YLS would have lower recidivism rates than those scoring higher.

The following literature review highlights four prominent theories of criminal behavior, including ecological theory. It also provides a historical context in which to understand the current interest in differential treatment and risk assessment, discusses current issues and challenges associated with juvenile risk assessment, and concludes with the specific goals and justifications for the current study.

Literature Review

Although the juvenile crime rate has gone down over the past several decades, it is still a significant problem in the United States (Kumpfer, 1999). The FBI reported that in 2004 there were 1,390,515 juvenile arrests (FBI, 2005). That equaled 16% of all arrests that year and 15% of violent crime arrests (FBI, 2005). It costs taxpayers a large amount of money to process, detain, and rehabilitate juvenile offenders. However, the costs go up tremendously if juveniles go on to become adult criminals (Blumstein, Farrington, & Moitra, 1985). The average cost to society of an adult criminal is between 1.7 and 2.3 million dollars (Cohen, 1998). The modern juvenile justice system is charged with providing punishment and rehabilitative services to prevent future criminal activity and the resulting costs and human tolls.

The above statistics leave us wondering, what causes juvenile crime? And what can be done by the justice system to prevent it? The following section highlights three prominent theories in the field of criminal justice that seek to explain criminal behavior. It also identifies an alternative theory, ecological theory, utilized by the YLS. Two meta-analyses of specific factors related to crime and delinquency are also discussed.

Theories of juvenile crime and recidivism

There are three prominent theoretical models in the literature that seek to explain juvenile crime and recidivism. They are: individual criminal propensity, social control, and social learning theory. Individual criminal propensity asserts that certain traits develop early in life that contribute to the likelihood a person will commit crime (Gottfredson & Hirschi, 1990). These traits develop as the result of socialization and developmental processes (Henry & Lanier, 2005).

In the second theory, social control theory, the focus is not on the presence of characteristics that contribute to crime, but rather the absence of suitable controls (Rankin & Wells, 2005). In other words, the motivation for criminal behavior is widespread among all people. However, some have control mechanisms in place, provided primarily by their family and friends, that decrease the likelihood they will act out in a deviant way. Others do not have these controls and are more likely to engage in criminal behavior (Hirschi, 1969; Sampson & Laub, 1993).

Finally, social learning theory includes both individual and social explanations for crime and suggests that "engagement in criminal behavior is dependent on the available rewards and costs for such behavior" (Watts,

Howells, & Delfabbro, 2004, pp. 145). Rewards are perceived by both individual and social factors such as learning history and attitudes of family and friends (Akers, 1977; Andrews, 1995; Bandura, 1977).

Each of the above theories only account for a portion of the risk areas measured on the YLS. There is an alternative theory that better accounts for the multiple, interconnected domain structure of the YLS.

Ecological theory recognizes the many different contextual influences on young people and how these influences interact with each other to cause criminal behavior. The theory includes five different levels of analysis, the individual, the microsystem, the macrosystem, the community, and the organizational level (Bronfenbrenner, 1979; Dalton et al., 2001). The individual level includes characteristics specific to individuals and is studied in relation to the other levels of analysis (how do individuals affect their environments and how do environments affect individuals). The second level, the microsystem includes systems with which an individual has direct, ongoing interaction such as families, friendship circles, and school classrooms. The macrosystem involves large systems such as societies and cultures that influence individuals and microsystems within

them. Organizations involve the merging of multiple microsystems (such as a school or corporation) and a community is usually defined in geographic terms (a neighborhood) (Livsey & Davidson, 2005).

The YLS assessment includes domain areas at four different levels of analysis, the individual (personality/behavior, substance use, criminal history, and attitudes/orientation), the microsystem (peer relationships and parenting/family factors), the organizational level (education/employment) and the community level (leisure/ recreation) (Dalton, et. al., 2001). The macrosystem is not measured directly as it is very difficult for individuals to assess the influence of the macrosystem on their lives, but this level is assumed to influence the other four levels. It should be noted that the YLS was not developed to specifically capture or measure these levels of influence. As a result, some of the items fit only loosely into an ecological level. This challenge is discussed further in the discussion.

In addition to understanding the theoretical explanations for juvenile crime and recidivism, it is also important to examine the specific, individual risk factors that have been correlated to crime and recidivism (Loeber & Dishion, 1983). The next section will summarize that

literature by describing the results of two meta-analyses concerning risk factors, crime, and recidivism in juveniles.

What are the specific risk factors associated with juvenile crime and recidivism?

The first meta-analysis included 60 studies concerning juvenile crime and was conducted in 1994 by Simourd and Andrews. Their literature review, which included articles published from 1964 through 1994, identified the following eight most widely studied categories: antisocial peers or attitudes, demographics including social class, educational difficulties, family structure or parental problems, minor personality variables, parent-child relationships, personal distress, and temperament or conduct issues.

The second meta-analysis was published in 2001 by Cottle, Lee, and Heilbrun. This analysis included 23 studies from 1983 through 2000 and focused on recidivism (as opposed to just crime in general). From these 23 studies, the authors identified 30 possible risk indicators which they grouped into eight general categories. These categories are: demographics, offense history, family and social factors, educational factors, standardized test scores, substance use history, clinical factors, and formal

risk assessment. See Table 1 for a summary the individual risk factors associated with each of those two studies.

Most of the factors from the first meta-analysis that contribute to initial juvenile crime also contribute to recidivism. However, there are additional factors that contribute to recidivism that do not necessary contribute to initial crime. Results indicated that those risk factors most strongly linked to juvenile crime were: antisocial peers or attitudes, temperament or conduct problems, educational difficulties, poor parent-child relations, and minor personality variables. Those factors that were not found to correlate strongly with juvenile crime include: gender, social class, family structure, parental problems, and personal distress (Simourd & Andrews, 1994).

Overall, the five factors most strongly predictive of recidivism were: age at first commitment, age at first contact with the law, nonsevere pathology, family problems, and conduct problems. The five most weakly predictive were: parent pathology, performance IQ score, school achievement, history of treatment, and substance use (Cottle, et. al., 2001).

The modern juvenile justice system is charged with measuring these criminogenic risk factors in juvenile

Table 1: Factors Associated with Youth Crime and Recidivism

Sigmound & Andrews, 1994	Cottle, Lee, & Heilbrun, 2001
FACTORS POSITIVELY CORRELATED WITH CRIME	FACTORS POSITIVELY CORRELTED WITH RECIDIVISM
Antisocial peers or attitudes **Temperament or conduct problems** **Educational difficulties** **Poor parent-child relations** **Minor personality variables**	Gender Socioeconomic status Age at first contact Age at first commitment Prior arrests Prior commitment Longer incarcerations More serious crimes History of abuse Single parent home Out-of-home placement **Significant family problems** **Delinquent peers** Ineffective use of leisure time **History of special education** **SAT score** **Overall IQ score** **Verbal IQ score** Substance abuse History of conduct problems **Nonsevere pathology** Results of formal risk assessments
FACTORS NOT POSSITIVELY CORRELATED WITH CRIME	FACTORS NOT POSSITIVELY CORRELATED WITH RECIDIVISM
Gender Social class Family structure Parental problems Personal distress	Race Parental pathology School attendance Academic achievement Performance IQ score Substance use Severe pathology Psychiatric treatment

*Items in **bold** represent agreed upon items between the two studies

offenders and providing targeted intervention efforts to prevent recidivism. In order to understand the current context, the history of the juvenile justice system in the United States must be examined. The following section provides a summary of the important events and resulting ideologies within this system.

The history of the juvenile justice system in the United States

The juvenile court system in the Unites States has changed tremendously since its inception in the late 1800's. What started as a system to offer protection and guidance to neglected and troubled kids gradually evolved through the 1980's and 1990's to focus primarily on punishment and isolation from larger society. The current system seeks to find a balance between appropriate rehabilitation and treatment, and punishment and protection of society (Anderson, 1998). The idea of differential treatment, or providing appropriate sanctions and services to cases based on the specific needs and risks of an individual young person, has received significant attention (Dowden & Andrews, 2000). A more detailed analysis of the important historical periods that have contributed to the current court system as well as a more thorough discussion of differential treatment follows.

1899-1925

The first formal juvenile court system emerged in Illinois in 1899. The push for such a system came from social progressives like Jane Addams and others who believed in the concept of parens patriae, or the ability of the state to step in on behalf of children who were not being properly cared for by their parents. "Acting out" by young people was attributed to a lack of proper resources, self-esteem, and guidance. It was the court's job to determine and provide for the needs of each young person to which it came into contact. By 1925, 48 states had established juvenile court systems based upon similar principles (Anderson, 1998; Scott & Grisso, 1997).

The 1960's and Gault

During the 1960's some weaknesses of the original court system were identified and challenged. Because judges were allowed total discretion in their sentencing and treatment practices, there was a wide pool of possible outcomes for the same crime or situation of neglect. In some cases young people were locked up for long periods of time for minor offenses at the whim of an individual judge (Anderson, 1998).

This problem was highlighted in a 1967 case involving a 15-year-old boy who was sentenced to six years in an

institutional training school for making a lewd phone call to a neighbor. The Gault case was reviewed by the U.S. Supreme Court and the idea of parens patriae was deemed unconstitutional. The court determined that, "unbridled discretion, however benevolently motivated, is frequently a poor substitute for principle and procedure" (Klein, 1998). They ruled that juveniles, like adults, had the right to notice of charges, to counsel, to confront and cross-examine witnesses, and against self-incrimination (Klein, 1998). The juvenile court system began to look much like its adult counterpart (Anderson, 1998).

The 1970's and 1980's

Due to increasing fear of violent teen offenders, mandatory minimum sentences began to appear in juvenile courts during the 1970's (Anderson, 1998; Scott & Grisso, 1997). In 1978 a high profile teenage murder case, know as the Bosket case, pushed the system to enact even harsher sanctions, including the transfer of young people to adult courts. Willie Bosket was fifteen when he shot two subway riders in New York City. Bosket had a long history with the juvenile justice system prior to committing these crimes. That case led to the passage of the Juvenile Offender Act. It provided specific criteria in which juveniles as young as 13 could be transferred to the adult system in New York.

