The Social Development Model:
A THEORY OF ANTISOCIAL BEHAVIOR

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ABSTRACT: This chapter presents a theory of antisocial behavior, the social development model, which organizes the results of research on risk and protective factors for delinquency, crime, and substance abuse into hypotheses regarding the development of antisocial and prosocial behavior. The social development model is grounded in tests of prior criminological theory. It hypothesizes similar general processes leading to prosocial and antisocial development, and specifies submodels for four specific periods during childhood and adolescent development.

Theoretical Considerations

The social development model seeks to explain a broad range of distinct behaviors ranging from the use of illegal drugs to homicide. Crime, including violent and nonviolent offending and drug abuse, is viewed as a constellation of behaviors subject to the general principles incorporated in the model. By considering evidence from research on the etiology of both delinquency and drug abuse, it is possible to identify general constructs that predict both types of behavior and to use this knowledge in specifying predictive relationships in the development of antisocial behavior.

As used here, the terms delinquency and drug use refer to behaviors. All behaviors are subject to influence from a variety of forces. The same principles, factors, or processes that influence one behavior should predict other behaviors. At the least, this suggests that a theory of antisocial behavior should be able to predict both drug use and criminal behavior, whether committed by children or adults. More ambitiously, it suggests a search for universal factors, mechanisms, or processes that predict all behavior. This implies a general theory. Gottfredson and Hirschi (1990), for example, have proposed "A General Theory of Crime," which attributes all criminal

Preparation of this chapter was supported in part by grants from the National Institute on Drug Abuse.
behavior to a single theoretical construct: low self-control. In contrast, developmental psychopathologists call for holistic developmental paradigms of learning, building on notions of hierarchical integration that explicitly recognize the importance of the developing organism’s behavioral feedback on its own development (Cicchetti, 1990).

Our goal is to explain and predict the onset, escalation, maintenance, deescalation, and cessation or desistance from patterned behaviors that are of concern to society, namely, crime and illegal drug use. These behaviors, which constitute antisocial behavior as the term is used here, have in common the fact that they are outside the normative consensus regarding acceptable social behavior. We seek to predict antisocial behavior as viewed from the social order. This requires an understanding of how both prosocial and antisocial patterned behaviors evolve in the social order. Given this knowledge, it is possible to hypothesize factors or processes that explain normatively disapproved as well as approved patterned behaviors. The social development model, by seeking to predict and understand both prosocial and antisocial behavior, attempts to identify general processes of human behavior.

Because delinquency and drug use typically are initiated in childhood or adolescence, and because an early onset of both predicts maintenance as well as diversity, seriousness, and persistence in crime and drug use, the social development model specifies causal processes in childhood and adolescence. Because criminal behavior persists for some into early adulthood, and because drug use and drug problems continue to increase into early adulthood (Anthony & Cohler, 1987), the general theory also predicts the maintenance and cessation of crime and drug use in adulthood, although specific developmental models for adulthood are not included in this chapter. (See Farrington & Hawkins, 1991, for a report of the power of social development constructs to predict onset, frequent involvement, and desistance from officially recorded crime. See Catalano & Hawkins, 1985, for a description of the theory of crime maintenance and cessation in adulthood.)

Before this theory of antisocial behavior is presented, the relevance of a developmental model and the importance of including empirical evidence on risk and protective factors in constructing the theory require discussion.

Developmental Perspective

Developmental theories of antisocial behavior have been advocated (Loeber & LeBlanc, 1990), and several criteria for such theories have been advanced. It has been suggested that developmental theory should take
into account evidence of "reciprocal effects," that is, the likelihood that past behaviors affect future attitudes and behaviors and that patterned behavior development takes place through social interactions over time (Shaw & Bell, 1992; Thornberry, 1987). For example, there is evidence that belief in the legitimacy of the moral order inhibits the initiation of minor offending, and there is also evidence that involvement in minor delinquent behavior affects belief in the legitimacy of the moral order (Agnew, 1985). Developmental theory should seek to specify how these reciprocal relationships evolve over time. Additionally, Sameroff (1990) and Shaw and Bell (1992) have suggested that developmental theory should be "transactional," specifying how behavior outcomes involving more than one participant and not attributable to either participant alone arise from repeated social interactions. For example, in the social development model, bonding between a mother and child is thought to result from processes of interaction involving both participants. The model specifies processes through which such bonding develops, thereby meeting the transactional criterion for developmental theory.

Finally, it has been suggested that developmental theories of antisocial behavior should be "transformational," specifying how developmental changes in behavior arising from sources other than interaction take on forms not shown in previous stages (Shaw & Bell, 1992). Transformational theory would explicitly identify developmentally specific behavioral outcomes indicative of antisocial behavior during different periods of development and identify the socializing units expected to influence behavior during different developmental periods. There is evidence that different patterns of delinquency and drug use occur at different developmental stages. For most youth, initiation of delinquency occurs in early adolescence, peaks from ages 15 to 17, and declines thereafter (Wolfgang, Thornberry, & Figlio, 1987). For drug use, the usual age of initiation is slightly later and continues to increase until the early 20s, after which prevalence rates decline (Elliott, in press). Drug problems appear to reach their peak during the period from 18 to 29 (Anthony & Cohler, 1987).

There is evidence that different patterns of involvement in these behaviors have different etiological origins (Kandel, 1982) and are associated with different outcomes (Newcomb & Bender, 1988; Shedler & Block, 1990). The factors leading to occasional involvement are distinct from factors leading to serious and persistent delinquency or the regular use of illicit drugs (Kandel, Simcha-Fagan, & Davies, 1986; Kaplan, Martin, Johnson, & Robbins, 1986; Robbins & Przybeck, 1985; Simcha-Fagan, Gersten, & Langner, 1986). Further, there is evidence that there are common as well
as distinct predictors for initiation, maintenance, and desistance (Elliott & Ménard, 1992, this volume; Farrington & Hawkins, 1991; Menard & Huizinga, 1990). Thus, theory must confront the empirical evidence that predictors of onset, maintenance, and desistance of delinquency and drug use may differ in degree, kind, and period of salience. At the same time, theory must address the evidence that, over the course of development, factors associated with different units of socialization have different predictive power. Moreover, theory should be able to specify causal pathways whereby influences from different social units interact in the etiology of behavior. For example, studies of adolescent delinquency find that parental influences are less strongly predictive of adolescent delinquent behavior than is involvement with delinquent peers (Elliott, Huizinga, & Agerton, 1985). However, poor parental monitoring of children who are age 10 is predictive of antisocial peer involvement by children at age 12 (Dishion, Patterson, Stoolmiller, & Skinner, 1991), suggesting that good family management practices may moderate early involvement with antisocial peers in predicting antisocial behavior. Theory should specify how interactions across time and units of socialization predict behavior.

The social development model posits general processes by which bonding and behavior evolve. At the same time, the model recognizes that the socializing contexts or units in which these processes occur change in salience and importance developmentally as children enter first the family and preschool environments, then the elementary school environment, and so on. This allows for specification of domain- and behavior-specific indicators of the general model constructs appropriate at different developmental periods.

Risk and Protective Factors

There is a growing body of knowledge regarding risk and protective factors for involvement in delinquent behavior and drug use. It is clear empirically that multiple biological, psychological, and social factors at multiple levels in different social domains—that is, within the individual and in the family, school, peer group, and community—all contribute to some degree to the prediction of delinquency and drug use. Risk factors for drug abuse and criminal behavior include community norms favorable to these behaviors, neighborhood disorganization, extreme economic deprivation, family history of drug abuse or crime, poor family management practices, family conflict, low family bonding, parental permissiveness, early and persistent
problem behaviors, academic failure, peer rejection in elementary grades, association with drug-using or delinquent peers or adults, alienation and rebelliousness, attitudes favorable to drug use and crime, and early onset of drug use or criminal behavior. (For reviews, see Hawkins, Catalano, & Miller, 1992b; Loeber, Stouthamer-Loeber, Von Kammen, & Farrington, 1991; Simcha-Fagan et al., 1986).

Investigators have also noted variability in responses to risk exposure and have sought to identify protective factors that enhance the resilience of those exposed to high levels of risk and protect them from undesirable outcomes. Three broad categories of protective factors against stress in children have been identified: (1) individual characteristics, including resilient temperament, positive social orientation, and intelligence (Radke-Yarrow & Sherman, 1990); (2) family cohesion and warmth or bonding during childhood; and (3) external social supports that reinforce the individual's competencies and commitments and provide a belief system by which to live (Garnezy, 1985; Werner, 1989). As distinct from risk factors, protective factors are hypothesized to operate indirectly through interaction with risk factors, mediating or moderating the effects of risk exposure (Hawkins et al., 1992b; Rutter, 1990).

