THE SOCIAL DEVELOPMENT MODEL: A THEORY OF ANTISOCIAL BEHAVIOR

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This paper presents a theory of deviant behavior which organizes the results of research on risk factors for delinquency and adolescent substance use into sets of hypotheses regarding the prevention of deviant behavior and the maintenance of conforming behavior. Following a review of the evidence on the causes and correlates of delinquency and adolescent substance use, the social development model which organizes these findings into a theory of deviant behavior is presented. The model specifically addresses four periods in adolescent development. The model has been developed explicitly to inform prevention program development as well as etiological research.

Risk Factors for Delinquency and Adolescent Drug Abuse

Research on juvenile crime repeatedly has shown that a small number of juveniles are responsible for a large proportion of both recorded and self-reported juvenile offenses (Wolfgang, Figlio and Sellin, 1972; Wolfgang and Tracy, 1982; Shannon, 1978; Farrington, 1983; West and Farrington, 1977; Dunford and Elliott, 1984). Within this group, juveniles who also abuse drugs tend to be among the highest rate offenders (Elliott et al., 1985; Dishion and Loeber, 1985).

Criminal behavior and drug use often occur simultaneously. A national survey of 12,000 state prison inmates indicated that one-third were under the influence of an illegal drug when they committed the crime for which they were incarcerated and half had taken drugs during the month prior to the crime (U.S. Department of Justice, 1984). In a study of substance abuse among juveniles adjudicated for violent crimes, half reported that they used

alcohol or drugs prior to their violent behaviors and 40 percent reported using drugs immediately prior to their committing offense (Hartstone and Hansen, 1984).

These findings have led to speculation and research regarding possible causal relationships between drug use and crime. Some have argued that drug use causes or exacerbates crime (Ball et al., 1983; Clayton and Tuchfield, 1982; Gropper, 1985), while others suggest that individuals with criminal tendencies are inclined to become drug abusers (Santo et al., 1980). Still others have argued that delinquency and drug abuse are different behavioral manifestations of a "deviance syndrome" which results from common etiological factors and processes (Donovan and Jessor, 1984; Elliott et al., 1985; Jessor and Jessor, 1977; Kandel, 1980).

An understanding of the relationships between delinquency and drug use among adolescents has been made more difficult by the fact that both minor delinquency and the occasional use of "gateway" drugs including alcohol and marijuana have become relatively widespread among American adolescents. The majority of teenagers commit minor delinquent offenses such as shoplifting or vandalism (Elliott et al., 1985) and try alcohol and marijuana before graduating from high school (Johnston et al., 1986). While not desirable, minor delinquency and occasional use of alcohol and marijuana have become normative, at least statistically (cf. Baumrind, 1985; Kaplan et al., 1986). The factors which lead to these forms of adolescent individuation are likely to be quite different from factors which lead to serious and persistent delinquency or the regular use of illicit drugs (Catalano et al., 1986; Gorsuch, 1980; Hawkins et al., 1985; Kandel et al., 1986; Kaplan et al., 1986; Kimlicka and Cross, 1978; Robins and Przybeck, 1985; Simcha-Fagan et al., 1986).

Thus, in discussing adolescent delinquency and drug use, it is important to specify the behavior of concern or interest whether one is seeking to understand etiology or to prevent deviant behavior. There is evidence that different patterns of drug use at different developmental stages have different etiological origins (Kandel, 1982) and are associated with different patterns of current behavior. Robins' research (1980) has shown that occasional use of drugs does not appear to be associated with antisocial personality or delinquency. In contrast, drug abuse, especially in adolescence, appears to be part of a general pattern of rebelliousness and nonconforming behavior (Johnston et al., 1978; Segal et al., 1979, 1980), which criminologists have called a "deviance syndrome" (Elliott et al., 1985; Hindelang and Weis, 1972; Jessor and Jessor, 1978) and mental health professionals have labeled antisocial personality (Robins, 1980).

Epidemiological statistics also suggest that the occasional use of drugs by most adolescents is a different phenomenon from drug abuse which is associated with a deviance syndrome or antisocial personality. Annual surveys of high school seniors conducted by Johnston et al. (1985) have shown that rates of lifetime prevalence of illicit drug use among high school seniors are far greater than the estimated rate of chronic antisocial behavior among boys, which ranges from 4 percent to 15 percent depending on the definitional criteria used, age of the subjects and the type of behaviors included (Elliott et al., 1985; Farrington, 1983; Loeber, 1982; Shannon, 1978; Wolfgang et al., 1972). The rates of drug experimentation are also far greater than the 5 percent prevalence of daily marijuana use found by Johnston in the class of 1985. It appears reasonable to hypothesize that behaviors with such different rates in the population may

arise from separable etiological roots. In sum, the factors which lead to occasional drug use and/or minor delinquency are likely to differ in substance or period of developmental salience from the factors which produce drug abuse and chronic serious delinquency (Catalano et al., 1986; Kandel, 1982; Robins and Przybeck, 1985).

This evidence has stimulated research to identify risk factors for high rate offending and drug abuse. A better understanding of the causes of chronic serious delinquency and drug abuse should assist policy makers to design prevention and intervention programs which address factors and causal processes in the etiology of high rate offending and drug abuse and to target preventive interventions on subpopulations and individuals at highest risk before they commit numerous crimes. Several researchers have reviewed the available evidence regarding precursors of antisocial behavior (Loeber and Dishion, 1983; Hawkins et al., 1985c; Hawkins et al., in press; Farrington, 1985b; Simcha-Fagan et al., 1986). It appears that a common set of precursors increase the risk of a variety of antisocial behaviors including delinquency, and alcohol and other drug abuse in adolescence (Jessor and Jessor, 1978; Robins and Ratcliff, 1979; Elliott et al., 1982; Elliott et al., 1985; Fagan and Hartstone, 1984; Kandel et al., 1986; Watters et al., 1985). This evidence suggests that efforts to prevent adolescent substance abuse and chronic serious delinquency should target the same factors. The same interventions may decrease the risk of both these apparently concomitant forms of behavior.

While some distinguishing factors are evident in the etiology of serious delinquency and drug abuse related to gender, the type of drug considered, the type of delinquency considered and the severity of the behavior (Elliott and Huizinga, 1984; Kandel et al., 1986), it appears that some precursors are common to both serious delinquency and drug abuse.

This section summarizes the evidence regarding shared risk factors for chronic serious delinquency and adolescent drug abuse and identifies risk factors which have been identified for one of these types of behavior but not the other.

1. Early variety and frequency of antisocial behaviors in the primary grades of elementary school

Problematic conduct early in life continues for certain children (McGee et al., 1984; Weiss et al., 1985; Loeber and Dishion, 1983; Alterman and Tarter, 1985; Gersten et al., 1976; Ghodsian et al., 1980; Patterson, 1982; Langner et al., 1983; Werner and Smith, 1977; West and Farrington, 1973). The greater the variety, frequency and seriousness of childhood antisocial behavior (before age 10), the more likely antisocial behavior will persist into adulthood (Blumstein et al., 1985; Farrington, 1979a, 1986; Robins, 1978; 1979; Robins and Ratcliff, 1979). Aggressive behavior in early elementary grades as rated by teachers is related to rates of later self-reported and official delinquency (Emsminger et al., 1983; Craig and Glick, 1968; Farrington, 1978; Magnusson et al., 1975). Moreover, antisocial behavior before age 10 predicts both later offending and high rate offending (Blumstein et al., 1985).

Early antisocial behavior also has been found to predict adolescent substance use (Lerner and Vicary, 1984; Robins, 1978; Johnston et al., 1978; Kandel et al., 1978; Simcha-Fagan et al., 1986; Wechsler and Thum, 1973). In their sample of 1,242 urban black first-grade students, Kellam and Brown (1982) found positive correlation between first-grade male aggressiveness especially when coupled with shyness, and the frequency of substance use ten years later.

Patterns of antisocial behavior appear to change between childhood and adolescence. The number of youths who engage in overt antisocial behavior such as fighting declines between the ages of 6 and 16, while in that same period the number of youths who engage in covert antisocial acts such as theft increases (Loeber and Dishion, 1983). Simcha-Fagan et al. (1986) found that early minor delinquency is associated with the transition into marijuana use, and that early adjustment problems predict use of other illicit drugs. Kandel et al. (1986) found that different patterns characterize predictors of illicit drug use among males and females. While early delinquency is a predictor of marijuana and other illicit drug use among male adolescents, Kandel found family factors to be more important among females for predicting drug use. Early delinquency did not predict female drug use in Kandel's longitudinal study.

Much remains to be learned regarding the relationships between early conduct disorders and later antisocial behavior. The earliest age at which childhood behavior can be reliably identified as predictive of serious delinquency or substance abuse is not clear. Stable predictions of behavior have been found from the age of school entry, but not before (Rutter and Giller, 1983; Robins, 1979). While serious conduct disorders in childhood appear to be virtually a prerequisite for serious antisocial personality problems in later life, less than one-half of the children with identified serious childhood behavior problems will manifest serious chronic delinquency (Robins, 1978; Farrington, 1978, 1979a; Ghodsian et al., 1980; Shannon, 1978; Werner and Smith, 1977). Finally, continuity of antisocial behavior appears stronger for those youths identified by parents, teachers, and peers as extremely antisocial (Loeber and Dishion, 1983). Loeber, Dishion, and Patterson (1984) have used a "multiple gating" procedure which

utilizes progressive teacher, parent and clinician screening. This procedure increased the percentage of children with early identified problems who manifest serious delinquency to 56 percent.

Different etiological paths may be associated with early versus late initiation of antisocial behavior including drug use (Hawkins et al., 1985c; Loeber, 1985). For example, antisocial behavior is associated with early initiation of drinking and drug use (Wechsler and Thum, 1973). In contrast, youths who begin drinking late in adolescence are less likely to have histories of antisocial behavior (Hawkins et al., 1985). The initiation of substance use in late adolescence is not connected with serious antisocial behavior for a large majority of youths. Early initiation of substance use is linked with a higher risk for regular use (Kandel, 1982; Kaplan et al, 1986) and for substance abuse (Bloom and Greenwald, 1984; Kandel, 1982; Rachal et al., 1982; Robins and Przybeck, 1985), though there is disagreement as to whether early delinquency, per se, is predictive of the seriousness of delinquent conduct (see Elliott et al., 1985; Farrington, 1985a, for a discussion of these issues).

2. Poor and inconsistent family management practices

Children raised in families with lax supervision, excessively severe or inconsistent disciplinary practices, and low communication and involvement between parents and children are at high risk for later delinquency (Farrington, 1979, 1986; McCord, 1979; Robins, 1978, 1979; Loeber and Dishion, 1983; West and Farrington, 1973) and substance abuse (Baumrind, 1983; Dishion and Loeber, 1985; Braucht et al., 1978; Blum et al., 1972; Penning and Barnes, 1982; Simcha-Fagan et al., 1986).

Excessively severe, physically threatening, and physically violent parental discipline have been associated with aggressive and destructive

acts of delinquency (Deykin, 1971; Shore, 1971; Haskell and Yablonsky, 1974) suggesting a link between parental child abuse and delinquency (Timberlake, 1981; Garbarino, 1981; Alfaro, 1976). There is some evidence that poor parental supervision and discipline are predictive of general delinquency rather than chronic offending (Blumstein et al., 1985), though there is little research on this topic.

Conversely, positive family relationships appear to discourage youths' initiation into drug use (Adler and Lutecka, 1973; Jessor and Jessor, 1977; Kim, 1979; Norem-Hebeisen et al., 1984). Familial risk patterns for adolescent drug abuse include parental drug using behaviors (Kandel, 1982; Kim, 1979), parental attitudes about drugs (Kandel, 1982), lack of closeness (Brooks et al., 1980; Kim, 1979), low parental educational aspirations for their children, negative communication patterns (Reilly, 1979), and overinvolvement by one parent with distance or permissiveness by the other (Stanton and Todd, 1979; Ziegler-Driscoll, 1979). As noted earlier, family factors appear to be more important for females than for males in predicting illicit drug use (Kandel et al., 1986).

3. Parent and sibling criminal, antisocial and drug using behavior

Children raised in families characterized by antisocial and criminal behavior are at risk of becoming officially recorded delinquents (Robins, 1979; McCord, 1977; Craig and Glick, 1968; West and Farrington, 1973; Langner et al., 1983). Having convicted parents and delinquent siblings also predicts self-reported offending (Farrington, 1979a, 1986) with convicted siblings predicting chronic offending particularly well (Blumstein et al., 1985).