Similar policies quickly spread to other states (Klein, 1998).

The 1970's were also marked by the "nothing works" movement. Several studies seemed to suggest that no form of treatment or rehabilitation could reform offenders (Lipton, Martinson, & Wilks, 1975; Martinson, 1974). The theory that nothing works has since been refuted by a wide body of research (Andrews, 1995; Dowden & Andrews, 1999; Howell, 2003; Lipsey, 2000; Lipsey, Chapman, & Landenberger, 2001;).

Moving into the 1980's there was a dramatic increase in crack use and distribution. As a consequence a growing number of young people were involved in selling drugs and in other, more violent, drug related crimes. Fear of teen crime increased even more during that time period and the push for harsher penalties grew stronger (Anderson, 1998).

Problems with the shift away from rehabilitation

As more and more young people were tried in adult courts and more severe punishments enacted, many weaknesses in these approaches began to be discussed. First, trying young people in adult courts sheds them of their right to confidentiality and leaves them with a criminal record that can affect their ability to get a job and play a productive role in society upon their release. In addition, these

young people do not have access to educational and other programs provided through juvenile courts (Klein, 1998).

Second, mandatory sentences do not allow room for an exploration of the individual risks and needs of a particular youth. Although total discretion by the court proved unsuccessful, some discretion may be useful in order to identify the most appropriate course of punishment and treatment (Klein, 1998).

Finally, there has been evidence of the effectiveness of many programs to rehabilitate juvenile offenders, thus preventing further involvement with the court system. The most successful programs are those that are matched with the specific needs of offenders (Anderson, 1998). A meta-analysis of 80 rehabilitation programs conducted in 1992 found that those using a careful matching system reduced recidivism by up to 50% (Lipsey, 1992).

Another meta-analysis in 1995 offered further evidence as to the effectiveness of intervention programs with youth involved in the court system. Lipsey (1995) reported a 10 to 40% reduction in recidivism among youth in treatment groups and identified several characteristics of the most successful programs. Those included having a cognitive behavioral orientation.

A final meta-analysis conducted in 1999 focused just on practical programs developed by juvenile justice system practitioners. One-fourth of the programs studied showed very significant results in reducing recidivism. In addition, all but 7% reduced recidivism by some amount (Lipsey, 1999).

Those issues led to a movement within the academic and court communities toward a differential treatment approach.

Differential treatment

Differential treatment, sometimes called the risk principle, implies that "the level of treatment services must be appropriately matched to the risk level of the offender" (Dowden & Andrews, 2000, pp. 450). In addition to assessing risk, a differential treatment approach also examines the needs, both criminogenic and noncriminogenic of the offender (Andrews & Bonta, 1998). It should be noted the idea of differential treatment is not new to the area of delinquency. There was much discussion of this concept in the late 60's and early 70's. A study by Glueck and Glueck (1970) identified three distinct types of juvenile delinquents and offered recommendations for treatment in each group.

In their article, "When programs 'don't work' with everyone: Planning for differences among correctional

clients," Voorhis and Spencer (1999) identified six principles of differential treatment. First, offenders can be classified into subgroups based on risk and need factors. Second, each of these groups has different treatment and retribution needs. Third, an appropriate instrument should be used to help court staff identify appropriate treatment. Fourth, the failure to properly classify offenders can lead to ineffective treatment strategies. Fifth, the chance of success, or lack of recidivism, is increased by properly matching needs with treatment. Finally, program evaluation results must be examined according to differences among offenders.

The idea of differential treatment has led to a push for effective methods and instruments to identify and access risks and needs among offenders. The following sections examine the history and utility of risk assessment.

The History of risk assessment

Within the context of the justice system, risk is defined as the likelihood "the defendant will commit another crime" (Vigorita, 2003). With this definition in mind, risk assessment, sometimes called case classification (Flores, Travis, & Latessa, 2003), has been used historically to

fulfill a number of purposes related to recidivism reduction.

Adult risk assessment

The first formal, published risk assessment was administered by Burgess in 1928 (Ashford & LeCroy, 1990; Withrow, 2003). Burgess developed and used a risk assessment instrument to identify adult prisoners likely to be successful upon being paroled (Burgess, 1928). The work of Burgess was revisited and revised in 1951 by Ohlin and again in 1978 by Gottfredson, Wilkins, and Hoffman (Withrow, 2003). During the 1980's risk assessment began to be widely used in many states' adult justice systems (Finn, 1984). Although the success at predicting recidivism has been mixed (Gottfredson & Gottfredson, 1984; Hoffman, 1983; Klein & Caggiano, 1986), adult risk assessment was and still is used for determining appropriate sentencing and placements, making decisions with regard to parole and probation, and dealing with early release due to prison overcrowding (Ashford & LeCroy, 1990; Withrow, 2003).

Juvenile risk assessment

Following close behind adult risk assessment, juvenile risk assessment has become increasingly popular over the past 20 years (Jung & Rawana, 1999; Wiebush, Baird, Krisberg, &

Onek, 1995). The use of risk assessment with this population must be considered within the context of the overall history of the juvenile justice system. As discussed earlier, the original rational for a separate justice system for juveniles was to protect them from the abuses inherent in the adult system and also to avoid labeling them early on as criminals, increasing their likelihood of reoffending. Therefore, beginning in the early 1900's a number of alternatives to incarceration, focusing on rehabilitation, began to emerge. This continued desire to rehabilitate balanced with an increased push to punish and protect society from dangerous youth offenders is one reason for the use of risk assessment in the modern juvenile justice system. These measurement instruments are used to aid in identifying those youth who can be successfully rehabilitated and those who should receive more carefully supervised detention services (Withrow, 2003).

A second reason for the increased use of risk assessment among juvenile offenders is a lack of financial resources and space in detention centers. Detaining juveniles in live-in correctional facilities is very expensive and space in those facilities is increasingly limited. Thus it has become important to identify only the

most severe, high-risk cases for use of those resources (Withrow, 2003).

A third reason for risk assessment came from the results of studies showing that youth identified as low risk are actually more likely to recidivate following participation in treatment or rehabilitation programs (Jung & Rawana, 1999). That may be due to labeling and exposure to higher risk youth, differential expectations, and/or increased monitoring (Andrews, Bonta, & Hoge, 1990). Risk assessment can identify these low risk youth for which certain treatments may be ineffective or detrimental and can focus such resources on higher risk youth most likely to benefit.

Juvenile risk assessment studies

The number of risk assessment studies has increased over the past several years. Included are studies examining and comparing the utility of various prediction instruments, studies using risk assessment to manage specific offender types such as sexual offenders, studies of risk assessment used as a screening tool for prevention and intervention programs, and studies looking at demographic variables such as gender, and risk assessment techniques (Ashford & LeCroy, 1990; Ashford, LeCroy, & Bond-Maupin, 1986; Baird,

1992; Funk, 1997; Hanson & Bussiere, 1998; Matson & Barnoski, 1997; Quist & Matshazi, 2000; Wright, 2000).

Challenges associated with juvenile risk assessment

Many instruments used to assess juvenile risk are modified adult measures. However, risk assessment has been used for different purposes in adult and juvenile populations and there are several unique challenges associated with juvenile risk assessment. First, many adult instruments use offense history as a primary measure of risk. That becomes problematic with juveniles due to their young age and general lack of criminal history (Ashford & LeCroy, 1990). Second, juveniles are developmentally different from adults and travel through many developmental stages. It is a challenge of risk assessment instruments to account for the unique developmental stage of juvenile offenders (Ashford & LeCroy, 1990). Third, there has been limited study of the validity of adult measures and even less on the validity of individual juvenile measures (Funk, 1999). In addition, the results of such studies suggest that although juvenile risk assessment is better than chance alone at predicting recidivism, its predictive power is limited (Funk, 1999; Rowland, 1988; Wasson, 1988; Wright, Clear, & Dickson, 1984). Finally, previous studies of juvenile court systems

have found significant overrepresentation of minority and underprivileged youth (Krisberg, DeComo, Rudenstine, & Rosario, 1995). Evidence suggests that illegal behavior by young people is widespread, crossing racial and economic lines, but that certain groups are more often targeted by the police and processed through the formal court system (Bridges & Crutchfield, 1988; Huizinga & Elliot, 1987; Sampson, 1986). Therefore, results of risk assessment studies must be viewed as biased in this way.

Considerations in selecting a risk assessment instrument

In his article entitled "Offender Risk Assessment: Guidelines for Selection and Use," James Bonta identified and explained ten important considerations in selecting a risk assessment instrument (2002). First, he argued that "assessment of offender risk should be based on actuarial measures of risk" (Bonta, 2002, pp. 356). An instrument is considered actuarial if it is "structured, quantitative, and empirically linked to a relevant criterion" (Bonta, 2002, pp. 356) as opposed to some widely used clinical assessment methods. There is a large academic literature to support this claim (Bonta, Law, & Hanson, 1998; Hanson & Bussiere, 1998; Grove & Meehl, 1996). Bonta noted that many of today's risk assessments still rely on non-

actuarial, clinical methods such as the Bender Gestalt and the Rorshach. He cited a study by Boothby and Clements (2000) which reported that 34% of 830 psychologists working in corrections still rely on these two methods to assess offender risk.

Bonta's (2002) second criteria for a good risk assessment instrument involved predictive validity. An instrument should not only demonstrate scale and interrater reliability, face validity, and discriminate validity, but should also have strong predictive validity. In other words, how well does the instrument actually predict who will reoffend. Again, Bonta (2002) asserted that far too many risk assessment studies have used instruments such as the MMPI which have not demonstrated predictive validity with correctional populations.

Next, Bonta (2002) warned against using instruments that are not "directly relevant to criminal behavior" (pp. 360). These could include instruments designed to measure psychological disorders such as Beck's Depression Inventory. Depression and other psychological disorders have not been shown to be strongly correlated with criminal behaviors (Boothby & Clements, 2000).