The challenge for theory is to specify clearly the mechanisms by which identified risk and protective factors for drug abuse and crime interact in the etiology of these behaviors. Relationships across social structures and levels of analysis must be specified if community, family, school, peer, and individual effects are all to be considered in a general theory of antisocial behavior. As Bursik (this volume) points out, given the number of observed empirical predictors and the large number of possible functional alternatives for the relationships among these variables, specification of the relationships in a model must proceed theoretically. To some extent, risk and protective factors' developmental periods of salience and their covariation have been established, but theory specification forces a choice among a host of plausible rival hypotheses regarding the relationships among the factors. Further, as Thornberry (this volume) points out, citing evidence from several longitudinal investigations, antisocial behavior itself can affect levels of social bonding. Theories must take into account the possibility of reciprocal effects between prior behavior and subsequent levels of predictor variables (such as social bonding) in predicting any form or level of involvement in antisocial behavior beyond initiation.

In fields ranging from embryology to developmental psychopathology (Cicchetti, 1990), research has shown that contextual forces serve to orga-
nize individual development. Moreover, behavioral response to environment itself affects future development. Behavior is the dynamic result of and contributor to development.

The preceding evidence on risk and protective factors and development argues for theoretical specifications that account for the empirical evidence on risk and protective factors, including mechanisms for cross-level effects, period of salience, and effects of behavior on later levels of predictors as well as on later behaviors. These considerations suggest the importance of a developmental theory of delinquency and substance abuse that hypothesizes pathways to different forms of antisocial behavior and identifies causal mechanisms in etiological processes.

**The Social Development Model**

**Key Features**

The social development model incorporates these key features:

1. **Inclusion of both delinquency and drug use.** Both delinquency and drug abuse are predicted by the theory.
2. **Developmental perspective.** Four distinct, developmentally specific submodels incorporate notions of age-specific problem and prosocial behavior. The theory identifies salient socialization units and etiological processes for each of four phases of social development: preschool, elementary school, middle school, and high school. The phases are separated by major transitions in the environments in which children are socialized; they are not conceived as stages of cognitive or moral development (Kohlberg, 1969, 1976; Piaget, 1965). Transitions from the home environment to elementary school and from the relatively self-contained classrooms of elementary school to the modularized environments of middle school are nearly universally experienced transitions accompanied by shifts in the balance of influence among socializing units of families, schools, and peers. The four submodels delineate specific predictors for each developmental period. The theory describes reciprocal processes of causation between developmental periods in which behaviors at one period are expected to affect subsequent social development processes.
3. **Risk and protective factors.** The theory organizes the evidence regarding risk and protective factors for delinquency and substance use by hypothesizing the theoretical mechanisms through which these factors operate to increase or decrease the likelihood of antisocial behavior.
Theoretical Background

The social development model is consistent with a continuing tradition of integrated theory in the field of criminology (cf. Elliott et al., 1985; Hepburn, 1976; Messner, Krohn, & Liska, 1989). It seeks to synthesize into a coherent model those propositions from existing theories of deviance that have the strongest empirical support in order to achieve greater explanatory and predictive power than that of the separate theories from which the model is derived.

At present, no single theory of deviant behavior has survived an empirical test without disconfirmation of some hypothesized relationships between concepts. This has led to debate concerning the optimum path for future theoretical progress (Cressey, 1979; Elliott et al., 1985; Hirschi & Gottfredson, 1988; Matsueda, 1988; Messner et al., 1989). The theory outlined here is a synthesis of control theory (Briar & Piliavin, 1965; Hindelang, 1973; Hirschi, 1969; Kornhauser, 1978; Nye, 1958; Reiss, 1951), social learning theory (Akers, 1977; Akers, Krohn, Lanza-Kaduce, & Radosevich, 1979; Bandura, 1973, 1977; Burgess & Akers, 1966; Conger, 1976, 1980; Krohn, Lance-Kaduce, Radosevich, & Akers, 1980), and differential association theory (Cressey, 1953; Matsueda, 1982, 1988; Sutherland, 1973; Matza, 1969). Control theory is used to identify causal elements in the etiology of drug abuse and delinquency, as well as in the etiology of conforming behavior. Social learning theory is used to identify processes by which patterns of conforming and antisocial behavior are extinguished or maintained. Differential association theory is used to identify parallel but separate causal paths for prosocial and antisocial processes.

Assumptions

When integrative or synthetic theories are developed, careful attention must be paid to the underlying theoretical assumptions so that theoretical propositions are not based on conflicting assumptions. The first assumption of this theory is that human beings are satisfaction seekers and that human behavior depends upon acts of perceived 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 are restrained or controlled by ability, opportunity, and experience. One's skills and opportunities largely determine one's
capability of achieving or even perceiving self-interest. In addition, experience provides empirical information on which to judge the likely impact of one’s contemplated next action (Tallman & Ihinger-Tallman, 1979). Together these three elements tend to set limits on and direct the exercise of “pure” self-interest in the Hobbesian sense. Like differential association theory, the social development model assumes that this process of constrained self-interest operates in both prosocial and antisocial encounters.

Second, it is assumed that a normative consensus exists in society to the extent that everyone knows the “rules of the game.” This level of agreement on rules makes group life possible, yet does not “preclude conflicts of value or interest” (Kornhauser, 1978, p. 41). Matsueda (1988) points out that this assumption is also incorporated in differential association theory. However, despite shared understanding of the rules of the game, there is “variation in the strength and content of both prosocial and antisocial motives, beliefs and justifications. . . . Variations in these applications, and not necessarily an oppositional normative system, give rise to normative conflict and constitute the crucial elements of definitions favorable to law violations” (Sutherland, 1973, p. 125). In the social development model there is room for agreement about society’s basic rules as well as for shifts in the strength of individuals’ normative beliefs.

Overview of the Theory

It is hypothesized that children must learn patterns of behavior, whether prosocial or antisocial. They learn these patterns of behavior from socializing units of family, school, religious and other community institutions, and peers. It is hypothesized that the underlying socialization follows the same processes of social learning whether it produces prosocial or problem behavior. Children are socialized through processes involving four constructs: (1) perceived opportunities for involvement in activities and interactions with others, (2) the degree of involvement and interaction, (3) the skills to participate in these involvements and interactions, and (4) the reinforcement they perceive as forthcoming from performance in activities and interactions. When these socializing processes are consistent, a social bond develops between the individual and the socializing unit. Once strongly established, this social bond has power to affect behavior independently of the four social learning processes, by creating an informal control on future behavior. This control inhibits deviant behaviors through the establishment of an individual’s stake in conforming to the norms and values of the socializing unit.
Following control theory, the social bond consists of attachment to others in the social unit, commitment to or investment in lines of action consistent with the socializing unit, and belief in the values of the unit. The deletion of involvement from Hirschi's original four elements of the bond is supported both empirically (Elliott, Huizinga, & Agecon, 1982; Kempf, 1993; Thornberry, 1987) and theoretically as discussed below. Bonding is expected to influence individuals' behavior choices by entering into their calculation of the costs and benefits of any particular behavior to self-interest. If individuals engage in behavior that is inconsistent with the standards and norms of those to whom they are bonded, the bond may be threatened if the behavior is exposed. Research on prosocial bonds has demonstrated an inhibitory effect on antisocial behavior (cf. Brook, Brook, Gordon, Whiteman, & Cohen, 1990; Brook, Gordon, Whiteman, & Cohen, 1986; Kempf, 1993; Krohn & Massey, 1980; Marcos, Bahr, & Johnson, 1986; Newcomb & Bentler, 1988).

It is hypothesized that the behavior of the individual will be prosocial or antisocial depending on the predominant behaviors, norms, and values held by those to whom the individual is bonded. This approach departs from the traditional control theory perspective, which asserts no causal role of bonding to antisocial others in the etiology of delinquency, characterizing relationships among delinquents as cold and brittle (Hirschi, 1969). However, much evidence suggests that the relationships among delinquents and drug-involved youth are not always characterized by negative affect (Agnew, 1991; Cairns, Cairns, Neckerman, Gest, & Gariepy, 1988; Gillmore, Hawkins, Day, & Catalano, 1992; Giordano, Cernkovich, & Pugh, 1986). Moreover, recent evidence on adolescent use of tobacco and alcohol indicates that attachment to parents interacts with parents' own use of alcohol and tobacco in predicting adolescents' use of these drugs. High attachment to parents who use alcohol or tobacco legally leads to drug use behavior consistent with parents' use, not necessarily to the legal alternative of no use by the adolescent (Foshee & Bauman, 1992). This indicates that bonding to a family involved in drug use can be positively associated with drug-using behavior.

