
Rochester Youth Development Study

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Working Paper No. 1
A Longitudinal Examination
of the
Causes and Correlates of Delinquency

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INTRODUCTION

This paper describes in general terms the theoretical and methodological approach of the Rochester Youth Development Study. Funded by the Office of Juvenile Justice and Delinquency Prevention as part of its Research Program on the Causes and Correlates of Delinquency, the study attempts to describe and explain the development of both pro-social and anti-social behavior patterns among a sample of high-risk adolescents.

CONCEPTUAL FRAMEWORK

Theoretically, the research is guided by an interactional theory of delinquency (Thornberry et al., 1986; Thornberry, 1987). Interactional theory starts with the assumption that, while contemporary theoretical models such as social control theory (Hirschi 1969), social learning theory (Akers 1977), and integrated models that combine them into a broader body of explanatory principals (Elliott et al., 1979; 1985) have substantially advanced our understanding of the causes of delinquency, they suffer from three fundamental limitations. First, they rely on unidirectional rather than reciprocal causal structures. By and large, current theories ignore reciprocal effects in which delinquent behavior is viewed as part of a more general social nexus, affected by, but also affecting, other social factors. Second, current theories tend to be nondevelopmental, specifying causal models for only a narrow age-range, usually during midadolescence. As a result, they fail to capitalize on developmental patterns to explain the initiation, maintenance and desistance of delinquency. Finally, contemporary theories tend to assume uniform causal effects throughout the social structure. By ignoring the person's structural position they fail to provide an understanding of the sources of initial variation in both delinquency and its presumed causes. In combination, these limitations have led to theories that provide incomplete and, at times, even misleading models of delinquency causation.

The interactional theory of delinquency developed in this project addresses and attempts to respond to each of these limitations. It pays particular attention to the first issue,

recursive versus reciprocal causal structures, since the development of dynamic models is essential to represent accurately the interactional settings in which delinquency develops.

The basic premise of the model is that human behavior occurs in social interaction and can therefore best be explained by models that focus on interactive processes. Rather than viewing adolescents as propelled along a unidirectional pathway to one or another outcome (i.e., delinquency or conformity) it argues that adolescents interact with other people and institutions and that behavioral outcomes are formed by that interactive process. For example, the delinquent behavior of an adolescent is formed in part by how he and his parents *interact* over time, not simply by the child's perceived, and presumably invariant, *level* of attachment to parents. Moreover, since it is an interactive system, the behaviors of others, for example, parents and teachers, are influenced both by each other and by the adolescent, including his or her delinquent behavior. If this view is correct then interactional effects have to be modelled explicitly if the social and psychological processes involved with delinquency are to be fully understood.

Interactional theory develops from the same intellectual tradition as the theories mentioned above, especially the Durkheimian tradition of social control. The fundamental cause of delinquency lies in the weakening of social constraints over the conduct of the individual. Unlike classical control theory, however, it does not assume that the attenuation of controls leads directly to delinquency. The weakening of controls simply allows for a much wider array of behavior, including: continued conventional action, failure as indicated by school dropout and sporadic employment, alcoholism, mental illness, delinquent and criminal careers or some combination of these outcomes. For the freedom resulting from weakened bonds to lead to delinquency, especially serious prolonged delinquency, an interactive setting in which delinquency is learned, performed and reinforced is required.

Given these basic premises an interactional model must respond to two overriding issues: first, how are traditional social constraints over behavior weakened and, second, once weakened how is the resulting freedom channelled into delinquent patterns. To address these

issues, the theory examines the interrelationships among six concepts: attachment to parents, commitment to school, belief in conventional values, associations with delinquent peers, adopting delinquent values and engaging in delinquent behavior. These concepts form the core of the model since they are central to social psychological theories of delinquency and have been shown repeatedly to be strongly related to delinquent conduct (see Elliott et al. 1985, Chapters 1-3 for an excellent review of this literature).