Parental drug use is associated with initiation of substance use by adolescents (Johnson et al., 1984; Kandel, 1982; Kandel et al., 1978; Kim,

1979) A consistent correlation between adolescent drug abuse and parents' use of alcohol and other legal drugs has been shown (Bushing and Bromly, 1975; Lawrence and Vellman, 1974; McGlothlin, 1975). Drug abuse is more likely among those whose mothers smoke and/or drink moderately than among those whose mothers abstain (Miller and Rittenhouse, 1980). Reviews of the familial incidence of alcoholism conclude that alcoholics are more likely than nonalcoholics to have a history of parental alcoholism or siblings with alcoholism (Cotton, 1979; Goodwin, 1985). Thorne and DeBlassie (1985) have shown similar patterns among those whose parents or siblings use illicit drugs. Finally, Bush and colleagues have found that parent modeling of drug use positively influences children's expectations to use drugs as well as their actual drug use (Amhed et al., 1984).

4. Family conflict

In spite of much speculation regarding the role of "broken homes" in the etiology of delinquency, the evidence regarding family structure and delinquent and drug using behavior is mixed. While children from homes broken by marital discord are at higher risk of delinquency and drug use (Baumrind, 1983; Penning and Barnes, 1982; Robins, 1980), there does not appear to be a direct independent contribution of "broken homes" to delinquent behavior (Wilson, 1985). Though parental discord may lead to family breakup, it is conflict between family members that appears more salient in the prediction of delinquency than family structure per se (Farrington, 1985; McCord, 1979). In a study of 335 7th through 12th graders, Byram and Fly (1984) found a weak correlation between living in a nonintact family and heavy alcohol use for white adolescents, but not for blacks. Friends' use and family closeness were related strongly with drinking among whites, but the relationship held for nonwhites only when at

least one natural parent was absent. For nonwhite adolescents, the nondrinking norms of family and friends, along with closeness to family, tended to neutralize the potential effects of the absence of one or both natural parents on alcohol use that had been observed with white adolescents. Simcha-Fagan et al. (1986) found that the use of heroin and other illicit drugs is strongly associated with parental marital discord. Thus, children raised in families with high rates of conflict appear at risk for both delinquency and illicit drug use.

5. Family social and economic deprivation

Children from families characterized by social isolation and entrapment of parents in extreme poverty, poor living conditions, and low status occupations are at risk of becoming offenders when they grow up (Farrington, 1985a; Robins, 1979; West and Farrington, 1973; Farrington, 1979a). Blumstein and associates (1985) found that low income of the family of origin discriminated between chronic and nonchronic offenders. While there is inconsistency in the findings regarding family occupational prestige and children's delinquency (McCord, 1979; Thornberry and Farnworth, 1982; Van Dusen et al., 1983), there is evidence that children reared in circumstances of extreme social and economic deprivation are at elevated risk of chronic delinquency (Farrington, 1985b).

Simcha-Fagan et al. (1986) found that the use of marijuana-only was positively related to socioeconomic background, specifically to mother's level of education (r=.25), ethnic-racial group membership (white) (r=.29), and monthly rent (r=.36). Rent level was identified as the unique predictor in a multiple regression equation controlling for other factors. For use of illicit drugs other than heroin or marijuana, ethnic status (black) is negatively associated (r=-.24) and rent level remains positively associated (r=.37).

6. School failure

Whether measured by self-report or by police records, delinquency is related to academic performance at school (Bachman et al., 1978; Elliott and Voss, 1974; Gold and Mann, 1984; Noblit, 1976; Polk et al., 1981; Kelly, 1980; Figueira-McDonough, 1985). Youths who experience academic success are less likely to be delinquent, while those who fail in school beginning in the late grades of elementary school are more likely to engage in disruptive classroom behavior and delinquency.

Research has also shown an independent effect of school failure on drug abuse (Robins, 1980; Anhalt and Klein, 1976; Jessor, 1976; Brooks et al., 1977; Galli and Stone, 1975). Poor school performance is a common antecedent of initiation into drugs (Jessor and Jessor, 1977; Kandel et al., 1978; Johnston, 1973), and has been found to predict subsequent use and levels of use of illicit drugs (Smith and Fogg, 1978). Holmberg (1985) reported that truancy, placement in a special class, and early dropout from school were prognostic factors for drug abuse in a longitudinal study of 15-year-olds. Drug users appear to perform more poorly in junior and senior high schools than do nonusers (Anhalt and Klein, 1976; Jessor, 1976; Simon, 1974). Robins (1980) characterizes drug users as having average or better IQs but being underachievers.

The relationship between achievement and delinquency and drug abuse appears interrelated with race and social class. However, the interactions among race, class, achievement and ability interact in producing or inhibiting delinquency and drug abuse are not well understood. Youths from low socioeconomic and minority backgrounds are more likely to experience academic failure than are white middle-class youth. Yet, the experience of

academic failure itself appears to be related to delinquency when class and race are controlled (Jensen, 1976; Johnson, 1979; McPartland and McDill, 1977; Noblit, 1976; Palmore and Hammond, 1964; Polk et al., 1974; Rhodes and Reiss, 1969; Stinchcombe, 1964).

There is evidence that school failure precedes delinquency (Phillips and Kelly, 1979; Kelly, 1980; Polk et al., 1981). By the end of elementary school, low achievement, low vocabulary and poor verbal reasoning predict later delinquency (Farrington, 1979a; Rutter et al., 1979; Spivack, 1983). In contrast, early academic performance in the primary grades of elementary school does not appear to predict delinquency (Spivack, 1983; Spivack et al., 1978), though, as noted earlier, aggressiveness and other school adjustment problems in primary grades do appear to predict later delinquency (Farrington, 1985)

It is also not clear from the existing research when, developmentally, school achievement becomes salient as a possible predictor of drug use. While underachievement and school failure have been linked to adolescent substance use, Fleming et al. (1982) found that children who scored high on 1st grade readiness and IQ tests exhibited earlier and more frequent use of alcohol and marijuana. These students were more than twice as likely to become frequent users. Teacher-rated learning problems for 1st grade students were not related to future substance use when shyness and aggressiveness were controlled. Aggressiveness in the Woodlawn sample of 1st graders were invariably accompanied by learning problems, but learning problems frequently occurred without aggressiveness and, alone, did not predict subsequent drug use (Kellam and Brown, 1982). Kandel (1982) suggests that low school performance does not itself lead to drug use, but that the factors leading to poor school performance are related to drug involvement.

It is possible that social adjustment is more important than academic performance in the early elementary grades as a predictor of later delinquency and drug abuse. Early antisocial behavior in school may predict academic failure in later grades (Feldhusen et al., 1973), later delinquency (Spivack, 1983) and drug abuse (Kellam and Brown, 1982). Academic failure in late elementary grade may be caused by or exacerbate the effects of early antisocial behavior and/or contribute independently to delinquency and substance abuse.

7. Low degree of commitment to education and attachment to school

Negative relationships have been reported between delinquency and commitment to educational pursuits (Elliott and Voss, 1974; Hirschi, 1969), participation in school activities (Glasser, 1978; Lawrence, 1985), achievement orientation and educational aspirations (Hirschi, 1969; Hindelang, 1973; Kelly and Balch, 1971), and caring about teachers' opinions (Hirschi, 1969; Hindelang, 1973).

Students who are not committed to educational pursuits are more likely to engage in drug use as well (Kim, 1979; Friedman, 1983; Galli and Stone, 1975; Robins, 1980; Brooks et al., 1977). The annual surveys of high school seniors by Johnston et al. (1982, 1984) show that the use of hallucinogens, cocaine, heroin, stimulants, sedatives, or nonmedically prescribed tranquilizers is significantly lower among students who expect to attend college than among those who do not plan to go on to college. Drug users are more likely to be absent from school, to cut classes, and to perform poorly than nonusers (Brooks et al., 1977; Kandel, 1982; Kim, 1979). Greater drug use has been demonstrated among dropouts (Annis and Watson, 1975). Factors such as how much students like school (Kelly and Balch, 1971), time spent on homework, and perception of the relevance of coursework

also are related to levels of drug use (Friedman, 1983), indicating a negative relationship between commitment to education and frequent drug use among junior and senior high school students.

A recent longitudinal study (Agnew, 1985) questions the temporal ordering of these relationships, and challenges the causal importance of bonding variables such as commitment to education in the etiology of delinquency. To investigate this assertion, longitudinal analyses of data from a Seattle panel studied in 7th and 9th grades showed that the effects of seventh grade school bonding variables were more consistent and pronounced for serious regular marijuana use than for occasional or experimental use of marijuana in 9th grade (Catalano et al., 1986). Little prospective longitudinal research has been conducted to assess school commitment during elementary grades as possible predictors of later delinquency and drug abuse.

8. Truancy

School truancy appears to be an important early predictor of official delinquency (Robins, 1966; Farrington, 1985b) and drug abuse (Holmberg, 1985; Kim, 1979).

9. School organizational factors

School structural arrangements and practices appear to be associated with rates of school failure (Brookover et al., 1978; Edmonds, 1980; Goodlad, 1984; McDill et al., 1967), alienation (Gottfredson, 1981), dropout (Elliott and Voss, 1974), isolation from prosocial peers (Hansel and Karweit, 1983), school misbehavior (Pink, 1984), and delinquency (Bachman et al., 1979; National Institute of Education, 1978; Reynolds et al., 1976; Rutter et al., 1979). Variations in school delinquency rates are not wholly explained by catchment area served (Power et al., 1967) or differences in

student attributes (Reynolds et al., 1976; West and Farrington, 1973). These findings lend support to the contention that certain school features are associated with high rates of delinquency.

Rutter (1973) and Reynolds et al. (1976) found that high crime schools generally are characterized by ability tracking, high rates of corporal punishment, high staff turnover, and a custodial or authoritarian climate. Gottfredson (1984) suggests that schools with high rates of disorder can be classified on two dimensions: urban social disorganization and lack of soundness of the school's administration. This latter construct is indicated by poor teacher/administrator cooperation, teacher emphasis on control in classes rather than instructional objectives, ambiguous sanctions, and student perceptions that rules are not clear or fair.

School factors appear to have negligible impact on <u>individual</u> behavior when compared with family variables. However, school variables have considerable impact on the <u>overall</u> level of behavioral disturbance or school performance in a student body (Rutter et al., 1979). School arrangements and practices appear to have considerably greater effects on behavior in school than on individual delinquent behavior outside of school (Gold and Mann, 1984; Hawkins et al., 1985a; Rutter and Giller, 1983).

10. Peer Factors

Association with delinquent peers during adolescence is among the strongest correlates of adolescent delinquency (LaGrange and White, 1985; Akers, 1977; Elliott et al., 1982, 1985; Hirschi, 1969; Jensen, 1972; Loeber and Dishion, 1983) and drug abuse (Catalano, 1982; Clayton and Rutter, 1985; Elliott et al., 1985; Huba et al., 1979; Jessor et al., 1980; Kandel and Adler, 1982; Kaplan et al., 1982, 1984; Norem-Hebeisen, 1984; O'Donnell and Clayton, 1979; Smart et al., 1978; Winfree et al., 1981). Drug behavior and

drug-related attitudes of peers are among the most potent predictors of drug involvement (Kandel, 1978). Peer influences are particularly important for initiation into the use of marijuana (Kandel, 1985; Kandel et al., 1978).

Perceived use of substances by others is also a strong predictor of use (Borins and Ratcliff, 1979; Jessor and Jessor, 1978; Kandel et al., 1978). It has been reported that frequent users of marijuana have a greater orientation toward friends than parents, and greater perceived support and models for use (Jessor and Jessor, 1978). Jessor et al. (1980) found that perceived environmental predictors (such as friends as models for use) accounted for twice the variance in drug use as compared to personality factors. The two most powerful discriminating variables for multiple drug use considered in an analysis of two multiple drug use groups were use of drugs by friends (Clayton and Ritter, 1985).

However, as noted by Farrington (1985a) it is difficult to ascertain the causal importance of delinquent associates in the etiology of delinquency since most delinquency is committed in groups. Further, use of marijuana is strongly associated with use by closest friends and perceived support for use (Penning and Barnes, 1982). Social settings favorable to substance use reinforce and increase any predisposition to use (Kandel et al., 1978). Adolescents coordinate their choice of friends, values and behaviors to maximize congruence in the friendship dyad (Kandel, 1985). There is evidence that adolescents increase use of drugs due to influence of friends and that they also choose friends who reinforce their drug norms and behaviors (Kandel, 1985). Self-reported delinquency and drug use and self-reports of delinquent and drug using peers may be indicators of a unitary construct of delinquent involvement or association with drug using peers.

In their longitudinal study of the National Youth Panel, Elliott et al. (1985) found that social bonds to family and school influenced drug use indirectly through peer associations. Strong bonds to family and school decrease the likelihood of involvement with drug using and delinquent peers. They found only indirect effects of family and school bonding on drug use and suggest that this reflects the time ordering of youths' experiences in the social contexts they encounter. The strength of bonding to family and school is determined before exposure to drug using peers in adolescence. However, the extent to which youths have become bonded to family and school is likely to be a factor in the selection of prosocial or drug using companions in early adolescence (Elliott et al., 1985; Kandel et al., 1976, 1978).

Elliott et al. (1985) found that the only measure having a direct effect on drug use was bonding to deviant peers. Persons who are strongly bonded to delinquent peers are more likely to use drugs than those who are not, and the volume of their drug use is dependent on their level of conventional bonding. Low conventional bonding in conjunction with high bonding to delinquent peers leads to a substantially higher frequency of drug use (see also Kaplan, 1985).

