

# Exploring the Defensive Actions of Drug Sellers in Open-Air Markets: A Systematic Social Observation

Eric L. Piza

*John Jay College of Criminal Justice*

*City University of New York*

Victoria A. Sytsma

*Centre for Criminology and Sociolegal Studies*

*University of Toronto*

## Abstract

*Objectives:* The current study contributes to the literature through a systematic social observation (SSO) of the defensive actions of drug sellers within open-air retail markets. The study expands upon previous literature by incorporating a novel data collection and coding method.

*Methods:* Video footage of narcotics transactions was extracted from the CCTV system of the Newark, NJ Police Department. Researchers transcribed and coded the footage to measure the frequency of defensive actions incorporated by drug sellers. Fisher's exact tests measured whether the frequency of each defensive action significantly differed across geographic setting or time-of-day.

*Results:* The frequency of many defensive actions was significantly related to geographic setting and time-of-day. The strongest relationship was observed between the use of stash spots and setting. Overall, the findings suggest that drug sellers adopt tenets of Opportunity Theory to protect themselves from law enforcement, specifically by acting as guardians and place managers on their own behalf.

*Conclusions:* This study extends prior techniques and provides an additional case study on the use of CCTV footage in the study of street-level crime. This methodology can be used in concert with more traditional ethnographic techniques in the study of the drug trade and in crime-and-place research in general.

## Keywords

drug selling, systematic social observation (SSO), CCTV footage, mixed-methods, situational crime prevention

## Citation

Piza, E. and Sytsma, V. (2016). Exploring the Defensive Actions of Drug Sellers in Open-Air Markets: A Systematic Social Observation. *Journal of Research in Crime and Delinquency*, 53(1): 36-65. <https://doi.org/10.1177/0022427815592451>

## **Introduction**

Perhaps no street-level crime occurs in as conspicuous a manner as public drug selling (Jacobs, 1999). The very nature of the crime requires both buyers and sellers to be publicly, and continuously, accessible to one another. This mutual accessibility sustains drug markets by ensuring that participants can easily locate one another and engage in the transaction. Ironically, while accessibility is key to the process, "the more accessible a participant is, the less security he or she has" (Eck, 1995: 72). In response to this vulnerability, drug offenders incorporate a number of defensive tactics to avoid detection and apprehension by police. Research has consistently found that such strategies effectively shield drug sellers from law enforcement action.

The current study contributes to the literature on the defensive tactics of drug offenders, specifically drug sellers within open-air retail markets. We extracted video footage of the moments preceding, during, and following narcotics transactions from CCTV cameras operated by the Newark, NJ Police Department (NPD). Through systematic social observation (SSO) researchers transcribed and coded this footage to analyze the defensive actions of the drug sellers observed on camera. Findings suggest that drug sellers incorporate an array of defensive actions and the frequency of such actions is commonly influenced by geographic setting and time-of-day. The nature of seller actions suggests that situational factors, as articulated by Opportunity Theory (i.e. Rational Choice and Routine Activities), directly influence public drug selling strategies.

## **Review of Relevant Literature**

### ***Theoretical Framework***

Contemporary research on street-level drug selling (e.g.. Eck, 1995; Jacques & Wright, 2011; Jacques & Reynald, 2012) has been grounded within the Rational Choice and Routine Activity perspectives of criminology (Cornish & Clarke, 1986; Cohen & Felson, 1979). Rational Choice

recognizes offender decision-making as a key determinant of crime occurrence. This emphasis on decision-making forces criminologists to distinguish between offender criminality and distinct criminal events (Clarke, 1997). Even if an individual is criminally active, generally speaking, his or her participation in crime is determined on a case-by-case basis. Only when the potential rewards outweigh the risks will an individual choose to offend. While such decisions typically occur in a state of bounded-rationality constrained by limited time and information, the offender nonetheless ponders the situation at hand (Clarke & Cornish, 1985).

The framing of the drug trade through the Rational Choice perspective raises some intriguing questions. A rich body of literature highlights the vulnerability of street level drug sellers, particularly due to the necessity for drug sellers to be publicly accessible to buyers (Adler, 1993; Agar, 1973; Eck 1995). While such accessibility maximizes profits through the facilitation of seller/buyer interactions, it brings the consequence of making drug sellers susceptible to detection and sanction. Thus, if offending is the result of a decision-making process why would drug sellers consider the rewards to be worth the risks in such a vulnerable situation? This paradox is better understood once Rational Choice is considered alongside Routine Activities theory (Cohen & Felson, 1979). Routine Activities considers crime incidence as the outcome of the spatial and temporal convergence of three elements: a likely offender, a suitable target, and the absence of a capable guardian. In applying these perspectives to the drug trade, Jacques & Wright (2011: 738) referred to Rational Choice and Routine Activities as "theoretical siblings" that rely on each other to make accurate predictions. Even when offenders wish to engage in crime, they cannot act upon their desires outside of the appropriate situation, as determined by the routine activities of the participants (Felson & Clarke, 1998). For drug offenders, while their trade requires exposure and vulnerability, the opportunity structure created through the routine activities of involved parties minimizes risk enough that crime commission is worth the potential reward.

### ***Opportunity Theory and the Prevention of Drug Selling***

In the crime prevention arena, Rational Choice and Routine Activities have been jointly considered (along with Crime Pattern Theory; Brantingham & Brantingham, 1981) as "Opportunity Theory" (Felson & Clarke, 1998). As opposed to traditional criminological theories, which focus on what makes people "criminal," opportunity theory focuses on the immediate situational causes of crime events (Clarke & Eck, 2005: section 8). Scholars have incorporated the tenets of opportunity theory in the conceptualization of the Problem Analysis Triangle (Hough & Tilley, 1998), an analytic device "intended to help analysts visualize crime problems and understand relationships among the three elements" of crime causation: the target(s), the offender(s), and the place of occurrence (Braga, 2008: 3). A more recent advancement of the triangle suggests specific avenues of focus for crime prevention strategies, specifically by emphasizing the role of controllers (Clarke & Eck, 2005). Traditionally, Routine Activities emphasized the roles of two controllers: guardians who protect suitable targets and handlers who are in a position to exert control over potential offenders (Felson, 1986). Eck (1994) extended the concept of controllers to include a third type, place managers, who can influence the activities of a specific environment in a manner that discourages crime. As described by Felson (1995), Eck's (1994) extension of the controller concept presents crime opportunity as two triplets. The first triplet presents the three elements of crime (target, offender, and amenable place) while the second triplet presents the controllers that exert influence over each of these elements (guardians, handlers, and place managers).

The tenets of Opportunity Theory have contributed to the development of effective crime control strategies, specifically Situational Crime Prevention (Clarke, 1980, 1997) and Problem-Oriented Policing (Goldstein, 1979, 1990). These strategies have mitigated drug selling by focusing the actions of controllers in a manner that directly addresses the situational characteristics of drug markets. For example, in Jersey City, NJ police (guardians) developed a problem-oriented drug

enforcement approach followed by a patrol maintenance program at targeted drug markets (Weisburd & Green, 1995; Weisburd et al., 2006). In High Point, NC a focused-deterrence strategy coordinated the activities of influential community members and prosecutors (handlers) to coerce drug sellers into abandoning the drug trade (Corsaro et al., 2012; Kennedy & Wong, 2009). In Oakland, CA, crime-control activities and cohesiveness of code enforcement officers, business personnel, and neighborhood residents (place managers) were significantly associated with decreased levels of drug and disorder activity on targeted street blocks (Mazerolle, Kadleck, & Roehl, 1998).<sup>1</sup>

***Opportunity Theory and Offender Threat Management: Defensive Actions of Drug Sellers***

Opportunity Theory provides a powerful framework to explore situational aspects of crime and crime prevention. Interestingly, recent research has found that the tenets of Opportunity Theory also explain strategies used by offenders in their management of sanction threats. Obviously, the observation that offenders take precautions to prevent sanction is not new, with researchers reporting such findings in the 1930s and 1940s (Sutherland, 1937; Whyte, 1943). However, recent research has shown that such offender precautions generate from the same situational underpinnings as crime prevention efforts. Jacques and Reynald (2012) provided an illustration in the context of the illicit drug trade. Through qualitative data from drug sellers, Jacques and Reynald (2012) demonstrated that the actions of offenders strictly adhered to the opportunity-reducing techniques of situational crime prevention, similar to the actions taken by law-abiding citizens. The observations of Jacques and Reynald (2012) enjoy a great deal of support as prior research has noted similar defensive actions among drug sellers.

