

**Structural changes and neighborhood homicide trends in St. Louis, Missouri, 1980--2000:
A multi-level and spatial analysis**

Ph.D Dissertation

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Abstract

Social scientists have long observed strong correlations between social structure and violent crime rates at the neighborhood level. Yet little is known about the relationship between changes in social structure and violent crime trends. Furthermore, the spatial distribution of crime trends has received little attention in the literature. The dissertation explores the trajectories and spatial dynamics of neighborhood homicide rates and social structure in St. Louis, Missouri between 1980 and 2000.

Multilevel growth curve models are used to describe the nature of, and variation in, census tract homicide trajectories as functions of structural characteristics and changes in those features. Exploratory spatial data analysis is used to measure and describe the spatial distribution and autocorrelation of homicide trends and social structure. Finally, spatial regression models are used to determine if the distribution of social structure explains the spatial autocorrelation of homicide trends across neighborhoods.

The findings show that St. Louis neighborhoods experienced significantly different homicide trajectories. Communities with higher levels of economic disadvantage experience the most pronounced fluctuations in violence. However, changes in structural characteristics provide only weak explanation of the variations in homicide trends between neighborhoods. The results indicate that homicide trends may have reciprocal influences on structural changes and that structure-crime processes operate differentially across regions of St. Louis. Furthermore, homicide trends and structural changes both exhibit positive spatial autocorrelation. Finally, between 1987 and 2000, the level and changes in structural conditions reduces residual clustering in homicide trends to zero.

The results indicate a need to further explore changes in neighborhood contexts and trends in non-structural correlates of violence. Furthermore, future research should examine the interdependence of spatial regimes in the development of dynamic urban systems. Finally, criminologists should examine more closely the influence of crime on neighborhood conditions.