It is not known at what point peer associations become important in predicting delinquency and substance abuse. Investigators have begun to study childhood peer associations longitudinally into adolescence (Coie and Dodge, 1983; Coie et al., 1981; Roff et al., 1972). This interest has been prompted in part by evidence that childhood social maladjustment is a significant predictor of antisocial behavior exhibited later in life (Asher et al., 1981; Cowen et al., 1973; Ladd, 1983; Tyler, 1982). Several studies show that unpopularity at an early age is a significant predictor of

subsequent delinquency (Conger and Miller, 1966; Roff et al., 1972; Roff and Wirt, 1984) and drug abuse (Lerner and Vicary, 1984; Kellam and Brown, 1982) and mental health problems (Cowen et al., 1973). The way in which these factors affect the formation of an individual's peer group and subsequent involvement in delinquent and drug abusing behavior requires further study.

11. Attitudes and beliefs

Individual attitudes and beliefs are related to substance use and delinquency. Generally, a constellation of attitudes and beliefs indicating a "social bond" between the individual and conventional society has been shown to inhibit both delinquency and drug use (Catalano, 1982; Catalano et al., 1986; Hirschi, 1969; Hindelang, 1973). The elements of this affective bond which have been shown most consistently to be inversely related to drug use and delinquency are attachment to parents (Adler and Lutecka, 1973; Catalano et al., 1986; Chassin et al., 1981; Jessor and Jessor, 1977; Kim, 1979; Krohn et al. 1983; Shibuya, 1974; Wechsler and Thum, 1973; Wohlford and Giammona, 1969), commitment to school and education as noted earlier (Elliott and Voss, 1974; Friedman, 1983; Hirschi, 1979; Johnston et al., 1981; Kim, 1979; Krohn et al., 1983;), regular involvement in church activities (Schlegel and Sanborn, 1979; Weschler and McFadden, 1979), and belief in the generalized expectations, norms, and values of society (Akers et al., 1979; Catalano et al., 1986; Hindelang, 1973; Krohn et al., 1983).

Conversely, alienation from the dominant values of society (Gorsuch and Butler, 1976; Jessor and Jessor, 1978; Kandel, 1982; Kandel et al., 1978; Penning and Barnes, 1982; Smith and Fogg, 1978), low religiosity (Gersick et al., 1981; Jessor et al., 1980; Kandel, 1982; Robinson, 1980), and rebelliousness (Bachman et al., 1981; Block, Keyes, and Block, 1984;

Goldstein and Sappington, 1977; Green, 1979; Kandel, 1982; Smith and Fogg, 1978) have been shown to be positively related to drug use and delinquent behavior. Similarly, high tolerance of deviance (Brooks et al., 1977; Jessor and Jessor, 1977), resistance to traditional authority (Goldstein and Sappington, 1977), a strong need for independence (Jessor, 1976; Segal, 1977), and normlessness (Paton and Kandel, 1978) have all been linked with drug use. All these qualities would appear to characterize youths who are not socially bonded to society.

Research also has shown a relationship between specific attitudes and beliefs regarding drugs and drug use initiation. Initiation into use of any substance is preceded by values favorable to its use (Kandel et al., 1978; Krosnick and Judd, 1982; Smith and Fogg, 1978).

12. Neighborhood attachment and community disorganization

Neighborhood characteristics such as high population density (Sampson, et al., 1981), high officially recorded rates of crime (Kobrin and Schuerman, 1981), and lack of natural surveillance of public places (Murray, 1983) have been identified as predictors of antisocial behavior in juveniles.

Attachment to neighborhood also has been recognized as a factor in the inhibition of crime (Wilson and Herrnstein, 1985). Studies by Newman (1972) and Murray (1983) indicate that people in communities characterized by low crime rates have a stronger sense of bonding to the neighborhood, participate actively in the informal surveillance of public areas, and move less often than people in high crime neighborhoods. Sampson et al. (1981) have shown that a rapid change in neighborhood population results in higher victimization rates, even after accounting for racial and age differences. Herting and Guest (1985) found that length of residence in a neighborhood is

strongly associated with positive sentiment toward (bonding to), the neighborhood. An influx of new residents into a neighborhood may diminish the authority of informal organizations that exert regulatory control over residents and can lead to conditions of neighborhood disorganization.

The Chicago area studies (Shaw et al., 1929; Shaw and McKay, 1931; Shaw and McKay, 1942; Short, 1976; Schlossman et al., 1984), and the McCord's (1959) evaluation of the Cambridge-Somerville project, pointed to community disorganization as a factor in the breakdown in the ability of traditional social units such as families to transmit prosocial values. A lack of informal social controls appears associated with increased rates of delinquency and recidivism in disorganized communities.

13. Mobility

There is evidence that rates of antisocial behavior including delinquency and substance abuse among adolescents increase following various transitions or stressful life events such as the change from elementary to middle or junior high school, and from junior high to senior high school (Catalano et al., 1986; Felner et al., 1981; Hamburg and Varenhorst, 1972; Finger and Silverman, 1966). Further, it appears that residential mobility predicts delinquency (Farnworth, 1984; Spivack, 1979) and is associated with higher rates of substance initiation and frequency of use (Catalano et al., 1986). The Cambridge study (Farrington and West, 1981; West, 1982) found that greater mobility was correlated with high rates of delinquency, though distant moves (to places outside London) were found to produce lower rates of delinquency. West (1982) attributes these latter results to a break-up of delinquent associates and reduced opportunity for crime.

Kaplan et al. (1984:273) found that subjects of a longitudinal study who were "missing" at time 2 or time 3 were somewhat "lower in self-esteem,

felt more rejected by peers, family and school, [saw] more potential in adopting a deviant response, and [were] more likely to have friends who used drugs than" did subjects present at followup, suggesting that mobile subjects may have higher levels of risk for drug abuse prior to moving. While the contribution of mobility to delinquency and drug use is not well understood, there is evidence that it may play a role in the etiology of these behaviors. Whether it interacts with these factors, contributes independently, or is spuriously related to drug abuse is not known.

14. Constitutional and personality factors

Since the late 19th century, criminologists have debated the proposition that criminals are constitutionally or genetically different from more conventional citizens (Wilson and Hernstein, 1985). Similar arguments have been advanced that alcoholism is an inherited disorder (Goodwin et al., 1977a, 1977b). Debates among scholars over these claims have been tied to ideological and political perspectives as well as empirical evidence (Lewontin et al., 1984), often inhibiting rational investigation of this issue.

Constitutional factors, present at or soon after birth, may increase the risk of delinquency (Wilson and Hernstein, 1985). There is evidence that adult criminals, delinquents, and conduct disordered children can be distinguished from comparison groups on neurophysiological, personality and cognitive dimensions (Barnum, 1985; Fenwick, 1985; Mednick et al., 1981; Peterson et al; 1982). The finding of depressed levels of autonomic (Rutter and Giller, 1983) and central (Mednick et al., 1981) nervous system arousal in delinquent youth may explain the apparent relationships between hyperactivity, impulsiveness, sensation-seeking and attention deficit disorder and delinquency. These have been hypothesized to be attempts to compensate for low level of nervous system arousal.

Longitudinal followups of children referred to clinics for treatment of attention deficit disorders or hyperactivity have shown them to be at elevated risk for delinquency (Weiss, 1983). Retrospective studies of adolescent delinquents also suggest that they demonstrated behavior in childhood typical of that found in hyperactive youth (Olweus, 1979). Douglas and Peters (1979), in a review of attention deficits in hyperactives, conclude that hyperactive children are not especially distractable, but perform better in highly stimulating environments. While they exhibit impairments in sustained attention, selective attention appears unaffected. Attention deficits of this type are similar to those found in delinquent populations (Rutter and Giller, 1983). The relationship between attention deficits/hyperactivity and drug use has been found when these disorders are manifested early. Hesselbrock et al. (1985) found that ADD/hyperactivity before age 12 predicted the onset of drinking. This evidence suggests that attention deficits in childhood may be associated with later drug use. These findings may, in turn, be related to evidence regarding a link between sensation seeking, delinquency and drug abuse.

There is evidence that a sensation seeking orientation may predict initiation and variety of drug use as well as delinquency. Penning and Barnes (1982) suggest an association between marijuana use and alienation, lower motivation, and sensation seeking. Zuckerman (1979) and Satinder and Black (1984) have reported similar results. Spotts and Shontz (1985:427) found measures of sensation seeking to be related to the number of drugs used. The authors view their results as "consistent with the proposition that a need for stimulation or change underlies experimentation with a large number of substances.". In a related finding, Ahmed et al. (1984) discovered that two measures of risk-taking, willingness to risk injury and

willingness to risk illness, predicted expectations to use and actual use of alcohol and cigarettes. Willingness to risk illness was also associated with intentions to use and actual use of marijuana. Further research exploring the sensation-seeking drug-use relationship in children is needed, since most research except the Ahmed et al (1984) study has been conducted with young adults.

Research has produced less consistent results regarding the relationships between sensation seeking and delinquency. Relationships between officially adjudicated delinquency (Farley and Farley, 1972), self-reported delinquency (White et al., 1985) and sensation-seeking have been reported for adolescents. However, other studies have failed to find a relationship between sensation seeking and delinquency (Karoly, 1975; Thorne, 1971). While still speculative, it is possible that sensation-seeking is a response to depressed levels of nervous system arousal manifested as attention deficit disorders. Sensation seeking could be hypothesized as an attempt to compensate for low levels of nervous system arousal. The risk of delinquent behaviors and drug use may be increased through such attempts.

Studies of adult criminals (Rutter and Giller, 1983) and delinquents (Davies and Maliphant, 1974) demonstrate poor passive avoidance learning relative to controls. Individuals displaying antisocial behaviors persevere in making punished responses regardless of whether or not they are vital to completion of the experimental task, indicating that they may be relatively unresponsive to aversive stimuli. There is evidence that a subset of delinquents and adult criminals have low levels of cortical and autonomic arousal, and possibly psychiatric conditions consequent to low arousal (Syndulko, 1978), but the causal nature and extent of these relationships are not known.

Cognitive deficits also have been found disproportionately in delinquent and criminal populations, even when controlling for socioeconomic status and other background variables (West and Farrington, 1973; Wolfgang et al., 1972). The cognitive deficits of offenders appears to be largely composed of deficits in verbal abilities (Prentice and Kelley, 1973).

Low verbal ability may affect the probability of delinquent behavior in several ways. Low ability is likely to increase the likelihood of school failure which appears more strongly linked to delinquency than ability itself. (Gottfredson, 1981). Low verbal ability may also increase the likelihood of aggressive behavior in childhood. Camp (1977) found poor use of language in problem-solving tasks to predict aggressiveness and conduct disorders in elementary school-aged children. Additionally, low ability may be related to a discounting of future benefits associated with conforming behaviors and hence with impulsive delinquent acts.

With regard to drug use, there is also evidence of a constitutional predisposition toward alcoholism. Convergent evidence from twin (Hrubec and Omann, 1981; Gurling et al., 1981; Kaij, 1960; Schuckit, 1981), adoption (Cadoret and Gath, 1978; Cadoret et al., 1980; Goodwin et al., 1974, 1977a, 1977b; Murray and Stabenau, 1982;) and biological response studies (Pollack et al., 1983; Schuckit et al., 1983; Schuckit, 1980; Schuckit and Rayes, 1979) suggest that genetic factors may play a role in the etiology of some male alcoholism. However, studies do not point to a unitary relationship.

While constitutional factors may increase the risk of delinquency and drug abuse, it is likely that these factors interact with other risk factors in the etiology of these behaviors as suggested above. It is unlikely that there are simple direct relationships between individual constitutional

factors and these behaviors. Further, constitutional factors, like other risk factors, appear to contribute relatively small proportions to explained variance in delinquency or drug abuse. For example, the adoption studies which suggest a genetic factor in male alcoholism also reveal that less than 20 percent of the sons of alcoholics become alcoholic. Factors other than genetic predisposition must be considered to explain why over 80 percent of the sons of alcoholics do not themselves develop alcoholism (Peele, 1986). Conversely, about half of the hospitalized alcoholics do not have a family history of alcoholism (Goodwin, 1985), suggesting that a large proportion of alcoholism is not linked to genetic factors.

15. Early Initiation

Early onset of drug use predicts subsequent misuse of drugs. Rachal et al. (1982) report that "misusers" of alcohol appear to begin drinking at an earlier age than do "users." The earlier the onset of any drug use, the greater the involvement in other drug use (Kandel, 1982) and the greater the frequency of use (Fleming et al., 1982). Further, earlier initiation into drug use increases the probability of extensive and persistent involvement in the use of more dangerous drugs (Clayton and Voss, 1981; Kandel, 1982; Kaplan et al., 1984), and the probability of involvement in deviant activities such as crime and selling drugs (Brunswick and Boyle, 1979; Kleinman, 1978; O'Donnell and Clayton, 1979, 1982). In their analysis of the Epidemiological Catchment Area Study data, Robins and Przybeck (1985) found that the onset of drug use prior to the age of 15 was a consistent predictor of later drug abuse. A later age of onset of drug use is usually associated with lesser drug involvement and a greater probability of discontinuation of use (Kandel et al., 1976).