Bonta's (2002) fourth recommendation involved selecting instruments with a strong theoretical

underpinning. There should be theoretical reasons for the overall structure of the instrument and for each individual factor.

Fifth, Bonta (2002) urged the sampling of multiple domains. In other words, an instrument should not focus just on criminal history or family dynamics, but should include all factors deemed theoretically relevant.

Next, Bonta (2002) pointed to the importance of measuring both static and dynamic risk/need factors. A static factor is one that cannot be changed such as age or criminal history. Dynamic factors, also called criminogenic need factors, are those that can be changed, such as peer group, and can lead to changes in criminal behavior (Andrews, Bonta, & Hoge, 1990).

Seventh, personality and cognitive tests should be included only as a tool to help match youth to an appropriate style of treatment and not for general risk assessment. Also, these factors should not be used alone to assign youth to treatments. Other social and cultural considerations must also be made (Bonta, 2002).

Eighth, Bonta (2002) stressed the importance of using different methods. This can improve validity as no one method is perfect. Different methods can include surveys, interviews, observations, and use of archival data sources.

Recommendations nine and ten involve ethical considerations for risk assessment. Those administering these assessments should be well trained and should thoroughly understand the tools they are using including their histories and predictive validities. Finally, Bonta (2002) believes that risk assessment should be used to identify the "least restrictive alternative" (pp. 374) for youth offenders. In other words, it should not be used as a tool to justify locking up youth offenders, but should be used to identify lower risk youth for which such harsh sanctions would not be appropriate.

Common risk assessment instruments

Three risk assessment instruments, YASI, Youth COMPAS, and YLS, are most commonly seen in the research literature. A description of the strengths and weaknesses of each instrument is presented below.

YASI

The Youth Assessment and Screening Instrument includes both a pre-screen and full assessment. The pre-screen measures legal history, family, school, community/peers, substance abuse, mental health, and attitudes. The full assessment, used for youth who score "moderate" or "high" on the pre-screen, includes all of the above factors plus social/cognitive skills, use of free time, and employment.

The instrument was designed to discriminate between more and less serious disposition cases. A major weakness of this instrument is that there are no scientific studies that report validity, only antidotal validity information is available. In addition, due to high training and ongoing staff support costs, the YASI can be prohibitive depending on a court's budget.

Youth COMPAS

Youth COMPAS (Correctional Offender Management Profiling for Alternative Sanctions) was also developed to discriminate more serious from less serious disposition cases. It measures: criminal behaviors, peer relationships, personality and attitudes, substance abuse and sexual behavior, school and education, family and socialization, primary socializing family, and recent family living situation. Again, this instrument has very little validity information available and is cost prohibitive.

YLS

The Youth Level of Service inventory is a third generation instrument originally developed from an adult measure called the Level of Service Inventory (Hoge & Andrews, 1996). The original youth measure was called Youth Level of Service Inventory. The revised version, the YLS,

measures prior and current offenses/adjudications, family circumstances and parenting, education/employment, peer relations, substance abuse, leisure recreation, personality and behavior, and attitudes/orientation. This instrument includes both risk and protective factors in each area.

Compared to the other two instruments, the YLS has the most validity information available (Flores, 2003; Hoge & Andrews, 1996; Jung, 1996; Rowe, 2002; Schmidt, 2002). Training for the measure includes a manual and does not require purchase of additional training services. As such, staff can be trained at a very low cost. Material costs are on a per item basis and were deemed appropriate for the court's budget.

In addition, the YLS meets all the criteria outlined by Bonta (2002). It demonstrates predictive validity, includes actuarial measures of both static and dynamic factors relevant to criminal behavior, draws on ecological theory, includes multiple domains, and encourages the triangulation of methods (including interviewing and archival data sources). Due to those factors the YLS was determined to be the best instrument available to the court and was chosen and implemented. More specific psychometric information on the instrument can be found below.

Psychometric properties of the YLS

A number of researchers explored the psychometric properties of the YLS. Studies dealing with internal consistency, inter-rater agreement, construct validity, and criterion-related validity are summarized below.

Internal consistency

Rowe (2002) completed the YLS on 408 juvenile offenders. Coefficient alphas were calculated on each of the eight subscales as well as the total risk/need score. Alpha's ranged from .60 for leisure/recreation to .82 for substance abuse. The total risk/need score had an alpha of .91. Another study by Schmidt, Hoge, and Robertson (2002) with an N of 114 reported slightly lower alphas (ranging from .56 for substance abuse to .77 for attitudes/orientation). However, they were still within the acceptable range.

Inter-rater agreement

Two studies calculated inter-rater agreements on the YLS. The first, by Poluchowicz, Jung, and Rawana (2000) measured the risk of 33 juvenile offenders using the YLS. A second person re-rated all 33 offenders. Correlations ranged from .05 (for leisure/recreation) to .92 (for prior convictions/dispositions). With the exception of leisure/recreation, all other subscales had average to good correlations. The correlation for the overall risk score was .75. The second study (Schmidt et al., 2002) analyzed

29 cases and reported correlations from .61 (peer relations) to .85 (education/employment).

Construct validity

In addition to examining instrument reliability, both Rowe (2002) and Schmidt et al. (2002) looked at construct validity. Rowe reported correlations between the YLS total risk score and scores from a number of measures of behavioral difficulties in adolescents. These included the Psychopathy Checklist: Youth Version (Forth, Kosson, & Hare, 2003), the Childhood and Adolescent Taxon Scale (Quinsey, Harris, Rice, & Cormier, 1998), the Disruptive Disorder Rating Scales (Barkley & Murphy, 1998), and the Conduct Disorder Symptom Scale (Barkley & Murphy, 1998). Scores on each of these measures were found to be significantly correlated at the $p < .001$ level with the YLS.

Schmidt et al. (2002) correlated the Child Behavior Checklist (Achenbach, 1994), the Social Skills Rating System (Gresham & Elliott, 1990), the Jesness Inventory (Jesness, 1996) and the Personal Experience Screening Questionnaire (Winters, 1991) with the YLS. Again, all correlations were statistically significant.

Criterion-related validity

Two studies have reported concurrent validity. First, Jung (1996) compared the scores of 62 adolescents with no juvenile justice exposure to 263 juvenile offenders and found that the offenders had significantly higher risk scores on the YLS than the non-offenders. Second, Hoge and Andrews (1996) compared YLS scores across three increasingly severe disposition categories. Results indicated that as severity of disposition increased, so did risk score on the YLS.

Several studies have attempted to demonstrate the predictive validity of the YLS. A number of these have examined simple correlations between YLS scores and recidivism. Of the three studies examined, all three reported a significant correlation between recidivism and YLS total and subscores (Hoge & Andrews, 1996; Rowe, 2002; Schmidt et al., 2002).

Flores et al. (2003) found several factors were correlated to higher scores on the YLS. First, as risk score increased, unsuccessful releases from correctional facilities increased. Second, high-risk youth were more likely to have an institutional violation or a technical violation. Third, those scoring high were more likely to be re-arrested for a more serious crime than those scoring

in the low risk range. Finally, high-risk youth were more likely to be re-incarcerated after being released.

A study by Jung and Rawana (1999) compared YLS scores of youth who had reoffended after six months with those who had not. They found that total risk scores were significantly higher for those youth who had recidivated. They also compared YLS subscores for each group and again found that scores were significantly higher for the group who had recidivated six months post disposition.

Predictive accuracy analyses were also conducted in several of the previously reported studies. A linear discriminant analysis using the eight subscales and the total risk score produced a 75.38% correct classification value (Jung & Rawana, 1999). Schmidt et al. (2002) reported a slightly lower rate of 57% for general offending and 56% for serious offending.

The 1996 study by Hoge and Andrews also compared the adjustment ratings of probation officers to scores on the YLS. In other words, did youth with a low level of compliance have higher scores on the YLS? Results indicated this to be the case.

Rationale for the current study

The primary goal of this study was to validate the YLS for court intake divisions using an ecological model. The

intake division is comprised of referees who are responsible for holding initial intake hearings for each new petition approved by the prosecutor (unless the youth is already involved in the system on probation or in other formal court programming). At the intake hearing, accused youth are asked to make a plea of guilty or not guilty. If they plead not guilty the case is sent formal before a judge where, if found guilty, the youth will most likely be placed on probation or in residential treatment. If they plead guilty the referee can choose to send the case formal before a judge or can choose to keep it informal at intake. Informal cases are assigned various sanctions such as community service and written letters of apology. In addition, they may also be linked to community resources such as substance abuse programs or mental health services. Often there are no formal criteria for making decisions at intake. Instead, decisions are made at the discretion of each referee.

Differential case planning based on risk is particularly important at the intake level as it is the largest gateway to the formal criminal justice system. With a valid risk assessment procedure in place, intake workers can make informed decisions as to which youth are not likely to commit another crime without any court

intervention (or who may actually get worse with court intervention). They can also identify higher risk kids early and provide them with appropriate programming matched with their specific risk profile to keep them from re-offending and becoming more deeply embedded in the system.

This study was also unique and contributes to filling some critical gaps in the risk assessment literature in that longitudinal, prospective data was utilized. It is the first of its kind to use a pipeline sample (examining kids entering the system at intake) to look at YLS scores and recidivism. This is important because the population at intake looks different from populations of kids already involved in the court system (either on probation, in residential treatment, or involved in other court programming). Intake samples are typically lower risk and younger in age. Also, youth already involved in the system have received varying levels of service and have been in the system for different periods of time. At intake all youth will be assessed at the same time point (before any formal court involvement).

This study was also the first of its kind to include a strong theoretical foundation. Four levels of the ecological model, the individual, microsystem, organization, and community are represented by subscales on

the YLS. Ecological theory would predict that each level would be important in explaining recidivism. This model's ability to predict recidivism was tested and compared to three additional theories of criminal behavior.