The first three concepts derive from Hirschi's version of control theory (1969), and represent the primary mechanisms by which adolescents are bonded to conventional, middle class society. When those elements of the bond are weakened behavioral freedom increases considerably. For that freedom to lead to delinquent behavior, however, interactive settings that reinforce delinquency are required. In the model those settings are represented by three concepts -- associations with delinquent peers, the formation of delinquent values, and the enactment of delinquent behavior -- all of which derive primarily from social learning theory.

For the purpose of explicating the overall theoretical perspective, these concepts are defined quite broadly. Attachment to parents, for example, includes the affective bond between parent and child, communication patterns, parenting skills such as monitoring and discipline, parent-child conflict and the like. Similarly, among the delinquency variables, association with delinquent peers includes the level of attachment to peers, the delinquent behavior and values of peers, and their reinforcing reactions to the adolescent's own delinquent or conforming behavior. While defined broadly here, the measurement of these concepts is much more specific and focuses on the subconcepts included within each conceptual area.

Theoretical Specification

The specification of the causal relationships among these variables is somewhat complex given the reciprocal nature of the model (see Thornberry, 1987). For the purpose of this discussion a schematic overview is all that is required (Figure 1) since attention is focused on three overarching theoretical issues addressed by the model, rather than the

detailed specification of anticipated causal effects. (One of the more specific models, relating to the causal processes associated with midadolescence, is presented in Figure 2.)

The first general issue concerns causal structure. Rather than adopting a recursive structure in which all causal variables are temporally ordered and delinquency is entirely an outcome variable, a nonrecursive structure allowing for reciprocal causal effects is employed. For example, rather than assuming that associating with delinquent peers leads to increased delinquent involvement but that delinquent involvement does not increase the likelihood of associating with delinquent peers, the typical specification found in the literature, interactional theory assumes that these variable mutually affect one another over time. In general, reciprocal effects such as this one seem to represent more accurately the manner in which delinquent behavior actually develops. Moreover, empirical findings (Thornberry and Christenson, 1984; Liska and Reed, 1985; and Burkett and Warren, 1987) indicate the value of reciprocal causal models in accounting for observed relationships.

The second issue concerns the development of delinquency over time. A developmental posture is adopted in which the salience of theoretical variables is seen to change considerably as the person matures. For example, the role of the family is much more important at relatively early ages and for the initiation or prevention of delinquency, while the role of peers is much stronger at middle and later adolescence and for the maintenance of delinquency. Also, some concepts (e.g., commitment to conventional activities like employment) enter the interactional setting at much later ages and help account for the rather marked changes in delinquent behavior that are generally observed. Although the explanatory model varies systematically over time to account both for the addition (or deletion) of causal factors and their changing salencies, the basic structure of the model is not altered. That is, the fundamental explanation of delinquency, the weakening of ties to conventional society and the reinforcement of delinquent behavior via reciprocal causal effects, remains constant.

The third general issue concerns the impact of social structural variables such as class and race on the genesis of delinquency. The process variables just discussed (see Figure 2)

are viewed as being systematically related to the person's position in the social structure. For example, lower class youth are likely to have different initial values on each of these variables, including the likelihood of delinquent behavior, than are youth from a middle class environment. Moreover, since the process variables are reciprocally related to each other, the different starting values generated by the social structure tend to reinforce each other over time to produce radically different expectations with respect to delinquent and criminal careers.

Summary: In brief, the interactional theory that guides this analysis is designed to respond to three basic limitations of contemporary theories. By adopting a reciprocal causal structure, a developmental posture and by linking process variables to position in the social structure, interactional theory hopes to offer a more comprehensive and accurate model of the causal network in which delinquency is located.

RESEARCH DESIGN

The previous section described the theoretical model that will be tested in this project. The present section provides an overview of the research design that will be used in the Rochester Youth Development Study.

Sampling

The sample will be drawn from the public school population of Rochester, New York and will consist of 1,000 seventh and eighth graders selected in Spring 1988. The sampling plan is designed to overrepresent youth who are at high risk of becoming serious delinquents.

