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Growing Up Poor: Examining the Link between Persistent Childhood Poverty and Delinquency

G. Roger Jarjoura,¹ Ruth A. Triplett,² and Gregory P. Brinker³

Findings from aggregate-level and ethnographic research suggest that poverty and delinquency are related. The inability of individual-level quantitative research to demonstrate consistent evidence of this relationship, however, has been used to call into question whether poverty is indeed related to an increased propensity for delinquent involvement. This may be due to the difficulty individual-level analyses have in identifying the group most important in uncovering the relationship of poverty to delinquency—those individuals that experience persistent childhood poverty. This paper provides an assessment of the effects of both the level of exposure to poverty and its timing on delinquent involvement using fourteen years of longitudinal data for a national sample of younger adolescents. Findings indicate that exposure to poverty and the timing of such exposure are indeed related to an increased likelihood of involvement in delinquency.

KEY WORDS: delinquency; poverty; persistent poor; tobit; longitudinal data.

1. INTRODUCTION

We are currently realizing a deepening of poverty for American children, both in terms of the number of children in poverty and in the intensity of the poverty they are experiencing. In terms of the numbers of children in poverty, data shows that nearly 21% of the nation's children are from families living in poverty—about twice that of most other industrialized countries (Huston *et al.*, 1994). For 1995, that means that there are approximately 15.3 million U.S. children living in households defined as falling below the poverty line (Duncan *et al.*, 1998). The percentage of children living in poverty has remained constant during the 1990s, but the number of children has increased. The increasing depth of poverty for American children is shown not only in this change but also in dramatic changes in the nature of

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poverty. Children in poverty are increasingly concentrated in impoverished and underclass neighborhoods (Greenwood, 1995).

Concern about the number of children living in poverty arises from our knowledge of the problems children face because of poverty. Since the 1960s, developmental research has examined the effects of poverty on IQ, social adjustment, self-esteem, depression, and other types of maladaptive behaviors as mediated by such factors as parenting, home environment, family structure, immediate resources and more recently, school, child care, and neighborhood (Huston *et al.*, 1994). In each case, poverty has been shown to have detrimental effects.

Whether we find evidence that poverty is related to delinquency, however, depends on the type of research employed. Ethnographic studies link poverty to delinquency and crime, along with such factors as persistent unemployment, marital disruption, female-headed households, and teenage pregnancy (Anderson, 1993; Hannerz, 1969; Liebow, 1967; Rainwater, 1970; Sullivan, 1993; Suttles, 1968). Ethnographic research tends to focus on a relatively small group within a relatively limited context, however, and so is unable to convincingly rule out rival hypotheses for a poverty–delinquency relationship. Empirical research at the aggregate-level has also amassed evidence that chronic and persistent poverty leads to crime (Currie, 1985; Hagan and Peterson, 1995; Jencks, 1992; Krivo and Peterson, 1996; Sampson and Wilson, 1995; Wilson, 1987). The results of aggregate-level studies, however, are not often taken by many as convincing evidence of a causal relationship (Jencks, 1992) or as useful in explaining the nature of the relationship: “when a relationship is found using aggregated data, the etiology, characteristics, and behavior associated with that relationship cannot be specifically detailed or easily understood (Sánchez Jankowski, 1995:93).”

The most convincing evidence that poverty causes delinquency would, therefore, necessarily be based on individual-level quantitative analyses. Yet, such investigations provide the least support for a relationship between poverty and crime (Sánchez Jankowski, 1995; Tittle and Meier, 1990). In general, such research efforts have led to the conclusion that poverty accounts for little of the variation in delinquent involvement. Yet, individual-level quantitative analyses have been the least effective of these three approaches at identifying the group which criminological theory suggests is the most important—individuals who grew up in conditions of persistent poverty (see Farnworth *et al.*, 1994).

This paper provides an individual-level analysis of the effect of poverty on delinquent involvement using a national sample of adolescents. The analysis is specifically designed to go beyond past analyses by identifying those youths growing up in persistent poverty, indicating the stage of life

that poverty was experienced, and finally, exploring the factors that mediate the effect of poverty on delinquent behavior. The paper begins with a review of prior research on the relationship between poverty and delinquency. Next, the most recent research on the dynamics of poverty is reviewed. The results of the analysis are then presented, followed by a discussion of the findings and conclusions.

2. POVERTY AND DELINQUENCY: THEORETICAL AND EMPIRICAL FOUNDATIONS

Criminological theories, such as strain (Cloward and Ohlin, 1960; Cohen 1955; Merton, 1938) and subcultural (Miller, 1958), focused on the relationship of class to crime, emphasizing crime among the lower class. Though lower-class status is not necessarily synonymous with poverty, this literature has been drawn upon to make predictions about the relationship of poverty to delinquency. Specifically, these theories predict the existence of a causal relationship, with the effect of poverty mediated by a variety of factors. For example, strain theorists suggest that the connection between poverty and delinquency is based in the experiences of lower class boys that range from lack of preparation for school and the subsequent performance in school (Cohen, 1955) to differential access to legitimate and illegitimate opportunities (Cloward and Ohlin, 1960). According to these theories, delinquency results as the boys attempt to adapt to the strain caused by these lower-class experiences. Miller's (1958) subcultural theory points to the structural and cultural differences arising from the isolation of the lower class to explain delinquent behavior. According to this theory, boys growing up in female-headed households search for status and belonging among their peers. Delinquency results among these boys because lower-class values, or focal concerns, encourage behaviors defined as deviant by middle-class standards. From this argument, we might predict that peer influence, family structure, and family interaction are important mediating influences on the relationship between poverty and delinquency.

Beyond recognizing a causal relationship between poverty and delinquency that is mediated by a wide variety of factors, theorists such as Cohen and Miller recognized that not everyone who can be identified as poor at one point in time has the same experience of poverty. They recognized this difference in experience in their focus on two important characteristics of poverty—its persistence and its timing. The importance of capturing the persistent poor is emphasized by Farnworth *et al.* (1994). They argue that criminological theories focusing on class and crime “imply that the lifestyle and life changes associated with the deprivations of *persistent poverty* provide motivations for lower-class crime” (Farnworth *et al.*, 1994; emphasis

added). Also important in understanding the relationship of poverty to crime is the timing of poverty, or when during the individual's life poverty occurred. Though none of these theorists clearly spell out the importance of timing, implicit in their work is the idea that most people who become involved in crime do so early in life. Thus, if poverty is important in explaining criminality it must be experienced while the individual is growing up.

Among the types of research examining the association between poverty and delinquency, ethnographic research provides the most consistent evidence linking poverty to delinquency (Anderson, 1990; Sánchez Jankowski, 1991; Sullivan, 1989; Williams and Kornblum, 1985). Ethnographies are also rich sources of information on the processes through which poverty is associated with delinquency. In particular, they give us another source for understanding those factors that might well mediate the effect of poverty on delinquency. Many of the processes support the theoretical positions of strain and subcultural theories. For example, Sánchez Jankowski (1995) has described the motives for delinquent involvement of those people living in poverty. First, for many people living in poverty, crime is seen as the only opportunity for achieving a higher level of socioeconomic status. Second, some people living in poverty turn to crime as a means of surviving, and at a minimum, maintaining their current economic status (see also Wilson, 1987). Third, many people living in poverty, especially adolescents, resort to delinquency to enhance their financial ability to have fun (see also Agnew, 1992). Finally, for those living in poverty, respect and honor become cherished "possessions" in the absence of material possessions. As a result, the individual is often prepared to take whatever means are necessary to protect his or her respect and honor, an argument consistent with the theoretical discussions of Miller (1958).