Specific research questions

The study answers the following research questions:

1. Do the eight scales of the YLS have good internal consistency? Does the YLS have good overall consistency?
2. Is the YLS able to predict recidivism controlling for demographic factors?

Methodology

Setting

Data was collected by the intake division of a local Juvenile Court located in a medium sized Midwestern county. The 2002 United States census estimated the population of the county to be 281,362 with 145,444 females and 65,673 persons under 18 years of age. Approximately 79% of residents were white.

The Juvenile Court provides services to youth through a number of programs falling under the categories of substance abuse, residential services, day treatments, sex offender services, diversion services, anger management, family services, detention services, probation services, and truancy services.

Sample

The sample included 300 juvenile offenders who entered the court from April 2004 through February 2005. Qualifying youth include those who admitted the criminal charge at intake. A total of 455 youth during the same time period did not qualify and therefore did not take the YLS. The most common reason for exclusion was that the youth denied the charges and chose to take their case to trial (N=215). Other common reasons included the case being transferred to another county (N=41), denial by

either the petitioner or by intake (N=15), and the youth not being located (N=135).

Procedures

The data for this study were collected by the juvenile court in question and provided to the author for this study. A codebook for the provided data is found in Appendix A. Three juvenile court referee's received eight weeks (8 hours per week) of training, conducted by Court administrators, on how to identify appropriate youth to take the YLS, the history, purpose, and utility of the YLS, and the techniques to administer and score the instrument. Practice interviews and reliability checks were conducted during the training process to ensure consistency between workers.

Once trained, intake staff administered the YLS during their initial intake with each qualifying youth. Following the interview and disposition the YLS was scored by the referee. In addition, inter-rater reliability checks were conducted by two court staff members on one out of every twenty cases. Reliabilities ranged from .70 to .98 with an average reliability of .90 (N=14 out of 300 cases).

Six-month follow-up recidivism data were collected eight months following initial intake to allow for enough

time to process cases through the system. However, recidivism reflects only the six-month period post intake.

Measurement Instruments

YLS

The Youth Level of Service/Case Management Inventory is a third generation instrument originally developed from an adult measure called the Level of Service Inventory (Andrews & Bonta, 1998). The original youth measure was called Youth Level of Service Inventory. The revised version, the YLS, has eight subscales that capture four levels of the ecological model: prior and current offenses/adjudications, family circumstances and parenting, education/employment, peer relations, substance abuse, leisure recreation, personality and behavior, and attitudes/orientation. This instrument includes both risk and protective factors in each area.

Recidivism

For purposes of this study recidivism was defined as any new criminal petition six months following the first YLS administration. Tickets and truancy violations were not counted. Three pieces of information were included on the recidivism collection form: recidivism (yes or no), total number of new petitions, total number of misdemeanors, and total number of felonies. The form was completed by court

staff using the court's data management system and entered into a database to be used for analysis.

Results

Sample Demographics

The mean age for the sample was 14. See Figure 1 for the complete age breakdown. Forty-one percent of the youth self identified as African American, 39% Caucasion, 9% Mexican American, 7% Biracial and 3% other. Figure 2 provides a more detailed description of sample's racial makeup. It is important to note that African Americans were over-represented in the sample (39%) compared to the population in the county (15%). However, once involved in the court system African Americans were not higher risk than other racial groups (see analysis below). Males comprised the majority of the sample at 64%, with females at 36% (see Figure 3). The largest percentage of youth came from non-intact families (77%), with 23% coming from intact families. A more specific breakdown of family composition can be found in Figure 4.

YLS Item by Item Frequencies

Frequency of responses, either yes or no, for each of the 42 YLS items was computed. The three items with the most yes responses were "could make better use of time," "limited organized activities," and "low achievement." The three items with the most no responses were "three or more current adjudications," chronic alcohol use," and inflated

Figure 1: Age Breakdown of YLS Sample

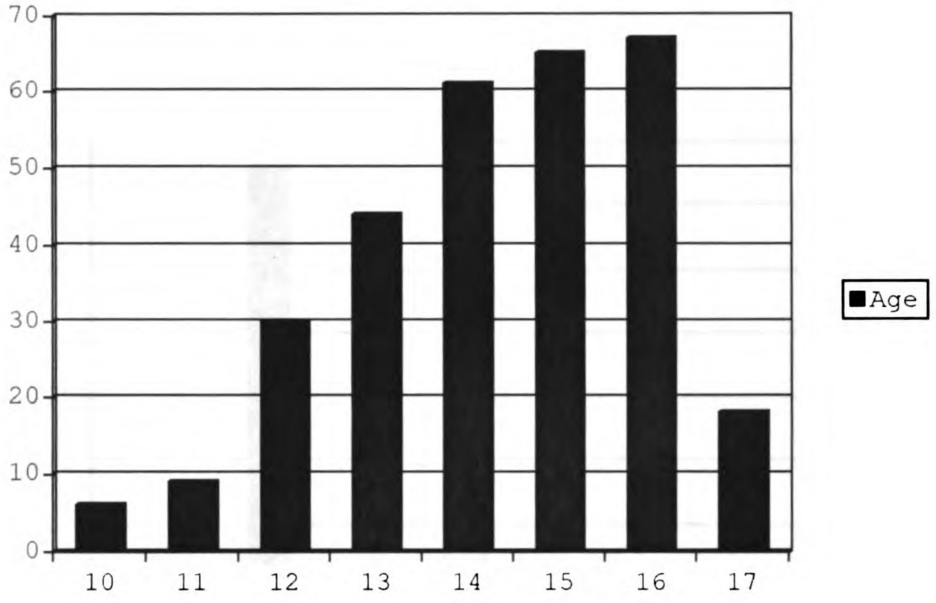


Figure 2: Detailed Racial Breakdown of YLS Sample

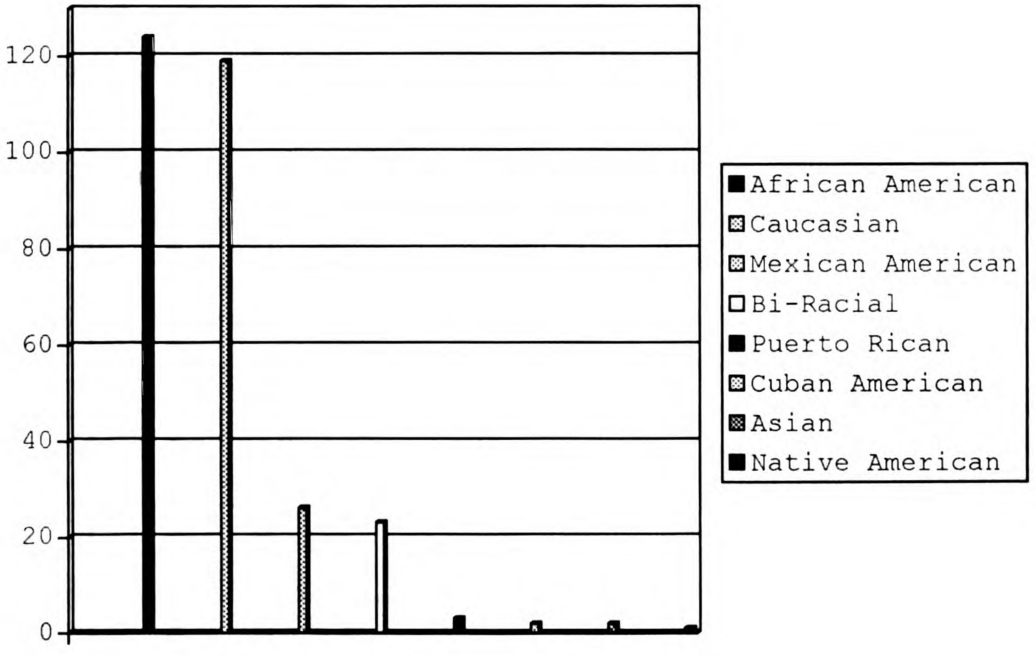


Figure 3: Gender Breakdown of YLS Sample

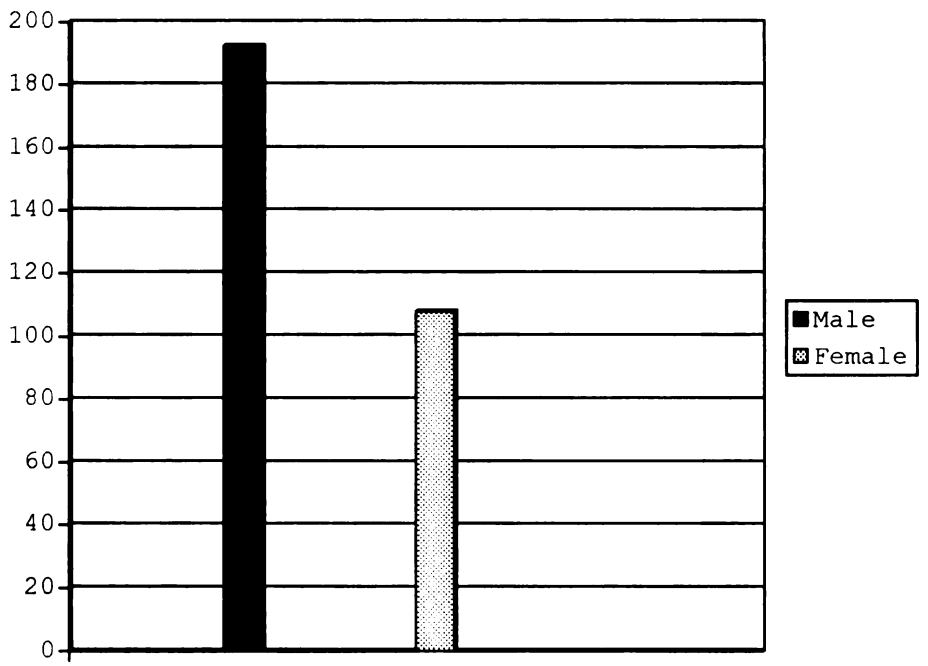
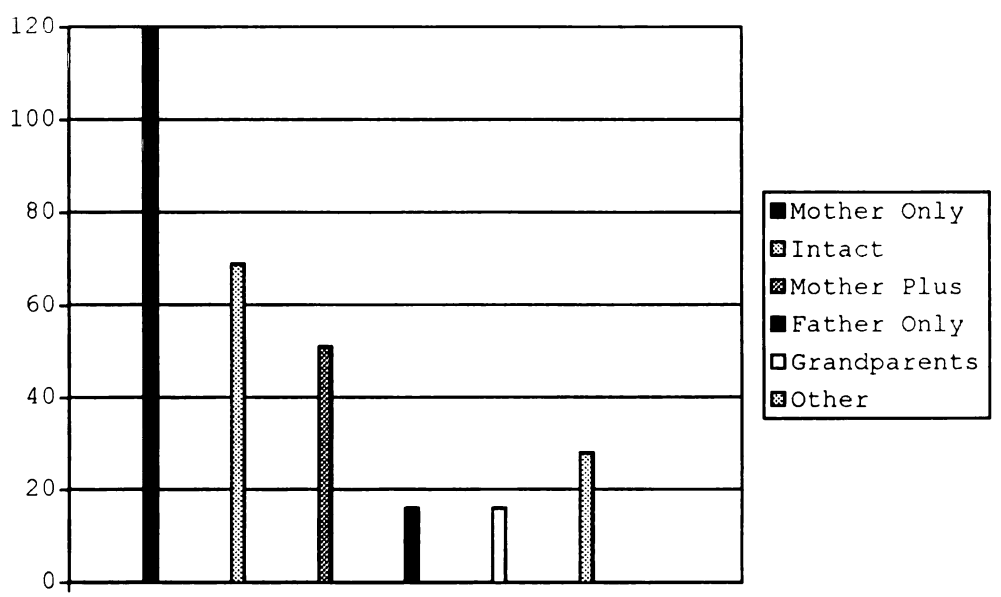