The assumption of a normative consensus in society implies that prosocial modes of action will ordinarily be preferable to illicit ones. However, the theory hypothesizes that social learning processes can produce bonds of attachment, commitment, and belief in illicit action and that such action can provide a valued alternative to prosocial action. Although the theory assumes normative societal consensus, following Sutherland, it allows for variation in the strength of the individual's beliefs. Antisocial behavior can develop in three ways despite normative consensus.
1. Antisocial behavior results when prosocial socialization breaks down, that is, when people are denied the opportunities to participate in prosocial life or their skills are inadequate for prosocial performance to produce reinforcement, or when the environment fails to reinforce them consistently for effective prosocial performance. This conforms to Hirschi’s (1969) theory of social control. Antisocial behavior results when low levels of prosocial bonding develop, providing few internal constraints against antisocial behavior.

2. Antisocial behavior results, even in the presence of prosocial bonding, when the individual’s calculation of costs and benefits, under the assumption of constrained self-interest, shows a profit for the illicit action. Even individuals who are bonded to prosocial norms may be exposed to situational inducements to commit crime or use drugs (Matza, 1964). Even one bonded to society may engage in deviant behavior if the potential cost seems low (if, for example, the risk of detection by valued prosocial others is perceived as low) and the benefit seems high.

3. Finally, antisocial behavior results when a child is bonded to immediate socializing units of family, school, community, or peers who hold antisocial beliefs or values. When youth are bonded to parents who use drugs or are engaged in crime, to schools or communities that tolerate drug use and dealing, or to peer groups that have antisocial practices, it is likely that they will behave in a manner consistent with the norms and values of these groups. Thus, antisocial bonding provides a third direct path to antisocial behavior. This is consistent with differential association theory.

As shown in Figure 4.1, two general pathways are hypothesized in the model: a prosocial pathway and an antisocial pathway. Identical processes are hypothesized to operate on these paths. We believe this conception better represents the differential association mechanism (Agnew, 1991; Matsueda, 1982; Sutherland, 1973). Rather than define a ratio concept (the ratio of prosocial to antisocial definitions or behaviors), we have opted to measure both pro- and antisocial elements. This conception may better reflect the reality of the social encounters of developing children, which may include both pro- and antisocial influences. The social development model suggests how these encounters lead to bonds that have an inhibitory or promotional effect on antisocial behavior. When the preponderance of influences are prosocial, prosocial behavior results. When the preponderance of influence are antisocial, antisocial behavior results. Many youth experience both pro- and antisocial influences and engage in both types of
Figure 4.1. The social development model of antisocial behavior – general model.
behavior. For example, currently most youth use alcohol before they are legally permitted to do so, and most youth engage in minor delinquency. The social development model allows for this variation in experience by including separate paths whose processes of reinforcement, learning, and bonding are independent but influence one another over time.

The General Model

Three variables exogenous to the theory proper are included in the social development model: (1) position in the social structure, (2) constitutional or physiological factors, and (3) external constraints. The effects of these three variables on antisocial behavior are hypothesized to be fully mediated by other social development model constructs.

The first exogenous construct is an individual's position in the social structure defined by socioeconomic status, race, gender, and age. Whereas age and gender appear to have consistent relationships to crime (Gottfredson & Hirschi, 1990), studies linking socioeconomic status (Tittle & Meier, 1990) and race (Elliott, Huizinga, & Menard, 1989) to drug use and crime have produced contradictory results. The social development model hypothesizes that there is no direct effect of position in the social structure on antisocial behavior. Rather, the theoretical mechanism is indirect, through its impact on perceived opportunities for prosocial and antisocial involvements and interactions, as well as through the external constraints construct. Depending on the measure, one's position in the social structure is expected to increase or decrease the perceived opportunities variables. For example, coming from a low socioeconomic background is hypothesized to increase one's opportunities for antisocial involvement due to the higher prevalence of visible crime in low-income neighborhoods. Since more males commit delinquent acts, being male is expected to increase one's opportunities to engage in antisocial interactions and involvements. Being African-American may be associated with increased perception of opportunity for delinquent involvement due to higher rates of reported involvement in serious crime, but it may also be associated with decreased perception of opportunity for interaction with drug users due to lower rates of substance use compared to European-Americans (Elliott et al., 1989). Position in the social structure is also expected to increase or decrease external constraints, depending on the measure. For instance, socioeconomic status has been found to have a positive effect on parental management as measured by positive discipline and monitoring (Larzelere & Patterson, 1990). Several studies have found that girls are more strictly supervised than boys
THE SOCIAL DEVELOPMENT MODEL (Hill & Atkinson, 1988; Singer & Levine, 1988). Younger children are less likely to be arrested by police, and there is some indirect evidence that sanctions increase with age in the deterrence literature, since fear of the legal risks of crime and certainty of punishment increase with age (Cusson & Pinsonneault, 1986; Grasmick & Bursik, 1990). Finally, there is also evidence that African-American families are more likely to provide positive, proactive management techniques than European-American families (Catalano et al., 1992).

The second exogenous construct comprises the individual's constitutional or physiological traits, which are hypothesized to be mediated by the constructs of prosocial and antisocial opportunities and skills, and prosocial reinforcement. Cognitive ability influences the development and acquisition of reading and math skills as well as verbal skills. Children with low cognitive ability may find alternative methods of obtaining reinforcement, such as resorting to aggressive behavior, instead of using skilled prosocial interpersonal interaction (Moffit, 1983). Similarly, individuals with low central and autonomic nervous system arousal levels may not perceive or recognize as significant rewards the routine positive responses that accompany prosocial interaction and involvement. Smiles, thank-you's, 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 thrill seeking may be required for these individuals to perceive rewards because of their lowered physiological responsiveness to stimuli. Another example is the individual with Attention Deficit Disorder (ADD), who may not recognize opportunities for prosocial interaction and involvement. 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 is less able to take advantage of existing opportunities. Individual constitutional factors are thus included in the model as exogenous factors whose effect on the etiology of conforming and deviant behavior is mediated through prosocial and antisocial perceived opportunities and skills, and prosocial perceived reinforcements.

The third exogenous concept involves the clarity, consistency, and immediacy of external constraints. External constraints are formal and informal social reactions to behavior (Nye, 1958) that affect the degree of reinforcement one perceives for involvement in behavior. Formal external constraints are exercised by police or other officials, while informal external constraints include "disapproval, ridicule, ostracism, banishment, the supernatural, and similar techniques used by informal groups or by the
society as a whole" (Nye, 1958, p. 7). These external constraints are not the punishments or rewards one receives but, rather, the explicit clarity of rules, laws, and norms, and the degree of consistency and immediacy of the sanctions imposed. **External constraints are hypothesized to affect perceived reinforcement for both prosocial and antisocial behavior.** The formal and informal constraints to which children are exposed vary with developmental period. For example, early in life family management practices represent the dominant external constraints. These include normative regulation (rules made by parents), supervision or monitoring, and discipline or punishment. The clearer the family rules are, the more consistent the monitoring, and the higher the likelihood of positive or negative consequences for behavior that follows or violates the rules, the more reinforcement will be perceived as likely for involvement in prosocial behavior, and as less likely for involvement in problem behavior. In addition, the clearer and more consistent the external constraints, the more likely they are to lead to skill development. This later effect is derived from social learning theory (Akers et al., 1979). The same principles apply to the exercise of external constraints in other socializing institutions encountered as young people mature, including schools and communities.

It is likely that other relationships exist among the exogenous variables beyond that between external constraints and position in the social structure. However, with this exception, relationships among the model’s exogenous variables are not specified here.

One path in the model specifies the processes that encourage prosocial behavior and one path specifies processes that encourage antisocial behavior. Each path is characterized by similar causal processes. In each path two dimensions of each variable are included: participation or involvement in activities and social interaction with others. Both dimensions are considered in the definition of the general constructs of the model along its two paths. The prosocial path is described first.