To accomplish this, all of the neighborhoods of Rochester will be described in terms of crime rates (where offenses occur) and offender rates (where offenders reside). Students who reside in the highest crime areas, where exposure to delinquency is greatest, will be selected with certainty. The rest of the subjects will be selected with proportions equal to their area's contribution to the Rochester crime rate.

For the initial wave of data collection approximately 1,400 students will be selected to allow for non-contacts and refusals, and still yield an initial panel of 1,000. The actual number sampled will depend on the refusal rates observed in the pretest.

Sample Characteristics

The sample will consist of 750 males and 250 females to ensure an adequate representation of chronic offenders in the analysis. Examining the careers of chronic delinquents is a crucial issue for two reasons. The first is policy based; since the small number of chronic offenders account for such a disproportionate share of offenses, especially serious and violent offenses, it is important to understand more fully the development of their careers. The second is methodological; it is important to have a substantial number of serious offenders in the analysis as a point of contrast to the proportionately much larger group of trivial or nondelinquents so that important causal effects can be more easily observed.

Initial estimates suggested that a sampling plan evenly divided between males and females would accomplish this objective, but the rate of serious, chronic offending among females is sufficiently low that it is possible that even oversampling from high risk areas would not be sufficient. Thus the proportion of female subjects is reduced, but not eliminated entirely, since sex is one of the most powerful correlates of delinquency and it is important to understand more clearly than we do now the characteristics of female delinquents and whether causal processes are the same for males and females.

The selection criteria for females will be truncated so that subjects from the lowest delinquency areas will not be eligible for selection; only females in the medium to high risk areas will be included in the panel. Thus, the number of female delinquents may not be greatly reduced given these selection criteria.

With the exception of the elimination of females from the lowest delinquency areas the sample will accurately represent the population of seventh and eighth graders in Rochester public schools. That is, the probability of selection is known and the sample can be weighted to reflect the population.

Design

The research design is a seven-wave panel model. Each member of the sample will be interviewed at six-month intervals, near the beginning and end of each academic year, from Spring 1988 to Spring 1991. In addition to the youth interviews, the primary caretaker of each subject, usually the mother, will be interviewed at six-month intervals as well. Six-month lags were selected for the design to provide better bounding for the measurement of the primary variables, especially delinquency, and to provide more precise estimates of the expected reciprocal effects.

Whenever possible, student interviews will be conducted in the Rochester schools. All subjects who leave the Rochester schools during the course of the study will be followed and interviewed in appropriate settings. The first parental interview will be conducted in the home so that the project can be described to the parent and informed consent obtained. After the first wave, parent interviews will be conducted over the phone.

On an annual basis, questionnaire data, covering performance in school and behavioral problems, will be collected from the subject's teachers. Also, data on the youth and his or her family will be collected annually from the school, police, court, and other relevant agencies.

In general, the project's measurement strategy relies on personal interviews supplemented by official records where appropriate. Data collection will be as comprehensive as possible to provide a broad description of the major psychological, social and structural factors that can affect delinquent behavior. Many of the measures used in this project were developed in cooperation with the other two projects, in Denver and Pittsburgh, so that a set of core measures would be available for analysis. The identification of those core measures is one of the unique features of the research program that has the potential of providing a mechanism for replicating and cross-validating the results of each of the individual projects.

Data Analysis

The theoretical model here builds upon existing theory and research but is a somewhat innovative approach to theory construction in criminology. Conventional analytic techniques are, in general, inadequate to estimate this nonrecursive, processual model over time. To relate accurately the theoretical model, the research model, and the analytic model requires a sequential application of a variety of multivariate techniques.