Developmental Salience and Interaction of Risk Factors

While there is a growing body of knowledge regarding risk factors for delinquent behavior and drug abuse, and while there is evidence that the presence of a combination of risk factors enhances the probability of delinquency and drug abuse (Elliott et al., 1985; Hawkins et al., in press; Kandel et al., 1986), little is known about how these factors interact during the process of development to produce higher risks for delinquency and drug abuse. Nor do we have much knowledge regarding how risk factors may be mediated by experience, environmental or other factors to reduce delinquent behavior and drug abuse among those otherwise at high risk. While covariation and, to some degree, temporal ordering have been established in the risk factors reviewed earlier, it is difficult to choose among a host of plausible rival hypotheses regarding the relationships among various risk factors and delinquent behavior and drug abuse in order to assert causality. For example, relationships between poor family management practices and delinquency and drug abuse, and early antisocial behavior and delinquency and drug abuse have been found consistently. Yet, it is not clear how these predictor variables interact in the etiology of delinquency and drug abuse. To what extent is childhood aggressiveness determined by constitutional factors and to what extent is it a product of poor family management? The answers to such questions can help to untangle the causal pathways in the development of prosocial and antisocial behavior, and will provide information on the most promising approaches for preventing delinquent behavior and drug abuse.

These considerations suggest the importance of a developmental theory of delinquency and substance abuse which hypothesizes pathways to both antisocial and prosocial behavior, and identifies factors and their

interrelationships in etiological processes. From a policy perspective, such a theory's utility is increased if it explicitly identifies points where intervention might reduce the likelihood of delinquency and drug abuse.

THE SOCIAL DEVELOPMENT MODEL

Key Features

The model presented here organizes the evidence regarding risk factors for delinquency and substance use and abuse. The model also explicitly hypothesizes intervention points and promising intervention approaches to weaken criminogenic factors and to strengthen preventive factors in the etiology of delinquency and drug abuse. It is hypothesized that prevention intervention programs designed to address key risk factors in naturally occurring causal processes will increase the strength of factors promoting prosocial outcomes, decrease the strength of factors promoting antisocial outcomes, and as a result, decrease rates of targeted antisocial behaviors.

Intervention points have been designated in the model where two conditions are present. First, if a risk factor is amenable to change, it may be targeted for intervention. Second, an intervention is designated where a particular intervention previously has demonstrated some effectiveness in reducing the risk factor or increasing the preventive potential of a protective factor specified in the model.

An important reason for including intervention points in the model is that intervention experiments targeted at predictor variables in a causal model can provide rigorous tests of the predictive validity of the hypothesized causal variables. By explicitly manipulating predictor

variables or "risk factors" to ascertain effects on hypothesized dependent variables in field experiments, alternative hypotheses can be ruled less plausible. Results of theoretically based longitudinal experimental studies can increase confidence in assertions regarding causality. Such studies provide the opportunity to measure variables at theoretically specified points in development, and to assess temporal ordering in covariation among risk factors for delinquency and drug abuse. In short, intervention experiments nested within etiological studies allow investigation of causal factors and processes in inhibiting or enhancing delinquency and drug abuse. For this reason, interventions are specified as part of the model.

A second feature of the theory is the identification of developmental periods at which specific risk factors are hypothesized to influence behavior. The theory is adjusted developmentally by identifying salient socialization units, etiological processes, and intervention strategies for each of four periods of social development: preschool familly socialization, elementary school socialization, middle/junior high school socialization and high school socialization. The periods are viewed as phases intersected by major environmental transitions and are not presented as "stages" of cognitive or moral development in Piaget's (1965) or Kohlberg's (1969, 1976) sense. These periods are separated by major transitions during which there are changes in socialization processes and environmental arrangements. Environmental transitions from the home and/or preschool environment to elementary school and from the relatively self-contained classrooms of elementary school to the modularized environments of middle or junior high schools are viewed as commonly experienced shifts in experiences which are associated with shifts in the balance of influence among socializing units of families, schools and peers.

Thus, normal transitions in school careers are used as markers for developmental periods.

A general description of the theoretical model is presented below, followed by four specific models, each tied to a developmental period as outlined above. The four models delineate specific predictors and interventions for each developmental period.

Theoretical Background

The theory outlined below is consistent with a continuing tradition in the field of criminology (cf., Elliott et al., 1985; Hepburn, 1976). It seeks to synthesize the most strongly empirically supported propositions from existing theories of deviance into a coherent model with greater explanatory and predictive power than the theories from which it is derived.

At present, no single theory of deviant behavior has survived an empirical test without disconfirmation of some hypothesized relationships between concepts. This fact has led to debate concerning the optimum path for future theoretical progress (Hirschi, 1969; Elliott et al., 1979; Cressey, 1979). Some have suggested that it is best to modify a single existing theory in light of empirical evidence, keeping the basic theory intact (Hirschi, 1969). Others have argued that a synthesis of several theories is the most efficient path to an accurate understanding of empirical reality (Elliott et al., 1979).

The theory outlined here is a synthesis of control theory (Briar and Piliavin, 1965; ; Catalano, 1982; Hirschi, 1969; Hindelang, 1973; Kornhauser, 1978; Nye, 1958; Reiss, 1951) and social learning theory (Akers, 1977; Akers et al., 1979; Bandura, 1973, 1977; Burgess and Akers, 1966; Conger, 1976, 1980; Krohn et al., 1980). Propositions from control

theory are used to identify causal elements in the etiology of drug abuse and delinquency, as well as in the etiology of conforming behavior. Propositions from social learning theory are used to identify processes by which patterns of conforming and antisocial behavior are extinguished or maintained.

Following Durkheim (1897), control theory views conforming behavior as problematic, and seeks to explain why people conform to legal rules and social norms. The assumption is that people will engage in deviant behaviors when these are not prevented. Control theory hypothesizes that adequate socialization promotes the development of a strong bond to the conventional social order. This bond is seen as the informal control mechanism which prevents deviance. When socialization is adequate people are prevented from engaging in deviant behavior. As operationalized by Hirschi (1969), the bond consists of attachment to conventional others, commitment to conventional lines of action, involvement in conventional activities, and belief in the legitimacy of the legal order. According to control theory, the stronger these components of the bond, the less likely it is that an individual will be free to engage in deviant behavior such as drug use or delinquency. A theory of prevention grounded in control theory would seek to identify how elements of the social bond are established, how they can be strengthened, and under what conditions patterns of deviant behavior are established.

Hirschi's version of control theory has been partially supported empirically (Conger, 1976; Hepburn, 1976; Hindelang, 1973; Hirschi, 1969; Wiatrowski et al., 1982). In Hirschi's (1969) analysis of junior and senior high school students, the attachment, commitment, and belief elements of the bond were shown to be related to self-reported delinquency. Commitment, the

investment one has in conventional behavior such as educational and occupational success, was negatively associated with delinquency, as was attachment to parents and school. Finally, belief, or the "attribution of moral validity to conventional norms' (Hindelang, 1973:473) was also negatively related to delinquency in both Hirschi's study and Hindelang's replication (1973).

In spite of general empirical support for control theory, there are three major weaknesses in the theory's ability to explain delinquency. First, involvement in conventional activities is not, by itself, strongly negatively related to delinquency as predicted by the theory (Elliott et al., 1982; Hindelang, 1973; Hirschi, 1969). Second, having delinquent peers as friends has an important positive relationship with delinquency which is not predicted by control theory (Hindelang, 1973; Hirschi, 1969). Control theory hypothesizes that all forms of social attachment lead to less deviance. A final weakness in control theory identified by Akers and his colleagues (1979), is the theory's failure to specify the processes by which a social bond to the conventional order develops and is maintained.

To obtain an adequate theory of deviance, the basic idea of control theory, the bonding of individual to a social order, should be broadened to overcome these shortcomings. This can be done by postulating social learning as the process by which social bonds are established (Bandura, 1973, 1977; Akers et al., 1979), and by accounting for the important role of deviant peers in deviant behavior (Elliott et al., 1982; Hirschi, 1969:230; Jensen, 1972; Jessor and Jessor, 1977; Johnson, 1979; Kandel and Adler, 1982; Matza, 1964:63; Meade and Marsden, 1981; Sutherland and Cressey, 1970).

While others have previously integrated social control and social learning theories in seeking powerful explanatory theoretical syntheses (Braukman et al., 1980; Conger, 1976, 1980; Elliott et al., 1985; Hawkins and Weis, 1985; Johnson, 1979; Johnston, 1978; Linden and Hackler, 1973; Meade and Marsden, 1981), the theoretical model outlined below explicitly identifies interventions at each developmental stage.

In this theoretical synthesis, a social bond to conventional society is viewed as necessary, though not sufficient, to prevent drug use and crime. It is hypothesized that the processes of social learning lead to the development of this social bond. According to social learning theory (Akers, 1977; Akers et al., 1979; Bandura, 1973, 1977), one's behavior is in large part a consequence of the reinforcement or lack of reinforcement which follows. Social behavior is acquired both through direct conditioning and through imitation or modeling of one's behavior. Behavior is strengthened through reward (positive reinforcement) and avoidance of punishment (negative reinforcement) or weakened by aversive stimuli (positive punishment) and loss of reward (negative punishment) (Akers et al., 1979). Using this perspective, it is hypothesized that a social bond to the conventional order is established through differential reinforcement of conventional activities and interactions compared to deviant activities and interactions. When conventional socialization is adequate, greater reinforcement is produced from conventional involvement and interactions when compared to deviant involvement and interaction. Thus, it is hypothesized that antisocial behavior should be inhibited when children have access to conventional activities and interactions, have skills for effective participation in these activities and interactions, and receive consistent rewards for effective participation in conventional activities

and interactions. Interventions which achieve these conditions should strengthen the bond between children and conventional society. When such conditions are not present youth are free to seek reinforcement from deviant activities and interactions. The reinforcement that such participation produces leads to the maintenance of these behaviors.

This suggestion provides a theoretical explanation for Hirschi's finding that conventional involvement in itself does not prevent delinquency. It is hypothesized here that what is important in inhibiting antisocial behavior is not simply involvement. Rather, conventional involvement must be skillful (thus increasing the likelihood of greater reinforcement) and produce positive rewards with some consistency in order to affect the likelihood of delinquency.

This theoretical synthesis also seeks to address the role of peers in behavior. As noted earlier, association with drug using and delinquent peers is a consistent correlate of adolescent drug use and delinquency. In Hirschi's (1969) study of junior and senior high school students and Elliott et al.'s (1985) national youth study, even those with strong bonds to the social order were more likely to commit delinquent acts if they had delinquent friends.

It is hypothesized that association with drug using or delinquent associates can provide reinforcement for continued association and for involvement in drug using or delinquent behaviors. However, the likelihood of such associations and the relative strength of the rewards they offer are hypothesized to be contingent upon the nature of youths' experiences in conventional socializing contexts with conventional others (parents, teachers and peers). Like Elliott et al. (1985), this theory suggests that youths are less likely to establish or maintain associations with drug using or delinquent peers if they have strong social bonds to conventional others.

In contrast to Elliott et al. (1985), in this theory, conventional others also are hypothesized to have a greater potential than delinquent others to develop social bonds with adolescents. This hypothesis is based on the assumption that there is a shared normative consensus in society regarding acceptable behavior. Even those engaged in deviant behaviors share an understanding of certain basic normative values of society (Kornhauser, 1978; Hirschi, 1969). These shared norms are hypothesized to lead to a higher valuation of conforming behavior and friends who behave in this way than of deviant behavior and deviant friends. Research on the social networks of drug abusers before participation in residential treatment supports this hypothesis. While drug abusers view their drug using network members as friends and while they like to see these friends and trust them, they view these same individuals as less desirable associates and less worthy of emulation than the nonusers in their networks (Fraser and Hawkins, 1984; Hawkins and Fraser, 1985b). From this persepctive it can be suggested that youths may perceive attachments to conventional others as more desirable than attachments to deviant peers, if youths have the opportunity and skills to establish both types of relationships.

In summary, it is recognized that associations with drug using and delinquent peers can provide rewards which reinforce youthful drug use and deviance. Drug using and delinquent network members provide social reinforcements which social learning theory would suggest lead to continued relations as well as to crime and drug use. However, the strength of influence which can be exercised by drug using or delinquent peers is conditioned, in part, by the extent to which youths' associations with more conventional others encourage the establishment of strong social bonds of

commitment, attachment and belief. If associations with conventional others meet the conditions necessary for social bonding, and if those others negatively view drug use, misbehavior and delinquency, it is hypothesized that these associations will lessen the likelihood of association with deviant others and will, through this process, prevent antisocial behavior.

