

The Joint Impact of Family and Community Structure  
on Violent Delinquency

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In a recent report, Lauritsen (2003) showed an interesting interaction between family structure, neighborhood disadvantage, and violent victimization. Using data from the National Crime Victimization Survey (NCVS), she found that, for adolescents residing in two-parent families, violent victimization was not related to the level of neighborhood disadvantage. That is, the rates of victimization were approximately the same for youth residing in the least and in the most disorganized areas. For adolescents from single-parent families, however, there was an impact of neighborhood disadvantage on violent victimization. In particular, for these adolescents, those who lived in highly disorganized areas, i.e., above the 80<sup>th</sup> percentile, victimization was higher than for those residing in less disadvantaged areas. The basic result was presented in her Figure 2 (Lauritsen, 2003:7), here reproduced as Figure 1.

The purpose of this report is to examine this issue using data from the Rochester Youth Development Study. There is one major difference between the Lauritsen analysis and the present one: the RYDS did not collect information on victimization. As a result, we will examine the interaction for violent offending, not violent victimization.

## **METHODS**

The Rochester Youth Development Study is an ongoing longitudinal study investigating the causes and consequences of serious, violent, and chronic delinquency. It has followed a panel of juveniles from their early teenage years through age 30, completing a total of 13 interviews with the respondents. The present analysis, however, only uses the adolescent data (Waves 1-9), the developmental stage covered by the Lauritsen analysis. The Rochester study began in 1988, at which time 1,000 seventh- and eighth-grade students were sampled from public schools in Rochester, New York. Subjects and a primary caregiver (most often the biological mother) were interviewed every six months from the spring of 1988 until the spring of 1992.

In order to meet our study objectives, we oversampled youth at high risk for serious delinquency and drug use because the base rates for these behaviors are relatively low (Elliott, Huizinga, & Menard, 1989; Wolfgang, Thornberry, & Figlio, 1987). To do this, the sample was stratified on two dimensions. First, males were oversampled (75% versus 25%) because they are more likely than females to be chronic offenders and to engage in serious and violent delinquency (Blumstein et al., 1986). Second, students from high crime rate areas of the city were oversampled based on the assumption that adolescents who live in such areas are at greater risk for offending than are those living in low crime rate areas. In order to identify these areas, each census tract in Rochester was assigned a resident arrest rate reflecting the proportion of the tract's total population arrested by the Rochester police in 1986.

Because the probability of selection into the study is known for all the students, we can weight the data to represent the target population -- the total cohort of seventh and eighth graders in the Rochester public schools in 1988. All data are weighted in the analysis presented here.

### Measures

The dependent variable is the frequency of involvement in violent behavior. At each wave, respondents were asked to self-report their involvement in various forms of delinquency. The Violent Delinquency index includes six items such as throwing objects at a person, robbery, and physically attacking someone with a weapon. In the present analysis, we use a cumulative measure of the frequency of violent behavior, covering interview Waves 2 to 9, when respondents were on average 14 to 17 years old. The dependent variable is logged because of the skewness toward high values.

We rely on the longitudinal nature of the Rochester study to create a more dynamic measure of family structure than that available in the NCVS. In particular, we use a measure of

Caretaker Transitions, that is, changes in the child's parenting environment over time. Caretaker transitions were counted by comparing family structure in adjacent interviews between the ages of 13 and 17 (up to a maximum of eight transitions using 6-month interviews). For example, if a youth lived with both biological parents during the first interview and with the biological mother only at the second interview, a transition occurred. If the mother's partner subsequently moved into the household, a second transition occurred.

There are a surprising number of transitions for the subjects in the Rochester study. Over this four-year period, 64% experienced at least one change in family structure and 46% experienced two or more. At the extreme, 6.5% experienced five to seven transitions. The number of transitions experienced is significantly related to a variety of negative outcomes, including violence, delinquency, and drug use (Thornberry, 1994; Thornberry et al., 1999).

The index of area disadvantage is based on 15 variables measuring social and structural disadvantage. These were collected for census tracts in Monroe County from the 1990 Census Summary File 3 (U.S. Census Bureau, 1992). They include the percent of total families in poverty, percent of persons in households on public assistance, percent of persons 16 years and older unemployed, percent of males 16 years and older unemployed, percent of persons 25 years and older with less than a high school diploma, those with some college education but not necessarily a degree, percent of total persons who are African American, and percent of total persons of Hispanic origin. A coefficient of racial/ethnic homogeneity was also included.<sup>1</sup> Household variables in the index include median income, percent single-parent, percent female-headed, percent of total units that are vacant, percent of occupied units that are renter-occupied,

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<sup>1</sup> This variable was created by summing the squared values of the percent total persons of Hispanic origin, African American, White and of "Other" racial/ethnic groups. The value of this coefficient ranges from zero to one, with a score of one indicating that the tract is 100% racially/ethnically homogeneous.

and the percent of specified owner-occupied units below the median value.<sup>2</sup>

Using tracts as the unit of analysis, an index was created using principal components analysis with one factor. The eigenvalue for the factor is 11.11, factor loadings are all above .5, Cronbach's alpha for the variables in the index is high (.83), and index scores for tracts range from -1.24 to 2.52. Each individual student was assigned a score on the index based on his tract of residence.