More generally, a number of ethnographic studies have contributed to our understanding of how living in poverty creates persistent problems that may well mediate the effect of poverty and have been related to delinquent activity (see Thornberry *et al.*, 1995). For example, a fairly common theme in these studies is the disruption of the family and the absence of the father (Anderson, 1993; Hannerz, 1969; Liebow, 1967; Rainwater, 1970; Sullivan, 1993)—factors which are central to Miller's subcultural theory. Hannerz (1969) attributes the prevalence of female-headed households to structural constraints in legitimate opportunities for men and the existence of a "ghetto-specific" male role which values such items as sexual exploits, toughness, ability to command respect and concern for personal appearance. Rainwater (1970) describes the peer support that can encourage the creation of situations in which the mother is head of the household and the father is absent. Whether viewed as a separate culture, independent from

the dominant culture (Miller, 1958), or as an adaptation of dominant culture values and behaviors to structural conditions (Hannerz, 1969; Liebow, 1967; Rainwater, 1970; Suttles, 1968), these studies view the ghetto and the lower class as distinct from the middle class in ways that contribute to social problems such as crime and delinquency.

Despite the depth of understanding we get from ethnographic research, the strongest empirical evidence that poverty is related to crime emerges from aggregate-level analyses. These analyses, though usually not involving longitudinal data, are able to distinguish the poorest areas through use of area-level economic indicators. In her review of this research, Figueira-McDonough (1992) concludes that “widespread poverty within a community has been found to be a powerful predictor of delinquency” (see also Curry and Spergel, 1988; Shichor *et al.*, 1979; Taylor and Covington, 1988). Ludwig *et al.* (1998) found violent delinquency to be more likely in the poorest communities. They also found that by moving to a more affluent neighborhood, the probability of engaging in violence declined. Hagan and Peterson (1995) cite evidence of the link between street crime and concentrated poverty in urban locales from epidemiological studies. Currie (1985) builds an argument that poverty is a cause of crime by considering evidence of a link between economic inequality and crime. He examines the differences in crime rates between cities and even countries based on differences in levels of economic inequality. More recently, Fowles and Merva (1996) examined data for major metropolitan areas in the U.S. over the period from 1975 to 1990, and found that the percent of the population living in poverty was consistently related to crime, regardless of crime type. Krivo and Peterson (1996) found that in neighborhoods characterized by “extreme disadvantage,” violent crime was particularly more likely to occur.

In trying to uncover the causal mechanisms linking poverty and crime at an aggregate level, researchers have pointed to unemployment (Land *et al.*, 1995), family disruption (Sampson, 1987), and informal social control (Elliott *et al.*, 1996; Sampson, 1997) as likely mediating factors. Other researchers have pointed to the devastating effects of concentrating minorities and the impoverished in urban communities (Hagan and Peterson, 1995; Sampson and Wilson, 1995; Wilson, 1987). In his historical analysis of murder rates, Jencks (1992) shows that the most likely cause of increases in the violent crime rates is the segregation of blacks with regard to occupational and legitimate opportunities. Hagan and Peterson (1995) further propose that the segregation of racial minorities in sections of concentrated poverty contributes to inferior educational and employment opportunities, which, in turn, enhance the likelihood of crime and delinquency. Sampson and Wilson (1995) theorize that the concentration of poverty, family disruption, and residential instability in black urban communities results in what

they refer to as “structural social disorganization” and “cultural social isolation,” both of which contribute to higher levels of crime.

Individual-level analyses of the effect of poverty on delinquency have provided far less consistent results linking poverty to delinquency than those uncovered by aggregate-level and ethnographic analyses. Inconsistent results are evident even when attempts are made to distinguish different levels of poverty. For example, Johnson (1980) conducted an explicit test of the idea that underclass measures are more likely to be related to delinquency than traditional measures of social class. His measure of underclass was a composite of information on total family income, receipt of welfare or unemployment compensation, whether the parents had graduated from college, and whether the parents held white-collar jobs. Johnson found no evidence of a class–delinquency relationship, regardless of the way in which class was operationalized. In contrast, Brown (1984) considered three different measures of social class and found that receipt of welfare was most strongly and consistently related to criminal involvement. Similarly, Ouston (1984) operationalized poverty as the receipt of free school meals and found that poverty was significantly related to delinquency. Brownfield (1986) found that poverty, as measured by combining information on receipt of welfare and unemployment of the father, was related to violent crime in one data set, but he was unable to replicate this result in another data set. In a review of these studies, Tittle and Meier concluded that the findings, as a whole, were “problematic” and did not “unambiguously specify an SES/delinquency relationship” (1990: 274–275).

More recently, however, Farnworth *et al.* (1994) made a substantial contribution to the literature in their test of the idea that the relationship between delinquency and class is strongest when class is measured in such a way that it captures a persistent experience of poverty. Their measure of persistent poverty incorporates information from over a two-year period on whether the household qualified as being below the poverty level, whether the principal wage earner was unemployed, and whether the family received welfare benefits. Results of their analysis indicated that persistent poverty had a strong and consistent impact on more serious forms of delinquency (Farnworth *et al.*, 1994).

There are many reasons why ethnographic and aggregate-level research would find more consistent evidence of a relationship between poverty and delinquency than empirical analyses at the individual level. One reason, in particular, structures the examination in this paper. Ethnographies and aggregate-level analyses have been better in the past at capturing the persistent poor and individuals that experienced poverty during childhood. Ethnographies examining poverty and crime are better at capturing long-term poor because the researchers can choose as their subjects neighborhoods

and individuals that are persistently poor. With aggregate-level analyses, researchers can focus on areas characterized by poverty.

Individual-level analyses have not in the past captured the persistent poor very well. This is due primarily to the fact that poverty or class tends to be measured at only one point in time. Without longitudinal data, it is difficult to identify the persistent poor. In addition, samples are typically random samples of some general population. Estimates from research on poverty point to only between 2–5% of the population as being persistently poor (Duncan, 1984; Wilson, 1987). Thus, we would only expect very small numbers in the average criminological sample to fit the description of persistent poor. For instance, Brown (1984) would have fewer than 5 out of 110 subjects in this category. Similarly, fewer than 35 from a sample of 734 in Johnson's (1980) study would actually be persistent poor, as would fewer than 115 from the 2300+ subjects in the study by Ouston (1984). The lack of adequate representation of the persistent poor in criminological research is important in that it is this group that, at least implicitly, criminological theories are referring to when they discuss the effect of poverty on delinquency.