Assumptions

The first two assumptions of the theoretical synthesis presented here are consistent with Hirschi's version of control theroy (Hirschi, 1969; Jensen, 1972). The first assumption is that the basic nature of human beings is neither moral nor immoral; humans are amoral. Their behavior depends upon their own self-interest as postulated below.

Secondly, it is assumed here that normative concensus exists to the extent that everyone knows the "rules of the game." That is, socialization is assumed to be effective to the extent that virtually all members of the society learn which behaviors are officially sanctioned and understand what is important for success in society. This level of agreement on rules makes group life possible, yet does not "preclude conflicts of value or interest" (Kornhauser, 1978:41).

The final assumption of this theoretical synthesis is that human beings are satisfaction seekers and that human behavior depends upon acts of self-interest. People engage in activities or interactions because of the satisfaction they expect to receive from them. This assumption is derived from social learning theory. Behavior in each immediate situation is expected to be conditioned by long as well as short-term payoffs. It is recognized that the perception and exercise of self-interest is restrained or controlled by ability, opportunity and experience. One's skills and

opportunities to a large extent determine one's ability to achieve or even perceive self-interest. In addition, experience provides empirical information on which to judge the likely impact of one's contemplated next action (Tallman and Ihinger-Tallman, 1979). Together these three elements tend to set limits on and direct the exercise of "pure" self-interest in the Hobbesian sense.

Overview of the Theory

The social development model hypothesizes that a social bond consisting of attachment to conventional others, commitment to conventional lines of action, and belief in the conventional moral order inhibits the initiation of drug use and delinquency. It is hypothesized that this social bond results from a social process involving four constructs: 1) opportunities for involvement in conventional activities and interactions with conventional others, 2) the degree of involvement and interaction, 3) the skills to participate in these involvements and interactions, and 4) the rewards one perceives as forthcoming from performance in conventional activities and interactions.

It is further hypothesized that the existing normative concensus makes conventional modes of action preferable to illegal ones in that, if other things are equal, conventional paths of action are chosen over illicit ones. The theory recognizes that illicit paths of action exist and can provide rewards when the conventional socialization process breaks down. This can occur when people are denied the opportunities to participate in conventional life, when their skills are inadequate for conventional performance to produce rewards, or when the environment fails to reward them consistently for effective conventional performance. When conventional

socialization has broken down, illicit actions including drug use and delinquency may become a preferable alternative because they produce rewards (albeit less widely valued).

As shown in Figure 1, four related paths are hypothesized in the general model: (1) interaction with drug users and delinquents, (2) interaction with conventional others, (3) involvement in conventional or legal activities, and (4) involvement in illegal activities. Two paths, the conventional interaction path (2) and the conventional involvement path (3), are directly relevant to the establishment of a bond to the social order. The two remaining paths in the model describe the establishment of deviant behavior patterns. The first is an "interaction with drug users and delinquents" path (1), and the second is an "involvement" in illegal activities path (4). Identical processes are hypothesized to operate on these paths. A social bond to illicit activities or individuals is not assumed in the model, given the assumption of normative consensus in society, though it is recognized that this remains an empirically testable issue.

The General Model

Two paths in this model specify the processes by which elements of a social bond capable of inhibiting drug use and delinquency develop. These paths are described first.

The first exogenous construct in both these paths is "willingness to participate in activities and interactions of conventional life." The child must be willing to participate in family life, attend church, participate in school, join an organization, seek a conventional job, or participate in conventional activities in some way. While this does not mean that the

young person initially must be committed to living a conventional life. What is necessary is that, for whatever reason, the young person is willing to engage in some conventional activities in the larger society. For most children, such initial willingness exists without question or conscious decision and some control theories simply assume its presence (Matza, 1964; Hirschi, 1969). However, others explicitly include it (Reckless, 1961). Such a construct may be essential in any theory of socialization or bonding to the conventional social order. Where willingness to participate in conventional activities does not exist, the opportunity to become involved in conventional activities or interactions may not induce participation.

The second set of exogenous constructs in the model concerns opportunities to participate in the conventional world. This construct refers to the number of different activities or interactions in which it is possible to participate. The number of opportunities available to a young person to participate in conventional activities or interactions varies. For example, some high schools may offer clubs in chess, fencing and debate in addition to varsity athletics, while others offer only varsity athletics. In addition, the degree of knowledge about the opportunities available and how these opportunities conform to personal interests is hypothesized to affect young peoples' recognition that opportunities exist. "Opportunities for involvement in legal or conventional activities" and "opportunities for interaction with conventional others" are treated as independent variables in the model. It is hypothesized that these opportunities are necessary conditions for conventional involvements and interactions, and ultimately for development of conventional commitments and attachments.

Inclusion of opportunities in the model does not presume the means/ends discontinuity hypothesis of strain theory (Merton, 1957). We do not

hypothesize that the lack of such opportunities leads directly to deviant behavior as an alternative means of achieving desired legitimate goals, as asserted by strain theorists (Cloward and Ohlin, 1960). Rather, it is simply hypothesized that for conventional involvements to occur, youths must encounter opportunities for such involvements. The perception or recognition of these opportunities cannot be assumed and must be viewed as problematic for youths, especially when they enter new settings, such as in making the transition from the home to elementary school or from elementary school to middle or junior high school or from middle or junior high school to high school.

The availability of such opportunities is likely to vary in association with macro level conditions in society such as economic prosperity with meso and micro level conditions such as educational policies which affect the availability of alternative education programs in a community or the use of ability tracking within schools and with micro level variables such as individual place of residence which helps to determine the likelihood that an individual will encounter conventional people which whom he or she can interact.

In the social development model, opportunities for interaction with conventional others, and opportunities for involvement in conforming activities, in conjunction with willingness to participate in these interactions and involvements, affect the degree of interaction with conventional others and involvement in conventional activities. This causal ordering differs from the ordering of variables in Hirschi's control theory in which attachment predicts commitment, and commitment in turn, predicts involvement. This model also diverges from Hirschi's control theory in that Hirschi does not specify interaction with conventional others as an

important variable. In the present synthesis, interaction with conventional others is viewed as a necessary, though insufficient, precondition to development of attachment to those others. Involvement in conventional activities is viewed as a necessary, though insufficient, precondition to development of commitment to conventional lines of action. This divergence from Hirschi's control theory emerges because involvement was not empirically supported in Hirschi's (1969) research as an element of the social bond which prevents deviant involvement. As will be seen, only rewarding involvement and interaction are hypothesized to lead to bonding to the conventional order (Hundleby, 1986). Attachment to conventional others and commitment to conventional activities are hypothesized only as a consequence of interaction and involvement that is perceived as rewarding. In essence, the present model asserts that involvement and interaction precede the formation of the attitudes (commitment and attachment) which characterize the social bond.

This alteration in the causal paths proposed by control theory appears consistent with the theoretical and empirical work of behavioral researchers (Bandura, 1977; Bem, 1972; Festinger, 1964) who argue that behavior change (in this case involvement and interaction), precedes attitude change (such as attachment and commitment). Placing involvement and interaction at this point in the model also appears appropriate in light of Conger's (1976) research showing the presence or absence of positive reinforcement as an intervening variable between involvement in conventional activities and delinquency. The proposed ordering of constructs is one in which involvements in conventional activities and interactions with conventional others flow from opportunities for such involvements. In turn, as suggested by Conger's research, the development of attachments and commitments capable

of inhibiting deviant behavior is viewed as dependent on the extent to which conventional involvements and interactions are positively reinforced.

In summary, involvement in conventional activities and interaction with conventional others are viewed as behavioral variables which are antecedent to and predict development of attitudinal elements of the social bond (attachment, commitment, and belief) when other conditions, specified below, are present.

Conger's research (1976, 1980) suggests that interactions with conventional others and involvements in conventional activities are sufficient to ensure social bonding and to preclude patterns of deviant behavior only if positively reinforced. It is hypothesized in the social development model that attachment and commitment result only when interactions and involvements provide rewards to individuals, and then only if these rewards are perceived as supplying some significant proportion of the total reinforcement available to the individual (cf. Conger, 1976). This is hypothesized to be true whether the rewards are social or nonsocial, conventional or nonconventional. Thus, perceived rewards (positive reinforcements) have been added to the interaction and involvement paths as intervening variables between interaction and attachment, and between involvement and commitment.

The concept of perceived rewards is used in the model because what is actually rewarding to an individual is likely to vary according to individual preferences. For example, emotional affect and money are capable of reinforcing behavior patterns only if they are interpreted as pleasing (Catalano, 1982:21-22).

The concept of skills for conventional involvement and interaction has been included in the model. If attachment and commitment depend on the

level of reinforcement one receives, then factors that enhance reinforcement for interaction or involvement should affect the development of attachment and commitment. Skills in performing tasks, doing academic work, social interaction, problem solving, coping with stress, or controlling impulses should increase probability that one will be rewarded for one's behavior in a particular interaction or involvement. This premise is the foundation for behavioral skills training programs which have demonstrated positive effects in the treatment of delinquency, substance abuse, aggression, shyness, depression, anxiety and various phobias (Schinke, 1981). In the social development model, the level of skills for conventional interaction and involvement is hypothesized to affect the level of rewards that the individual receives for both interaction with conventional others and for involvement in legal activities. It is expected that the greater these skills, the greater the ensuing rewards from conventional interactions and involvements.

In addition to affecting attachment and commitment, perceived rewards for conventional interactions and involvements are hypothesized to directly decrease the likelihood of drug use. It is expected that the more an individual perceives conventional interaction and involvement as rewarding, the less likely s/he will be to initially use drugs because such use could threaten these rewards. Those who are committed to conventional lines of action and attached to conventional others should perceive greater risks associated with the initiation of drug use.

Both commitment and attachment are hypothesized to directly negatively affect interactions with drug users, involvement in illegal activities, and drug use. The more one is committed to conventional activities and attached to conventional others, the less one is likely to become involved in

behavior (interaction with deviant others and involvement in deviant activities) which compromises these commitments and attachments. Commitment and attachment to conventional activities and people also indirectly affect interaction with drug users and delinquents, involvement in illegal activities, and drug use by increasing belief in the moral order. Belief in the moral order is viewed as an internalization of the legal and ethical code. Once internalized, this code becomes part of the individual's value system which plays a part in determining which activities are viewed as morally acceptable. Belief is thus an evaluative element of the social bond which is directly affected by one's attachment to conventional others and one's commitment to conventional activities. Belief in the moral order is hypothesized to directly decrease the probability of interaction with users and involvement in crime.

The two paths of interaction with conventional others and involvement in conventional activities represent paths which inhibit deviance. However, as shown in Figure 1, we are concerned with predicting drug use and delinquency as well as with predicting the inhibition of these behaviors. It is not sufficient to describe only the processes by which drug use and delinquency are prevented. Paths which explain the initiation of drug use and crime are also included in the model.

Specification of these additional paths makes this theoretical model less elegant than purer formulations of control theory, which assert that nonconformity is a natural state which need not be learned. However, research has indicated that control theory's assertion of "natural" motivation to deviance is empirically inadequate (Hirschi, 1969:230). The evidence suggests that an adequate theory of deviant behavior must explain how and why deviance emerges and is maintained. Thus, in the social

development model, control theory's elegance is sacrificed for empirical adequacy. Deviance is a social phenomenon, learned from peers or associates. The principles of reinforcement hypothesized by social learning theorists are hypothesized to be equally important in the process of learning deviant behaviors (Akers et al., 1979) as they are in the process of developing a social bond to conventional society. For this reason, paths which explain drug use and crime are included in the model.

The social processes leading to criminal behaviors are specified in differential association theory (Conger, 1976; Hepburn, 1976; Jensen, 1972). Behavior is learned by interacting with others, principally in small groups where people learn both the techniques and the motivations or rationalizations necessary for living in either the criminal or the noncriminal world. The greater the frequency, duration, and intensity, of interactions with deviant associates, the greater the tendency for deviant behavior. It is hypothesized here that associations with deviant others increase when one is not attached to conventional others and when deviant others provide rewards for an individual's interaction with them (see Hirschi, 1969:152-158). Thus, we keep the causal ordering of control theory and borrow the social learning language of differential association theory (Conger, 1976; Hepburn, 1976; Hirschi, 1969; Jensen, 1972).

Again, two separate paths, an interaction and an involvement path, are postulated to lead to drug abuse and crime. Both paths begin with opportunities for deviant involvement and interaction and willingness to become involved in conventional life. Without the opportunities to interact with drug users and delinquents or to become involved in illegal activities, actual interaction or involvement is not possible. The greater the opportunities, the more actual interaction and involvement is expected. On

the other hand, the greater an individual's willingness to become involved in conventional life, the less interaction with drug users or involvement in illegal activities should occur. Finally, as already noted, the three cognitive elements of the social bond to conventional life are hypothesized to affect illicit interaction and involvement. It is hypothesized that the stronger these elements of attachment, commitment and belief, the less likely one is to interact with drug users or delinquents and to become involved in illegal activities because these involvements may threaten one's investments in conventional relationships and activities.