The first analytic issue concerns the strategies used to scale the interview and official data. Scales for latent variables such as attachment to parents and commitment to school will be constructed using confirmatory factor analysis (see Long, 1983b; Joreskog, 1967, 1969). Confirmatory factor analysis can be used in an exploratory manner to improve the fit of the model (1983b:61). This is a very powerful technique which allows one to test for a specific theoretically-informed structure. The confirmatory factor model allows one to impose constraints upon the model which may be necessary for either theoretical or statistical reasons and is an important advantage of confirmatory factor analysis when compared to exploratory (principal components) factor analysis.

"Exploratory factor model's inability to incorporate substantively meaningful constraints, and its necessary imposition of substantively meaningless constraints, has earned it the scornful label of a garbage in/garbage out (GIGO) model" (Long, 1983b: 12).

The substantive analysis will focus on the development of multivariate models which describe the formation and maintenance of juvenile delinquency over the developmental process. The analysis will account for five special aspects of the data and the relations to be estimated.

First, cross-sectional models of the relationship between explanatory factors and delinquency will be modelled. Second, these cross-sectional models will be expanded to account for the hypothesized reciprocal relations among the process variables. Third, a panel analysis will be conducted which models the effects of variables measured at earlier time periods on process variables and delinquency at later time periods. The panel analysis will do

this while accounting for the reciprocal effects within the time periods mentioned in number two above. Fourth, the analysis will account for nonlinear relations between variables and the threshold effects which these nonlinear relations imply. Finally, the predictive adequacy of the models will be evaluated.

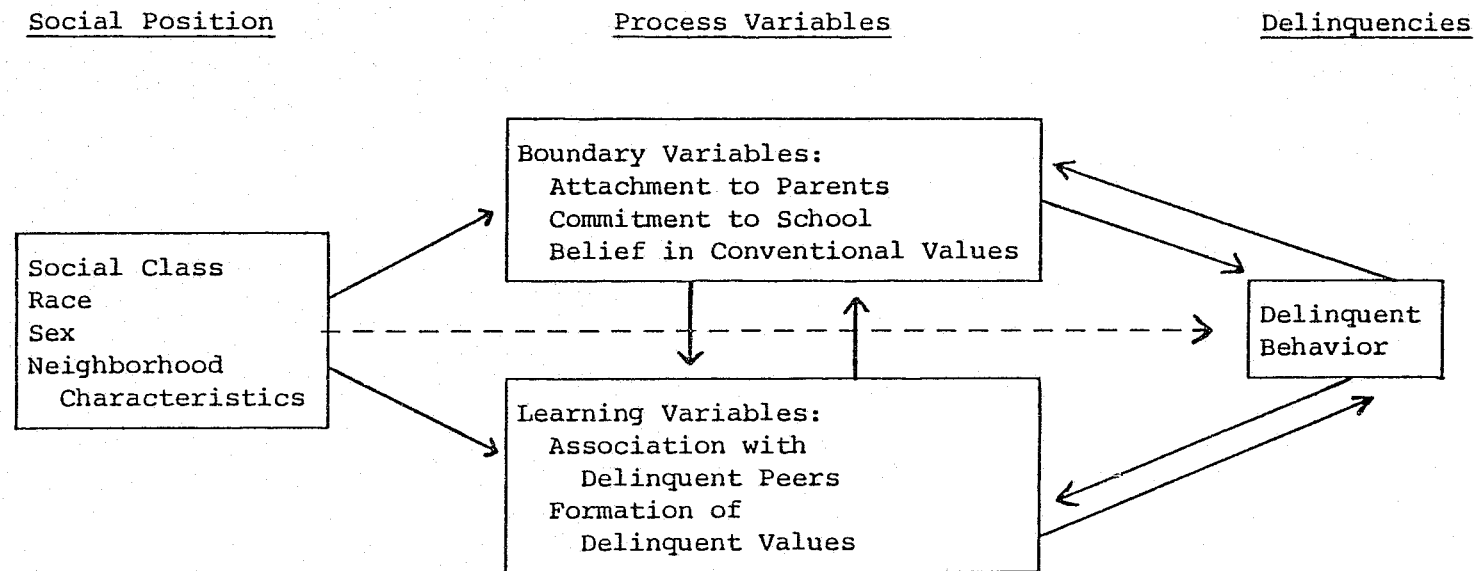
Summary

The design of the Rochester Youth Development Study will trace the social and psychological development of approximately 1,000 adolescents, overrepresenting those at high risk of delinquency, from the earliest stages of delinquent involvement to the peak years of delinquency. It will provide comprehensive data, often from multiple sources, on some of the most salient factors associated with delinquency so that delinquent careers can be described and the causes of delinquency modelled and tested. In brief, the design provides for a comprehensive, conceptually based examination of the basic causes and correlates of delinquency.