This reading of the criminological literature raises three interesting questions that the literature on the nature of poverty might well shed light on. First, just how distinct a group of poor are the persistent poor? If criminological theory is right then the persistent poor should be distinct in a variety of ways from the short-term poor. Second, the follow-up question is how important is it to have longitudinal data to identify them? Finally, is there reason to believe that the timing of poverty is important in understanding the relationship of poverty to delinquency? In the next section of the paper we examine the literature on the nature of poverty for guidance in our examination of these issues.

3. THE PERSISTENT POOR AND THE TIMING OF POVERTY

Criminological investigations into the relationship between poverty and delinquency have rarely considered the dynamics of poverty. Nor do most criminological researchers draw upon the vast literature that now exists on poverty in America to inform their analyses of delinquency. Yet, even a cursory reading of the poverty literature shows quite clearly what strain and subcultural theories suggest: that there are considerable differences among the poor by level of exposure.

Understanding the importance of distinguishing the poor by level of exposure begins with the recognition that there is a dual nature to poverty in America (Bane and Ellwood, 1986). The concept of a "dual nature to poverty" refers to the fact that while there are a substantial number of

people living in persistent, long-term poverty, many people, including children, experience only short-term poverty. For example, Duncan and Rodgers (1988) found that one-third of all children experience poverty in at least one year of their life, while only 1 in 20 experience ten or more years. In fact, most spells of poverty are quite short—nearly 45% ending within one year, 70% end within three years and only 12% last ten or more years (Bane and Ellwood, 1989). Further, research shows that those who can be categorized as the short-term poor are not very different in their characteristics from the general population. Research does find, however, that the longer-term poor are more likely to come from African-American and female-headed households, and that poverty is more persistent in the South and in rural areas (Duncan, 1984). Those in poverty at any particular moment, then, are not a homogeneous group. They consist of the “long and short term poor, less and more serious conditions and of families of quite different characteristics” (Bane and Ellwood, 1989).

The literature on the nature of poverty also points to other differences important in understanding the causes of persistent vs. short-term poverty. These differences can be found, for example, in the conceptualization and analysis of spells of poverty. Bane and Ellwood (1986, 1989) conceptualize a spell of poverty as beginning in the first year that income is below the poverty line after having been above it, and ending when income is above the poverty line after having been below it. They report that the duration of a poverty spell is related to the cause of the spell. The shortest spells are those that begin when children move out of their parents' house and set up their own household. Changes in income levels of the head of household and other family members contribute to relatively short spells of poverty. The longest spells are found in households headed by females.

More recent analyses of exits from poverty confirm exit rates are higher for households headed by white males and much lower for those headed by black females (Stevens, 1994). Stevens also reports that from 1970–1987, mobility into and out of poverty decreased, with the declines being concentrated among female-headed households. Stevens found that these same households are more likely to experience repeated spells of poverty.

Recognition of the dual nature of poverty—with many experiencing only short spells of poverty—leads to the hypothesis that the effects of poverty vary by the duration of poverty. Research in this area has provided evidence that the effects of poverty increase as the duration in poverty increases (see, for example, Corcoran *et al.*, 1992; Duncan *et al.*, 1994; Garrett *et al.*, 1994; Haveman *et al.*, 1991). A study that illustrates well the findings in this area is that carried out by Duncan and his colleagues (1994). They examined the impact of persistent poverty on a sample of children at age five, and found empirical support for their hypothesis that length of

time in poverty mattered even among children as young as five. They found that even though occasional poverty was significantly related to all of their outcome measures—cognitive functioning (as measured by IQ), behavioral functioning (as measured by the revised Child Behavior Profile) and health status—“the estimated effect of transitory poverty is not as large as the estimated effect of persistent poverty” (Duncan *et al.*, 1994; 307).

The timing of poverty has also been shown to be important. Brooks-Gunn *et al.* (1997) argue that the effect of poverty is likely to vary (in degree and in mechanism) by stage of childhood in which it is experienced. They propose four distinct periods to differentiate between based on the transitions and role changes which occur at each stage: the prenatal–infancy period, early childhood (ages 2–5), middle childhood (ages 6–10), and late childhood/adolescence (over 10 years). The effect of poverty at different stages in a child’s life has only recently been the subject of scholarly research.

In a 1998 review of this literature, Duncan *et al.* draw three important conclusions. Firstly, they conclude the timing of poverty does matter. Secondly, they find that poverty in early childhood is most important. “Family economic conditions in early and middle childhood appeared to be far more important for shaping ability and achievement than were economic conditions during adolescence” (Duncan *et al.*, 1998: 408). Finally, the literature thus far indicates that poverty has less of a relationship to behavioral outcomes than to achievement and ability. For instance, Duncan *et al.* (1998) find that the timing of poverty significantly affected both years of school completed and high school graduation, with family income during early childhood having a greater impact than income during middle childhood. They found no significant effect, however, of poverty on out-of-wedlock births.

Evidence also points to the potential interaction effect between timing and the duration of poverty. One study reports that while long-term poverty has a greater impact on cognitive development than short-term poverty, cognitive deficits are more likely to result if poverty was experienced prior to age five than later in childhood (Brooks-Gunn and Duncan, 1997). In contrast, “emotional outcomes” are related to growing up in poverty, but the impact does not vary by level or timing of poverty.

What implications can we draw from both criminological theory and the literature on the nature of poverty for a study of the effect of poverty on delinquency? There is a need to pay more attention to the measures of poverty we use in our analyses and to understand just who is captured by the measures. Farnworth *et al.* (1994) recognized this and initiated a discussion in the criminological literature on this point. They argued, as do many in the literature on the dynamics of poverty, that the identification of

the persistent poor requires data on more than one year in the life of the subjects—something that is missing in most studies of poverty and delinquency. Research on the dynamics of poverty confirms that by using a cross-sectional measure of poverty, we would be capturing both the persistent poor and some significant portion of short-term poor as well. Longitudinal data are required to untangle the dual nature of poverty. Farnworth *et al.* (1994) demonstrated that, indeed, serious forms of delinquency are more likely among the persistent poor. They were able to make this distinction despite the fact that their measure of the persistent poor was limited to only a two-year period, far shorter than the literature on the dynamics of poverty would recommend.

Once we can distinguish between the persistent poor and the short-term poor, then we can examine the effect of poverty on delinquent involvement. We predict the following:

*H*₁: The longer the periods of life spent in poverty, the greater the frequency of delinquent behavior.

The literature on the dynamics of poverty also points to the timing of poverty as an important distinction. This is something that has not been addressed by other studies examining poverty and delinquency. In terms of timing, we expect that having experienced poverty in early childhood (i.e., before age five) is more likely associated with higher levels of involvement in delinquency than exposure to poverty in later stages of childhood and adolescence. Thus:

*H*₂: The impact of poverty on delinquent involvement will be greater if experienced in early childhood, rather than later in a child's life.

Following the theoretical and empirical literature, we also expect the effect of poverty on delinquent involvement to be mediated by a number of factors related to the cognitive development of the child, family structure, family interaction patterns, and peer relationships. Thus we can predict that:

*H*₃: The effect of poverty on delinquent involvement will be mediated through the cognitive development of the child, the family structure, family interaction patterns, and peer influences.

