

Ecological Networks and Urban Crime: The Structure of Shared Routine Activity Locations and Neighborhood-Level Informal Control Capacity.¹

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Abstract

Despite decades of research, our knowledge of why and how neighborhoods influence local crime rates is still emerging. Drawing on the seminal work of Jane Jacobs, we hypothesize that the extent of public contact among neighborhood residents, captured by the aggregate network structure of shared local exposure, is consequential for crime. Neighborhoods in which residents intersect in space more extensively in the course of conventional routine activities will exhibit higher levels of public familiarity, beneficial (“weak”) ties, trust, collective efficacy, and more consistent monitoring of public space, with implications for the informal social control of crime. We employ the concept of *ecological* (“eco-”) *networks* to formalize our hypotheses. Eco-networks are two-mode networks linking households within neighborhoods through a shared activity location. Shared routine activities capture *interaction potential* characterizing two households (not necessarily actual social network ties). We expect that eco-network *extensity* (the average proportion of neighborhood households to which a given household is tied through any location) and *intensity* (the probability that households tied through one location will be tied through another visited location) will be negatively associated with neighborhood crime. We use unique simulation data on the travel patterns of urban households to construct eco-networks for Columbus, OH and extract network structural properties by census tract. We then examine associations between eco-network characteristics and geo-coded administrative data on crime in Columbus (N=189 census tracts). We employ spatial autoregressive models of neighborhood crime rates adjusting for a host of structural controls and prior crime. Results offer evidence that eco-networks characterized by more extensive ties among households exhibit lower levels of violent and property crime. These analyses hold the potential to enrich insight into the spatially anchored network origins of neighborhood crime control.