Figure 4: Family Composition of YLS Sample



self esteem." An item analysis is found in Table 2, including endorsement frequency and subscale mean.

YLS Risk Score by Race, Gender, and Family Composition

YLS risk score was examined by race, gender, and family composition. The mean YLS score for African Americans was 8.6 (SD=7.0), Caucasians averaged 8.5 (SD=6.9), Mexican Americans had a mean of 8.4 (SD=6.2), and Biracial youth had an average risk score of 8.7 (SD=7.9). A one-way analysis of variance concluded that no statistical differences in risk score by race were observed between the most common four racial groups $F(3,287)=.015, p>.05$.

A one-way analysis of variance indicated there were significant differences, $F(1,298)=6.37, p<.05$, between males and females with regard to average YLS score. Males had a mean score of 9.38 (SD=7.3) and females had a mean score of 7.27 (SD=6.3).

Differences in mean YLS score by family composition were examined for intact versus non-intact families. Youth with intact families had a mean YLS score of 8.29 (SD=8.3), while those living in a non-intact family had a mean YLS score of 8.72 (SD=6.5). Analysis of variance indicated that no significant differences existed due to family composition $F(1,298)=.198, p>.05$.

Table 2: YLS Item by Item Frequency Analysis by Subscale

1. Prior and Current Offenses, Adjudications	YES
a. Three or More Prior Adjudications	3%
b. Two or More Failures to Comply	5%
c. Prior Probation	17%
d. Prior Detention	11%
e. Three or More Current Adjudications	0%
Prior and Current Offenses, Adjudications Mean	.36

2. Family Circumstances and Parenting	YES
a. Inadequate Supervision	7%
b. Difficulty in Controlling Behavior	21%
c. Inappropriate Discipline	8%
d. Inconsistent Parenting	16%
e. Poor Relations/Father-Child	41%
f. Poor Relations/Mother-Child	21%
Family Circumstances and Parenting Mean	1.13

3. Education/Employment	YES
a. Disruptive Classroom Behavior	34%
b. Disruptive Behavior on School Property	42%
c. Low Achievement	44%
d. Problems With Peers	30%
e. Problems With Teachers	27%
f. Truancy	30%
g. Unemployed/Not Seeking Employment	4%
Education/Employment Mean	2.10

4. Peer Relations	YES
a. Some Delinquent Acquaintances	40%
b. Some Delinquent Friends	23%
c. No or Few Positive Acquaintances	10%
d. No or Few Positive Friends	12%
Peer Relations Mean	.85

5. Substance Abuse	YES
a. Occasional Drug Use	26%
b. Chronic Drug Use	12%
c. Chronic Alcohol Use	2%
d. Substance Abuse Interferes With Life	11%

e. Substance Abuse Linked to Offense(s)	11%
Substance Abuse Mean	.61

6. Leisure/Recreation	YES
a. Limited Organized Activities	56%
b. Could Make Better Use of Time	57%
c. No Personal Interests	30%
Leisure/Recreation Mean	1.43

7. Personality and Behavior	YES
a. Inflated Self-Esteem	1%
b. Physically Aggressive	25%
c. Tantrums	21%
d. Short Attention Span	36%
e. Poor Frustration Tolerance	43%
f. Inadequate Guilt Feelings	9%
g. Verbally Aggressive/Impudent	19%
Personality and Behavior Mean	1.54

8. Attitudes/Orientation	YES
a. Antisocial/Pro-Criminal Attitudes	18%
b. Not Seeking Help	12%
c. Actively Rejecting Help	2%
d. Defies Authority	23%
e. Callous/Little Concern for Others	7%
Attitudes/Orientation Mean	.62
Total YLS Mean	8.62

Recidivism Statistics

Frequency statistics indicated that 14% of the sample received at least one new petition over six months. Thirty-four youth received just one new petition, five received two new petitions, one received three new petitions, and one received four new petitions. The 41 new

petitions contain a total of 66 individual charges (20 felonies and 46 misdemeanors).

Reliability (Research Question #1)

A number of analyses were conducted to examine the reliability of the YLS structure. Results of these analyses follow.

Factor analysis

A chi-square (using AMOS 5) testing departure of the data from the original eight-factor model was not significant, $\chi^2(756)=1221$, $p=1.0$, meaning the data fits the model and the null hypothesis is not rejected. Goodness of fit indices (GFI and RMR) were moderately high (.801 and .036) indicating a modest model fit.

Given the confirmatory factor analysis indicated a modest fit of the data, a principal components analysis using Kaiser's criteria and varimax rotation was conducted for exploratory purposes. After looking at the scree plot, three factor structures (thirteen factors, eight factors, and four factors) were examined. The thirteen-factor model was rejected due to too many factors with only one item or no items highly loaded. The four- factor model was rejected due to too few factors (low communalities, too many domains included in each factor, factors negatively defined). The eight-factor model resulting from the

exploratory factor analysis was accepted and compared to the original eight-factor model using confirmatory factor analysis. The original model and the alternative model can be viewed in Appendix B and Appendix C respectively.

A chi-square testing departure of the data for the alternative model was not significant, $\chi^2(435)=1133$, $p=.08$, meaning the data fits the model and the null hypothesis is not rejected. Goodness of fit indices (GFI and RMR) were lower than the original model (.747 and .041) indicating the data does not fit the alternative model any better than original model (note that several items were removed in this model). As such, the alternative model was rejected and the original model was utilized for further analysis.

Alpha coefficients

Following results of the confirmatory factor analysis, alpha coefficients were calculated for each of the eight risk scales of the YLS. The following items did not contribute to their scale's reliability: prior convictions, poor relationship with father, unemployed/not seeking employment, chronic alcohol use, no personal interests, and inflated self-esteem. See Table 3 for corrected item-total correlations. The overall reliability of the 42 items of the YLS was also calculated. Analysis revealed that the measure had an Alpha of .90. One item, three or

Table 3: Corrected Item-Total Correlations

Item	Corrected Item-Total Correlations
Three or More Prior Adjudications	.509
Two or More Failures to Comply	.598
Prior Probation	.730
Prior Detention	.802
Three or More Current Adjudications	(No Variance)
Inadequate Supervision	.372
Difficulty in Controlling Behavior	.468
Inappropriate Discipline	.398
Inconsistent Parenting	.515
Poor Relations/Father-Child	.292
Poor Relations/Mother-Child	.352
Disruptive Classroom Behavior	.510
Disruptive Behavior on School Property	.370
Low Achievement	.425
Problems With Peers	.376
Problems With Teachers	.458
Truancy	.331
Unemployed/Not Seeking Employment	.067
Some Delinquent Acquaintances	.447
Some Delinquent Friends	.565
No or Few Positive Acquaintances	.528
No or Few Positive Friends	.471
Occasional Drug Use	.538
Chronic Drug Use	.694
Chronic Alcohol Use	.289
Substance Abuse Interferes With Life	.673
Substance Abuse Linked to Offense(s)	.504
Limited Organized Activities	.705
Could Make Better Use of Time	.669
No Personal Interests	.533
Inflated Self-Esteem	.075
Physically Aggressive	.429
Tantrums	.545
Short Attention Span	.374
Poor Frustration Tolerance	.578
Inadequate Guilt Feelings	.181
Verbally Aggressive/Impudent	.449
Antisocial/Pro-Criminal Attitudes	.457
Not Seeking Help	.498
Actively Rejecting Help	.285
Defies Authority	.432
Callous/Little Concern for Others	.523

more current convictions, was removed prior to calculating Alpha due to zero variance.

Multiple regression to examine internal consistency

A multivariate regression was conducted to look at the relationship between scores on each of the eight YLS subscales and YLS total score. Results suggest all the subscales significantly contribute to the total YLS score (see Table 4).

Validity of the YLS (Research Question #2)

Several different analyses were also conducted to examine validity. Results for each are below.

Bivariate correlations predicting recidivism

A bivariate correlation (Table 5) between YLS total score and number of re-petitions was conducted to test predictive validity. Results indicated a significantly positive relationship between YLS score and re-petition. In other words, those youth scoring higher on the YLS were more likely to receive re-petitions over the next six months.