The first endogenous construct on the prosocial path consists of perceived opportunities to participate in the prosocial order. As noted, perceived opportunity is expected to be influenced by the exogenous factors of position in the social structure and individual constitutional factors. Inclusion of opportunities in the model does not presume the means/ends discontinuity hypothesis of strain theory (Merton, 1957). Rather, it is simply hypothesized that for prosocial involvements to occur, youth must perceive opportunities for such involvements. Perceived opportunity is hypothesized to be of causal importance, distinct from the actual number of
different activities or interactions in which it is possible to participate. For example, some high schools may offer intramural sports activities, clubs in chess, fencing, and debate in addition to varsity athletics, while others offer only varsity athletics. The presence of such opportunities to participate in prosocial activities is a necessary condition for participation, but it is not sufficient to engage individuals, for they must know the opportunity is available and must also know how the opportunity satisfies their personal interests. In the absence of this knowledge and experience, the opportunity is powerless itself to influence behavior. Rather than expand the model to include mechanisms specifying relationships between "actual" and "perceived" opportunities, "perceived opportunities for involvement and interaction in prosocial activities" is specified as the causal factor. This avoids the problem of cross-level analysis and specifies how the context is important in influencing the behavior of the individual (Bursik, this volume).

Perceived opportunities for prosocial interaction and involvement affect the level of prosocial interaction and involvement. 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. In the present synthesis, prosocial interaction and involvement is viewed as a necessary, though insufficient, precondition to development of prosocial bonding. Involvement was not empirically supported in Hirschi's (1969) nor more recent research (Kempf, 1993) as an element of the social bond that prevents antisocial behavior. The present theory asserts that involvement and interaction precede the formation of attachments and commitments. This alteration in the causal paths appears consistent with the 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). In summary, prosocial interaction and involvement is viewed as a behavioral variable that is antecedent to and predicts the development of the social bond of attachment and commitment.

The development of attachments and commitments to the prosocial world depends on the extent to which prosocial involvements and interactions are positively reinforced. It is hypothesized that attachment to prosocial others and commitment to prosocial lines of action result only when prosocial interactions and involvements provide, in sum, positive reinforcement to individuals (Conger, 1976, 1980; Hundleby, 1986). This is hypothesized to be true whether the rewards are social or nonsocial. Thus,
perceived rewards (positive reinforcements and punishments) have been added to the interaction and involvement path as intervening variables between involvement/interaction and attachment/commitment. As with perceived opportunities, we focus on the perception of rewards. What is actually rewarding varies with individual preferences, and the perception of an activity or interaction as rewarding involves assessment of several dimensions of the involvement. For example, a youth employed at a low-skilled food service job may dislike the job, hate having peers see him there, and think the wages are too low. Measurement of perceived rewards includes multiple sources of possible reinforcements beyond wages alone. Perception of rewards also incorporates experience over multiple encounters.

If attachment and commitment depend on the level of perceived reinforcement for involvement, then factors that enhance reinforcement and perception of reinforcement should indirectly affect the development of attachment and commitment. Emotional, cognitive, and behavioral skills, including the ability to identify, express, and manage feelings, as well as skills to control impulses, cope with stress, read and interpret social cues, solve problems and make decisions, understand behavioral norms, perform tasks such as academic work, and communicate verbally (W. T. Grant Consortium on the Promotion of Social Competence, 1992) all should increase the probability that one will experience rewards for prosocial involvement and interaction. Therefore, the individual’s skills for prosocial interaction and involvement affect the level of reinforcement perceived as forthcoming from prosocial interaction and involvement. This may be a direct relationship with perceived reinforcements or may moderate the relationship between involvement and rewards. The actual form of the relationship is an empirical question; we have chosen to model it as a direct effect as shown in Figure 4.1.

Commitment and attachment to prosocial activities and people directly affect the development of belief in the moral validity of society’s rules of conduct (the law and prosocial norms). Belief in the moral validity of society’s rules of conduct is viewed as internalization of the standards for behavior of persons and institutions to which one is bonded. Once internalized, these standards become part of the individual’s value system and help determine which activities the individual views as morally acceptable. Belief is thus an internal constraint that is directly affected by attachment to prosocial others and commitment to prosocial activities. Belief is hypothesized to directly decrease the probability of antisocial behavior.

The social development model hypothesizes recursive relationships within developmental periods, but provides a mechanism for reciprocal
relationships among constructs across developmental periods. These relationships will be mentioned here since they are part of Figure 4.1, but they will be more fully described after presentation of the developmentally specific models. On the prosocial path, perceived rewards for prosocial interaction and involvement, attachment and commitment to prosocial others and activities, and belief in the moral order are all hypothesized to affect one's perception of opportunities for prosocial interaction and involvement in the next developmental period. On the antisocial path, perceived rewards for problem behavior and interaction with antisocial others, attachment and commitment to antisocial others and activities, belief in antisocial values, and antisocial behavior itself are hypothesized to have a direct positive effect on perceived opportunity for problem behavior and antisocial interactions. Antisocial behavior is expected to have a direct negative effect on perceived opportunity for prosocial interaction and involvement, and a direct positive effect on perceived opportunity for antisocial interaction and involvement in the next developmental period.

The prosocial path inhibits deviance through strengthening bonds to prosocial others and activities. However, as shown in Figure 4.1, the model predicts the promotion of antisocial behavior as well as its inhibition. Therefore, the model includes a pathway of processes leading to the initiation, escalation, and maintenance of drug use and crime. Specification of this additional path makes this theoretical model less elegant than pure formulations of control theory, which assert that nonconformity is a natural state that need not be learned. However, research has indicated that control theory's assertion of "natural" motivation to deviance is empirically inadequate (Hirschi, 1969, p. 230). An adequate theory of deviant behavior must explain how deviant behavior emerges and is maintained. Crime and drug use are, to some degree social behaviors; that is, they are behaviors learned from others (Elliott & Menard, this volume). The principles of reinforcement hypothesized by social learning theorists are hypothesized in the social development model to be important in the process of learning deviant behaviors (Akers et al., 1979), just as they are in the process of developing prosocial behaviors. The path to drug use and criminal behaviors includes the same social processes as those inhibiting these behaviors.

The existence of prosocial and antisocial paths with similar social processes operating to produce bonding requires that careful distinction be made between interactions and involvements on the two paths. If an individual is employed as a counter employee at a fast food restaurant, this may be initially classified as prosocial involvement. However, if that individual finds ways to provide friends with free food from the restaurant, or encoun-
ters opportunities to buy drugs from other employees, the involvement may contribute to the antisocial path. It is therefore important to measure the extent to which both prosocial and antisocial opportunities are available to the individual, even in the same social unit.

The first endogenous concept on the antisocial path consists of perceived opportunities for antisocial involvement and interaction. If an individual does not perceive opportunities to interact with drug users and delinquents or to become involved in problem behaviors, actual interaction and involvement are not possible. The greater the perceived opportunities, the more actual interaction and involvement are expected.

As with the prosocial pathway, at this point we have combined into a single construct the two concepts of interaction with others engaged in antisocial behaviors and prior involvement in problem behavior. These are both types of behavior themselves. Both are expected to have similar effects in the model. Problem behavior as defined here is continuing involvement in the specific antisocial behavior measured in the prior developmental period. The specific behavior included is distinct from the antisocial behavior predicted in the current developmental period. As explicated in more depth in the specific submodel descriptions to follow, it is recognized that in some individuals, antisocial behaviors build along a traceable trajectory (see Loeber, this volume; Loeber & Le Blanc, 1990). Difficult early temperament predicts behavior problems, including aggressive behavior in early childhood, and aggressive behavior predicts the early initiation of both drug use and delinquent behavior. Early initiation is itself a predictor of more frequent and unspecialized involvement in later delinquent and drug-using behaviors. In late adolescence and early adulthood, more frequent involvement in a wide range of drug-using and criminal behaviors predicts more negative outcomes, such as alcoholism or drug abuse or other problems (arrests, DUI citations), associated with drug-using or criminal behavior. Importantly, however, significant numbers of children do not pass through these stages of development of antisocial behavior. For example, only about 40% of primary school children identified as aggressive became involved in frequent criminal or drug-using behavior (Loeber, 1991; Kellam, Ensminger, & Simon, 1980).

The challenge for theory is to explain both the development of antisocial behaviors over time and the desistance from such behaviors. Viewing prior antisocial behavior as problem behavior in the model allows inclusion of the empirically supported phenomenon of behavioral continuity, while avoiding the tautological and theoretically trivial claim that antisocial behavior predicts later involvement in the same antisocial behavior. At the
same time, it allows specification of the mechanisms by which problem behaviors in one developmental period fail to escalate into antisocial behaviors in another. In sum, the empirically observed links among antisocial behaviors at different developmental periods are included in the model through the concept of involvement in problem behavior, which indicates behaviors distinct from and thought to be developmentally prior to the antisocial behaviors predicted in each subsequent developmental period.