Initial illicit interactions and involvement are hypothesized to increase the likelihood that an individual will perceive these interactions and involvements as rewarding. It is also hypothesized that individuals continue these interactions and involvements only if perceived rewards are sufficiently great. One's perception of rewards is conditioned by the costs of legal and other sanctions. The model does not assert that people must develop strong attachments with drug users or commitment to illegal involvements as a necessary condition for continued interaction with drug users or continued criminal involvement. Both delinquency research and studies of drug users support the exclusion of the attachment variables from these paths (Catalano and Hawkins, 1985; Fiddle, 1976; Hawkins and Fraser, 1985b; Hirschi, 1969:159).

The issue of commitment to unconventional activities is complex. After an extensive review of the evidence relating to cultural deviance models, Kornhauser (1978) found little evidence that delinquents form a subculture characterized by value reversal. She suggested three alternatives to the suggestion that delinquent youths develop commitments to unconventional activities (Kornhauser, 1978:243):

> (Delinquents) hold neutralizing beliefs that simultaneously affirm the validity of conventional values while providing rationalizations for their evasions. Second, delinquents may array their values in an unequivocal hierarchy, in which conventional values are always preferred and are granted undisputed moral validity, but in which some, though not all, delinquent acts are less disapproved when preferred alternatives are out of reach. Third, delinquents may be indifferent to the moral consequences of their actions, guided solely by cognitive orientations that assert the universal primacy of self-interest. In no case is there evidence that delinquent acts are positively approved or preferred.

It appears most parsimonious to view continued criminal behavior as a direct consequence of the rewards or reinforcements received for that behavior. It does not appear necessary to postulate the existence of commitments to criminal activities as essential for the continuation of such activities.

Perceived rewards for interaction with drug users and delinquents and for delinquent involvement are also hypothesized to affect the occurrence of drug use. Rewarding interaction with drug users and delinquents is likely to increase drug abuse by increasing direct access to drugs and through the imitation and reinforcement processes of social learning (Akers et al., 1979). A number of studies have demonstrated a relationship between delinquency and drug use (Clayton and Voss, 1981; Elliott and Ageton, 1976; Elliott et al., 1985; Goode, 1970; Hindelang and Weis, 1972; Jessor, 1976; Santo et al., 1981; Simonds and Kashami, 1979). Delinquency and drug use have also been shown to have common etiological roots (Huizinga and Elliott, 1982; Kandel et al., 1986). Illicit drug users are much more likely to have engaged in delinquent acts than non-users (Kandel, 1978), often prior to their initiation into drug use (Huizinga and Elliott, 1981). Thus it is hypothesized that the greater the perceived rewards for such delinquent involvement, the more likely drug use is to occur. Note that the preventive effects of social bonding emerge at this point as well. The likelihood of drug use is decreased if an individual perceives he/she is

receiving rewards from conventional activities and interactions and is attached to conventional others or committed to conventional lines of action. Attachment to conventional others and commitment to conventional involvement are also hypothesized to directly decrease the likelihood of drug use by decreasing the initial likelihood of interaction with users and delinquents and involvement in illegal activities.

Earlier, consitutional factors which appear to be related to delinquency were described. These individual characteristics are directly related to skills for conventional interaction and involvement, rewards for conventional interaction and involvement, and opportunities for conventional interaction and involvement in the social development model. Cognitive ability influences the degree to which an individual will develop skills for participation in conventional activities and interactions. For example, a child who has low cognitive ability will likely have greater difficulty mastering the skills necessary to succeed academically, though other factors, such as the quality of teachers' instruction, and parent involvement in the child's education will also influence the degree of academic success attained. Low cognitive ability may also constrain the level of interpersonal skills acquired by the child. Thus, children with low cognitive ability may resort to aggressive or other antisocial behaviors to attain desired rewards because these are not forthcoming from conventional involvement.

Similarly, individuals with low central nervous system and autonomic nervous system arousal levels may not perceive or recognize the routine positive responses which accompany conventional social interaction and involvement as significant rewards. Smiles, thank yous, pats on the back or good grades may not be perceived as rewarding when individuals have low

arousal levels. Rather, sensational and other peak arousal experiences such as risk taking and thrill seeking may be required for these individuals to perceive rewards because of their lowered physiological responsiveness to stimuli. Alternatively, low arousal levels may increase the likelihood that a criminal act will occur through a process involving devaluation of perceived future rewards associated with conventional involvements. A criminal act occurs at that point when the rewards of crime are perceived as stronger than the rewards associated with not engaging in crime. Any factor, inborn or experiential, which serves to increase the time-discounting curve of perceived future benefits of noncrime, will increase the probability of a criminal act occurring (Wilson and Herrnstein, 1985). Either process may predispose this group to seek immediate intensive reinforcers such as drugs. Finally, attention deficit disorders/hyperactivity may influence the degree to which individuals can recognize opportunities for conventional interaction and involvement. To take advantage of conventional opportunities, an individual must first recognize them. If an individual cannot perceive a friendly smile as an invitation to talk or the presence of the teacher in the classroom before school as an opportunity to get help to improve academic skills, he or she cannot take advantage of existing opportunities. This skill is also conditioned by experience. However, individuals who suffer from attention deficit disorders may be less likely to recognize opportunities regardless of previous experience. In sum, individual constitutional factors are included in the model under the constructs of skills and perceptions of rewards and opportunities.

The theory presented has been constructed to highlight the simple causal chains of each of four major paths which constitute the model.

Crosspath causal links have been minimized for two reasons. First, less is known empirically about these crosspath relationships and interactions. Second, the degree of complexity introduced by inclusion of more than a few of these paths makes it much more difficult to articulate. While some additional crosspath links probably exist, their specification awaits further empirical work.

Developmentally Specific Models

Specific models for four social developmental periods through high school are presented in Figures 2-5. During the period before elementary school entry, the family is of primary importance in the development of a social bond which is hypothesized to inhibit involvement in antisocial behavior and drug use (Loeber and Dishion, 1983; McCord, 1979; West and Farrington, 1973). Risk factors presented earlier which are salient during this period include antisocial behavior, family management practices, parental drug use and positive attitudes towards use, and parents' antisocial and criminal behavior (Hawkins et al., in press). The specific features of each of the four paths in the preschool submodel are presented below.

During the preschool period, interaction with nondrug users includes interaction with family, friends, and caretakers. Interaction with drug users may include interaction with family users of alcohol and/or other drugs. While it is hypothesized that drug use that occurs in the home is the most observable and salient causal factor predisposing an individual toward deviance in this time period. The conventional involvement path focuses on family roles and activities, and the antisocial involvement path includes antisocial (i.e., childhood conduct disorders) but not illegal behavior.

Intervention points the model are underlined. During this preschool period, it is possible to intervene by enhancing the opportunities for interaction with nondrug using family members through the creation of structured family time for interaction. Opportunities for involvement in family life can be enhanced through the creation of age appropriate roles for children in the family and by creating special activities that the family does together on a periodic basis. These enhanced opportunities are expected to lead to increased interaction and involvement in the family. A second intervention appropriate in this time period is parent training to teach parents observation, limit setting, disciplining and communication skills. Use of these skills by parents is expected to increase the consistency of rewards and discipline in families, and thus to enhance the rewards the child perceives for appropriate family involvement and interaction. At the same time, these enhanced parental skills are expected to decrease the rewards the child perceives for antisocial behavior. Parents can be taught supervision skills to monitor children's behavior and disciplining skills so that limits can be enforced and good behavior can be rewarded. These parental skills should enhance rewards for conventional interaction and involvement and reduce the rewards from antisocial involvement. In addition, they should increase the child's interaction and involvement with conventional persons and activities. Finally, an intervention which addresses positive parental attitudes towards drugs (including alcohol), parent practices which involve children in the parents' drug use, and parents' actual drug use is expected to reduce parental modeling of alcohol and drug use, expression of favorable attitudes towards use, and involvement of children in activities such as bringing drinks to a parent or lighting cigarettes for family members. The reduction of these

activities should lower interaction with family members when they are using drugs and reduce the perceived rewards for association when family members are using drugs.

Figure 3 presents the model for the elementary school period. During this period, school involvement increases in etiological and preventive importance. Interaction with peers is hypothesized to increase in importance towards the end of elementary school. The risk factors for this period include those listed above with the addition of academic failure beginning in mid to late elementary school (Blumstein et al., 1985; Hawkins et al., 1985c; Wolfgang et al., 1972). The conventional interaction path includes family, teachers, and school peers. The conventional involvement path focuses on school and family activities. The interaction with drug users and delinquents path includes family and peers, and the involvement in unconventional activities path includes both non-criminal antisocial and illegal behaviors.

Preventive interventions during the elementary school period would seek to enhance conventional opportunities for involvement through such vehicles as family meetings, increased family roles for children, increased family time and greater classroom roles for children created by teachers. It is hypothesized that greater opportunities for involvement in family and school will increase conventional involvement and interaction in these social units. Interventions to enhance children's skills for conventional involvement include training teachers in instructional skills to enhance the learning of all students in the classroom and to facilitate student peer teaching and learning from peers in an environment of reward interdependence. Another skill focused intervention involves training family members to assist the child to develop cognitive and social

interaction skills. A final skills oriented intervention during this time period trains youths to develop skills to avoid drug using peers. This intervention recognizes that children who intiate drug use early are more likely to become drug abusers (Robins and Przybeck, 1985). Avoiding interaction with drug using peers appears to be an achievable goal during the elementary period when a small proportion of an age group has initiated use.

With regard to rewards, it is hypothesized that greater cognitive and social skills will increase elementary students' perceived rewards for interaction and involvement in conventional school and family activities. Similarly, the more effective the instruction provided in the classroom, the greater the rewards perceived by the child for school interaction and involvement. Parent training in setting and enforcing expectations for children's behavior and in communication skills should influence perceived rewards as well. The more skilled families are at communicating about school, the greater the consistency of rewards for school performance likely to be experienced by the child. Finally, the clearer the family rules regarding consequences for misbehavior and for drug and alcohol use, the greater the likelihood that negative reinforcements will be perceived as associated with violations of family expectations. By enhancing conventional involvements and interactions, these skill interventions should diminish the attractiveness of the rewards from unconventional activities and interactions. In addition, since misbehavior threatens conventional rewards, higher costs should be perceived as associated with antisocial behaviors.

Drug initiation is included in the model in this elementary school period. It is expected that the relative weight of conventional and

antisocial influences will determine whether children begin to use drugs during this period. It is expected that conventional bonding will tend to discourage the likelihood of drug use, and that perceived rewards for interaction with drug using family and friends and perceived rewards for involvement in antisocial and illegal activities will increase the likelihood of drug use. Drug use initiation is placed at the far right of the model because it has been shown to occur most frequently slightly later than delinquent involvement (Elliott and Huizinga, 1982; Elliott et al., 1985; Holmberg, 1985; Huizinga and Elliott, 1981; Inciardi, 1981).

Figure 4 presents the model for the middle/junior high school period. During this period, peers become a primary socialization force (Elliot et al., 1985). Although previous risk factors continue to operate, new risk factors become more salient: lack of commitment to school, alienation, rebelliousness, friends who use drugs or are involved in delinquency, favorable attitudes towards drug use, early first use of drugs and alcohol, and early involvement in delinquency (Hawkins et al., in press). The interaction with conventional others includes family members and school personnel, but peers have an increased influence in socialization during this period. Conventional activities include family, school and peer activities. Interaction with drug users and delinquents may include family members (such as drug using or delinquent parents or older siblings), other children and other adults. Involvement in unconventional behavior refers primarily to delinquent behavior.

During this period, prevention interventions with school, peers, and family seek to increase opportunities for interaction with conventional peers and involvement in conventional activities. Conventional involvement is viewed as important during this period because youths without such

involvement may seek alternative activities and groups for status attainment and social rewards. While becoming involved with deviant groups at school is relatively easy because the boundaries of these groups are permeable, students who become so involved are more likely to experiment with substance use and illegal behavior.

A variety of skill interventions is possible during this period. Interest identification and interest-activity matching skills should enhance students' perceived opportunities for involvement and interaction in conventional activities. Consequential thinking skills regarding the consequences of antisocial behavior should increase willingness to participate in conventional activities and interactions. Also skills to avoid drug use or participation in illegal activities ("refusal skills") may counter the pressure to become involved in these activities during this period of adolescent individuation. Since alcohol and marijuana experimentation and minor delinquent behavior are statistically widespread during this period, "refusal skills" should allow the child to keep friends while avoiding antisocial behavior. Skill interventions which teach problem solving and stress coping skills recognize that the beginning of adolescence is a time of difficult personal choices and increased performance pressure. Problem-solving and stress coping skills should enhance conventional performance and consequent rewards. Finally, skills to deal with a changing role in the family should help to maintain the bonding potential and hence the prevention impact of the family. Family communication and crisis management skills should increase the ability of the family to remain as a source of prosocial influence. Family support groups increase the consistency of rules, rewards, and punishment across families and provide parents with reinforcement for continuing to set limits and maintain bonding to the family as adolescents express greater independence and individuation.

