

EXAMINING THE ENVIRONMENTAL CHARACTERISTICS OF DRUG DEALING LOCATIONS

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Full Article:

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Introduction

In open-air drug markets, dealers must simultaneously access customers while minimizing a variety of risks (Eck, 1995). Some locations may be more suitable for drug dealing than others. These locations will have disproportionately high levels of drug dealing because they have a particular set of environmental features (see Kennedy, Caplan, & Piza, 2011) that allow dealers to balance the unique demands of operating an open-air market. That is, some locations contain particular qualities that produce “ecologically advantageous” conditions for crime (St. Jean, 2007). Only a handful of studies have examined this phenomenon to-date. And prior studies rarely examine variation in the environmental features of drug dealing locations by drug type. This research study applies Risk Terrain Modeling (RTM) to (a) explore the environmental features of drug dealing locations, and more specifically, (b) compare the environmental features of locations where cannabis, heroin, crack, and cocaine are sold.

The Study

Drug markets refer to highly concentrated drug activity occurring among a small group of people or at a specific location (Reuter & Pollack, 2012). According to Eck (1995), dealers and buyers have two primary concerns: accessing one another and maximizing the security of transactions. When operating in public places, dealers exploit specific locations with particular environmental features that increase control over transactions and thereby resolving these concerns (Eck, 1995). A number of studies have explored these features, and have found that drug dealing is more likely to occur at locations influenced by bars and liquor stores, public transit stops, highway access ramps, check-cashing stores, homeless centers, or hotels (see Bernasco & Jacques, 2015; McCord & Ratcliffe, 2007; Rengert, et al., 2005; St. Jean, 2007)

However, concerns of accessibility and security may be tied to the type of drug that is being sold. Different drugs may have different consumers, sellers, or legal considerations (Curtis & Wendel, 2000; Decker, 2000; Decker & Van Winkle, 1994; Office of National Drug Control Policy, 2012; Yeh, 2015), meaning that certain environmental features may be better suited to address these concerns leading to different types of drugs being sold in different locations. Conversely, accessibility and security may be universal concepts. When a particular location is ripe for drug dealing more generally, many dealers will move in to capitalize on the ecologically advantageous space.

This study explores the environmental features of drug dealing locations in Chicago, Illinois. Then, the environmental features are compared for locations where the four aforementioned types of drugs are sold.

Methodology

RTM is a tool for geospatial risk assessment that is designed to identify crime-prone locations as a function of criminogenic features of the environment (Caplan, Kennedy, & Miller, 2011). In this study, RTM was utilized to assess the relationship between 28 environmental features as potential risk factors and drug arrest incident locations for the manufacture or delivery of cannabis, heroin, crack and cocaine that occurred in public places between 2010 and 2014.

The RTMDx Utility (Caplan & Kennedy, 2013) was utilized to perform each RTM analysis (i.e., for each drug type). Parameters were standardized across models, with block lengths of 426 feet and cell sizes of 213 feet. The spatial influence of each environmental feature was tested as a function of density and proximity, at whole block increments, to a maximum extent of three blocks.

Results

The risk terrain models identified 11 risk factors for cannabis dealing, 12 for heroin dealing, 11 for crack dealing, and three for cocaine dealing. Foreclosures represented the riskiest environmental feature for cannabis (RRV = 10.21), heroin (RRV = 4.95), crack (RRV = 11.12), and cocaine (RRV = 16.56) dealing in Chicago (see Table, below). Across all drug markets, a number of security and accessibility features were identified. With regard to the former, locations with broken street lighting, affordable housing, foreclosures, and problem landlords were at higher risk for cannabis, heroin, and crack dealing. In terms of the latter, locations containing filling stations, retail food establishments, bus stops, grocery stores, liquor stores, and schools were at higher risk for cannabis, heroin, and crack dealing.

Figure 1 demonstrates that many locations that are high risk for dealing one type of drug are also high risk for another type of drug (i.e., areas shaded black). This makes sense, as the models demonstrate substantial overlap in risk factors. However, there were also a number of dissimilarities across models. The result, as Figure 1 shows, was several locations that were high risk for dealing one type of drug (i.e., areas shaded gray). Divergent spatial patterns in drug dealing locations were due to the unique set of risk factors, the way they influence their surroundings, and the extent of their influence.