Linear discriminant analysis of subscale structure predicting recidivism

Predictive accuracy of the eight-subscale structure was tested with linear discriminant analysis. Prior to that analysis, new petitions were recoded from continuous to dichotomous.

Table 4: Multivariate Regression Model Predicting YLS Total

Variable	B	SE	Beta	t	Sig
History	1.006	.033	.129	30.638	.000
Parenting	.936	.022	.182	42.981	.000
Education	.999	.019	.254	53.889	.000
Peers	.993	.025	.162	39.214	.000
Substance	.970	.024	.156	39.883	.000
Leisure	1.017	.023	.177	44.280	.000
Personality	1.003	.021	.230	48.801	.000
Attitudes	1.040	.035	.156	29.523	.000
Constant	.018	.042		.433	.665

NOTE: $F(8)=10745.980$; $p \leq .001$; $R^2=.997$

Table 5: Correlation Between YLS Score and Re-Petitions

	Re-Petition
YLS Total Score	.163**

**Indicates significance at the $p \leq .01$ level

The eight domain model is statistically significant in predicting recidivism ($\lambda=.929$, $X^2(8)=21.74, p=.005$) and produces an 86.7% correct classification value (see Tables 6 and 7 for univariate means and function coefficients). The model was 100% accurate in predicting non-recidivists, but only 2% accurate in predicting recidivists (see Table 8). In other words, if one were to predict that 100% of kids would not recidivate they would be 86% accurate. This test only improves prediction accuracy by .7%. Alternative cut scores were explored, but the cut would have to be lowered to 2 in order to predict all recidivists. Tests of

Table 6: Univariate Means by Recidivism Status

Recidivism		Mean
No	Prior and current offenses	.3629
	Family circumstances/parenting	1.0772
	Education and employment	1.9537
	Peer relations	.8031
	Substance abuse	.5830
	Leisure and recreation	1.3398
	Personality and behavior	1.4517
	Attitudes and orientation	.5985
Yes	Prior and current offenses	.3659
	Family circumstances/parenting	1.4634
	Education and employment	3.0488
	Peer relations	1.1707
	Substance abuse	.7805
	Leisure and recreation	1.9756
	Personality and behavior	2.1220
	Attitudes and orientation	.7317

Table 7: Function Coefficients

	Function
Prior and current offenses	-.271
Family circumstances and parenting	.029
Education and employment	.711
Peer relations	.285
Substance abuse	-.036
Leisure and recreation	.409
Personality and behavior	.264
Attitudes and orientation	-.493

Table 8: Predicted Groups Versus Original Groups

		Recidivism	Predicted Group Membership		Total
			No	Yes	
Original	#	No	259	0	259
		Yes	40	1	41
	%	No	100.0	.0	100.0
		Yes	97.6	2.4	100.0

86.7% of original grouped cases correctly classified

Equity of Group Means suggested that the scales of family circumstances/parenting, education/employment, peer relations, leisure/recreation, and personality/behavior contributed to the model while prior history, substance use, and attitudes/orientation did not (See Table 9).

Heirarchical linear regression of subscales and demographics predicting new petitions

The predictive validity of each subscale and each demographic factor was tested using hierarchical linear regression. The demographic variables (age, gender, race, and family composition) were entered into the first block. Prior to analysis, race and family composition were re-coded into dichotomous variables. The eight YLS scales, age, gender, race, and family composition were entered into the second block.

Table 10 shows results from the two Steps. Step 1 produced an R^2 of .024 and an adjusted R^2 of .007 and

Table 9: Tests of Equity of Groups Means for Recidivism

	Wilks' Lambda	F	df1	df2	Sig.
History	1.000	.000	1	298	.985
Parenting	.990	2.867	1	298	.091
Education	.955	13.911	1	298	**.000**
Peers	.988	3.705	1	298	**.055**
Substance	.996	1.083	1	298	.299
Leisure	.968	9.939	1	298	**.002**
Personality	.979	6.279	1	298	**.013**
Attitudes	.998	.571	1	298	.451
YLS Total	.970	9.154	1	298	**.003**

Items in bold are significant

Table 10: Hierarchical Linear Regression for New Petitions

	STEP 1 Multiple R=.153 R^2=.024, adj. R^2=.007			STEP 2 Multiple R=.304 R^2=093, adj. R^2=.051		
	B	SE	Beta	B	SE	Beta
BLOCK 1						
Age	-.00	.01	-.01	-.00	.02	-.03
Gender	.05	.06	.05	.04	.06	.04
Caucasian	.00	.08	.00	.01	.08	-.01
African Am.	.10	.08	.10	.11	.08	.12
Family Comp.	.07	.07	.06	.05	.07	.05
BLOCK 2						
History				-.04	.04	-.07
Parenting				.00	.03	.02
Education				.04	.02	.15
Peers				.03	.03	.08
Substance				.01	.03	.03
Leisure				.05	.03	.13
Personality				.02	.02	.07
Attitudes				-.07	.04	-.16

showed that none of the demographic variables alone or together were significantly related to recidivism. The

second block adding the YLS scales produced an R^2 of .093 and an adjusted R^2 of .051 and was significantly related to recidivism.

Chi-square of risk level predicting recidivism

Chi-square explored the predictive validity of risk level (as defined by the authors of the YLS). In other words, how strong the relationship is between risk level and recidivism? Results were significant, $\chi^2(2)=7.816$, $p<.05$. However, there was not a significant difference in recidivism in the expected direction between moderate and high-risk youth. See Table 11 for the crosstabulation.

Table 11: Crosstabulation between Risk Level and Recidivism

			Recidivism		Total
			No	Yes	
Risk	Low	Count	155	15	170
		Within risk level	91.2%	8.8%	100.0%
		Within recidivism	59.8%	36.6%	56.7%
		Total	51.7%	5.0%	56.7%
	Mod.	Count	90	23	113
		Within risk level	79.6%	20.4%	100.0%
		Within recidivism	34.7%	56.1%	37.7%
		Total	30.0%	7.7%	37.7%
	High	Count	14	3	17
		Within risk level	82.4%	17.6%	100.0%
		Within recidivism	5.4%	7.3%	5.7%
		Total	4.7%	1.0%	5.7%
Total		Count	259	41	300
		Risk level	86.3%	13.7%	100.0%
		Within recidivism	100.0%	100.0%	100.0%
		Total	86.3%	13.7%	100.0%

Discussion

This study sought to answer two research questions with regard to the YLS at court intake. First, how reliable is the eight-factor structure of the YLS and how reliable is the overall YLS? Second, is the YLS a valid predictor of recidivism at intake? This section discusses the findings for each research question, ties results back to the discussed literature (including each of the theoretical models), outlines implications of these findings for intake, highlights study limitations, and identifies directions for future research.

Research Question #1

The first research question involved the reliability of the YLS instrument itself. Analysis revealed that the original eight-domain risk structure outlined by the authors of the instrument fits the data moderately well and was better than an alternative model derived from exploratory factor analysis. Alpha coefficients were acceptably high for each domain and each subscale contributed significantly to the total risk score. Items that did not contribute to the reliability of the instrument included: three or more current convictions, poor relationship with father, unemployed, chronic alcohol use, no personal interests, and inflated self-esteem.

Because these items are not reliable, future versions of the YLS may consider removing them to increase reliability and shorten the measure.

Research Question #2

The second research question involved the validity of the YLS. In other words, does it actually predict who will recidivate? Findings suggest that YLS total score was statistically valid as a predictor of re-petitions at intake for the overall sample of 300. As expected, those youth who score higher are more likely to have a greater number of new petitions after six months than those who score lower.

Linear discriminant analysis tested the ability of the eight-domain scale structure to predict recidivism. Although results were statistically significant, the domain scores were only able to predict recidivists 2% of the time (one out of forty recidivists) and were only .7% better than the base rate overall. This highlights a common tension in psychological research, statistical significance versus practical utility. These results, although statistically significant and better than chance, call into question the practical utility of using the domain scores to predict recidivism.

Hierarchical multiple regression demonstrated that the YLS scales were significantly related to recidivism controlling for the four demographic factors. The demographic factors were not significantly related to recidivism. This suggests that males and females, youth of all ages, Caucasian and African American youth, and youth from both intact and non-intact families recidivate at the same level.

Finally, "low" risk youth (as defined by the original authors of the measure) were significantly less likely to recidivate than "moderate" or "high" risk youth. However, there was not a significant difference in recidivism between "moderate" and "high" risk youth. As such, it would make sense to merge moderate and high-risk kids into one group or re-examine the cutoff scores for each group if this holds at longer follow-up points.

Overall the results of this study are consistent with prior studies that have explored the predictive power of the YLS for youth already involved in the court system (Hoge & Andrews, 1996; Jung & Rawana, 1999; Schmidt et al., 2002). The instrument is better than chance alone at predicting recidivism at intake. However, its predictive power is limited and its practical utility is in question.

Results must also be examined in light of the prominent theories of juvenile crime. The first examined theory, individual criminal propensity would suggest that individual factors of the YLS would have the greatest influence on recidivism (Gottfredson & Hirschi, 1990. This is not the case. The individual areas of prior history, substance use, and attitudes/orientation did not contribute to explaining recidivism. The area of personality/behavior did contribute to predicting recidivism, however they were not the strongest or only predictors.

The second discussed theory, social control theory, would predict that two domains, family circumstances/parenting and peer relationships would best predict recidivism (Hirschi, 1969; Rankin & Wells, 2005; Sampson & Laub, 1993). While both of these areas did contribute to predicting recidivism, they were not the only two. As such, this theory alone is not adequate in explaining recidivism.