By the time youths get to high school, many of the causal processes which produce high rates of offenses and drug use have been established. Early and persistent antisocial behaviors (Blumstein et al., 1985; Emsminger et al., 1983; Farrington, 1978, 1985b; Loeber and Dishion, 1983; Robins, 1979), poor parental child management techniques (Farrington, 1979a; Loeber and Dishion, 1983; Robins, 1979; West and Farrington, 1973), convictions of parents and siblings (Blumstein et al., 1985; Craig and Glick, 1968; Farrington, 1985a; West and Farrington, 1973), and poor educational attainment (Blumstein et al., 1985; Farrington, 1979; Loeber and Dishion, 1983; Polk et al., 1981; Wolfgang et al., 1972) have all been established prior to high school.

Figure 5 presents the model for the high school period. The causal model during the high school period is characterized by factors which are relevant to the maintenance of these behaviors once established. The actual and perceived rewards and costs of conventional and unconventional involvement and interaction should determine the behaviors that are maintained during this period. For some youths, delinquency decreases during this time (Elliott et al., 1985). It is hypothesized that the rewards for risk taking and delinquency decrease for adolescents who are experimenting with antisocial behavior as a means of adolescent individuation but who are otherwise conventional and do not have criminogenic levels of early risk factors.

However, for chronic delinquents, it is also hypothesized that many of the conventional rewards for interaction and involvement are not available. Poor grades, low conventional social status and lack of access to conventional leadership roles are likely to characterize their situation.

No prevention interventions have been included in the social development model during the high school period for two reasons. Research has not established what factors protect those with high levels of early precursors from becoming chronic delinquents or drug abusers. Further, few secondary prevention interventions have been shown to be effective in remediating delinquency once it has begun.

During the high school period, peers remain a primary socialization force. Previous risks continue to operate and new risks include frequent exposure to delinquents and drug users, incarceration, and overinvolvement in adult activities--e.g., sexual activity, pregnancy, employment (Farrington, 1985b; Hawkins et al., in press; Hirschi, 1969; Thornberry et al., 1985; Wiatrowski et al., 1982). The interaction with conventional others path includes all conventional people in the youths' environment--peers, school officials, family members, and other adults. The conventional involvement path focuses on involvement in conventional activities such as school and employment. While some involvement in employment is hypothesized to have preventive effects, high levels of employment are expected to remove the youth from the normative adolescent environment which centers on school. Interaction with antisocial others includes association with criminal or drug abusing family or peers. Finally, the involvement in illegal activities path includes a legal reaction variable, legal sanctions.

Actual conventional rewards are added to the model during this period because of the emphasis on maintenance of behavior patterns. Three rewards are hypothesized to keep levels of perceived rewards for conventional involvement and interaction high: grades, leadership roles and conventional social status. Conventional leadership roles and social status are also

expected to decrease the perceived rewards for unconventional involvement and interaction. The final dependent variable in this period is chronic delinquency and drug abuse. By this time, it is expected that if the relative weight of the rewards of unconventional interaction and involvement is greater than preventive impact of bonding to conventional others and activities, then antisoial behavior will be maintained and become serious, persistent antisocial behavior.

These four submodels of preschool, elementary, junior high and high school social development have been constructed as steady state models for heuristic purposes. If the four models are laid out end to end, a perspective on the transition from one period to the next is provided.

Transitions are times of change. They present opportunities to change behavior as old conditions of social life are replaced by new ones. These are times when the new conditions, rules, and structures are not year clear, and the applicability of the old conditions, rules and structures is diminished (Smelser, 1962). It is hypothesized that three factors determine the impact of the transition itself. They are: 1) the level of social bonding established to social units during the previous period, 2) the rewards for conventional and antisocial behaviors which the child perceives as a result of experiences in the prior period, and 3) the opportunities for conventional and antisocial involvements and interactions encountered in the new environment(s).

Considering the transition from preschool to the elementary school period, it is hypothesized that the stronger the previous levels of prosocial bonding to the family (attachment, commitment, and belief), the greater the willingness of children to participate in conventional activities. In addition, it is expected that the greater the perceived

rewards from interaction with conventional family and friends, and the greater the rewards for involvement in the family, the more likely the child will be to interact and become involved with conventional others in the school setting. It is also expected that the greater the perceived rewards from interaction with drug using family members during the preschool period, the more likely children will be to interact with drug using and delinquent peers and family members during the elementary school period. In like manner, the greater the perceived rewards for antisocial behavior (such as withdrawal or throwing tantrums to get one's way) during the preschool period, the more likely the child is to behave in antisocial ways in the elementary school period. In contrast, the opportunity variables are functions of the new environment at each period.

The transitions from elementary to middle school and from middle to high school are expected to reflect similar dynamic relationships across periods. In both cases, there is an additional connection between drug use in the previous period and interaction with drug users in the subsequent period.

The factors affecting the outcomes of transition from one developmental period to another, can also be expected to apply to other transitions or life changes such as a residential move, school transfer, or separation of the youth's parents. It is hypothesized that the outcomes of these added transitions within a developmental period will be affected by the same factors which affect the outcomes of transitions between periods. Prior levels of bonding, the rewards the child perceives for conventional and antisocial involvement and interaction as a result of experiences in the previous environment(s), and the opportunities available in the new environment(s) will influence the extent to which the child becomes involved

in conventional or antisocial activities and interactions in the new environment(s) following the transition. With regard to opportunities, the relative levels of opportunity in the new environment when compared with opportunities in the previous environment are hypothesized to be important in influencing behavior.

This paper has integrated the empirical evidence concering risk factors for delinquency and drug abuse into a comprehensive theory of adolescent antisocial behavior. The social development model is grounded in empirically supported theories of deviance. It is a general theory with specific submodels for different developmental periods during childhood. The theory has been designed to have explicit implications for prevention intervention programming through the inclusion of intervention points.

The authors are currently engaged in a series of field experiments to test this model which have begun to show positive results (Catalano and Hawkins, 1985; Catalano et al., 1985; Hawkins and Lam, in press; Hawkins, Catalano, and Wells, in press). Longitudinal experiments grounded in the social development model will help to clarify or refute the causal processes specified here and lead to an empirically tested theory of childhood and adolescent behavior.

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FIGURE 1

THE SOCIAL DEVELOPMENT MODEL OF ANTISOCIAL BEHAVIOR

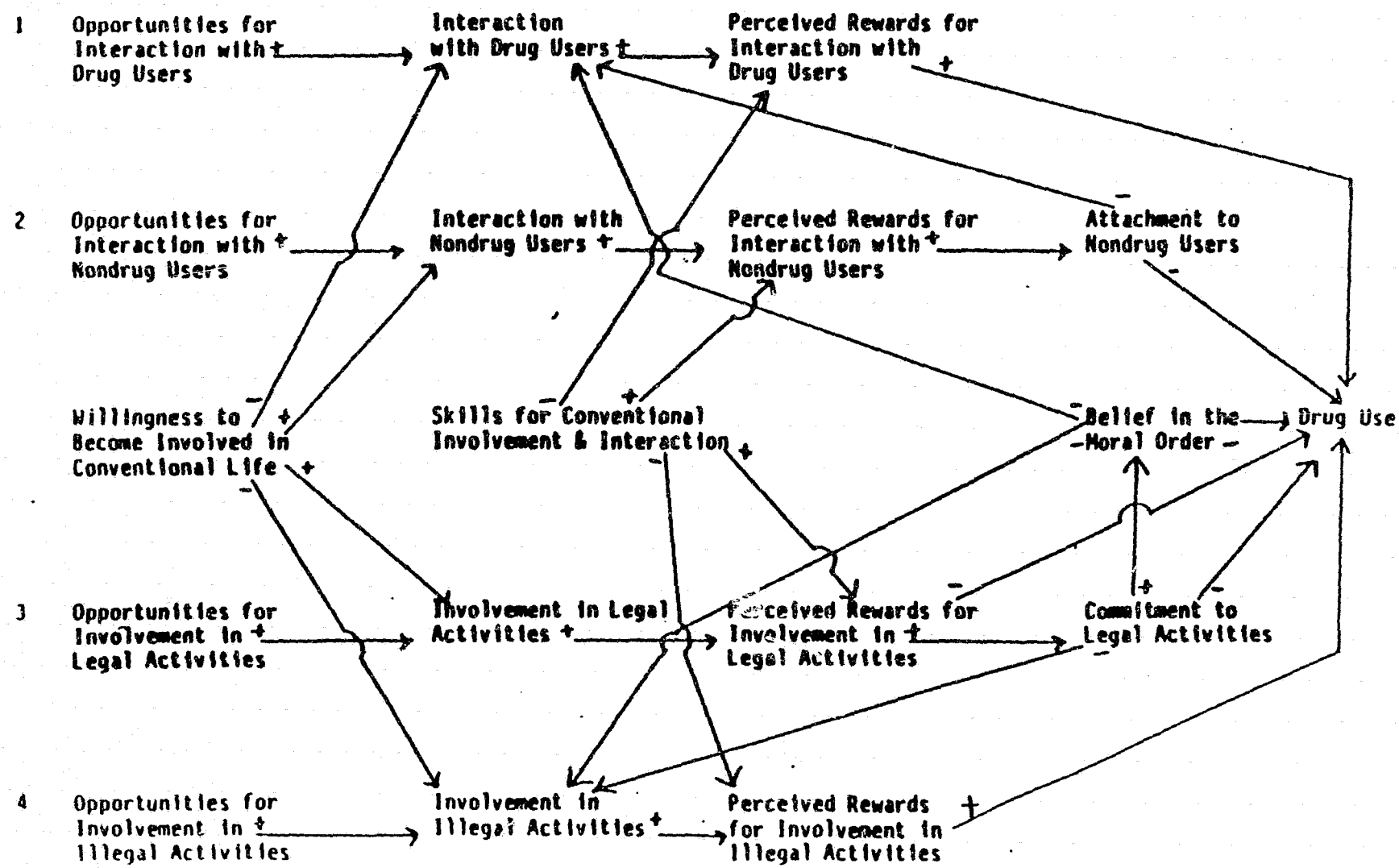
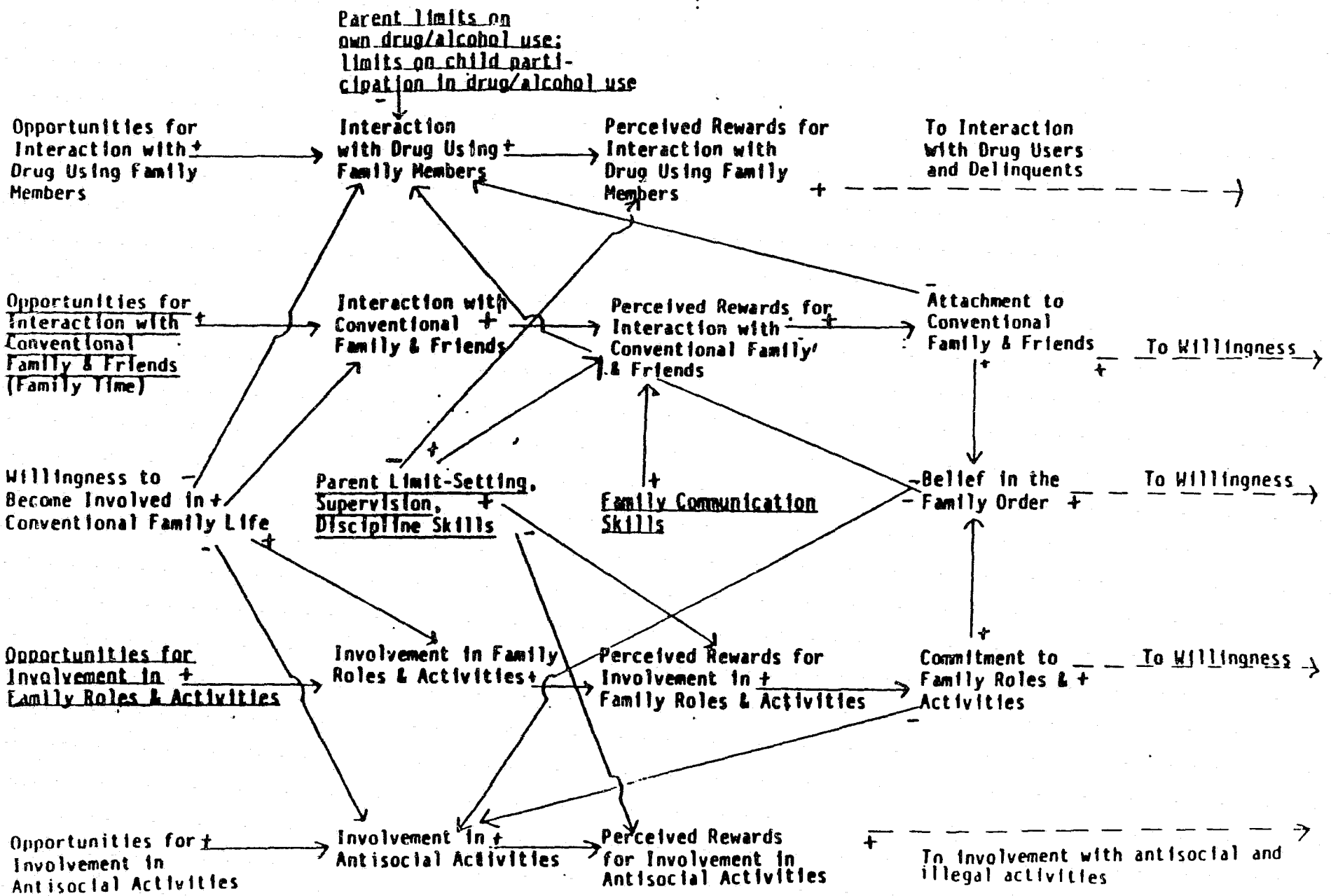
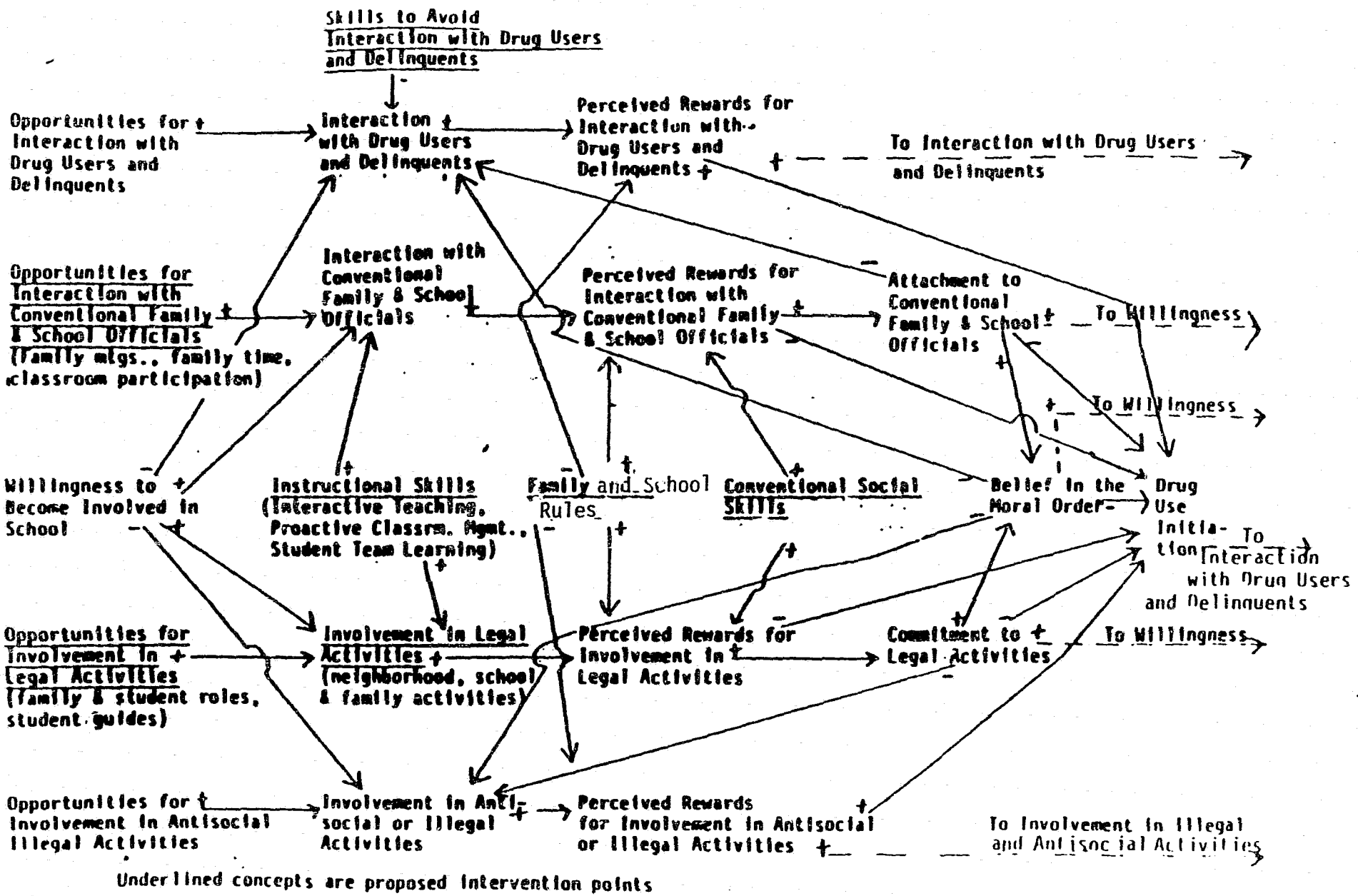