Finally, we expect the effect of poverty on delinquent involvement to be relatively weak because its effect is largely dependent on a number of mediating factors. We believe that the effect of the more proximate intervening factors will be stronger than the effect of poverty. Specifically, we predict that:

*H*₄: The impact of poverty on delinquent involvement will be weaker than other, more proximate factors.

4. THE CURRENT STUDY

The analysis in this paper is designed to operationalize poverty in ways consistent with the best information on the dynamics of poverty. Using longitudinal data spanning 14 years, measures of level of exposure to poverty and its timing are constructed and used to examine the poverty–delinquency relationship. In addition to considering the ways that poverty makes a difference in the propensity for delinquent involvement, these data also allow us to consider the ways that poverty shapes the lives of children to enhance their likelihood for delinquency. Results in the child development literature point to the impact of poverty on such outcomes as cognitive development, school achievement, and emotional well-being (Brooks-Gunn *et al.*, 1997). These outcomes have been linked to delinquency in criminological research, and thus, are likely candidates for mediating the relationship between poverty and delinquency.

4.1. Sample

Fourteen waves of the National Longitudinal Survey of Youth (NLSY) data—from 1979 to 1992—were used in this analysis. The sample was gathered using area probability techniques, ensuring that it was representative of the noninstitutionalized civilian population aged 14–22 in 1979, with a supplemental sample of youths designed to overrepresent minority and economically-disadvantaged white youths (Center for Human Resource Research, 1995). The youths were interviewed yearly from 1979 through 1992, and beginning in 1986, all of the children born to the females in the sample were also included in the survey. These children were interviewed in 1986, 1988, 1990, and 1992.

The NLSY data are uniquely qualified to answer questions about poverty and delinquency. Because the sampling process involved oversampling of civilian Hispanic, black and economically-disadvantaged youths, there is information on groups normally underrepresented in criminological studies while being overrepresented in criminal justice system processing. Also, because a primary focus of the NLSY is the labor market behavior of young adults, special attention was paid to collecting information on income. The unique combination of gathering data on the mothers and then gathering information on their adolescent children provide for a stronger test of the effect of poverty on delinquent involvement than has generally been the case in criminological research.

The sample used here includes all the children who are at least 10 years of age, but no older than 15, at the time of the 1992 interview. The sample is restricted in this way for two reasons. First, only those youths aged 10 and older were asked to self-report delinquent behaviors. Second, by limiting the

sample to respondents no older than 15, there is complete information on poverty across their entire life. Limiting the sample in this way results in a sample of 1371 youths and their mothers.

The way this sample is limited, it is not a nationally representative sample of children aged 10–15. The selection rules bias the sample towards youths born to young mothers, youths born to poor mothers, and youths born to minority women. We do, however, make use of sampling weights provided with the data. Weighted analyses are conducted to allow for generalizing to a national population of youths born to a national population of women.

4.2. Measures

In the literature on poverty, persistent poverty has been measured in different ways (Duncan and Rodgers, 1991). One approach has been to indicate the fraction of some number of years in which the person/family lived in poverty. Hill *et al.* (1981) considered eight out of ten years in poverty as being evidence of persistent poverty. Another approach to measuring persistence in poverty has focused on spells—continuous periods of time in poverty (Bane and Ellwood, 1986). Spells lasting longer than eight or ten years have been considered indicators of persistent poverty (Duncan and Rodgers, 1991). Measuring the persistence of poverty in either of these ways requires longitudinal data covering at least ten years, something that is not often available to criminological researchers.

As such, two measures of the level of exposure to poverty were created for this analysis. The first measure created indicates the fraction of the number of years the youth's family was living in poverty. Since there is a range of several years in the ages of youths under study, a measure of the percent of the youth's life spent in poverty was constructed to adjust for age. This measure indicates whether the family income for each year was below the poverty level. The number of years the family was considered in poverty was then divided by the age of the youth in 1992 to come up with a percent of the youth's life spent in poverty. The second measure identifies poverty spells. This measure indicates the longest continuous period, in years, that the youth's family lived in poverty, based on whether the family was in poverty for each given year.

A third conceptualization of poverty is also considered here. Based on the work of Brooks-Gunn *et al.* (1997), we also consider whether the impact of poverty varies by stage of life in which the youth experienced poverty. Three discrete periods of life are examined: from birth to age 5, from age 6 to age 10, and ages 11 and over. Dummy variables have been created to indicate whether the youth's family lived in poverty at any one point during

each stage. Note that these dummy variables are not mutually exclusive, as it is possible that some youths experienced poverty in all three stages of life.

Delinquency was operationalized as the number of times each youth reported (in the 1992 interview) engaging in each of six different behaviors. Factor analysis and reliability analysis led to the selection of the six behaviors as being internally consistent with one another ($\alpha = 0.629$). The value for each youth represents the combined number of times he or she reported committing any of the following behaviors in the previous year: hurt someone bad enough to need a doctor, taken something without paying for it, damaged school property on purpose, was drunk, skipped school without permission, or stayed out one night without permission. The youths were asked to indicate whether they engaged in each behavior never, once, twice, or more than twice. With the exception of a measure of aggravated battery, these behaviors represent relatively minor forms of delinquency.

To create a summed index of delinquency, we treated the “more than twice” category as three, creating a conservative estimate of the actual frequency of delinquent activity.⁴ Due to the highly skewed distribution on self-reported delinquency, the measure has been transformed by taking the natural logarithm. We first added one to the delinquency scores, to avoid taking the natural log of 0 (an unidentified value), and then calculated the natural logarithm. The log-transformed measure of delinquency is used as the dependent variable in each of the analyses reported here. In addition to this general measure of delinquency, we create measures of each of the subcategories of violent, property, and status offenses.

In the analyses that follow, three different intervening factors related to cognitive abilities are included as potential mediating factors between poverty and behavioral outcomes. The degree to which the home environment stimulated the cognitive development of the youth has been measured with the HOME inventory (Elardo and Bradley, 1981). For this analysis, we use the percentile rank of the home on this dimension, as assessed in the 1990 interview. Academic performance of the youth, as reported by the mother in the 1992 interview, is indicated by a six-category measure coded (from lowest to highest): one of the best, above the middle, in the middle, below the middle, near the bottom, not attending school. Finally, the self-esteem of the youth, as reported by the youth in the 1990 interview, is represented by the global raw score from the Self-Perception Profile for Children (Harter, 1982).

⁴Since we have only a partial measure of the actual frequency of delinquent activity, we also examined the effect of participation in delinquency (creating a yes–no measure of delinquent activity). Results of these analyses, not reported here in tabular form, were very consistent with the results from the models examined here. As such, we elected to report results from the models incorporating more, rather than less, information on the distribution of delinquency.