A popular tactic amongst drug sellers involves the use of partners in drug transactions. While a primary seller oversees the operation, and ultimately manages proceeds from sales, other people fill specific roles. Certain individuals transport the drugs and/or money between drug sellers

and buyers. Referred by such terms as middle men, go-betweens, or runners (Johnson & Natarajan, 1995; Moskos, 2008), such individuals allow drug sellers to avoid (or reduce) direct contact with buyers, thus minimizing sellers' exposure to law enforcement activity. In such arrangements, these partners only receive from the seller the precise quantity of drugs paid for by the buyer, meaning their arrest typically results in minor charges (Johnson et al., 1985). A second type of partner frequently observed in the literature is lookouts, persons who watch for the presence and/or approach of police officers (Jacobs, 1999; Johnson & Natarajan, 1995). Lastly, research has found that sellers use partners to hold their narcotics inventory or proceeds from transactions (Johnson & Natarajan, 1995, Moskos, 2008). While sellers conduct the transactions in such instances, this arrangement allows them to operate while possessing minimal quantities of narcotics and proceeds.

As for the actual exchange of drugs and money, sellers have reported the use of several transactional mediation schemes (Jacobs, 1999) meant to obscure the occurrence of the transaction. The first type of mediation scheme involves the use of props, the placing of drugs or money in an object for delivery purposes. Examples of props include sellers placing drugs inside of objects such as folded newspapers (Jacobs, 1999: 89), crumbled paper bags (St. Jean, 2007: 119-120), and other miscellaneous forms of litter (Johnson & Natarajan, 1995: 59) for a buyer to pick up after payment. Props allow sellers to make transactions without the use of potentially conspicuous hand-to-hand exchanges. A second type of scheme is public cuts, which refer to publicly accessible places that have a somewhat private dimension by being partially obscured from sight (Jacobs, 1999: 91). Public cuts include places such as alleyways, basement pits, or spaces between buildings. Cuts provide sellers quick cover for transactions without leaving the drug market. In addition, since undercover police officers need to maintain visible contact with their back-up teams, sellers often believe that undercover officers are reluctant to enter cuts (Jacobs, 1999). A somewhat related scheme, which we refer to as legitimate context, involves sellers using legitimate features of the

drug market to give the impression that they are involved in licit activities during their transactions. For example, Jacobs (1999) reported that sellers would often sell from within fast food restaurants to appear like customers, while St. Jean (2007) found that dealers preferred to operate around transit stops to give the impression that they were waiting for public transportation.

Sellers may conduct different phases of the transaction at different places within the drug market in an attempt to obscure the transaction (Johnson & Natarajan, 1995). Such a strategy makes it difficult for police to prove that "geographically and temporally distinct transactions...were somehow related to the same sales transaction event" (Johnson, Dunlap, & Touringy, 2000: 29). For example, a seller and buyer may exchange currency at one location and then walk to another location for the purpose of conducting the exchange of drugs. By separating the components of the transaction offenders obscure the exchange, to a certain extent.

A particularly popular defensive tactic reported in prior research is the use of stash spots, which are "secret places for keeping ones' drugs, guns, money, or other desirable object" (Jacques & Reynald, 2012: 282). Stash spots help sellers minimize the probability of being caught with drugs on their person, while also minimizing the likelihood of having significant quantities on them in the event that they are caught (Jacobs, 1999; Moskos, 2008). Stashes are typically kept in an environmentally hidden area close by the seller's location, allowing for quick access when needed (Jacobs, 1999; Jacques, & Reynald, 2012; Johnson & Natarajan, 1995). Research has also found that drug sellers use on-person stash spots by holding drugs within areas of their person not easily detected during a police stop, such as in shoes, socks, and inside of underwear (Jacobs, 1999). While the drugs are still in the seller's possession in such instances, the stash is not as vulnerable as when drugs are kept in easily found areas, such as a pants or jacket pocket.

Lastly, research has found that drug sellers manipulate the speed at which transactions occur. The motivations for different transaction speeds are contextual, with both quick and delayed

transactions providing benefits to the seller. On the one hand, hasty transactions may indicate efforts to avoid apprehension through rapid completion of the criminal act (Gill & Loveday, 2003). However, research has also found that sellers oftentimes deliberately delay transactions to allow more time to verify that they received the proper amount of currency and/or that the buyer is not an undercover officer before surrendering the drugs (Jacobs, 1993, 1999; Jacques & Reynald, 2012).

### **Scope of the Current Study**

The extensive research on drug selling has contributed greatly to our understanding of the defensive tactics incorporated into the drug trade. However, it should be noted that offenders themselves have largely reported such information during interviews. Findings can be compromised if offender accounts are dishonest or embellished in certain respects. To be sure, researchers are well aware of this and report the use of various controls to minimize threats to validity, such as conducting follow-up interviews later in time (Williams, 1992), probing unusual comments to determine accuracy (Jacques & Wright, 2011), and using data saturation, an indicator of how useful the sample is for indicative knowledge, to determine when data from various sources confirm overarching themes (Coomber & Maher, 2006). However, as noted by Jacques and Wright (2011: 741), such safeguards do not eliminate the possibility that subjects lied or embellished their accounts.

Irrespective of the truthfulness of research subjects, more direct observations of drug seller tactics would significantly contribute to the literature. As argued by Sampson and Raudenbush (1999: 606), "direct observation is fundamental to the advancement of knowledge." However, it should be acknowledged that most research has relied on second-hand accounts for good reason. Since they engage in inherently illegal behavior, drug sellers do not readily allow third parties to view their operations. Researchers in certain cases have needed to experience the brunt of law enforcement themselves before earning the necessary trust of offenders. For example, Jacobs (1999)

stated that his research on St. Louis drug offenders did not gain momentum until he was stopped and searched by police at an open-air drug market, which assured offenders that he had no association with law enforcement. Granted, researchers can gain access to sensitive populations through other means: negative encounters with police are no prerequisite. However, gaining the required trust of offenders is a hurdle not all researchers can overcome (Adler, 1993).

The current study contributes to the literature through the SSO of public drug transactions in Newark, NJ. Similar to prior research, our analysis focuses on the defensive tactics incorporated by street-level drug sellers. We build upon prior research by incorporating video footage of narcotics transactions as a data source, which was recorded by CCTV cameras operated by the NPD. The footage allows for in-depth observation, and analysis, of the defensive actions incorporated by drug offenders and follows in the tradition of prior studies incorporating video footage in SSO (Sampson & Raudenbush, 1999; St. Jean, 2007).

## **Methodology**

### ***Study Setting and Data Sources***

Newark is the largest city in New Jersey, spanning over 26 square-miles with a population of nearly 280,000 persons. The percentage of residents living below the poverty level (28%) is nearly three times that of New Jersey as a whole (9.9%). Ethnic minorities largely comprise Newark's population: 52.4% of residents are Black and 33.8% of residents identify themselves as Hispanic or Latino (U.S. Census Bureau, 2014). The city has a longstanding reputation as a tumultuous, dangerous urban environment (Tuttle, 2009), with city officials commonly attributing serious crime problems to the illicit drug trade (Piza & O'Hara, 2014: 698).

In 2007, the City of Newark installed a public CCTV system, and the Video Surveillance Unit (VSU) of the NPD has responsibility for the day-to-day CCTV operations. The system can store and save footage from camera feeds for a period of 30-days. Portions of footage can also be

exported and stored indefinitely on disk. Footage is saved each time VSU monitoring activity generates probable cause leading to an arrest and includes footage prior to, during, and following the drug transaction. Following each arrest, a disk is submitted into evidence and an additional copy is stored at VSU.

Footage disks are documented within VSU's Video Control Ledger. The ledger lists the following for each incident: the case number, the date/time/location of the incident, the crime observed by the operator, and the primary arrest charge (if an arrest occurred). From November 2007 through 2011, the time frame for which we had access to the data, the Video Control Ledger included 1,667 disks. Researchers reviewed the ledger and identified all incidents with a crime type of Drug Distribution that resulted in an arrest for inclusion in this study. Given the clandestine nature of hand-to-hand drug transactions, it can sometimes be difficult to determine precisely what was exchanged between parties. The fact that the person on camera was subsequently arrested and charged with drug distribution provides confirmation that the behavior was part of a drug transaction. In total, 200 cases fit the selection criteria. Due to resource constraints we focused on the 62 incidents occurring in 2011. Across those 62 incidents, footage amounted to 1,436 minutes of video, with each minute of video footage requiring approximately 20 minutes of transcription time. This was due to a need to frequently pause and rewind footage in order to sufficiently describe the observed activities. The result was approximately 28,720 minutes, or nearly 480 hours spent transcribing data. With limited resources at our disposal we were simply unable to include more cases in the study.