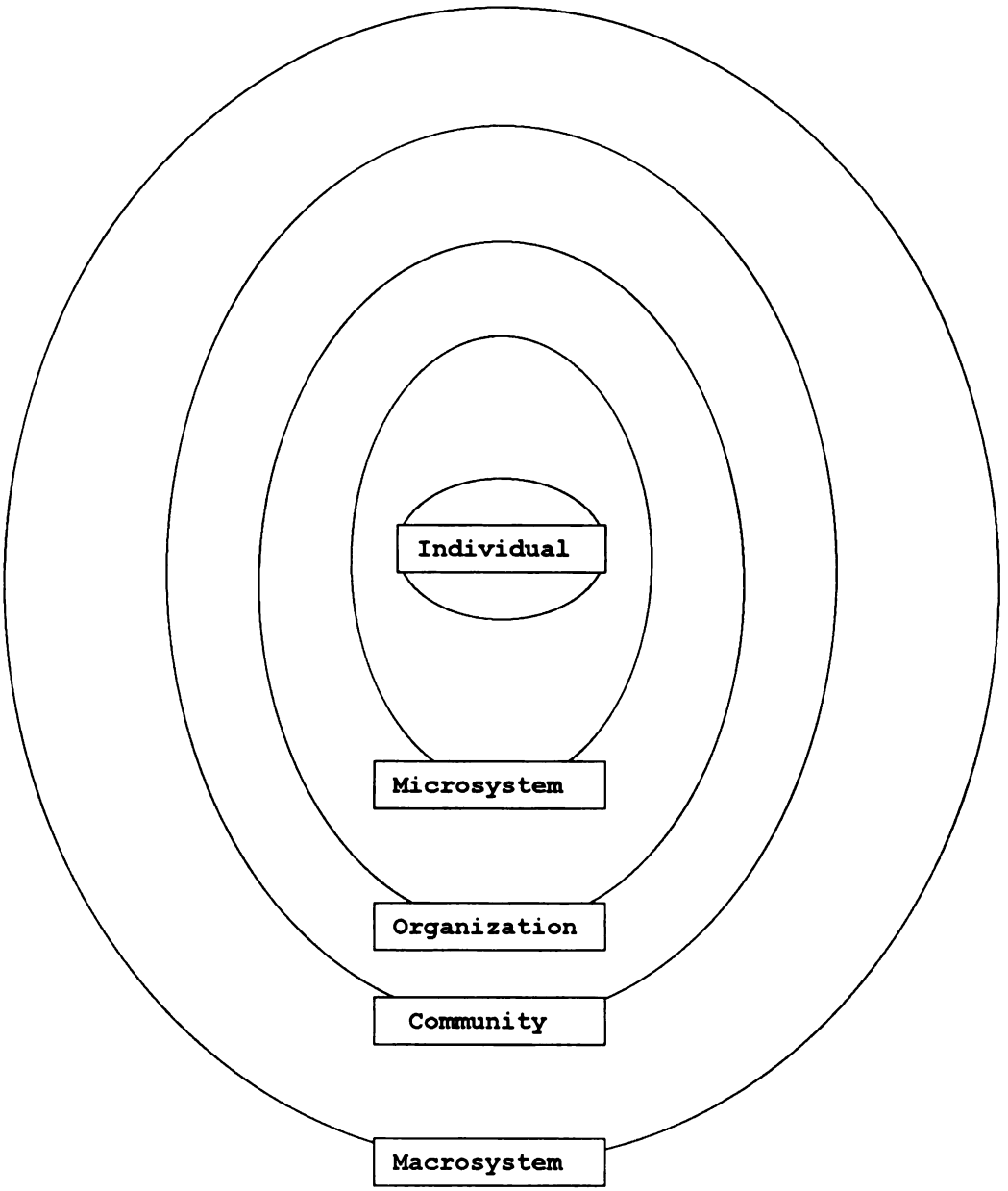
Finally, social learning theory focuses on the learned behavior of youth and, as such, would predict that the areas of peers and family circumstances/parenting would contribute most to criminal propensity (Akers, 1977; Andrews, 1995; Bandura, 1977). Results suggest that peers and family do contribute to predicting recidivism along

with four additional domains. Again, this theory alone probably does not fully explain recidivism risk.

Ecological theory does not support the idea that individual domain areas alone will predict crime or that these areas can easily be separated from each other (Bronfenbrenner, 1979; Dalton et al., 2001). Instead it recognizes the importance of and the complex interactions between different levels of influence. This study is generally supportive of this theory. Results indicate that domains on the YLS within each of four ecological levels (individual, organization, community, and microsystem) predict recidivism. See Figure 5 for a graphical representation of the model. The individual level of the ecological model is captured by the YLS domain of personality/behavior, the organizational level by education/employment, the community level by leisure/recreation, and the microsystem level by family circumstances/parenting and peer relations. The only items that do not contribute to predicting recidivism were prior history, substance use, and attitudes/orientation. These all fall within the individual level of analysis. This suggests these items may not capture that level as well as personality/behavior.

Implications of the Study for Intake Divisions

Figure 5: YLS Scales by Ecological Level



Individual: Prior History, Substance Use, Attitudes/Orientation, Personality/Behavior

Microsystem: Family Circumstances/Parenting, Peer Relations

Organization: Education/Employment

Community: Leisure/Recreation

Marcosystem: (No specific domains on YLS)

Possible future directions for intake divisions include using the YLS score to aid in making disposition decisions. It should be noted that the intake division involved in this study was already making disposition decisions consistent with a youth's risk level prior to knowing that risk level. Chi-squares examined the relationship of risk level and each possible disposition decision. Results were significant for each (adjourned vs. not adjourned, $\chi^2(2)=13.807$, $p<.05$, diverted vs. not diverted, $\chi^2(2)=6.514$, $p<.05$, and formal vs. informal, $\chi^2(2)=4.073, p<.05$). Low risk youth were more likely to be adjourned, diverted away from the court system entirely, or kept informal at intake (instead of going formal before a judge) than moderate or high-risk youth.

Results can also be used to identify low risk youth that can be excluded from expensive and unnecessary court services (which may even prove harmful) and to identify very high-risk youth for which services most likely will not prove effective (note there were no very high risk kids in the sample). For those youth scoring in the moderate and high range, the court can more easily target and develop services to match their specific risk areas as identified by the YLS. Eventually the YLS can also be used

to track the progress of individual offenders within court and community programs over time and hold those systems accountable if they are not meeting the needs of youth (i.e. lowering risk scores in the targeted areas).

Study Limitations

There are some limitations of the study that should be noted. First the sample only included those youth who admitted the charges against them. It is possible that these kids look different than kids who denied the charges and chose to have their cases sent formal. It is important that these youth be tracked and assessed in the future.

Second, any results regarding race should be viewed as confounded due to the blending of race and ethnicity in collecting the data. These two constructs are conceptually and operationally different (Williams, 1994). The social sciences typically define race as "a population of humans distinguished from other populations" (Issac, 2004, pp. 2). The most common racial categories are based on visible physical traits. Ethnicity includes socially defined cultural and social characteristics (Hahn, 1992; Reber, 1985).

In addition to using race and ethnicity interchangeably, there are also difficulties with using self-report to collect racial information. Although the

Bureau of Census evaluations found that self-report of race provided more consistent information than other techniques, this method remains problematic as racial identifications vary among people (Hahn, 1992; Trevino, 1987). For example some youth with parents from different racial backgrounds identify with one race or the other whereby some identify as bi-racial.

Third, six month follow-up data does not give a complete picture of who will recidivate. Although most recidivism happens within the first six months, one-year follow up is recommended (Lipsey, 2005). Recidivism data should continue to be collected and analyzed at the one-year mark.

Fourth, the YLS itself does not offer any definitive policy recommendations. As such, statistical information derived from the YLS could be used to support any number of policy directions, some of which could prove controversial or ineffective such as cutting court positions or sending an increased number if kids to residential facilities. It is important for the court to make decisions that are empirically supported and considered "best practice" in the literature.

Finally, although the theory seems to best explain recidivism and fits with the basic structure of the

instrument, the YLS was not developed using ecological theory. As such, the four ecological levels could be better captured with additional items. For example, the level of community is currently measured by the domain area of Leisure/Recreation. It is implied that a youth living in a neighborhood with limited access to after school programming and community centers would score higher in this area. However, there are more direct ways to measure the influence of neighborhood on recidivism. Future studies may add and test additional questions that better capture each ecological level.