Several measures of family context and peer interaction are also included in this analysis as factors which might mediate the relationship between poverty and delinquency. The age of the mother at the time of the youth's birth is included, as is the birth order within the family for the youth. Dummy variables are included indicating whether the youth's biological father is living in the home at the time of the 1990 interview, and whether the youth ever lived away from his or her mother while growing up. The quality of supervision by the mother is indicated by the mother's report (from the 1992 interview) about how often she knows with whom the youth is when not at home. This is a four-category measure in which the responses include (from lowest to highest): all of the time, most of the time, some of the time, only rarely. To capture the influence of the youth's peers, we include a measure of whether the youth reported pressure from peers to engage in negative behaviors. This variable is coded to indicate the number of different things the youths felt pressure from their friends to do from among the following list, as reported in the 1992 interview: try cigarettes; try marijuana or other drugs; drink beer, wine or liquor; skip school; or commit a crime, or do something violent. A "0" indicates no peer pressure to do any of these things. A "5" indicates peer pressure to do all of these things.

Control variables are also included in the analysis: the youth's age, gender and race. Gender is represented by a dummy variable coded 1 for females and 0 for males. Different dummy variables are included for each of two racial subgroups: black and Hispanic. Descriptive statistics for each of the variables included in the analyses are reported in Table I.

4.3. Models

We consider the effects of persistent poverty on the level of involvement in delinquency using a tobit model (Tobin, 1958). Because a minority of the sample engaged in delinquency, the tobit model is most appropriate since it is designed to handle censoring at a lower bound. We follow the lead of several recent studies (Albonetti, 1997; Caspi *et al.*, 1998; Roncek, 1992) in taking advantage of the nature of tobit analysis that allows us to decompose the results so as to understand the effect of persistent poverty on both the likelihood of offending and the change in the expected value of the level of involvement in delinquency.

The tobit model (adapted from Caspi *et al.*, 1998) for censoring at the lower bound is

$$Y_{ii}^* = X_i\beta + \varepsilon_i \quad (1)$$

$$Y_{ii} = Y_{ii}^* \quad \text{if } Y_{ii}^* > 0 \quad (2)$$

$$Y_{ii} = 0 \quad \text{if } Y_{ii}^* \leq 0 \quad (3)$$

Table I. Descriptive Statistics for Variables Used in Analyses ($N = 1371$)

Variable	Mean	Standard deviation	Minimum	Maximum
Age	11.92	1.60	10	15
Cognitive stimulation in home (percentile)	53.22	29.08	0	97
Poor supervision by mother	1.36	0.58	1	4
Mother report of low academic performance	2.32	1.04	1	6
Youth report of self worth	202.40	34.38	70	240
Birth order	1.48	0.77	1	7
Age of mother at birth of child	19.95	2.27	14	25
Peer pressure reported	0.41	0.98	0	5
Longest continous spell in poverty	2.69	3.44	0	14
Percent of life in poverty	28.38	31.99	0	100
Delinquency (natural log transformed)	0.48	0.70	0	2.94
Violent offending (natural log transformed)	0.20	0.38	0	1.39
Property offending (natural log transformed)	0.18	0.43	0	1.95
Status offending (natural log transformed)	0.24	0.51	0	2.30

Characteristics of sample (percentage)	
Female	48.9%
Black	21.1%
Hispanic	9.3%
Father living in household	49.9%
Ever lived away from mother	11.9%
Poverty status in 1991	20.2%
In poverty ages birth-5	56.5%
In poverty ages 6-10	42.1%
In poverty ages 11-15	19.0%

where for each observation, i , Y_{it}^* is an unobserved latent variable representing the likelihood of living in poverty, X_i is a vector of independent variables, β is a vector of coefficients, ε_i is a normally distributed error term, and Y_{it} is the observed number of self-reported offenses in the previous year. For those cases who report no delinquent activity, the change in the cumulative probability that the youth will engage in delinquency is

$$\frac{F(z)}{\delta X_i} = \beta_i \times \frac{f(z)}{\sigma} \tag{4}$$

For those cases that report some level of involvement in delinquency, the change in the expected value of level of delinquent activity is

$$\frac{\delta EY_{li}}{\delta X_i} = \beta_i \times \left[1 - \left(z \times \frac{f(z)}{F(z)} - \left(\frac{f(z)^2}{F(z)^2} \right) \right) \right] \quad (5)$$

where z is the z -score associated with the area under the normal curve, $f(z)$ is the unit normal density, $F(z)$ is the function of the cumulative normal distribution, and σ is the standard deviation of the error term, as reported by the tobit program.

5. FINDINGS

Before discussing the results on the effect of level of exposure to poverty on delinquent involvement, a few comments are in order about the identification of the chronic and persistent poor. As suggested in the literature, operationalizing poverty status on the basis of data from only one or two points in time hampers the identification of the persistent poor. Consider the evidence in Table II. Classifying subjects as living in poverty on the basis of 1991 data yields 396 youths living in poverty vs. 975 not living in poverty. These numbers can be contrasted with those evidenced by the current operationalizations of level of exposure to poverty over the 14-year period. By following the criteria of Duncan and Rodgers, families are classified as persistently poor if they experienced a continuous spell of poverty lasting at least eight years. Using this criterion, 242 youths are classified as persistently poor. Thus, focusing on only one period to classify persons as

Table II. Cross-classification of Poverty Status of Subjects as Determined Cross-sectionally and Longitudinally

		Poverty status determined longitudinally		Row total
		Not persistent poor	Persistent poor	
Poverty status determined cross-sectionally	Non-poverty	908 ^a 93.1 ^b 80.4 ^c	67 6.9 27.7	975
	Poverty	221 55.8 19.6	175 44.2 72.3	396
Column total		1129	242	1371

Notes: ^aThe top number in each cell is the actual frequency for that cell.

^bThe middle number in each cell is the row percentage for that cell.

^cThe bottom number in each cell is the column percentage for that cell.

to their poverty status overestimates the number of persistent poor. In fact, 56% of the cases classified as living in poverty using only one year of data would not fit this definition of the persistent poor. There are, however, more serious consequences of looking at data for one year only. Almost 28% of those cases which fit the definition of persistent poor would not be classified as living in poverty when using data from only one year.

To the extent that the level of exposure to poverty is important in enhancing the likelihood of delinquent involvement, this relationship may be obscured by classifying subjects relative to their poverty status using data from only one point in time. Indeed, the correlation between poverty status, as classified using data from only one year, and delinquency ($r = 0.157$) is weaker than the correlation between the length of the longest continuous spell in poverty and delinquency ($r = 0.201$). Correlations (as presented in Table III) also show that the biggest differences between the short-term and long-term measures of poverty in the association between poverty and delinquency exist for violent and property offending behaviors, rather than status offending behaviors. This is consistent with the research by Farnworth *et al.* (1994).

In the first part of the analysis, the measure of self-reported delinquency was regressed on each of the measures of poverty. Results of the tobit models are reported in Table IV. In support of our first hypothesis, in each model, the measure of poverty is significantly related to higher levels of involvement in self-reported delinquency. As the longest continuous spell in poverty increases, so does the likelihood of reporting a higher level of involvement in delinquency. Similarly, there is a higher likelihood of greater involvement in delinquency as the percent of life in poverty increases.⁵ In support of our second hypothesis, we also find that stage of life is important. When considering the effects of poverty at different stages of childhood, we find significant results for the period after age ten and for the period before age six. Thus, poverty has a stronger effect in the years just before the outcome is measured and in the very early years of child development.