### ***CCTV Footage as a Data Source***

We feel that the observation of drug transactions provides a unique opportunity for the study of the procedural aspects of drug selling. Indeed, researchers have previously created video recordings of block faces to study issues of crime and disorder (e.g. Sampson & Raudenbush, 1999; St. Jean,

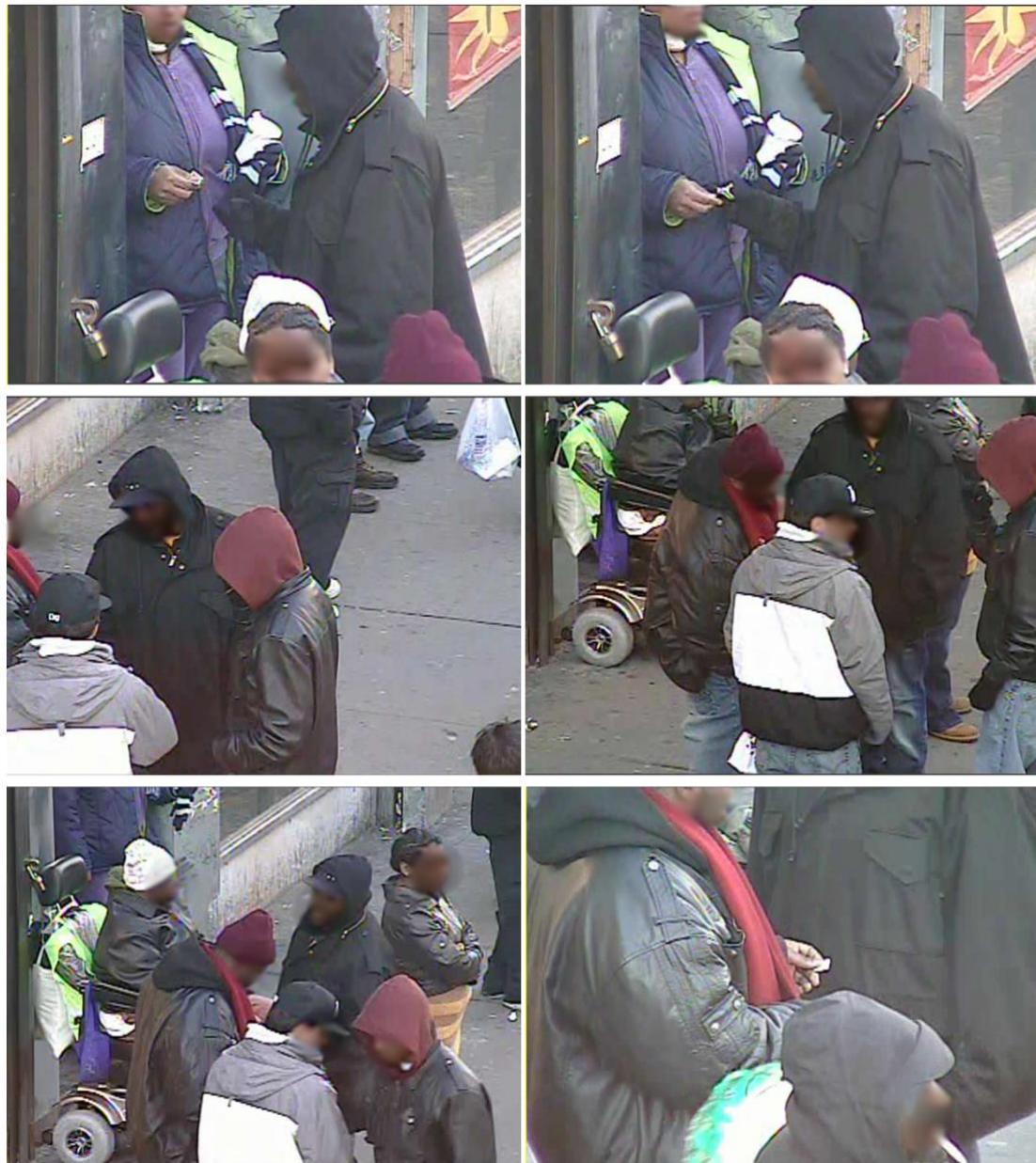
2007). Such procedures provide the benefit of "a permanent visual record amenable to later coding and reinterpretation based on emergent insights" (Sampson & Raudenbush, 1999: 605). While such recordings were intentionally created for research purposes, scholars have argued that pre-existing footage, specifically CCTV-generated footage, can be similarly used in criminology (Braga & Clarke, 2014: 492; Mastrofski, Parks, & McClusky, 2010: 233).

The utility of CCTV footage as a data source has been demonstrated in recent research. Levine, Taylor, and Best (2011) used footage from public CCTV cameras to measure the influence of group size on the escalation of aggressive behavior to violence. Moeller (2014) used CCTV footage collected as part of a covert surveillance operation in an open-air drug market to analyze temporal patterns of drug transactions. Piza, Caplan, and Kennedy (2014a) analyzed and coded footage of violent crime incidents captured on public CCTV cameras to identify precursor events preceding serious predatory violence. Considered together, these studies provide support for the observational analysis of CCTV footage to explore research questions relating to human behaviors.

### ***Footage Transcriptions***

Copies of footage disks were provided to us by the NPD in early 2013. As per NPD policy, CCTV operators focus closely on individuals in suspected drug transactions for the purpose of identifying the possession and exchange of drugs and money. Visual confirmation of drug activity is required before operators can report the behavior as a drug transaction to police. This operator activity combined with the telescopic quality of the cameras allowed for in-depth observation of the incidents (see Figure 1), which enabled us to readily identify objects in the video as packages of drugs or money.

**Figure 1. Screen captures of example CCTV footage incident**



*NOTE: Faces of all persons were intentionally distorted by the research team to ensure privacy.*

The footage was in a proprietary format, unable to be inputted into any third party software for coding. Therefore, detailed transcriptions using SSO were created for each incident. First advanced by Reiss (1968, 1971), SSO involves the observation of social phenomena in a systematic, replicable manner, involving a means of observation that is independent of the phenomena being

observed. SSO is especially well suited to situations "where all of the relevant actors and events...can be observed from start to finish in a limited, well-defined time period" (Mastrofski, Parks, & McClusky, 2010: 228). Street-level drug sales, as recorded by CCTV operators, are well suited for SSO.

To prepare for coding and transcription, coder training consisted of both authors of this paper transcribing and coding 10 full incidents together. Authors actively discussed how to best articulate and code the activities taking place on-screen, until general saturation of potential uncertainties was met. If uncertainties arose thereafter, authors watched the footage numerous times together, and discussed the incident until an agreement was reached.

Following training, the second author of this manuscript led the remaining footage observation and coding efforts to ensure consistency. However, the primary author did transcribe and code 19% of incidents. Maxfield and Babbie (2015) recommend that if there are multiple coders, measures should be independently coded and compared. Thus, inter-rater reliability was tested in a manner similar to that of Rosenfeld, Bray and Egley (1999). Of the 19% of cases transcribed and coded by the primary author, 25% were coded independently by the primary coder. Using the QSR NVivo software package (version 10) coding comparison feature, percentage of agreement was calculated on all variable attributes for those cases coded by both researchers. Coders were in agreement an average of 97.6% of the time across all attributes under study, with a mean kappa coefficient of .85 – which is considered substantial in the literature (see Landis & Koch, 1977 for a general guideline to interpreting kappa values).