Interaction with others involved in the antisocial behavior predicted during the period is included at the same point in the model as prior problem behavior. Research on predictors of drug use and crime has consistently found strong correlations between association with others engaged in antisocial behaviors and involvement in crime and drug abuse (Brook et al., 1990; Dembo, Farrow, Schmeidler, & Burgos, 1979; Elliott et al., 1985). Elliott and Menard’s (this volume) data indicate that in the preponderance of cases in which temporal ordering can be established, interaction with others engaged in delinquent behaviors predicts delinquent behavior. Initial illicit interactions and involvements in problem behavior are hypothesized to increase the likelihood that an individual will perceive these interactions and involvements as rewarding. Perception of rewards is conditioned by the costs of legal and other sanctions as well as by benefits resulting from the behavior itself. Direct paths are hypothesized from perceived rewards for illicit interactions and involvements to attachment and commitment to antisocial others and activities. As discussed earlier, a direct path is also hypothesized to involvement in antisocial behavior.

Again, skills for interaction/involvement are hypothesized to directly affect perceived rewards for problem behavior and interaction with antisocial others. Thus, social and cognitive skills can be useful in enhancing reinforcement for involvement in both prosocial and antisocial groups and activities.

If one perceives that interactions with drug users and delinquents and involvement in problem behavior are rewarding, attachments to these individuals and commitments to these behaviors are predicted to develop. These attachments and commitments are hypothesized to directly positively affect involvement in drug use and crime. Further, attachment and commitment to antisocial others and activities are hypothesized to lead to internalized normative approval of antisocial behavior. As with belief in the prosocial moral order, belief in illicit lines of action can develop. Clearly, individuals can generate behavior norms that advocate antisocial behaviors as when those engaged in revolutionary actions advocate violence. Sim-
ilarly, in the autobiography of one organized crime figure, there is evidence of an understanding of societal rules and norms, but these are perceived as superseded by “the rules of war,” which condone the use of violence among “soldiers” (Bonanno, 1983). The development of belief in antisocial values provides another path to antisocial behavior. This path is hypothesized to be associated with frequent and prolonged involvement in antisocial behavior. The extent of such belief is variable in individuals and society.

Although bonds to prosocial others are generally preferred, bonds are hypothesized to develop among those engaged in antisocial behaviors (Colvin & Pauly, 1983). Thus, it is not bonding per se that inhibits deviance, but rather the norms, values, and beliefs of those to whom one is bonded that either inhibit or increase deviance.

As indicated in Figure 4.1, the social development model hypothesizes three direct predictors of antisocial behavior from the antisocial path. The direct link from each predictor indicates a different etiological path to antisocial behavior. Drug use and delinquency are hypothesized to be directly caused by perceived rewards for antisocial interaction and involvement in problem behavior, attachment and commitment to antisocial others or lines of action, and belief in antisocial values.

The first path to antisocial behavior is chosen simply for the rewards an individual perceives as forthcoming from the behavior. The personal calculation of reward is sufficient to produce antisocial behavior when low bonding to prosocial others results in low perceived costs of antisocial behavior (Hirschi, 1969) or in the presence of high bonding, when the perceptions of risks of detection, and thus, costs of antisocial behavior are perceived as low.

Attachment to those engaged in antisocial behavior and commitment to antisocial lines of action also directly increase antisocial behavior. Bonds of attachment and commitment may form among those engaged in antisocial behaviors and these attachments and commitments contribute to delinquent and drug involvement. These hypotheses are supported by Agnew’s findings that delinquent friends have “the greatest effect on delinquency when the adolescent is attached to these friends, spends much time with them, feels they approve of his or her delinquency and feels pressure from them to engage in delinquency” (1991, p. 64). Further, commitment to a deviant line of action is hypothesized to develop when deviant involvement and interaction consistently produce profit of rewards over costs, such that one decides to forego prosocial involvements for antisocial ones. This type of commitment does not imply value reversal in Kornhauser’s sense; rather,
it may imply rationalizations or acceptance of deviance when "preferred alternatives are out of reach" (Kornhauser, 1978, p. 243).

Finally, antisocial behavior is encouraged by the internalization of a set of norms favorable to criminal involvement as illustrated by the belief structure advanced by those engaged in organized crime (Bonanno, 1983).

Developmentally Specific Models

Specific models for four developmental periods from birth through high school are presented in Figures 4.2–4.5. While the general model identifies the processes hypothesized to operate across developmental periods, the developmentally specific models specify the social units that are involved in the processes of each developmental period.

During the preschool period (Figure 4.2), position in the social structure is indicated by education and socioeconomic status of the child's household(s), together with the family's and child's race and the child's gender. In this period, low interpersonal, educational, and financial resources of caretakers increase risk for delays in development of cognitive skills, for school failure, and for child psychopathology (Barnard, 1992). Constitutional biological factors, such as preterm birth, small birth weight for age, or prenatal alcohol or drug exposure, negatively affect cognitive skill development (Barnard, 1992; Chasnoff, 1991; Howard, Beckwith, Rodning, & Kropenske, 1989; Rutter, 1985). Constitutional psychological factors, such as positive temperament and positive social orientation, are expected to have their greatest effects during this period (Werner & Smith, 1992) through their influence on enhancing early skill development. The preschool child's opportunity for prosocial involvement is indicated by degree of access to prosocial adult careproviders. For example, a family with four or fewer children spaced at least 2 years apart has been shown to predict resilience in at-risk children (Werner & Smith, 1992). These are indicators of greater opportunity for access to adult careproviders during the preschool period. As reflected in Figure 4.2, during this developmental period the use of such indicators may be preferable to seeking measures of the child's perception of opportunities. Prosocial involvements include the nature and extent of interaction with prosocial family members and child care providers. The child's nonverbal cue-giving skills, responses to social interactions with caregivers, and subsequently locomotion, verbal communication, and self-help skills appear important during this period (Barnard et al., 1989; Chasnoff, Griffith, MacGregor, Dirkes, & Burns, 1989; Werner
Figure 4.2. The social development model of antisocial behavior – preschool period.
As the social development processes unfold in the preschool period, the family is of primary importance as a socializing unit (Egeland & Farber, 1984; Loeber & Dishion, 1983; McCord, 1979; Rutter, 1987; Sameroff & Seifer, 1990). In addition, the day care, preschool or alternative care environment can also affect social development if the child is involved in these settings (Berrueta-Clement, Schweinhart, Barnett, Epstein, & Weikart, 1984; Johnson, 1988; Ramey, Bryant, Campbell, Sparling, & Wasik, 1988). During this period, external constraints consist of family management practices and the child management practices of child care providers. The clearer, more consistent, and more immediate the positive reinforcement and moderate negative consequences are, the more likely children are to develop prosocial skills, and the more likely they are to perceive reinforcement for prosocial involvement and interaction. Further, as shown in the cross-path link, it is hypothesized that parental monitoring and discipline decrease the likelihood that children perceive positive reinforcement from involvement in problem behaviors during early childhood.

The social development process begins during this period when the mother picks up the infant and holds it in her arms, creating an involvement or interaction. Even at this early point developmentally, the child's skills in social interaction influence the reinforcement he or she will receive from this encounter. If the child attends to the mother, returns the mother's gaze, and responds with indications of pleasure, this is a skilled performance in the interaction. If the child stiffens, cries, or fails to attend to the mother, this is a less skilled performance. This response is less likely to be reinforced by the mother, and the interaction is less likely to be perceived as reinforcing by the child. The mother's own response also affects the child's perception of reinforcement from the interaction. If the mother's affect is flat or her response is otherwise disturbed (perhaps as a result of a mental disorder, Sameroff & Seifer, 1990), or if she is unable to attend to or recognize the child's performance as a result of drug abuse, even skilled performances by the child may not be reinforced. However, if the mother enjoys the child's attention or expression and responds in a nurturing manner, reinforcement is more likely to be perceived by the infant. It is through these numerous transactional interactions that feelings of attachment to mother begin to develop and grow in the infant (Ainsworth, Behar, Water, & Wall, 1978; Morisset, Barnard, Greenberg, Booth, & Spicker, 1990). The social units in which these processes occur on the prosocial path include non-drug using, noncriminallly involved household members; members of extended support systems that participate in the child's socialization; and other caretakers. The antisocial path includes
drug-using, criminally involved, and violent family and other caretakers. It is hypothesized that drug use in the home or child care setting and interpersonal conflict/violence are the most salient environmental factors in this period, predisposing an individual toward antisocial behavior, especially when children are attached to these people. The belief in antisocial values construct is not included in this period since it is not likely to develop during this period. The antisocial behavior predicted in the preschool period includes aggressive behavior and other conduct disorders.