We hypothesize that if poverty is related to delinquent involvement, it is more likely to be true for the persistent poor than for those living in poverty on a relatively temporary basis. Therefore, we are more likely to detect this effect if we have a measure of poverty that identifies the persistent poor. To test this, we estimate a fourth model that includes a cross-sectional

⁵In explanatory analyses, we considered whether there were nonlinear effects of the length of time in poverty. We found the relationship to be monotonic and positive. Each additional year spent in poverty led to a significantly greater likelihood of higher levels of delinquent involvement. This result was true up through 12 years in poverty. After that point, additional years spent in poverty did not significantly enhance delinquent involvement.

Table III. Bivariate Correlations between Measures of Poverty, Measures of Delinquency, and Control Variables

Part 1				
	Delinquency index	Assault	Property offending	Status offending
Longest continuous spell in poverty	0.201	0.105	0.157	0.184
Percent of life in poverty	0.188	0.122	0.148	0.159
In poverty from birth to age 5	0.168	0.080	0.141	0.150
In poverty ages 6–10	0.163	0.079	0.123	0.156
In poverty ages 11–15	0.168	0.108	0.113	0.155
Poverty status 1991	0.157	0.086	0.110	0.150

Part 2							
	Delinquency index	Longest continuous spell in poverty	Percent of life in poverty	In poverty from birth to age 5	In poverty ages 6–10	In poverty ages 11–15	Poverty status 1991
Female	-0.162	0.024	0.023	-0.023	0.015	-0.019	0.029
Black	0.113	0.430	0.439	0.277	0.301	0.263	0.353
Hispanic	0.023	0.058	0.082	0.085	0.052	0.017	0.078
Age	0.172	0.102	0.001	0.061	0.102	0.406	0.095
Cognitive stimulation in home	-0.070	-0.361	-0.403	-0.338	-0.311	-0.207	-0.304
Poor supervision by mother	0.234	0.218	0.186	0.148	0.116	0.164	0.131
Mother report of low academic perform.	0.200	0.113	0.113	0.119	0.090	0.136	0.085
Youth report of low self worth	-0.107	-0.078	-0.094	-0.089	-0.082	-0.118	-0.160
Peer pressure	0.410	0.119	0.122	0.120	0.080	0.109	0.074
Birth order	0.133	0.205	0.206	0.111	0.154	0.010	0.161
Age of mother at birth of child	-0.115	-0.273	-0.238	-0.258	-0.225	-0.290	-0.171
Dad in household	-0.108	-0.408	-0.425	-0.304	-0.411	-0.254	-0.347
Ever lived away from mother	-0.004	0.058	0.070	0.081	0.095	0.130	0.066

measure of poverty status in the year prior to the interview at which delinquency involvement is self-reported. As discussed above, this cross-sectional measure captures short-term and long-term stays in poverty, with no opportunity to distinguish between the two. Results of this model indicate that while the effect of the poverty status in 1991 is smaller than the effect of the percent of life in poverty or the longest continuous poverty spell, there is still a significant effect on delinquent involvement. Those classified as

Table IV. Estimates from Tobit Models of Self-Reported Delinquency for Different Measures of Poverty ($N = 1371$)

Predictor	b^a	t -value						
Longest continuous spell in poverty	0.097	7.76						
Percent of life in poverty			0.010	7.16				
In poverty from birth to age 5					0.369	3.52		
In poverty ages 6–10					0.109	1.00		
In poverty ages 11–15					0.607	5.11		
Poverty status, 1991							0.557	5.11
Constant	-0.550		-0.571		-0.660		-0.408	
Sigma	1.424		1.432		1.416		1.452	
Log likelihood	-1456.941		-1461.334		-1450.691		-1474.140	

^aMaximum likelihood tobit estimate.

living in poverty in 1991 are significantly more likely to report higher levels of involvement in delinquency than those not living in poverty.

The analysis next considers the third hypothesis. Are the effects of poverty mediated by factors such as cognitive ability, family structure/interaction, and peer influence? The models from Table IV are repeated, but now include the control variables (gender, race, and age of the youth) as well as the measures of cognitive stimulation, family context and peer pressure. Results from these models, as presented in Table V, lead to two important conclusions. First, controlling for these other factors improves the fit of the models. For instance, the log likelihood for the model of percent of life in poverty increases from -1461.334 to -1317.386, a statistically significant difference ($\chi^2 = 287.9$ with 13 d.f.). This demonstrates that when poverty is the only factor in the model, we account for a relatively small portion of the variance in delinquent behavior.

Second, even though poverty contributes little in terms of variance explained, this does not mean that poverty is substantively unimportant. There is some reduction in the effects of poverty moving from Table IV to Table V that can be attributed to the intermediate factors. This reduction suggests that some of the effect of poverty is mediated by these factors, as we predicted. Thus, the effect of poverty on delinquency comes in large part through its effect on other factors. It should be noted, though, that controlling for these other factors does not *explain* the relationship between poverty and delinquency. Even after controlling for antecedent and intermediate factors, the relationship between poverty and delinquency does not disappear. We still find that the longer a person has been in poverty, either in terms of the length of spells of poverty or the percent of the youth's life

Table V. Estimates from Tobit Models of Self-Reported Delinquency for Different Measures of Poverty Controlling for Demographic and Family Factors ($N = 1371$)

Predictor	b^a	t -value						
Female	-0.553	-6.90	-0.554	-6.91	-0.545	-6.80	-0.546	-6.80
Black	0.016	0.15	0.005	0.04	0.039	0.37	0.076	0.74
Hispanic	0.118	0.88	0.106	0.79	0.125	0.93	0.137	1.02
Age	0.101	3.58	0.114	3.95	0.083	2.76	0.097	3.41
Cognitive stimulation in home	0.0003	0.24	0.001	0.41	0.0004	0.28	-0.0001	-0.10
Poor supervision by mother	0.269	3.97	0.275	4.06	0.287	4.25	0.293	4.34
Mother report of low academic perform.	0.084	2.13	0.083	2.10	0.085	2.15	0.084	2.12
Youth report of self worth	-0.002	-1.48	-0.002	-1.40	-0.001	-1.25	-0.001	-1.27
Peer pressure	0.391	10.51	0.387	10.41	0.389	10.43	0.397	10.65
Birth order	0.147	2.71	0.151	2.80	0.170	3.22	0.178	3.38
Age of mother at birth of child	-0.030	-1.36	-0.030	-1.34	-0.035	-1.58	-0.043	-1.97
Dad in household	-0.063	-0.73	-0.060	-0.70	-0.067	-0.77	-0.101	-1.18
Ever lived away from mother	-0.150	-1.25	-0.152	-1.26	-0.159	-1.33	-0.153	-1.27
Longest continuous spell in poverty	0.044	3.16						
Percent of life in poverty			0.005	3.17				
In poverty from birth to age 5					0.112	1.17		
In poverty ages 6–10					0.100	1.00		
In poverty ages 11–15					0.203	1.78		
Poverty status 1991							0.213	2.05
Constant	-1.269		-1.487		-1.104		-0.988	
Sigma	1.200		1.200		1.201		1.204	
Log likelihood	-1317.423		-1317.386		-1318.016		-1320.341	

^aMaximum likelihood tobit estimate.

spent in poverty, the more likely they are to report higher levels of involvement in delinquency. Long-term, chronic poverty, thus, has effects on the likelihood of delinquent participation beyond the mechanisms considered here. Yet, as predicted in our fourth hypothesis, the effect of poverty is weaker than more proximate factors, such as the age of the youth, the quality of supervision by the youth's mother, and the influence of peer pressure.