Transcriptions were organized by one-minute intervals, with behaviors of all actors described in detail. Below is a portion of a transcription:

14:29 Camera Operator is observing a house with four males on the front porch. The group consists of Male A (Black, young, mid to late teens), Male B (Black, young, mid to late teens), Male C (Black, young, mid to late teens), and Male D (Black, young, mid-teens to early 20s). Male A is standing at the top of the steps eating something. Male B is sitting at

the top of the steps. Male C is currently walking out of the gate away from the porch area. Male D is standing on the left side of the porch, leaning on the handrail. Male C walks across the street out of camera view. Male D then walks out of the gate and away from the house towards the left of the home. Male D stops next to a large bush and bends over. He appears to pick something up from the bush, at this time previously unseen male (Male E, Black, early 30s) is walking up towards the house and Male D. Male D hands something to Male E in exchange for what appears to be money.

14:30 Male E immediately walks away. Male E returns quickly and meets Male D again near the corner. Male E hands something to Male D. Male D then walks over to the bush and places something into his left back pocket with his left hand and places something in the bush with his right hand. Male D pulls something out from the bush. The item Male D has in his right hand seems to be wrapped in a transparent plastic of some sort. Male D then looks through the package and walks back to the bush. Male D bends over again and seems to pick something up. Male D then walks past the bush about 10 ft away while holding something in his left hand. Male D surveys the sidewalk area, and then picks up a large rock. He then places the package under the rock and places the rock on the package to hide it. Male D then walks back to the house where Male A and Male B are still talking.

Following the transcriptions, we realized that while the continuous footage on a disk was considered a single incident by the NPD numerous transactions were often captured. This led us to designate the individual narcotics transactions captured within footage incidents as units of analysis. We used Jacques and Wright's (2011: 731) definition of a drug transaction (which they termed a "drug trade"): "a reciprocal giving and taking of resources between actors. Drug selling is concerned with trading drugs for resources, and drug buying is concerned with trading resources for drugs." Transactions were operationalized as the moment when the buyer and dealer made contact through the moment when the buyer and dealer went separate ways after the exchange of drugs and money. There were 92 individual transactions across the 62 incidents. Each of the drug markets captured in the footage can be considered open markets, publicly accessible places open to any buyer (Hough & Natarajan, 2000: 4), as well as retail markets, hosting primarily small-scale transactions "between a seller and an ultimate consumer" (Eck, 1995: 69). All offenders fit Johnson and Natarajan's (1995) definition of drug sellers, and Johnson, Dunlap, and Touringy's (2000) definition of retail sellers: offenders who engage in street-level sales of small quantities of drugs. For consistency purposes, we refer to subjects in our study as drug sellers throughout the manuscript.

## ***Data Coding***

Following the transcription of each event, the text was coded within the QSR NVivo software package (version 10) to identify pertinent behaviors of the drug sellers. Individual transactions were identified within each incident. We coded descriptive aspects of each transaction. First, information was collected on the transaction participants, including the race, gender, and age of sellers and buyers, and the number of sellers and buyers involved. Second, we noted the land use setting in which the transaction occurred. All occurred within two settings: *commercial* areas, exclusively comprised of businesses and storefronts, and *mixed-residential* areas, comprised of residential housing alongside storefronts. Third, we recorded the time of day, using two specific categories: *daytime* and *evening*. Evening was considered any time after sunset, when offenders were afforded the cover of darkness.<sup>2</sup>

For purposes of the analysis, we coded sections of text to measure specific defensive actions enacted by the drug sellers, as described below.

*Seller partners.* To get a sense of cooperation across multiple actors, we coded instances where more than one individual was involved in the sale. Specifically, we noted the presence of *carriers*, defined as individuals who held drugs or money for the primary drug seller, and *runners*, who delivered drugs and/or money between the primary seller and the buyer. We coded this variable as *none* in transactions where a single dealer conducted the sale alone.

*Exchange speed.* We also noted the speed with which the transaction occurred. Any transaction in which the initial exchange of drugs or money was not immediately followed by the reciprocal exchange of drugs or money was coded as *delayed*. Specifically, *delayed* captured when a seller or buyer took time to physically examine the goods or currency before committing their part of the exchange. Transactions in which the exchange occurred absent any such delay were coded as *immediate*.

*Transaction mobility.* We considered each transaction as containing three distinct phases: the greeting between the seller and buyer, the exchange of money, and the exchange of drugs. Each of these phases can potentially occur in a different place within the drug market. In total, four different combinations were observed, and coded, within the current study: the greeting, money exchange, and drug exchange occurring at the same place (*G1,M1,D1*); the greeting and money exchange occurring at the same place with the drug exchange occurring at a different place (*G1,M1,D2*); the greeting occurring at one place and the money and drug exchanges occurring simultaneously at a different place (*G1,M2,D2*), and the greeting, money exchange, and drug exchange each occurring at a unique place (*G1,M2,D3*).

*Transactional mediation schemes.* We observed three types of transactional schemes. *Legitimate context* refers to transactions conducted in a manner that suggests the buyer and seller are engaged in a non-criminal activity, such as while sitting together at a bus shelter. *Props* refer to instances where drugs and/or money are placed in an object rather than exchanged hand-to-hand. *Public cuts* refers to transactions that occur in publicly accessible places that have a private dimension by being partially obscured from sight, such as within alleyways or spaces between buildings. Transactions not involving a transactional scheme were coded as *none*.

*Stash spots.* We coded two different types of stash spots: *off-person stash spots*, in which the seller keeps the bulk of their drug inventory in a proximate location, and *on-person stash spots*, which involves sellers holding drugs on their person, but in a location unlikely to be detected during a police-initiated terry pat, such as inside of underwear. All transactions in which sellers kept drugs in a readily accessible area of their person (e.g. pockets) were coded as *on-dealer*.

### ***Analytical Strategy***

Given the qualitative nature of the data and the lack of statistical power due to small cell sizes, frequencies were calculated for each of the identified defensive actions to distinguish popular tactics

from those seldom used. In addition, we measured whether the frequency of particular tactics was influenced by setting (commercial or mixed-residential) or time-of-day (daytime or evening). Fisher's exact tests were conducted to measure the statistical significance of these relationships.<sup>3</sup> We report Cramer's V as a measure of effect size.<sup>4</sup>

### **Descriptive Statistics**

When descriptive statistics were calculated (see Table 1) it was found that the 92 separate transactions involved 200 individual actors. Of the 200 total actors observed, 99 were sellers and 101 were buyers. The majority of both buyers (n=66) and sellers (n=89) were Black males. When White males were observed (n=15) they were typically buyers (n=14) rather than sellers. Of the 24 females observed, they were also more often seen purchasing drugs (n=14) and tended to be Black (n=21). The predominate involvement of Blacks (87.5% of participants) fits within the context of the study setting. The 24 census block groups encompassing the drug markets viewed in this study have a mean Black population of 58.9% and a standard deviation of 38.3.<sup>5</sup>

The 200 actors were involved in the transactions in various group configurations. The most common configuration was a single buyer engaged in a transaction with a seller at the scene with a larger group of people (n=43). Following this, transactions involving a single buyer interacting with a single seller was the most frequently observed (n=32). Eight transactions involved multiple buyers and a seller within a group, and 6 involved multiple buyers and a single seller. In 3 transactions the group configuration was unable to be determined due to the buyers being within motor vehicles, preventing researchers from observing the number of people involved. In transactions coded as *multiple buyers*, each person interacting with the seller participated in the exchange, by passing money to the seller and/or accepting narcotics from the dealer (or from another buyer, after the initial exchange). However, persons observed with sellers during transactions often did not show

any evidence of direct involvement. We coded such instances as *seller in a larger group* rather than *multiple sellers* because a person being in the company of a drug seller was not universally indicative of involvement in the drug trade.

We estimated the age of all participants using the physical characteristics discernable via the CCTV footage. The majority of actors appeared to fall within the late teens to early 30s range (n=131), with there being a fairly even split of late teens – early 20s (n=68) and mid-20s – early-30s (n=63). Sellers appeared to be predominately late teens – early-20s (n=47), with the mid-20s – early-30s (n=39) a close second. Buyers appeared to range from late teens – early-50s with no single dominate group. There were almost no actors either in their early teens or older than 50 years.

Of the 92 transactions under study, commercial settings were most often observed (n=55), although mixed-residential settings were also quite common (n=41). While transactions most frequently occurred during the evening (n=52), daytime transactions were not uncommon (n=40).