FIGURE 2
THE SOCIAL DEVELOPMENT MODEL OF ANTISOCIAL BEHAVIOR
PRESCHOOL PERIOD



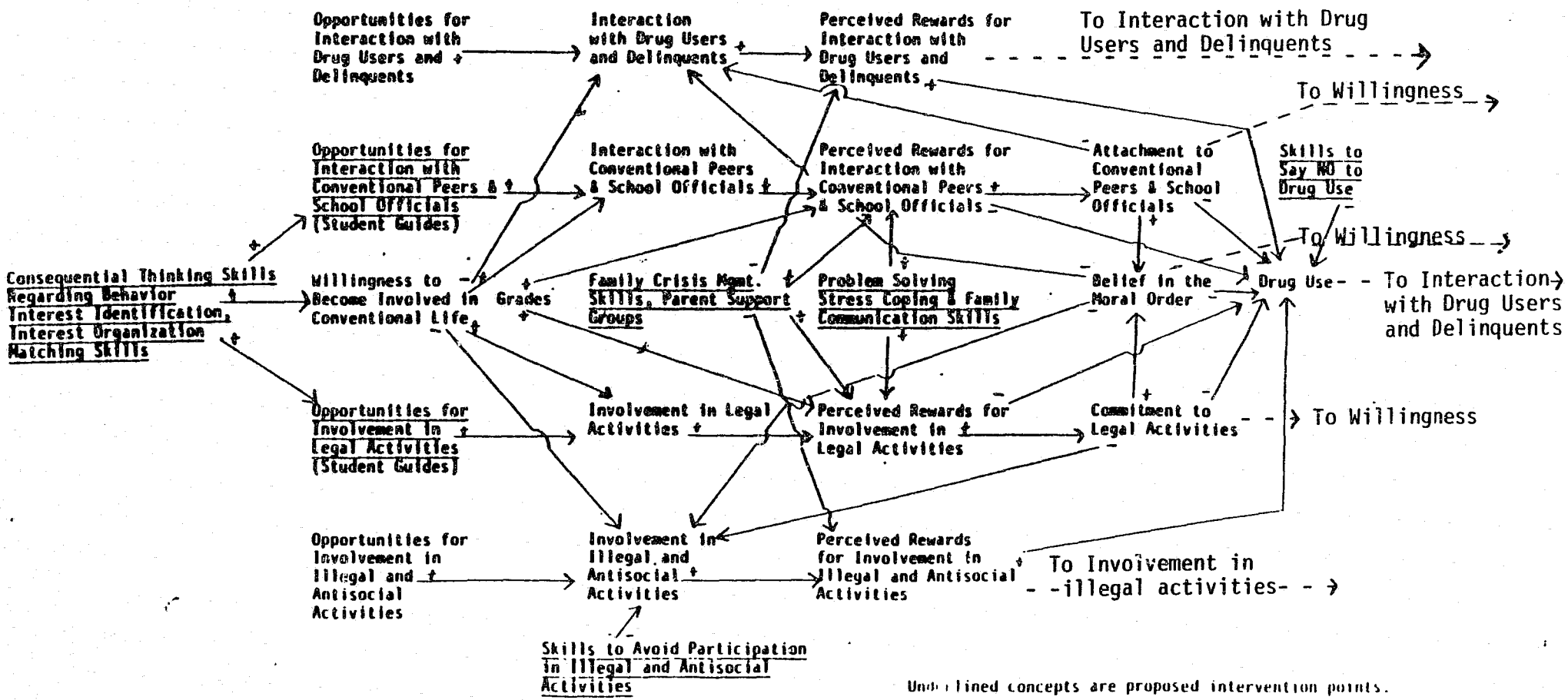
Underlined concepts are proposed intervention points.

FIGURE 3
THE SOCIAL DEVELOPMENT MODEL OF ANTISOCIAL BEHAVIOR
ELEMENTARY SCHOOL PERIOD



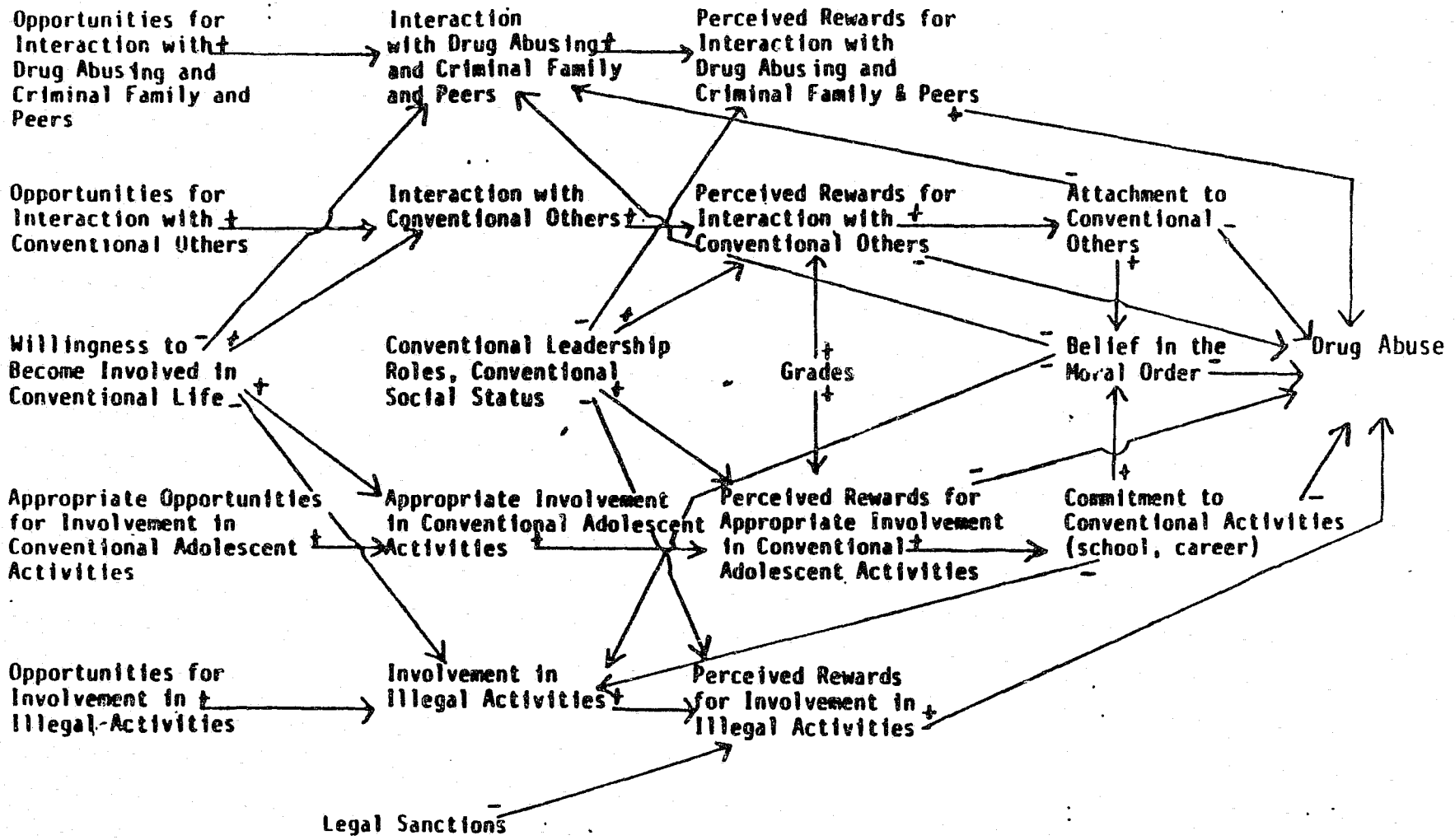
Underlined concepts are proposed intervention points

FIGURE 4
THE SOCIAL DEVELOPMENT MODEL OF ANTISOCIAL BEHAVIOR
MIDDLE SCHOOL PERIOD



Underlined concepts are proposed intervention points.

FIGURE 5
THE SOCIAL DEVELOPMENT MODEL OF ANTISOCIAL BEHAVIOR
HIGH SCHOOL PERIOD



Underlined concepts are proposed intervention points.