Our cross-sectional measure of poverty status is also still related to delinquent involvement, although there has been a significant reduction in its effect after controlling for demographic factors as well as cognitive stimulation, family interaction and structure, and peer interaction. Poverty during

early childhood and during the early teen years, however, is no longer related to delinquent involvement. Since the measure of poverty in the period of ages 11–15 is the closest indicator we have to a current poverty status, and given the significant effects of the chronic long-term indicators of poverty, the findings suggest that poverty is more likely to have an impact on delinquent involvement for those experiencing persistent poverty. To test this implication, we divided the sample into those classified as persistently poor (i.e., longest spell in poverty is eight or more years) and those not experiencing shorter-term poverty. We then re-estimated the final model from Table V for each sub-sample. After controlling for persistent poverty, the cross-sectional measure of poverty status was no longer related to delinquent involvement. We can conclude that poverty is related to delinquent involvement the longer a youth experiences poverty over the course of their childhood.

We next consider whether the relationship between poverty and delinquency differs based on the types of behaviors captured in our measure of delinquency. The measure we use here includes a combination of violent, property, and status offense behaviors. We consider each type of behavior separately. Results from these tobit models are presented in Table VI. Here we use only one measure of poverty, the percent of life in poverty. We selected this measure since the respective model from Table V provided the best fit to the data. We find that percent of life in poverty is significantly related to the level of involvement in both assault and property offending, but not to involvement in status offending. This is, again, consistent with the results of Farnworth *et al.* (1994) in that the more serious forms of delinquent activity are related to having grown up in poverty.

The last section of the analysis looks further at the results of the tobit analyses. Roncek (1992) adapted from McDonald and Moffitt (1980) a method for decomposing tobit coefficients into two components. The formulas for these decomposition effects are presented above (see Eqs. (4) and (5)). We are able to estimate the effect of living in poverty on delinquent involvement for those reporting delinquent activities in the survey period. We are also able to separately consider the effect of poverty on the probability for delinquent involvement for those not reporting any delinquent involvement. We decompose the results from the analyses reported in Table VI. The decomposition effects are presented in summary form in Table VII.

The findings support our predictions on the magnitude of the effect of persistent poverty. For every additional 10% of a youth's life spent in poverty, the probability that that youth will engage in general delinquency increases by 1.6%. Smaller increases in the probability of offending are found for each of the offense specific categories—1.1% for property offending, 0.9% for assault, and 0.6% for status offenses. For those reporting

Table VI. Estimates from Tobit Models of Forms of Delinquency for Percent of Life in Poverty Controlling for Demographic and Family Factors (*N* = 1371)

Predictor	Delinquency index		Assault		Property offending		Status offending	
	<i>b</i> ^a	<i>t</i> -value						
Female	-0.554	-6.91	-0.535	-5.37	-0.599	-4.99	-0.516	-4.66
Black	0.005	0.04	0.173	1.37	-0.025	-0.17	0.031	0.22
Hispanic	0.106	0.79	0.015	0.09	0.355	1.93	0.064	0.35
Age	0.114	3.95	-0.017	-0.49	0.071	1.70	0.199	5.23
Cognitive stimulation in home (percentile)	0.001	0.41	0.0003	0.17	0.003	1.57	0.002	0.84
Poor supervision by mother	0.275	4.06	0.009	0.10	0.232	2.50	0.371	4.21
Mother report of low academic perform.	0.083	2.10	0.099	2.07	0.154	2.70	0.117	2.20
Youth report of self worth	-0.002	-1.40	-0.002	-1.73	-0.002	-1.52	0.001	0.34
Peer pressure	0.387	10.41	0.229	5.19	0.386	7.65	0.408	8.69
Birth order	0.151	2.80	-0.019	-0.29	0.177	2.32	0.259	3.62
Age of mother at birth of child	-0.030	-1.34	0.017	0.64	0.0001	0.00	-0.085	-2.76
Dad in household	-0.060	-0.70	-0.065	-0.62	0.030	0.24	-0.231	-1.94
Ever lived away from mother	-0.152	-1.26	-0.061	-0.41	0.250	1.54	-0.335	-2.08
Percent of life in poverty	0.005	3.17	0.004	2.27	0.007	2.92	0.003	1.34
Constant		-1.487		-0.885		-2.991		-3.078
Sigma		1.200		1.241		1.397		1.355
Log likelihood		-1317.386		-848.477		-766.517		-852.268

^aMaximum likelihood tobit coefficient.

delinquent involvement, an additional 10% of a youth's life spent in poverty results in an increase of 0.016 in the log of offending. Once we control for antecedent and mediating influences, we see that the impact of persistent poverty is statistically significant, but not substantial in magnitude

Table VII. Decomposition of Tobit Estimates from Regression of Delinquency on Percent Life Spent in Poverty (from Multivariate Analyses)

Dependent variable	Tobit coefficient	Percent change in the probability of delinquent involvement ^a	Increase in natural log of offending ^a
General delinquency	0.005	1.60	0.016
Violent offending	0.004	0.90	0.009
Property offending	0.007	1.10	0.013
Status offending	0.003	0.60	0.006

^aPer additional 10% of life spent in poverty.

6. DISCUSSION

Despite a long history of theorizing about the relationship between poverty and delinquency, and results from ethnographic and aggregate-level research pointing to a relationship between poverty and delinquency, debate continues among criminologists about the nature of this relationship. Much of this debate stems from the inconclusive results of individual-level empirical analyses, arguably the most appropriate method for demonstrating causal relationships. Using the existing criminological literature and research on the nature of poverty as guides, we sought to improve on previous individual-level analyses through careful consideration of how poverty status should be operationalized. We were able to improve upon past analyses in two ways. Firstly, we developed a measure of poverty that better captures the persistent poor. Secondly, we were able to examine the effects of the timing of poverty in a youth's life.

What did we learn from the analysis? As predicted in our first hypothesis, the level of exposure to poverty has an impact on the likelihood of delinquent involvement. This was true whether we considered the length of the longest spell in poverty or the percent of the youth's life spent in poverty. We also found that the persistent poor, as a group, are distinguishable from the short-term poor in terms of the impact of poverty. Having experienced persistent poverty is related to a higher level of involvement in delinquency. This lends credibility to the argument that the inability of past researchers to find consistent evidence of an effect of poverty is due in part to the practice of measuring poverty or class at only one point in time.