**Table 1. Descriptive Statistics**

<b>RACE/GENDER</b>	<b>BUYER</b>	<b>SELLER</b>	<b>TOTAL</b>
Black Female	14	7	21
Black Male	66	89	154
White Female	2	0	2
White Male	14	1	15
Female, Race Unknown	1	0	1
Male, Race Unknown	1	0	1
Unknown Race & Gender	3	2	5
<i>TOTAL</i>	<i>101</i>	<i>99</i>	<i>200</i>
<b>AGE</b>	<b>BUYER</b>	<b>SELLER</b>	<b>TOTAL</b>
Early Teens	1	1	2
Late Teens-Early 20s	21	47	68
Mid-20s – Early-30s	24	39	63
Mid-30s – Early-40s	26	9	35
Mid-40s – Early-50s	23	2	25
Older than 50	3	1	4
Unknown Age	3	0	3
<i>TOTAL</i>	<i>101</i>	<i>99</i>	<i>200</i>
<b>GROUP CONFIGURATIONS</b>	<b>NUMBER</b>		
Multiple Buyers, Seller in Group	8 (8.7%)		
Multiple Buyers, Single Seller	6 (6.5%)		
Single Buyer, Seller in Group	43 (46.7%)		
Single Buyer, Single Seller	32 (34.8%)		
Unknown Participants	3 (3.3%)		
<i>TOTAL</i>	<i>92 (100%)</i>		
<b>SETTING</b>	<b>NUMBER</b>		
Commercial	55 (59.8%)		
Mixed/Residential	41 (40.2%)		
<i>TOTAL</i>	<i>92 (100%)</i>		
<b>TIME OF DAY</b>	<b>NUMBER</b>		
Daytime (Before sunset)	40 (43.5%)		
Evening (After sunset)	52 (56.5%)		
<i>TOTAL</i>	<i>92 (100%)</i>		

## Findings

Findings of the seller partners, exchange speed, and transaction mobility models appear in Table 2.

Overall, sellers were rarely observed relying on partners to engage in transactions. Eighty-three transactions (90.2%) involved the seller working alone. In the rare cases (n=9) where partners were observed, the partner was most often a runner (n=6). Interestingly, all 9 cases of seller partners

occurred during evening hours. The relationship between partners and time-of-day was statistically significant. While all but 1 of the partner transactions occurred in commercial rather than mixed-residential settings, the relationship was not statistically significant. Despite the infrequency of seller partners, the evening hours had an appreciable effect on the use of both carriers and runners in drug transactions.

Transactions were most often observed to occur immediately (n=68) and immediate transactions were more likely to occur in commercial areas (n=45) regardless of time-of-day. Delayed transactions most commonly occurred in mixed-residential areas and during evening hours. Both the setting and time-of-day relationships were statistically significant. Cramer's *V* values identify the effect size as moderate.

Most transactions (n=63) lacked any mobility by the participants. When mobility was observed it generally consisted of parties greeting one another at a first location and then moving to a second location where both money and drugs were exchanged (n=18). This form of mobility was more often observed in commercial areas and during the evening hours, though those relationships were non-significant. Instances in which the exchange of money and drugs occurred at different locations were rare (n=8). Setting or time-of-day did not have any significant effect on mobility.

**Table 2. Fisher's Exact Test Findings: Seller Partners, Exchange Speed, Transaction Mobility**

DEFENSIVE ACTION	N	SETTING		TIME-OF-DAY	
		COMMERCIAL	MIXED-RESIDENTIAL	DAYTIME	EVENING
<b><i>Seller Partners</i></b>					
Carriers	3	3 (1.8)	0 (1.2)	0 (1.3)	3 (1.7)
None	83	47 (49.6)	36 (33.4)	40 (36.1)	43 (46.9)
Runners	6	5 (3.6)	1 (2.4)	0 (2.6)	6 (3.4)
TOTAL	92	55	37	40	52
<i>p</i>		0.20		0.02*	
<i>V</i>		0.20		0.30	
<b><i>Exchange Speed</i></b>					
Delayed	22	9 (13.2)	13 (8.8)	5 (9.8)	17 (12.2)
Immediate	68	45 (40.8)	23 (27.2)	35 (30.2)	33 (37.8)
TOTAL	90				
<i>p</i>		0.05*		0.03*	
<i>V</i>		-0.22		-0.25	
<b><i>Transaction Mobility</i></b>					
G1, M1, D1	63	37 (37.5)	26 (25.5)	32 (28.3)	31 (34.7)
G1, M1, D2	3	2 (1.8)	1 (1.2)	0 (1.3)	3 (1.7)
G1, M2, D2	18	11 (10.7)	7 (7.3)	7 (8.1)	11 (9.9)
G1, M2, D3	5	3 (3.0)	2 (2.0)	1 (2.2)	4 (2.8)
TOTAL	89	53	36	40	49
<i>p</i>		1.00		0.22	
<i>V</i>		0.03		0.23	

Note: Expected frequencies in parentheses; \* $p \leq .05$ .

Table 3 displays the findings of the transactional schemes and stash spot models. For the overwhelming majority of transactions (n=75) no transactional schemes were used. That said there was a moderate and significant relationship between setting and transactional schemes. All but one incident of legitimate context occurred within mixed-residential areas. Public cuts, on the other hand, occurred exclusively in commercial areas. No significant relationship was observed for time-of-day.

The majority of transactions did not involve the use of stash spots, with sellers holding the drugs in an easily accessible place on their person (n=55). However, stash spots were not

uncommon, and were used in 32 transactions. Off-person stash spots were the most commonly observed type (n=22). A statistically significant relationship was observed between the use of specific types of stash spots and setting. All but one instance of off-person stash spots occurred in mixed-residential areas. The opposite relationship was observed with on-person stashes, with all but one of these actions occurring within commercial areas. The effect size of this relationship was strong, exhibiting the largest Cramer's V value in this study (0.67).

**Table 3. Fisher's Exact Test Findings: Transactional Schemes, Stash Spot**

DEFENSIVE ACTION	N	SETTING		TIME-OF-DAY	
		COMMERCIAL	MIXED-RESIDENTIAL	DAYTIME	EVENING
<i>Transactional Schemes</i>					
Legitimate Context	6	1 (3.6)	5 (2.4)	1 (2.6)	5 (3.4)
Props	3	1 (1.8)	2 (1.2)	1 (1.3)	2 (1.7)
Public Cuts	8	8 (4.8)	0 (3.2)	4 (3.5)	4 (4.5)
None	75	45 (44.8)	30 (30.2)	34 (32.6)	41 (42.4)
TOTAL	92	55	37	40	52
<i>p</i>		0.00**		0.62	
<i>V</i>		0.34		0.15	
<i>Stash Spot</i>					
On Dealer	55	44 (34.4)	12 (21.6)	26 (25.5)	30 (30.5)
Off-Person Stas	22	1 (13.5)	21 (8.5)	11 (10.0)	11 (12.0)
On-Person Stas	10	9 (6.1)	1 (3.9)	3 (4.5)	7 (5.5)
TOTAL	88	54	34	40	48
<i>p</i>		0.00***		0.56	
<i>V</i>		0.68		0.12	

Note: Expected frequencies in parentheses; \*\* $p < .01$ ; \*\*\* $p < .001$

## **Discussion**

The defensive actions of the drug sellers show that they operate in a manner that minimizes their detection by potential controllers in the drug market. Foremost, the defensive actions can be considered as safeguards against police. However, they also can be considered as protection against

non-law enforcement place managers who provide surveillance over the drug market. Research has demonstrated that place managers produce a crime control effect through their informal presence and include persons such as business owners, employees, community residents, and pedestrians (Eck, 1994; Felson, 1995; Mazorelle, Kadleck, & Roehl, 1998). This suggests the possibility that defensive actions observed in this study may be as much a protection against the natural surveillance offered by place managers as a protection against direct apprehension by police.

Similar to Jacques & Reynald (2012), our findings suggest that drug sellers also directly adopt situational prevention techniques by acting as controllers on their own behalf. For example, the use of stash spots may allow a drug seller to better serve as a guardian over drugs and/or proceeds (i.e. target). This is further illustrated by the observed effect of setting on the specific stash spot employed. To review, all but one instance of off-person stash spots occurred in mixed-residential areas, while all but one instance of on-person stash spots occurred within commercial areas. Given the increased foot traffic in commercial areas, the use of an on-person stash spot provides for a much more secure form of guardianship than an off-person stash spot in such settings. The fact that nearly 63% (55 of 88) of transactions did not involve a stash spot also supports the notion of guardianship. Specifically, the decision to forego a stash spot may be reflective of a paradox inherent in their use; while they protect dealers from harsher sanction in the event of apprehension, stash spots also present the risk of having drugs stolen since sellers do not possess their inventory for extended periods of time. As one dealer interviewed by Jacobs (1999) offered, “If they [fellow sellers] find out where it is, you best believe you won’t have your shit no more” (Jacobs, 1999: 82). In this context, not using a stash spot allows drug sellers to better provide guardianship over their inventory. This may explain why sellers most frequently opted to either bypass stash spots or use an on-person stash spot in commercial areas. Since mixed-residential areas

have lower levels of natural surveillance, due to reduced foot traffic, guardianship concerns may not be as high, leading to more frequent use of off-person stash spots.