Figure 4.3 presents the model for the elementary school period. During this period, the school joins the family as an important socializing environment. Teachers and classroom peers join parents, siblings, and other adult caretakers as important agents of socialization. Thus, external constraints in the school environment, specifically classroom management practices and school policies, join family management practices as important indicators of this exogenous variable. Again the clearer, more consistent, and more immediate the reinforcement and consequences, the more rewards are perceived for involvement, the more prosocial skills are learned, and the fewer the perceived positive rewards for interacting with drug users and delinquents.

During this period in the family, children can be provided opportunities to contribute to the family's maintenance and governance systems. For instance, children can be provided with opportunities to care for younger siblings. Werner and Smith (1992) found that involving older siblings in caring for younger siblings was a protective factor in inhibiting problem behavior of the older sibling. The greater these opportunities, the greater the family involvement. If parents teach children skills to perform effectively, the children will be more likely to perceive the experience as rewarding. Further, researchers have demonstrated that greater time spent on academic tasks, in part, to effective classroom management has been associated with greater gains in achievement (skill) and higher grades (a reward for skillful academic performance) (Brophy & Good, 1986). Again, as in the previous period, this is a transactional process between caregivers and children in which mutual skills and reinforcement are important in shaping behavior.

The social development process at school is influenced by the ways schools and teachers structure opportunities for children to be involved in school. These include opportunities to be involved in academic tasks as well as in organizational maintenance, governance, nonacademic activities, and in interaction with classmates. The more schools and classrooms provide such opportunities, the greater the likelihood that children will be-
Figure 4.3. The social development model of antisocial behavior – elementary school period.
Active participation in the classroom has been associated with protection from involvement in problem behavior (Dryfoos, 1990). Perceived rewards include grades, the manner in which teachers provide both reinforcement and punishment, and perceived support and rejection by peers. Academic failure and peer rejection — costs of prosocial involvement — have been found to predict later involvement in antisocial behavior (Hawkins et al., 1992b). Supportive teachers who reinforce effort have been found to protect children from later involvement in problem behavior (e.g., see Hawkins & Lam, 1987).

Involvement with non-drug using and nondelinquent peers is hypothesized to increase in importance toward the end of elementary school, although parents and teachers remain the most significant influences on behavior during this period.

On the antisocial path, interaction may be with drug-using or criminally involved family members, school personnel, or, toward the end of this period, peers. Aggressive behaviors and other conduct or behavior problems at home or school are indicators of involvement in problem behaviors during this period. These appear to be nonspecific predictors of both delinquency and drug use initiation. The onset of drug use and delinquent behaviors are the antisocial behavioral outcomes predicted during the elementary school period. The relative weight of prosocial and antisocial influences will determine whether children begin to use drugs and engage in delinquent behavior during this period. It is hypothesized that prosocial bonding inhibits involvement with others who engage in drug use and/or delinquent behavior, as well as the initiation of these behaviors, and that bonding to drug users and delinquents will increase the likelihood of drug use and delinquency initiation.

Figure 4.4 presents the model for the middle/junior high school period. During this period, peers increase in importance as a socialization force (Elliott et al., 1985). External constraints during this period include peer norms and behaviors, school policy and classroom management practices, family management practices, and, for the first time, the legal codes and police and court enforcement of these codes. As youth mature and initiate delinquent and drug-using behaviors, the response of the legal system becomes a potentially more important external constraint. Smith and Garnett (1989) found that arrest encourages the termination of criminal behavior for novice offenders and reduces future rates of offending for experienced offenders, suggesting that the external constraint of arrest may operate to reduce perceived rewards for criminal involvement and inhibit criminal behavior as hypothesized. On the prosocial path, prosocial others...
Figure 4.4. The social development model of antisocial behavior – middle school period.
include non-drug using or noncriminally involved family members and school personnel as before. However, during this period non-drug using and noncriminal peers have an increased influence. Interaction with drug users and delinquents is indicated by the extent of interaction with drug-using or criminal family members as well as other children and adults engaged in criminal or drug-using behaviors.

The increase in peer influences during the middle school period has important implications for both prosocial and antisocial behavior. As children begin the process of individuation from family, peer interaction becomes an important socializing force. Middle school children are exposed to a variety of peers with both prosocial and antisocial behavior patterns. The norms and values of peers with whom one associates have a large impact on behavior that persists through young adulthood. During this period, peer bonding increases in importance and can have a positive or negative impact on behavior depending on the preponderance of prosocial or antisocial influence represented by a child's peer network. On the antisocial path, the predictive power of antisocial peer bonding increases during this period.

During this period, perceptions of rewards for antisocial involvement include those associated with drug and delinquency initiation. These perceptions of rewards include not only the results of applications of legal sanctions and other informal external constraints, but also the direct rewards and risks perceived as forthcoming from the behaviors themselves. Perceived physical and psychological effects of drugs following drug use initiation have been shown to be important determinants of the maintenance of drug use (Bailey, Flewelling, & Rachal, 1992). The antisocial outcomes predicted during this developmental period are the diversity and frequency of drug use and delinquent behaviors.

Figure 4.5 presents the model for the high school period. By the time youth enter this period, many of the risk and protective factors for drug use and delinquency have been established. For example, early and persistent antisocial behaviors (Blumstein, Farrington, & Moitra, 1985; Ensminger, Kellam, & Rubin, 1983; Farrington, 1978, 1985; Loeber & Dishion, 1983; Robins, 1979), poor parental child management techniques (Farrington, 1979a; Loeber & Dishion, 1983; Robins, 1979; West & Farrington, 1973), and poor educational attainment (Blumstein et al., 1985; Farrington, 1979b; Loeber & Dishion, 1983; Polk et al., 1981; Wolfgang, Figlio, & Sellin, 1972) are all evident before high school. During the high school period the model is characterized by factors relevant to the maintenance of prosocial or antisocial behaviors.

The external constraints construct is characterized by peers, school, the
Figure 4.5. The social development model of antisocial behavior – high school period.
The referent group for the prosocial path consists of non–drug using and noncriminal family, peers, school personnel, and community members. Although peers are increasing in importance, evidence suggests that parents remain an important force in socialization throughout high school especially concerning decisions such as drug use, sex, and contraceptive use (Munsch & Blyth, 1993). The referent groups for the antisocial path include drug users and those criminally involved. The actual and perceived rewards and costs of prosocial and antisocial involvement and interaction 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 delinquency decrease for adolescents who are experimenting with antisocial behavior as a means of adolescent individuation, and who have not been exposed to high levels of early risk factors. In contrast, those who experience few rewards for prosocial interaction and involvement, have high levels of early risk factors, and are involved with drug use and delinquency are hypothesized to be more likely to become chronic delinquents. Poor grades, low social status, and lack of access to prosocial leadership roles are likely to characterize their background. The antisocial behavior outcomes in the high school period include a high rate of delinquency and drug abuse indicated by the frequency and persistence of these behaviors as well as by problems associated with the behaviors.

These four submodels of preschool, elementary, middle school, and high school social development have been constructed as recursive models. However, the social development model hypothesizes reciprocal relationships among constructs across developmental periods. If the four models are laid out end to end, prosocial and antisocial influences from one period affect variables at the beginning of the causal chain in the next. In this sense, each submodel is a phase or period, whose outcomes affect the levels of the beginning variables in the next phase or period. This notion of recurring phases allows the construction of models that account for reciprocal effects, that is, mutual causal influences among antisocial behaviors and hypothesized causes (Thornberry, 1987, this volume). To illustrate, the effects of early initiation of delinquency on prosocial bonding and on interaction with delinquent peers are both included in the cross-period transition from the elementary period to the middle school period. Initiation of antisocial behavior is hypothesized to directly increase perceived opportunities for interaction with drug-using and criminal family, peers, and school personnel, and to directly decrease perceived opportunities for prosocial interactions and involvements. In this way, the process of
prosocial interaction and bonding is affected by prior antisocial behavior through this indirect path. This use of recurring model phases has the advantage over instantaneous reciprocal models of maintaining the ability to make assertions about the temporal priority of predictor variables and to specify mechanisms by which behaviors affect bonding. This is important, if theory is to meet the basic criterion for asserting causality, that is, if one wishes to claim that the predictor variable could have caused the particular outcome of interest. Models that solve the problem of mutual causal influences through the specification of instantaneous reciprocal effects do not appear to us to meet the test of temporal priority of the causal variable.