We predicted that by capturing the amount of time spent in poverty over a youth's lifetime we would find that poverty was more strongly associated with delinquent involvement than has previously been shown in the literature. While we did find consistent evidence that the percent of a youth's life spent in poverty was positively related to delinquency, we also found a similar relationship (also statistically significant) when using a cross-sectional measure of poverty tapping recent poverty status. So is it important to try and distinguish between persistent and short-term poverty? We believe the results of our analysis show that it is important to make such a distinction. In fact, as reported above, the results show clearly that poverty is related to delinquency for the persistent poor, but not for the short-term poor. Using a cross-sectional measure of poverty from one point in time confounds the ability to identify persistently poor families. If, as we argue, poverty is more likely to be related to delinquency as it becomes persistent and chronic, then it is critical to use the most valid measure of persistent/chronic poverty possible. This will require longitudinal data on poverty.

We also believe that the degree to which a cross-sectional measure of poverty will tap persistently poor families is dependent on the nature of the

sample. This sample was designed to capture the economically disadvantaged. Oversampling ensured that there was significant proportions of minority and lower-income youths in the sample. As such, our measure of poverty from one point in time may actually capture a higher proportion of persistent poor than would be the case where the sample was more general in composition. Since other samples will include a smaller proportion of persistently poor, this may help explain the inconsistent evidence in other studies on the relationship between poverty and delinquency.

We also predicted that the timing of poverty would be important. Specifically we expected that poverty experienced early in life would have a stronger effect on delinquent behavior than poverty experienced later in life. Our findings support this conclusion, in part. Living in poverty during the first five years of life makes later involvement in delinquency significantly more likely. Yet, our results also indicated that living in poverty makes concurrent delinquency more likely. It could well be that poverty affects an individual's chance of involvement with delinquency through different paths. Those exposed to poverty at a young age may experience poor prenatal and postnatal care, particularly regarding nutrition, that may contribute to cognitive difficulties that affect the youths throughout their lives. Those who experience poverty as pre-teens, however, might well be affected by the lack of educational and employment opportunities in many disadvantaged areas. Current or recently-past poverty may also act as a proxy for contextual factors not included in the model.

Our reading of the literature on the effects of growing up in poverty prepared us for the result that experiencing poverty from ages 6–10 does not influence delinquent involvement. Much of what is detrimental about experiencing poverty as a child is tied to the health and developmental processes that children go through prior to age six (Korenman and Miller, 1997). The empirical evidence points to the period of birth to age 5 as the key window of time when living in poverty has long-term detrimental effects. In our models, we control for the 0–5 period when examining the effect of living in poverty from age 6–10. Once we controlled for the impact of poverty in early childhood, there is no further independent effect of having experienced poverty in the period of ages 6–10.

We predicted that the effect of poverty would be mediated by a number of factors, including cognitive stimulation and ability, family interaction, family structure, and peer influence. Our findings support this prediction. The effect of poverty diminishes with the addition of these variables to the model. Yet, persistent poverty remains significantly related to delinquent involvement after controlling for these other factors. These findings attest to the importance of poverty—both substantively as well as empirically—despite its apparently small contribution to explained variance. We believe

that compelling evidence of the substantive importance of poverty is in the fact that the longer a child has lived in poverty, the more likely he or she will be involved in delinquent behavior.

More importantly, though, these results demonstrate that poverty is clearly not the only cause of delinquency. We should not even expect the impact of poverty to be deterministic. If anything, poverty is important to the extent that it represents a context in which behavior occurs. Growing up poor means there is less likely to be appropriate levels of cognitive stimulation in the home. Children raised in poverty are less likely to perform well academically, are more likely to report lower levels of self-confidence, and are less likely to be supervised effectively by parents. They are also more likely to grow up in families that lack the resources or skills needed by children. These intervening mechanisms contribute to a higher likelihood of delinquent participation. There is also evidence from other research that the direct impact of poverty is necessarily low given the many factors which mediate the effect of poverty on delinquency (Jarjoura and Triplett, 1997; Sampson and Laub, 1994). Combining these results with those from aggregate-level and ethnographic analyses suggests that the poverty–delinquency relationship is substantively important, particularly in the way poverty shapes experiences which lead to delinquency.

Finally, we predicted, and found, that the effect of poverty would be weaker than the effects of the mediating factors. This makes sense given the more proximate nature of many of the mediating variables. Yet, some readers will interpret this result as consistent with previous research that shows that poverty is not related to delinquency, as it appears that the explanatory power of poverty is weak. In their 1990 review of studies examining the relationship between measures of the underclass and delinquency, Tittle and Meier cited two concerns with the evidence: a lack of significant correlations between measures of class and delinquency, and consistent evidence of the relationship in the expected direction. We believe the results presented here rise above both of these concerns. The correlations between poverty and delinquency are uniformly in the expected direction, regardless of the type of offending behavior and the measure of poverty. In addition, all of the correlations (as reported in Part I of Table III) are statistically significant (of course, in a sample this large, very small correlations can be statistically significant). Finally, we note that the poverty–delinquency correlations reported here are all stronger than those covered in the Tittle and Meier review focusing on the underclass–delinquency relationship.

We would make one final comment on the strength of the association between poverty and delinquency. It is likely that the relationship reported here is, at best, a conservative estimate. This is based on the nature of the sample. First, this is a relatively young sample. The mean age of this sample

is just under 12 years. Higher levels of involvement in the more serious forms of delinquency would not be expected until the youths are older. Since poverty is not a significant predictor of participation in status offending behaviors, an older sample where more serious forms of delinquency were more prevalent would likely provide a better test of the relationship between poverty and delinquency. Another concern is related to the racial makeup of the sample. Blacks are overrepresented in this sample by design. Hindelang, Hirschi, and Weis (1981) found black youths less likely than white youths to self-report offenses that actually occurred. The disparity between blacks and whites was even greater among the more active offenders. As Hindelang and his colleagues found, we find no instance here when blacks are less likely to report offending behaviors than whites. We have no means of comparing self-reports to official records of offending, so we are unable to assess the actual validity of the self-reports by the black youths. We merely suggest, though, that if the youths in this sample follow a similar pattern as the youths in the Hindelang *et al.* work, then our estimates of the poverty–delinquency relationship may be attenuated.

Future research needs to explore further the factors that help shape the poverty–delinquency relationship. Research on poverty has already indicated a number of such factors, several of which are included in this analysis. Attention should be paid to identifying both protective, as well as aggravating factors. From a theoretical perspective, attention needs to be directed at understanding the role of poverty in shaping the lives of children in such ways as to enhance the likelihood of delinquent involvement.

Future research should include, as well, an examination of the impact of persistent poverty among those living in different contexts. Stark (1987) has suggested that the focus of criminological research on individuals outside of their context has led in part to the conclusion of some that poverty and crime are unrelated. This points to some different questions that may be posed. For instance, is there a difference between being poor in a poor neighborhood and being poor in a neighborhood that includes a more diverse set of families and individuals? Given the growing literature on the tremendous impact of living in racially- and economically-isolated neighborhoods, we suspect that context makes a difference.

Finally, future research should continue to explore the poverty–delinquency relationship using longitudinal data. The focus on change over time using longitudinal data is consistent with recent efforts which examine change over the life course (see, for example, Sampson and Laub, 1993). Such approaches can improve the quality of criminological research, regardless of the focus of that research. Given the availability of several longitudinal data sets for criminological research, it is possible to address the impact

of persistence and change in risk and protective factors over time on delinquent involvement.

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