The influence of setting and time-of-day on exchange speed is also telling. Since a distinguishing feature of commercial areas is a high level of both vehicle and pedestrian traffic, perhaps immediate transactions were more important in this context, given the increased likelihood of potential onlookers. Perhaps the lower frequency of crowds in mixed-residential areas made immediate sales less necessary. Conversely, the low street traffic may have allowed sellers and buyers to maximize guardianship, specifically by allowing time for inspection of the currency and product prior to exchange. In fast-paced situations, such as those typical in commercial areas, participants are likely not afforded the time to take such precautions (Agar, 1973; Mieczkowski, 1992). Similar cover may have been provided by the darkness of evening, explaining the more frequent use of delayed transactions during these times of the day.

In addition to guardians, drug sellers also seemed to take the role of place managers through the use of transactional schemes, which were more often observed within commercial areas. By requiring sellers to engage in a transaction via the use of a scheme, drug sellers may have manipulated the nature and flow of human behavior in a manner that eschewed both formal and natural surveillance. In those instances where transaction schemes were used, offenders seemed to directly incorporate the spatial features of a drug market (e.g. a bus stop or take-out eatery). In addition, public cuts occurred exclusively in commercial areas where there is not only a large amount of vehicle and foot traffic, but also a greater number of public cuts that exist within commercial areas by design, affording greater opportunity to rely on such facilities.

Since mixed-residential areas provided less of a threat in regards to natural surveillance, place management may have been less important in this setting. However, it is possible that the general nature of the mixed-residential areas under observation may have provided sufficient

opportunities for place management, thus rendering the use of transactional schemes less important. In this sense, St. Jean (2007: 20) reported that drug sellers in Chicago explicitly selected locations that offered the opportunity for deniability, "the ability to deny that one is present in the area solely to participate in the exchange of drugs or sex for money." Drug sellers reported that features such as busy intersections, corner stores, liquor establishments, and public transit, among others (see St. Jean, 2007: chapter 5), allowed them to actively engage in narcotics sales while simultaneously "blending in" with the general behavior patterns of non-criminal pedestrians within the market. Indeed, quantitative analyses have found that the presence of certain features significantly contributes to both the presence and size of illicit drug markets (McCord & Ratcliffe, 2007; Rengert, Ratcliffe, & Chakravorty, 2005). Therefore, drug sellers may not need to directly utilize the facilities in the drug market to obtain deniability if the environmental composition of the market already provides such.

The differential use of drug selling partners by time-of-day, with more frequent use of partners occurring during evening hours, also reflects the notion of place management. By using partners a drug seller manipulates the activity of drug buyers by mandating that they consult with different people, at different moments in time, to conduct specific aspects of a transaction. Furthermore, the use of selling partners may be as much a defense against criminal victimization as apprehension by police. Drug offenders are particularly attractive victims for robbery, since they are typically stationary in public places, have ready cash, and generally will not report crimes to the police (Jacobs, 1999; Lauritsen, Sampson, & Laub, 1991). Since violent crime in Newark, especially robbery (see Piza & O'Hara, 2014), is most prominent during evening hours, sellers may have been most concerned with controlling the flow of activity (by using partners in the transaction) when they were most at-risk.

Due to the nature of the data, the analysis was not able to explore the role of handlers in the drug trade. However, since the places under observation were busy open-air drug markets, perhaps community characteristics meant that handlers were ineffective in controlling drug sellers in the first place. Felson (1995) explains the notion of handlers as a two-step process of control theory (Hirschi, 1969). In the first step, society attaches a "handle" to each individual by which those in the community can "grasp" the individual and impose social control. The second step of this process involves "identifying exactly who is breaking the rules" (Felson, 1995: 54). This may be difficult in some contexts, as certain communities provide plentiful opportunity to evade social control through the lack of cohesion amongst community members. Felson's (1995) argument points to the importance of community cohesion in enacting social control, which echoes the research on collective efficacy, defined as social cohesion and shared expectations for social control (Sampson, Raudenbush, & Earls, 1997).

Certain studies have found that sellers work in partnerships in drug markets (Johnson & Natarajan, 1995; St. Jean, 2007), while others, like this one, have reported that single seller operations are quite common (Coomber & Maher, 2006; Jacobs, 1999; Sales & Murphy, 2007). Commonly referred to as freelance distribution, such situations are defined by the lack of a formal hierarchy and the absence of a division of labor across a group (Curtis & Wendell, 2000: 132). Even when multiple sellers have been present within the same drug market, prior research subjects have largely claimed to be freelance dealers. For example, Jacobs (1999: 49) quoted a crack seller as saying the following: "We sell by ourself, but we all out together...My partners, they all be outside, but I'm not really slangin' with them. Anywhere I stand, somebody gonna be 'round [but I sell by myself]." Such findings help to explain the relation between our descriptive statistics and seller partner findings, specifically by contextualizing why so little partnership was observed despite the fact that over half (55.4%) of the transactions involved a seller within a larger group. In addition,

much prior research has identified stash spots as a nearly universal tactic of drug sellers. For example, Johnson and Natarajan (1995) reported that nearly all of the 120 drug offenders included in their study reported using stash spots, with Jacques & Reynald (2012) also finding stash spots to be a commonly employed strategy. That said, the focus of these studies was not exclusively open-air markets, as it is here. The less frequent use of stash spots in the current study may be explained by factors identified in other research. St. Jean (2007), for example, reported that sellers with more sophisticated operations, involving partners and/or transaction schemes, were much more likely to report the use of stash spots than less sophisticated sellers. In this sense, the infrequent use of seller partners and transactional schemes may explain the less-than-usual use of stash spots.

### **Implications and Conclusion**

From a policy perspective, the findings of this study indicate that place-based narcotics strategies should not be incorporated in a *one-size-fits-all* manner but should rather account for situational context. For example, focusing exclusively on the primary drug seller may be beneficial in commercial settings, since the stash of narcotics is typically kept on the seller's person (or in an on-person stash) in such areas. However, in mixed-residential settings police should be more mindful of the surrounding area, since off-person stash spots were more common in this setting. The use of partners (carriers and runners) was much more prevalent during the evening, meaning that police officers working at night should be mindful of the increased risk for team-based narcotics transactions during their shifts. Officers who exclusively patrol residential areas in the evening should be aware of activities such as delayed transactions, and thus may have to wait-out a potentially lengthy transaction prior to making an arrest. In addition, the findings suggest that police could better leverage the activity of CCTV operators in crime control strategies. Recent research suggests that granting CCTV operators the authority to immediately dispatch patrol officers to

observed incidents of concern can generate significant reductions in street-level crime (Piza et al., 2015). This study suggests that intelligence gathered by CCTV operators can also be used in investigative strategies. The CCTV footage at our disposal led us to identify many situational and contextual factors of drug markets, which could be used to proactively address drug crime by a variety of police personnel, such as patrol officers, narcotics detectives, and code enforcement officials, to name a few. CCTV operators could conceivably uncover information similar (or superior) in scope to our findings during their normal course of duty. Such information could be systematically collected and used according to the recently advanced Case of Places approach, which emphasizes that law enforcement agencies should devote as many resources to investigating problem places as they do investigating crime suspects (Lum & Koper, 2012; Tate et al., 2013).

CCTV as a data source offers a form of SSO that avoids some limitations of depending solely on offender interviews. In addition, the access to footage allowed sufficient time for in-depth coding and analysis of seller behavior, and the exploration of how setting and time-of-day effect seller actions. Similar to Jacques and Reynald (2012), the findings suggest that the same theoretical framework used in the formation of situationally-focused crime prevention interventions helps explain the defensive actions enacted by drug sellers. In addition, our findings demonstrate that offender decision-making is not a static process, but rather varies according to the drug market setting and time-of-day. Exploring the effect of additional situational factors is a future avenue of research suggested by the current findings.