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 yet 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: (1) the level of prosocial and antisocial bonding to social units established during the previous period, (2) the rewards for prosocial and antisocial behaviors that the child perceives as a result of experiences in the prior period, and (3) the level of antisocial behavior manifested in the prior period.

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 number of prosocial opportunities children will perceive in the new environment. In addition, it is expected that the greater the perceived rewards from interaction and involvement with prosocial family and caregivers, the more likely the child will be to perceive opportunities to interact and become involved with prosocial others in the elementary school setting as well as in other prosocial units during this period. Conversely, the greater the bonds to drug users and family members involved in violence or conflict, and the greater the perceived rewards from interaction and involvement with antisocial family members during the preschool period, the more likely children will be to perceive opportunities to interact with antisocial peers, family members, and other adults during the elementary school period. Moreover, if children have engaged in aggressive behavior in the preschool period, they will be less likely to perceive new encounters as opportunities for prosocial involvement in the elementary period. This in turn should predict lower levels of prosocial involvement, with these children finding opportunities to engage in aggressive and other problem behaviors and failing to perceive opportunities to engage in prosocial beh-
haviors in the classroom or on the playground. Through this process, antisocial behavior diminishes prosocial bonds of attachment, commitment, and, ultimately, belief. The transitions from elementary to middle school and from middle to high school are expected to reflect similar dynamic relationships across periods. Note that across each transition antisocial involvement is expected to have a negative indirect effect on prosocial involvements and interactions, prosocial reinforcement, prosocial bonds of attachment and commitment, and belief in the legitimacy of laws and norms.

These four developmental models have been presented to demonstrate the utility of the social development model in summarizing cumulative processes during periods in which there is a degree of continuity in the constellation of socializing units affecting the child. Major changes in the amount of time spent in different units of socialization occur following entry to elementary school, middle or junior high school, and high school. These are predictable transitions between periods of somewhat greater stability.

However, it is also possible to conceptualize other transitions in the socialization environment as points at which a new phase of the model is begun. The factors affecting the outcomes of transition from one developmental period to another can also be expected to follow other transitions or life changes such as a residential move, school transfer, or separation from parents. It is hypothesized that the outcomes of these additional transitions within a developmental period will be affected by the same factors that affect the outcomes of transitions between periods. Prior levels of bonding, the rewards the child perceives for prosocial and antisocial involvement and interaction as a result of experiences in the previous environments, and the extent of prior antisocial behavior will influence the extent to which the child becomes involved in prosocial or antisocial activities and interactions in the new environments following the transition.

We have suggested that each phase or period of the social development model is a causal process that recurs following transitions, with beginning variables affected by factors from the prior period. It is possible that phases endure for much shorter time periods and recur across much more frequent transitions than those discussed so far. For example, opportunities for involvement are experienced daily in the classroom. Opportunities for involvement in classroom activities are differentially provided by teachers moment by moment. Teachers wait longer for children who they believe to be intelligent (skilled) to answer questions than they do for children who they believe are less skilled. As experienced by elementary children, these are likely to be perceived as differences in opportunities. Children not
afforded opportunities for involvement in the classroom are not likely to perceive the classroom experience as rewarding. Opportunities and rewards are experienced in many such interactions each day. They are experienced in real time. The perceived opportunities and rewards for each incident of interaction or involvement should affect the developing child's degree of commitment and attachment to the social units in which the child is involved. Over the course of a day, the cumulative result of many rewarded interactions in the classroom should be to increase attachment and commitment to school among those with low attachment and commitment and to maintain high attachment and commitment to school among those with high attachment and commitment.

Commitment and attachment are more stable qualities than rewards. They are emotional and personal investments in social units themselves. The concept of investment implies a degree of stability and a future orientation, that is, the promise of future involvement in the same lines of action in which one has previously been involved. Such investments are built up through each day's involvements and rewards, but the cumulative weight of the investment is more than the sum of that day's rewards. Prosocial attachments and commitments are attitudes. They change more slowly than daily experience. Temporally, opportunities and rewards are experienced moment by moment, while social bonds of attachments, commitments, and beliefs are built up over time from these momentary interactions. These social bonds themselves influence future perceptions of opportunities for both prosocial and antisocial involvement.

There is a need for explicit consideration of the time frame or duration of effects expected for specific constructs as well as the time frames over which constructs are measured in testing theory. This is an issue with which we are only beginning to wrestle. In addition to etiological studies with annual or semiannual measurements in which we and many of our colleagues engage, useful tests of the social development model could also be undertaken in short-term studies seeking to investigate the effects of single events, cumulative daily experiences, and involvements and rewards measured over longer time frames in predicting levels and changes in attachment and commitment over shorter and longer intervals.

Implications for Developmentally Specific Intervention Design

Theory provides a basis for the design of approaches for preventing and reducing delinquent behavior and drug abuse. When the etiological path-
ways to antisocial behavior are specified, it is possible to identify intervention points to interrupt the causal process. Interventions to prevent or reduce antisocial behavior, most basically conceived, seek to interrupt the causal processes that lead to antisocial outcomes and strengthen the processes that lead to prosocial outcomes. This conception of intervention has several implications:

1. Each of the causal elements in the social development model is a potential focus of intervention.
2. Multiple interventions may be required because there are multiple direct and indirect paths to antisocial behavior.
3. Interventions to interrupt the causal processes in the development of antisocial behavior should include components seeking to promote processes that encourage prosocial behavior as well as to interrupt causal processes that encourage antisocial behavior.
4. The influence of prior bonding and behavior on future behavior suggests the importance of intervening early in development.
5. Interventions should be developmentally appropriate. They should affect the primary socializing units operative in the particular period targeted.
6. Transitions hold potential for interrupting causal pathways.

Using the social development model, interventions can be conceptualized in terms of their hypothesized effects on constructs and processes of the model. Specification of the model provides a set of guides for exploring the effects of intervention by examining effects on each construct along the hypothesized causal pathway to antisocial behavior. In the following pages, illustrative interventions at each of the four developmental periods are described from this perspective.

Early in the preschool period when children are infants, interventions that promote close physical proximity of mother and child should promote interaction and the development of bonding. Anisfeld and her colleagues (Anisfeld, Casper, Nozyce, & Cunningham, 1990) tested the use of infant carriers (the Snugli) in an experimental study with low-income inner-city mothers. In social development terms, this intervention increased opportunities for parent-child interaction when compared with an alternative intervention (the provision of an infant seat where the baby could be safely put down). By increasing time spent in close proximity, both the mother’s monitoring of the baby and her responsiveness to the baby’s cues also should have been enhanced, potentially strengthening external constraints and reinforcements for interaction. The social development model hypo-
The social development model hypothesizes that rewarded interaction should increase bonding (attachment during this period). The infant carrier intervention produced higher rates of secure attachment when compared with the infant seat (Anisfeld et al., 1990).

High-quality early childhood education provides a second illustration of intervention consistent with the social development model during the preschool period. Early childhood education programs seek to enhance the cognitive and social skills of young children and often to teach parents effective methods for child management and for reinforcement of their children's learning. From a social development perspective, early childhood education intervenes by enhancing children's skills for prosocial interaction and involvement and parents' understanding and use of external constraints and reinforcements appropriate to the developmental level of the child. Early childhood education for low-income urban children has resulted in higher levels of cognitive skill development, enhanced school achievement, increased rates of high school graduation, and less involvement in delinquency (Berrueta-Clement et al., 1984), suggesting consequences of the intervention on constructs all along the social development pathways.

In the elementary period, as the school classroom emerges as an important domain of social development, the use of effective methods of management and teaching in the classroom becomes important in determining the extent to which opportunities and rewards for interaction and involvement are provided and for determining the degree to which cognitive, interpersonal, and self-management skills are learned by the developing child. Thus, teacher training in effective management and instruction techniques such as proactive classroom management (Doyle, 1986; Hawkins, Catalano, & Associates, 1992a), effective teaching strategies (Brophy & Good, 1986; Walberg, 1986), and cooperative learning (Slavin, 1990) is an intervention consistent with social development hypotheses. In field experimental studies based on the model, use of these methods by elementary teachers in a multiethnic urban school district revealed positive effects on constructs along the social development pathways. Students in intervention classrooms in grades 1 to 4 perceived more opportunities for prosocial involvement and interaction and were more attached and committed to school and less likely to have initiated alcohol use or delinquency by fifth grade than their counterparts in control classrooms (Hawkins et al., 1992c).