Discussion

This study tested numerous environmental features that were likely to provide accessibility or security for drug dealing. The results support prior evidence pointing to the importance of these two dimensions. Overall, the findings suggest that accessibility and security are both key dimensions of ecological advantage for drug dealing. Moreover, cannabis, heroin, crack, and cocaine dealing had many risk factors in common, and as a result, there was also substantial degree of geographic overlap in high-risk locations. However, there was some variation in risk factors and their associated spatial influences for cannabis, heroin, crack, and cocaine dealing. The confluence of unique risk factors for each drug type produced a number of qualitatively distinct high-risk locations for dealing (Kennedy et al., 2015).

This study adds to the importance of understanding crime places, and the utility of RTM to explore the environmental features of micro-level drug dealing locations. Environmental qualities influence drug dealing, and this influence can vary across markets for different types of drugs. With such localized insights and actionable intelligence, more focused interventions can be developed and implemented to achieve better public safety outcomes.

References: See full article for complete list of references.

Table: Optimal Risk Terrain Model Specifications for Cannabis, Heroin, Crack, and Cocaine Arrest Incidents in Chicago, 2010 – 2014.

Risk Factor	Cannabis		Heroin		Crack		Cocaine	
	OP, SI	RRV	OP, SI	RRV	OP, SI	RRV	OP, SI	RRV
<i>Security Features</i>								
Broken Street Lights	D, 1278	1.63	D, 1278	2.43	D, 1278	1.88	-	-
Affordable Housing	P, 1278	1.52	D, 1278	1.73	P, 1278	1.46	-	-
Public Parking Garages	-	-	-	-	-	-	-	-
Foreclosures	P, 852	10.21	P, 852	4.95	P, 852	11.12	P, 852	16.56
Parks	-	-	P, 1278	1.17	-	-	-	-
Problem Landlords	P, 1278	2.48	P, 1278	2.85	P, 1278	3.62	-	-
<i>Accessibility Features</i>								
Apartment Complexes	-	-	-	-	-	-	-	-
Banks	-	-	-	-	-	-	-	-
On Premise Liquor	-	-	-	-	-	-	-	-
Filling Stations	P, 426	1.69	P, 1278	1.57	P, 1278	1.61	-	-
Late Hour Establishments	-	-	-	-	-	-	-	-
Packaged Goods	-	-	-	-	-	-	-	-
Retail Food	P, 1278	2.22	P, 852	1.37	P, 852	1.60	P, 426	3.11
Secondhand Dealers	-	-	-	-	-	-	-	-
Taverns	-	-	-	-	-	-	-	-
Bus Stops	D, 426	1.78	D, 426	1.63	D, 426	1.37	-	-
Grocery Stores	P, 852	2.07	P, 1278	2.65	P, 852	2.47	D, 1278	2.26
Homeless Shelters	-	-	P, 1278	2.20	-	-	-	-
Laundromats	-	-	-	-	-	-	-	-
Liquor Stores	P, 426	2.09	P, 1278	1.33	P, 426	1.95	-	-
Night Clubs	-	-	-	-	-	-	-	-
Pawnbrokers	-	-	-	-	-	-	-	-
Rail Stations	-	-	-	-	-	-	-	-
Retail Shops	-	-	-	-	-	-	-	-
Schools	P, 1278	1.39	P, 1278	1.45	P, 1278	1.41	-	-
Variety Stores	P, 1278	1.46	-	-	P, 1278	1.32	-	-
Youth Centers	-	-	-	-	-	-	-	-
Highway Access Ramps	-	-	-	-	-	-	-	-

OP: Operationalization (Proximity or Density); SI: Spatial Influence (1 block = 426 ft.); RRV: Relative Risk Value

Figure 1: Spatial overlap (i.e., areas shaded black) and divergence (i.e., areas shaded gray) of locations at high-risk for dealing cannabis, heroin, crack, and cocaine in Chicago, Illinois from 2010 – 2014.