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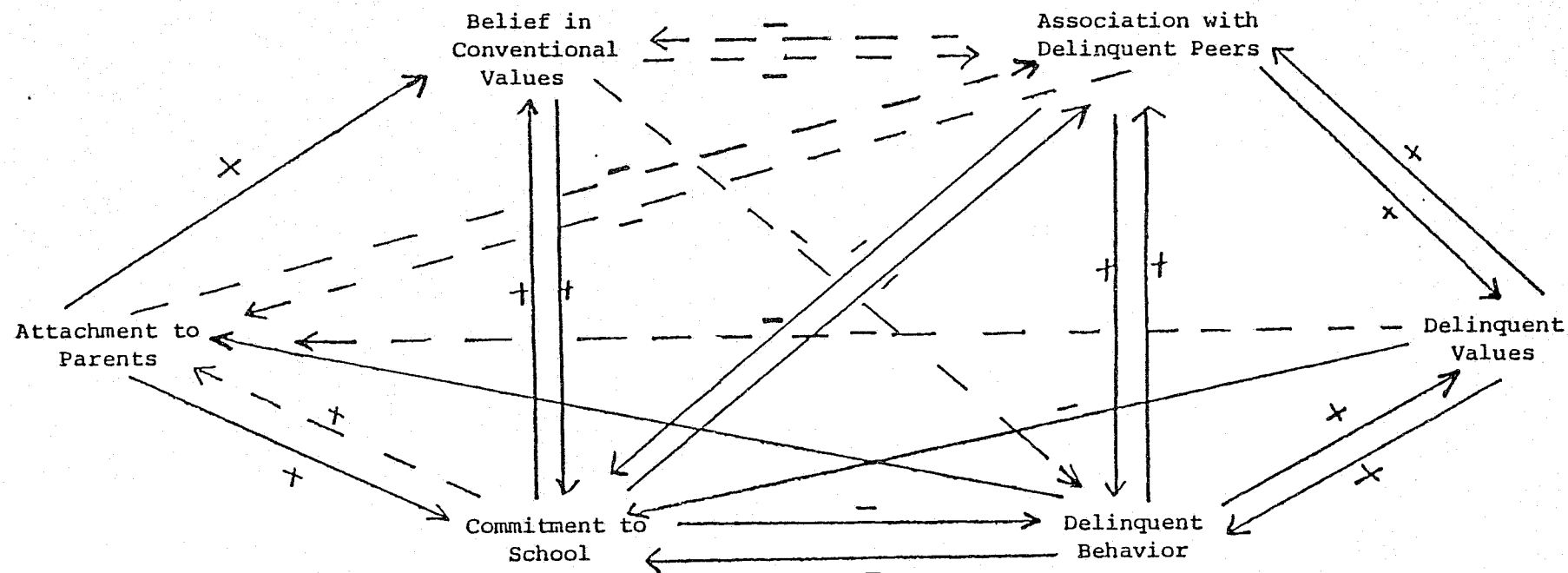
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Figure 1. Overview of Interactional Theory of Delinquency*



*This diagram of the theory is a schematic overview of the types or blocks of concepts in the theory and their basic interrelationships. It is not, however, a causal diagram specifying direct causal effects.

Figure 2. A Reciprocal Model of Delinquent Involvement at Middle Adolescence



NOTE: Solid lines represent stronger effects; dashed lines represent weaker effects.