A brief discussion of proactive classroom management techniques illustrates how an intervention to train teachers in methods consistent with the
social development model is viewed from the perspective of the theory. In this intervention, teachers are trained to teach students the rules and expectations for the classroom in the first few weeks of the school year. These rules and routines provide efficient methods of handling necessary but nonacademic tasks. The result of this explicit intervention to set clear expectations for classroom behavior is that more time is spent on academic tasks, providing more opportunities for active involvement with academic materials. Teaching these routines proactively results in clear and explicit external constraints. In this intervention, teachers also learn to use the method least disruptive to the flow of instruction to maintain control in the classroom when behavior problems begin. For example, instead of calling attention to disruptive behavior as a first response, teachers use techniques such as moving toward students who are disruptive while continuing to teach. This response often extinguishes the behavior without calling attention to the perpetrator or singling out that individual for stronger discipline and without cost to the class in academic work time. In social development terms, this component of proactive management minimizes the costs of classroom participation and increases proactive involvement in the classroom.

During the elementary period, parents and adult caretakers remain important in social development. Thus, developmentally appropriate parent training is another intervention consistent with the model during this period (Fraser, Hawkins, & Howard, 1988). An example of a parent-training curriculum designed to address the constructs in the social development model during the late elementary years is Preparing for the Drug (Free) Years (Hawkins et al., 1988). This curriculum trains parents in methods to increase children's opportunities for involvement in the family through holding regular family discussions of family management, health, maintenance, and financial issues. It teaches parents to involve children actively in contributing roles in the family in these areas, thereby increasing proactive involvement in the family. It also teaches parents skills for responding to unwanted behaviors from children in ways that express affect appropriately and are behaviorally specific. The curriculum emphasizes the importance of establishing clear and explicit family policies on drug use as a means of establishing clear external constraints. In this intervention, children and parents also learn to resist antisocial influences by assertively refusing opportunities for involvement in antisocial behavior. The curriculum also provides information to parents regarding evidence that involving children in their own alcohol or other drug use increases the children's risk for early initiation of alcohol and other drugs (Ahmed,
Bush, Davidson, & Iannotti, 1984) and encourages them to minimize involvement of children in their own alcohol or other drug-using behaviors. In sum, in social development terms, Preparing for the Drug (Free) Years is designed to enhance opportunities for prosocial involvement by expanding family roles and holding family meetings; reduce perceived costs of family involvement due to anger and conflict; set external constraints on drug use; enhance skills to minimize involvement with drug-using peers; and decrease children’s interaction with family members when the family members are using alcohol or other drugs (Hawkins, Catalano, & Kent, 1991).

Middle school entry is a transition to an environment characterized by increased levels of drug use, school misbehavior, and delinquency. The structure of involvement with peers and teachers changes from a self-contained classroom with a single group of 25 to 35 classmates to modularized subject-oriented classes and daily exposure to an increased number and variety of students. During this period, a primary focus of preventive interventions with school, peers, and family should be to increase opportunities for interaction with prosocial peers and involvement in prosocial activities. Prosocial involvement is viewed as important during this period because youth without such involvement may seek alternative activities and groups for status attainment and social rewards. Children who become involved with peers engaged in delinquency and substance use are more likely to initiate substance use and illegal behavior.

The School Transitional Environment Program (Felner & Adan, 1988) is an example of a middle school intervention consistent with the social development model. This intervention seeks to ease the transition from elementary to middle school for children who are marginally bonded to school at the end of the elementary period. This intervention has been associated with increases in academic performance and decreases in absenteeism and dropout (Felner, Weissberg, & Adan, 1987). Replication studies have found less depression, substance abuse, and delinquency among program students than control students (Felner & Adan, 1988). The program makes structural changes in middle schools by keeping students in homerooms and core classes as a group during their first year of middle school. This provides increased opportunities for interaction with a limited number of students and reduces students’ exposure to older students, whose behavioral norms are expected to be more favorable toward antisocial behavior. Homeroom teachers contact parents to explain the nature of the program and to encourage parents to contact their students’ teachers. This increases home–school interaction and enhances the potential for external constraints, since home and school are linked in monitoring stu-
udents' behavior. Further, homeroom teachers provide a single source of contact for guidance and administrative activities, increasing interaction and consistency of interaction. In theoretical terms, external constraints are strengthened as well as prosocial interaction and potential rewards for interaction. Increased interaction with a limited set of teachers and students has the potential to enhance bonding. Enhanced external constraints have the potential to increase perceived rewards for prosocial and decrease perceived rewards for antisocial behavior.

During the middle school period, the incidence and prevalence of drug use and delinquency increase as do opportunities for interaction with others engaged in antisocial behavior (Elliott & Huizinga, 1989; Johnston, O'Malley, & Bachman, 1991). Therefore, from a social development perspective, interventions that seek to decrease interactions with others engaged in drug use or delinquency, interventions that seek to enhance perceptions of the salient costs associated with antisocial behavior, and interventions that enhance external constraints against antisocial behavior all appear warranted. A number of drug abuse prevention interventions have focused on goals consistent with these theoretically derived foci. In these classroom-based interventions, students have been trained to identify and resist influences to use drugs (Botvin, 1986) and have been encouraged, through various efforts to portray social, health, and other costs of drug use, to view drug use as costly and socially unacceptable (Hansen, Johnson, Flay, Graham, & Sobel, 1988; Perry, 1986). The Midwestern Prevention Project included these elements and has shown reductions in tobacco and alcohol use among middle school students (Pentz et al., 1989a, 1989b). The program consisted of a school component to teach social influence resistance skills and to examine the prevalence of use and risks associated with use, a parent component to support school activities and inform parents about substance abuse, and a mass media component to publicize the program and its message on the prevalence and risks associated with substance use. In social development terms, the program sought to enhance skills, reduce interaction with drug users, and enhance external constraints through peer, parent, school, and community messages regarding the risk of substance abuse.

During the high school period, delinquent behavior peaks and begins to decline for most individuals, while rates of substance use, school dropout, and pregnancy increase (Elliott, in press; Johnston et al., 1991). Providing the skills to successfully negotiate the proliferating behavioral choices while avoiding antisocial behavior is an appropriate intervention goal during this
period. Social competence promotion is an intervention that addresses this goal. Using skills-training techniques, students of all racial/ethnic backgrounds and socioeconomic and risk statuses have been successfully trained to develop skills that are hypothesized to promote prosocial involvement (Elias & Weissberg, 1990; Jones, 1988; Presseisen, 1988). The W. T. Grant Consortium on the School-Based Promotion of Social Competence (1992) recommends that social competence promotion interventions during the high school period include training in recognizing the consequences of risky behaviors, protecting self from negative outcomes, planning a career, initiating and maintaining cross-gender friends and romantic relationships, making a realistic academic plan, being responsible at social events and parties, and understanding the importance of government and community service. In social development terms, these skills are hypothesized to directly enhance the probability of successful performance in prosocial settings, decrease antisocial interactions, and indirectly increase the development of prosocial commitment and attachment through the promotion of skillful performance in prosocial relationships at school and in the community.

As briefly illustrated here, the social development model provides a theoretical foundation for the design of diverse interventions at different developmental stages to promote prosocial bonding and reduce antisocial behavior. The theory provides guidelines for intervention by specifying constructs that serve as intervention targets and by ensuring that interventions focused on different constructs and interventions in different domains work compatibly toward consistent, theoretically specified goals.

Summary

This chapter has presented a theoretical statement of the social development model. The model is grounded in empirically supported theories of deviance. It is a general theory of human behavior that recognizes the importance of development by specifying submodels for different developmental periods during childhood and adolescence. Further, the model uses empirical evidence on risk and protective factors in its construction, employing a path that encourages antisocial behavior and a path that inhibits antisocial behavior. The authors are currently engaged in a series of theory-driven etiological studies and field experiments to explore the model's empirical adequacy and power (Catalano & Hawkins, 1985; Hawkins et al., 1992c; Hawkins & Lam, 1987; Hawkins, Catalano, & Wells, 1986;
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THE SOCIAL DEVELOPMENT MODEL


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