Future Research

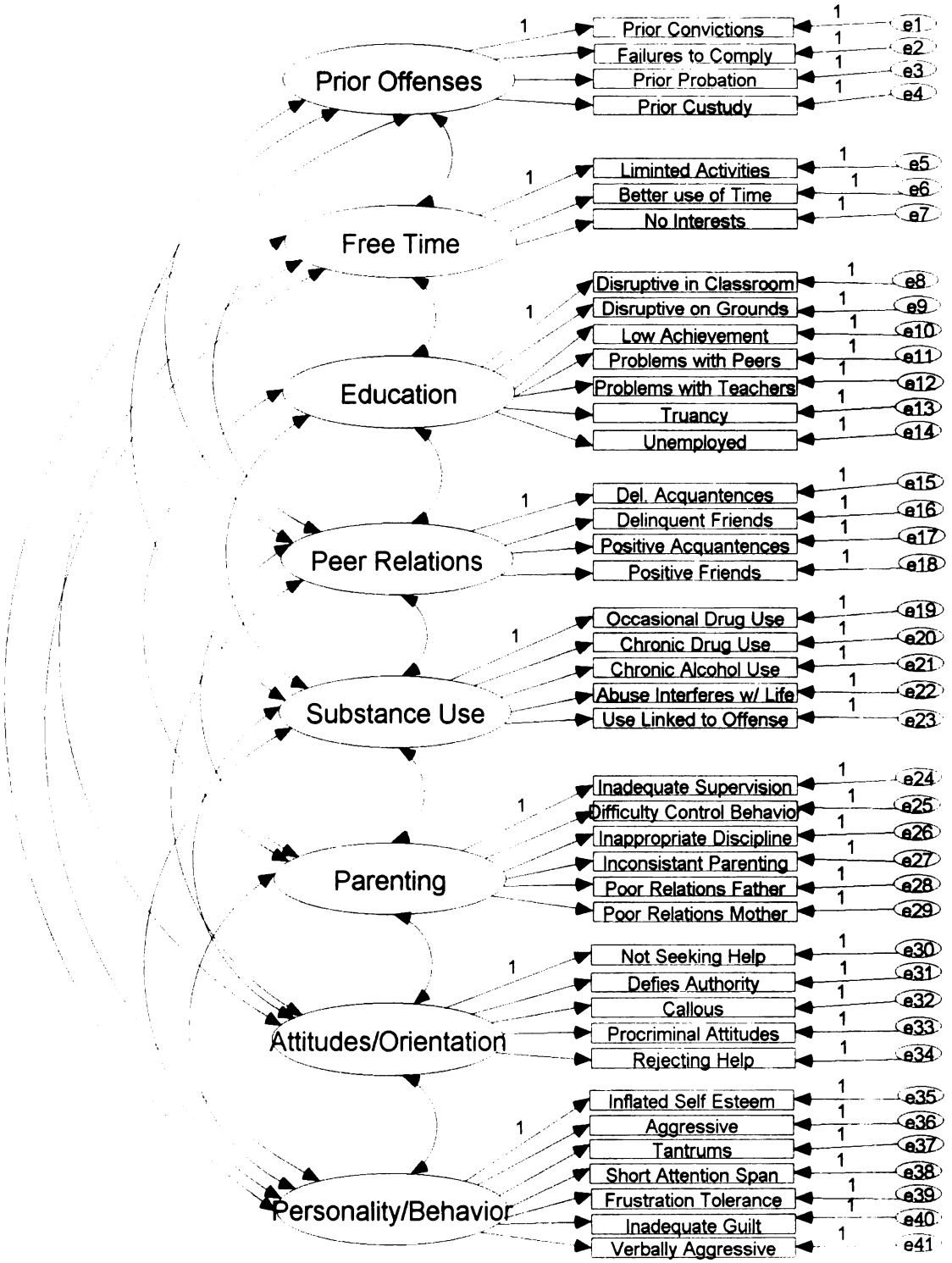
There are several additional areas related to the YLS at intake that need to be explored. First, African American youth are highly over-represented at intake (even though their risk levels are no higher than other racial groups). Future research should examine possible factors that lead to a disproportionate number of African Americans ending up in the system at the intake level. Past research has highlighted the complex relationship between race, social factors, and community characteristics (Wordes, 1995) as contributing to over-representations of minorities in the court system.

Second, the current study used cutoff scores as defined by the authors of the YLS to determine risk level (low, moderate, high, and very high). In this study there was not a distinction between moderate and high youth with regard to recidivism risk. Future studies should examine alternative cutoff scores for intake.

Finally, disposition at intake should be tested as a predictor of recidivism controlling for risk score. In other words, how do different dispositions at intake affect recidivism for kids of the same risk level? These analyses were not possible using this sample due to the small number of youth who were sent formal with YLS scores (N=23)

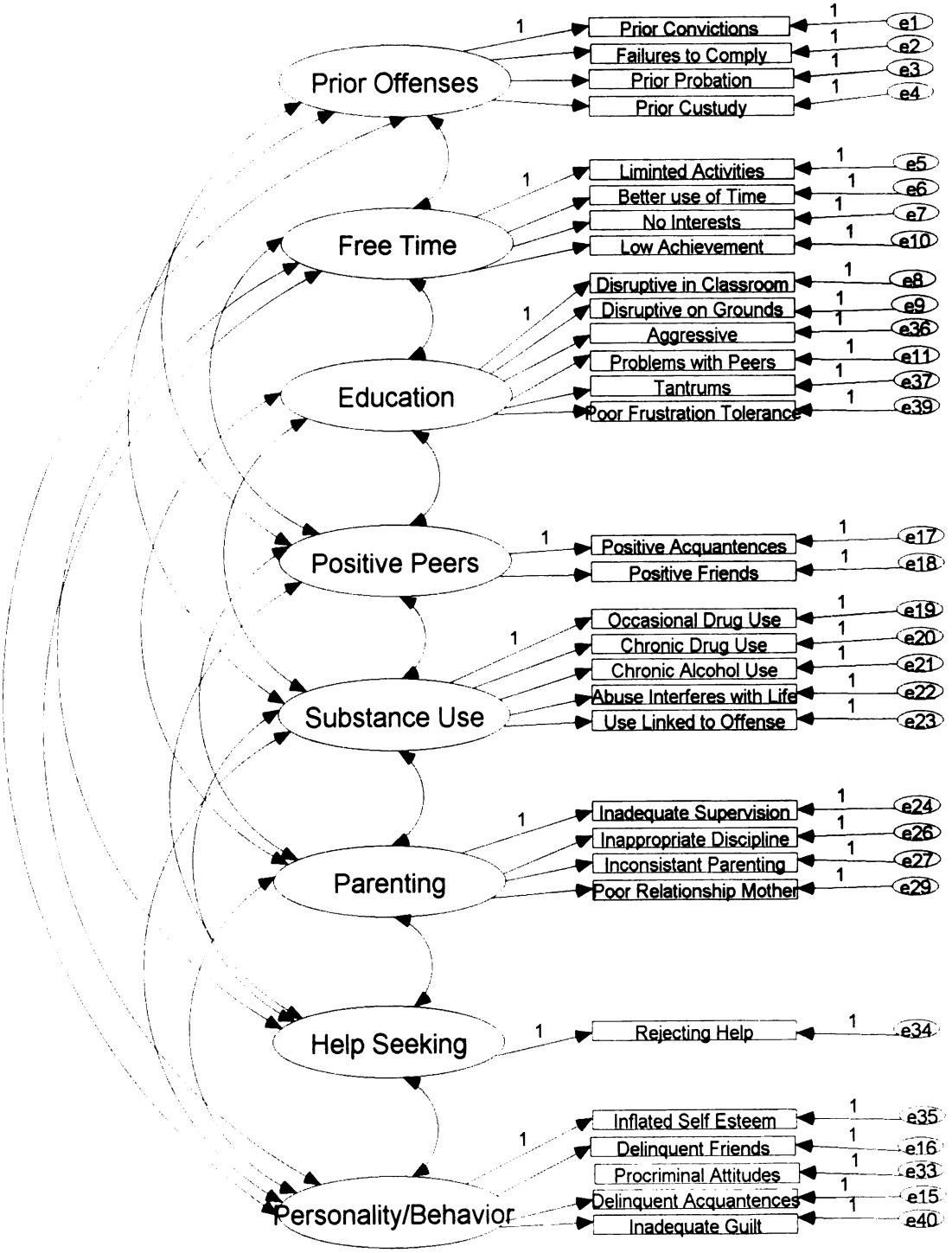
APPENDIX A

ORIGINAL FACTOR STRUCTURE



APPENDIX B

ALTERNATIVE FACTOR STRUCTURE



APPENDIX C

CODEBOOK

DEMOGRAPHIC VARIABLES

A. I.D. Number (coded as a continuous variable (001-300)

B. Age (coded as continuous variable)

C. Race

1. Caucasian
2. African American
3. Mexican American
4. Bi-racial
5. Asian American
6. Native American
7. Middle Eastern

D. Gender

1. Female
2. Male

D. Family Composition

1. Intact
2. Mother Only
3. Father Only
4. Mother Plus Boyfriend/Partner/Husband
5. Father Plus Girlfriend/Partner/Wife
6. Guardian
7. Grandmother Only
8. Grandfather Only
9. Grandmother and Grandfather
10. Other extended relative
11. Foster
12. Other

YLS COMPOSITE VARIABLES

A. YLS Total Score (coded as a continuous variable (0-42)

B. YLS Risk Level

1. Low
2. Moderate
3. High
4. Very High

YLS INDIVIDUAL ITEMS (all dichotomous Yes/No variables)

A. Prior and Current Offenses, Adjudications	YES	NO
1. Three or More Prior Adjudications		
2. Two or More Failures to Comply		
3. Prior Probation		
4. Prior Detention		
5. Three or More Current Adjudications		

B. Family Circumstances and Parenting	YES	NO
1. Inadequate Supervision		
2. Difficulty in Controlling Behavior		
3. Inappropriate Discipline		
4. Inconsistent Parenting		
5. Poor Relations/Father-Child		
6. Poor Relations/Mother-Child		

C. Education/Employment	YES	NO
1. Disruptive Classroom Behavior		
2. Disruptive Behavior on School Property		
3. Low Achievement		
4. Problems With Peers		
5. Problems With Teachers		
6. Truancy		
7. Unemployed/Not Seeking Employment		

D. Peer Relations	YES	NO
1. Some Delinquent Acquaintances		
2. Some Delinquent Friends		
3. No or Few Positive Acquaintances		
4. No or Few Positive Friends		

E. Substance Abuse	YES	NO
1. Occasional Drug Use		
2. Chronic Drug Use		
3. Chronic Alcohol Use		
4. Substance Abuse Interferes With Life		
5. Substance Abuse Linked to Offense(s)		

F. Leisure/Recreation	YES	NO
1. Limited Organized Activities		
2. Could Make Better Use of Time		
3. No Personal Interests		

G. Personality and Behavior	YES	NO
1. Inflated Self-Esteem		
2. Physically Aggressive		
3. Tantrums		
4. Short Attention Span		
5. Poor Frustration Tolerance		
6. Inadequate Guilt Feelings		
7. Verbally Aggressive/Impudent		

H. Attitudes/Orientation	YES	NO
1. Antisocial/Pro-Criminal Attitudes		
2. Not Seeking Help		
3. Actively Rejecting Help		
4. Defies Authority		
5. Callous/Little Concern for Others		

RECIDIVISM VARIABLES

A. Total Number of New Charges After Six Months (Coded as continuous variable)

B. Total Number of New Felonies After Six Months (Coded as continuous variable)

C. Total Number of New Misdemeanors After Six Months (Coded as a continuous variable)

D. Recidivism: Any new charge (Coded as dichotomous Yes/No)

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