Despite these implications, the current study, like most research, has specific limitations that warrant mentioning. For one, the use of CCTV footage as a data source obviously limited our observations of defensive tactics to physical activities. Prior research has consistently found that drug sellers utilize verbal cues to determine whether buyers are undercover law enforcement agents (Jacobs, 1993; Johnson & Natarajan, 1995) and verbal codes of communication with fellow sellers

that are difficult to understand by unfamiliar onlookers (Jacques & Reynald, 2012; Johnson & Natarajan, 1995). Such actions were not measured in this study. The focus of the CCTV cameras also presented some restrictions. As per NPD policy, Newark's CCTV operators maintain continuous focus on the offender in each incident to ensure that officers receive real-time information regarding the location of the offender and potential escape routes. By focusing on the seller, the operator may have missed the presence of selling partners that were not in immediate proximity of the seller. Indeed, drug-selling partners are known to use cell phones or walkie-talkies (Curtis & Wendel, 2000; McEwen, 2010) in order to collaborate from a distance. Finally, since this study only included incidents resulting in arrest, our findings may be restricted to arrested drug sellers rather than drug sellers in general. However, the vast majority of research on drug offenders has incorporated convenience or snowball sampling methods, which prevent their generalizability as well. Nevertheless, we caution readers against applying our findings to the general drug selling population.

Despite these limitations, we feel this study positively contributes to the literature. The findings distinguished between high frequency and low-frequency seller tactics and demonstrated the effect of specific situational characteristics on the use of said tactics. In addition, the study follows recent calls to improve the understanding of crime (Braga & Clarke, 2014; Mastrofski, Parks, & McClusksy, 2010) by using a novel data collection instrument (CCTV) in the study of drug selling. Future research can incorporate this methodology in concert with more traditional ethnographic techniques in the study of the drug trade, and in crime-and-place studies in general.

## References

Adler, Patricia. (1993). *Wheeling & dealing: An ethnography of an upper-level drug dealing & smuggling community*. Columbia University Press

Agar, Michael. (1973). *Ripping and running. A formal ethnography of urban heroin addicts*. Seminar Press: New York.

Braga, Anthony. (2008). *Problem-oriented policing and crime prevention. Second edition*. Criminal Justice Press: Monsey, NY.

Braga, Anthony and Ronald Clarke. (2014). Explaining high-risk concentrations of crime in the city: Social disorganization, crime opportunities, and important next steps. *Journal of Research in Crime and Delinquency*. 51(4): 480-498.

Brantingham, Paul and Patricia Brantingham (1981). *Environmental Criminology*. Sage: Beverly Hills, CA.

Clarke, Ronald. (1997). Introduction. In Clarke, Ronald. (ed.) *Situational Crime Prevention, successful case studies, second edition*. p. 1-45. Criminal Justice Press: Monsey NY.

Clarke, Ronald. (1980). Situational crime prevention. Theory and practice. *British Journal of Criminology*, 20: 136-147.

Clarke, Ronald and Derek Cornish. (1985). Modeling offenders' decisions: A framework for research and policy. In Tonry, Michael and Norval Morris (eds.). *Crime and Justice: An Annual Review of Research*, Vol. 6. P. 147-185. Chicago: University of Chicago Press.

Clarke, Ronald and John Eck. (2005). *Crime Analysis for Problem Solvers in 60 Small Steps*. U.S. Department of Justice Office of Community Oriented Policing Services. Washington, D.C.

Cohen, Lawrence and Marcus Felson. (1979). Social change and crime rate trends: A routine activity approach. *American Sociological Review*, 44: 588-605.

Coomber, Ross and Lisa Maher. (2006). Street-level drug market activity in Sydney's primary heroin markets: Organization, adulteration practices, pricing, marketing and violence. *Journal of Drug Issues*, 36(3): 719-753.

Cornish, Derek and Ronald Clarke. (eds.) (1986). *The reasoning criminal: Rational choice perspectives on offending*. Springer-Verlag: New York, NY.

Corsaro, Nicholas, Eleazer Hunt, Natalie Hipple, and Edmund McGarrel (2012). The impact of drug market pulling levers policing on neighborhood violence. *Criminology and Public Policy*, 11(2): 167-199.

Curtis, Ric and Travis Wendel. (2000). Toward the development of a typology of illegal drug markets. In Natarajan, Mangai and Mike Hough. (eds.) *Illegal drug markets: From research to prevention policy*. *Crime Prevention Studies, Volume 11*. p. 121-152. Criminal Justice Press: Monsey, NY.

Eck, John. (1995). A general model of the geography of illicit retail marketplaces. In Eck, John and David Weisburd. (eds.) *Crime and Place. Crime prevention Studies, Volume 4*. p. 67-94. Criminal Justice Press: Monsey, NY.

Eck, John. (1994). *Drug markets and drug places: A case-control study of the spatial structure of illicit drug dealing*. Doctoral Dissertation, University of Maryland: College Park, MD.

Felson, Marcus. (1995). Those who discourage crime. In Eck, J. and Weisburd, D. (eds.), *Crime and Place: Crime Prevention Studies. Vol. 4*. Washington, D.C.: Police Executive Research Forum.

Felson, Marcus. (1986). Routine activities, social controls, rational decisions, and criminal outcomes. In Cornish, Derek and Ronald Clarke (eds.), *The Reasoning Criminal*. Springer-Verlag: New York, NY.

Felson, Marcus and Ronald Clarke. (1998). *Opportunity makes the thief: Practical theory for crime prevention*. Police Research Series, Paper 98. Policing and Reducing Crime Unit. London: Home Office.

Gill, Martin and Karryn Loveday. (2003). What do offenders think about CCTV? *Crime Prevention and Community Safety: An International Journal*, 5(3):17-25.

Goldstein, Herman. (1990). *Problem-oriented policing*. McGraw-Hill: New York, NY.

Goldstein, Herman. (1979). Improving policing: A problem-oriented approach. *Crime and Delinquency*, 25: 236-258.

Hirschi, Travis (1969). *Causes of delinquency*. University of California Press: Berkeley, CA.

Hough, Mike and Mangai Natarajan. (2000). Introduction: Illegal drug markets, research and policy. In Natarajan, Mangai and Mike Hough. (eds.) *Illegal drug markets: From research to prevention policy*. *Crime Prevention Studies, Volume 11*. p. 1-18. Criminal Justice Press: Monsey, NY.

Hough, Michael and Nick Tilley. (1998). *Getting the grease to squeak: Research lessons for crime prevention*. Crime Detection and Prevention Series, Paper 85. Home Office: London, UK.

Jacobs, Bruce. (1993). Undercover deception clues: A case of restrictive deterrence. *Criminology*, 31(2): 281-299.

Jacobs, Bruce. (1999). *Dealing crack. The social world of street corner selling*. Northeastern University Press: Boston, MA.

Jacques, Scott and Danielle Reynald. (2012). The offenders' perspective on prevention: Guarding against victimization and law enforcement. *Journal of Research in Crime and Delinquency*, 49(2):269-294.

Jacques, Scott and Richard Wright. (2011). Informal control and illicit drug trade. *Criminology*, 49(3): 729-765.

Johnson, Bruce, Paul Goldstein, Edward Preble, James Schmeidler, Douglas Lipton, Barry Spunt, and Thomas Miller. (1985). *Taking care of business: The economics of crime by heroin abusers*. Lexington Books: Lexington, MA.

Johnson, Bruce and Mangai Natarajan. (1995). Strategies to avoid arrest: Crack sellers' response to intensified policing. *American Journal of Police*, 14(3/7): 49-69.

Johnson, Bruce, Eloise Dunlap, and Sylvie Touringy. (2000). Crack distribution and abuse in New York. In Natarajan, Mangai and Mike Hough (eds.) *Illegal drug markets: From research to prevention policy. Crime Prevention Studies, Volume 11*. p. 19-58. Criminal Justice Press: Monsey, NY

Kennedy, David and Sue-Lin Wong (2009). *The high point drug market intervention strategy*. U.S. Department of Justice, Office of Community Oriented Policing Services: Washington, D.C.

Landis, Richard, and Gary Koch. (1977). The measurement of observer agreement for categorical data. *Biometrics*, 33(1): 159-174.