There are two ways to estimate interaction effects for this analysis. One is to multiply caretaker transitions by neighborhood disadvantage and enter the multiplicative term into a regression equation. If there is an interaction, this term will be statistically significant. While somewhat less intuitive, this approach has some statistical advantages. The second, and more intuitive, strategy is to estimate two regressions of violent delinquency on disadvantage, one for the low and one for the high caretaker transitions group. We use both strategies here.

## RESULTS

The results based on the multiplicative approach are presented in Table 1. Both the number of caretaker transitions and neighborhood disadvantage are significantly associated with violent offending. Youth residing in families where there are frequent changes in family structure are more apt to be violent; youth residing in more disadvantaged neighborhoods are more apt to be violent.

The interaction term combining caretaker transitions and neighborhood disadvantage is not statistically significant, however. In fact, it is virtually zero. Thus, the impact of disadvantage on violent offending is the same for those with fewer and those with more caretaker transitions. This can be seen more easily in Table 2 and Figure 2.

In Table 2 we regressed violence on neighborhood disadvantage for those who

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<sup>2</sup> The median of the median values for census tracts is \$79,900.

experienced no transitions (36% of the sample) and then for those who experienced one or more transitions. The impact of neighborhood disadvantage is significant in each case, but the coefficients are of approximately the same magnitude: unstandardized coefficients of .17 and .18, respectively. These two regression coefficients are not statistically different from one another,  $Z=.12$ ,  $p=.12$ . The equivalence of these effects can be seen in Figure 2.

The regression lines representing the impact of neighborhood disadvantage on violence are seen to be two parallel lines. Compare them with the curves in Lauritsen's results (Figure 1). In that case, there is a sharp divergence in the two lines after the 80<sup>th</sup> percentile point. In our case, however, the divergence is not evident.

### CONCLUSION

This paper examined whether there is an interaction between family structure and neighborhood disadvantage in accounting for self-reported violent offending. We find no evidence of such an interaction.

Youth from disadvantaged neighborhoods report more violence than those from less disadvantaged neighborhoods. Youth experiencing a greater number of family transitions report more stability. But, the impact of disadvantage on violence is the same regardless of the number of caretaker transitions.

These findings are obviously very different from those reported by Lauritsen (2003). There are two major differences between the studies that might account for this. First, we examined offending, while she examined victimization. Second, she examined a national sample, while we examined a sample of urban youth. No doubt there are other differences as well. Nevertheless, we do not observe an interaction between family and neighborhood structure in accounting for violent offending.

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Table 1: Interaction of Family Transitions and Neighborhood Disadvantage on Violent Delinquency (Logged)

	Unstandardized Coefficient	Standard Error	Standardized Coefficient	t
Family Transitions	.14	.03	.19	5.57**
Neighborhood Disadvantage	.17	.05	.13	3.68**
Family Transitions X Neighborhood Disadvantage	-.01	.03	-.02	-0.45
(n=816)				
Adjusted R = .06				

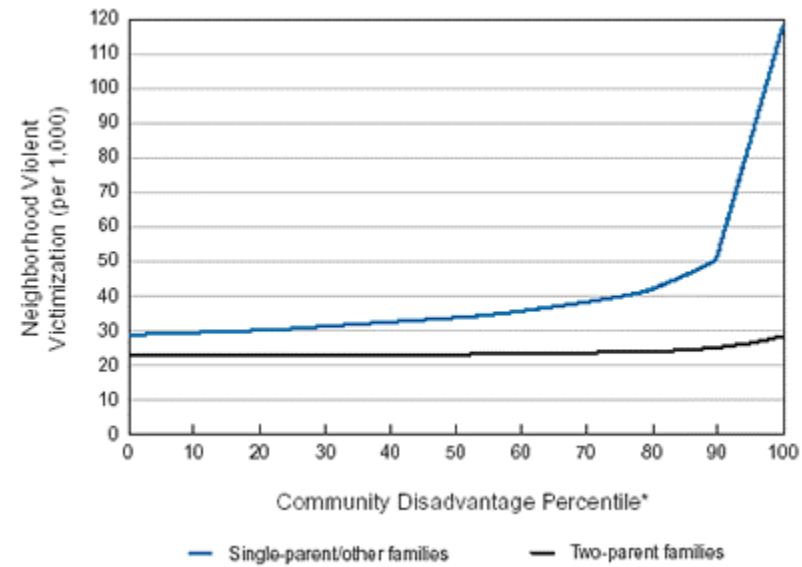
\*\*p < .01



Table 2: The Impact of Neighborhood Disadvantage on Violent Delinquency (Logged), By Level of Family Transitions				
a. Subjects with No Family Transitions				
	Unstandardized Coefficient	Standard Error	Standardized Coefficient	t
Neighborhood Disadvantage (n = 310) Adjusted R = .02	.17	.06	.05	2.66**
b. Subjects with At Least One Family Transition				
Neighborhood Disadvantage (n = 521) Adjusted R <sup>2</sup> = .01	.18	.06	.13	2.87**

\*\*p < .01

Figure 1: Risk of Youth Victimization, by Level of Community Disadvantage and Family Type



Source: Lauritsen (2003: Figure 2).

**Figure 2: Violent Delinquency, by Level of Neighborhood Disadvantage and Number of Family Transitions**