Lauritsen, Janet, Robert Sampson, and John Laub. (1991). The link between offending and victimization among adolescents. *Criminology*, 29: 265-291.

Levine, Mark, Paul Taylor, and Rachel Best. (2011). Third parties, violence, and conflict resolution: The role of group size and collective action in the microregulation of violence. *Psychological Science*, 22(3):406-412.

Lum, Cynthia and Christopher Koper. (2012). Incorporating research into daily police practice: The matrix demonstration project. *Translational Criminology*, Fall: 16-17.

Mastrofski, Stephen, Roger Parks, and John McClusky. (2010). Systematic social observation in Criminology. In Piquero Alex and David Weisburd. (eds.) *Handbook of Quantitative Criminology*. p. 225-250. Springer: New York.

Maxfield, Michael and Earl Babbie. (2015). *Research methods for criminal justice and criminology*. 7<sup>th</sup> Edition. Cengage: Stamford, CT.

Mazerolle, Lorraine, Colleen Kadleck, and Jan Roehl. (1998). Controlling drug and disorder problems: The role of place managers. *Criminology*, 36(2): 371-398.

McCord, Eric and Jerry Ratcliffe. (2007). A micro-analysis of the demographic and criminogenic environment of drug markets in Philadelphia. *Australian & New Zealand Journal of Criminology*, 40 (1): 43-63.

McEwen, Rhonda. (2010). Tools of the trade. Drugs, law and mobile phones in Canada. *New Media & Society*, 13(1): 134-150.

Mieczkowski, Thomas. (1992). Crack dealing on the street. The crew system and the crack house. *Justice Quarterly*, 9: 151-163.

Moeller, Kim. (2014). Temporal transaction patterns in an open-air cannabis market. *Police Practice and Research: An International Journal*, DOI: 10.1080/15614263.2014.994214.

Moskos, Peter. (2008). *Cop in the hood. My year policing Baltimore's eastern district*. Princeton University Press: Princeton, NJ.

Piza, Eric, Joel Caplan, and Leslie Kennedy. (2014a). CCTV as a tool for early police intervention: Preliminary lessons from nine case studies. *Security Journal*, DOI: 10.1057/sj.2014.17.

Piza, Eric, Joel Caplan, and Leslie Kennedy. (2014b). Analyzing the influence of micro-level factors on CCTV camera effect. *Journal of Quantitative Criminology*, 30(2): 237-264.

Piza, Eric, Joel Caplan, Leslie Kennedy, and Andrew Gilchrist (2015). The effects of merging proactive CCTV monitoring with directed police patrol: A randomized controlled trial. *Journal of Experimental Criminology*, 11(1): 43-69.

Piza, Eric and Brian O'Hara. (2014). Saturation foot-patrol in a high-violence area: A quasi-experimental evaluation. *Justice Quarterly*, 31(4): 693-718.

Reiss, Albert. (1971). Systematic observations of natural social phenomena. In Herbert Costner. (ed.) *Sociological Methodology, Vol 3*. p. 3-33. Jossey-Bass: San Francisco.

Reiss, Albert. (1968). Stuff and nonsense about social surveys and observation. In Becker, Howard, Blanche Geer, David Riesman, and Robert Weiss. (eds.) *Institutions and the person: Papers presented to C. Everett Hughes*. p. 351-367. Aldine Publishing Company: Chicago, IL.

Rengert, George, Jerry Ratcliffe, and Sanjoy Chakravorty. (2005) *Policing illegal drug markets: Geographic approaches to crime reduction*. Criminal Justice Press: Monsey, NY.

Rosenfeld, Richard, Timothy M. Bray, and Arlen Egley. (1999). Facilitating violence: A comparison of gang-motivated, gang-affiliated, and nongang youth homicides. *Journal of Quantitative Criminology*, 15(4): 495-516.

Sales, Paloma and Sheigla Murphy. (2007). San Francisco's freelancing ecstasy dealers: Towards a sociological understanding of drug markets. *Journal of Drug Issues*, 37: 919-949.

Sampson, Robert and Stephen Raudenbush. (1999). Systematic social observation of public spaces: A new look at disorder in urban neighborhoods. *American Journal of Sociology*, 105(3): 603-651.

Sampson, Robert, Stephen Raudenbush, and Felton Earls. (1997). Neighborhoods and violent crime: A multilevel study of collective efficacy. *Science*, 277(5328): 918-924.

St. Jean, Peter. (2007). *Pockets of crime: Broken windows, collective efficacy, and the criminal point of view*. The University of Chicago Press: Chicago, IL.

Sutherland, Edwin. (1937). *The professional thief*. University of Chicago Press: Chicago, IL.

Tate, Renee, Thomas Neale, Cynthia Lum, and Christopher Koper. (2013). Case of places. *Translational Criminology*, Fall: 18-21.

Taylor, Angela. (2007). *How drug dealers settle disputes: Violent and nonviolent outcomes*. Criminal Justice Press: Monsey, NY.

Tuttle, Brad. (2009). *How Newark became Newark. The rise, fall, and rebirth of an American city*. Rivergate Books, an imprint of Rutgers University Press: New Brunswick, NJ.

U.S. Census Bureau (2014). *State & country quick facts*. Retrieved 8/26/14 from <http://quickfacts.census.gov/qfd/states/34/3451000.html>

Weisburd, David and Green, Lorraine. (1995) Policing drug hot spots: The Jersey City drug market analysis experiment. *Justice Quarterly*, 12: 711-736.

Weisburd, David, Laura Wyckoff, Justin Ready, John Eck, Joshua Hinkle and Frank Gajewski. (2006). Does crime just move around the corner? A controlled study of spatial displacement and diffusion of crime control benefits. *Criminology*, 44(3), 549-592.

Whyte, William. (1947). *Street corner society. The social structure of an Italian slum*. University of Chicago Press: Chicago, IL.

Williams, Terry. (1992). *Crack house: Notes from the end of the line*. Addison-Wesley: Reading, MA.

## Notes

<sup>1</sup> There is some obvious overlap between these categories. For example, in addition to guardians, police may be considered as place managers since their enforcement activity may produce changes in the behavior and activity of people within drug markets. This reflects the unavoidable overlap inherent in the analysis of crime from a situational perspective (Clarke, 1997: 17).

<sup>2</sup> Since data were coded within the text narrations, and not from the video footage, researchers had to manually determine whether the transaction occurred after sunset. For most incidents, this was easily determined: e.g. an 11am transaction was obviously *daytime* and a 10pm transaction was obviously *evening*. However, determining *evening* times was less straightforward in certain cases (e.g. 6:30pm during a Winter month). To ensure that evening cases were correctly identified and coded, dates and times of each transaction were referenced on the history archives of the Weather Underground website ([wunderground.com/history](http://wunderground.com/history)). For each day in question, the time of the Nautical Twilight was recorded, which Weather Underground defines as the time at which “ordinary outdoor activities are not possible...without extra illumination.” The transaction was coded as evening if it occurred after this time.

<sup>3</sup> Fisher’s Exact Tests were conducted rather than Chi Square because of the presence of cells with expected counts less than 5. However, Chi Square produced nearly identical results.

<sup>4</sup> For each model, all transactions coded as *unknown*, meaning the researcher was unable to make a determination, were excluded. This was done to prevent the presence of unknown cases from influencing the results, specifically from Fisher’s Exact test treating *unknown* as a nominal value in the analysis. Since the *unknown* cases differed across models, each of the analyses had a different N. However, the vast majority of cases were included in each analysis. The highest number of excluded cases was 5, in the *Stash Spots* model. With N=88, this sample size is sufficient for the analysis and is larger than or comparable to prior studies of drug seller behavior (e.g. Coomber & Maher, 2006; Jacobs, 1993; Jacques & Reynald, 2012; Jacques & Wright, 2011; Taylor, 2007).

<sup>5</sup> These micro-level statistics were calculated via GIS mapping processes. GIS shapefiles and accompanying demographic tables for the census block groups in Essex County (the encompassing county of Newark) were downloaded from the U.S. Census Bureau’s TIGER

(<http://www.census.gov/geo/maps-data/data/tiger.html>) and American Fact Finder

(<http://factfinder.census.gov/faces/nav/jsf/pages/searchresults.xhtml?refresh=t>) websites.

Researchers then identified which block groups intersected the CCTV viewsheds (areas visible to a camera; see Piza, Caplan, and Kennedy, 2014b for a more in-depth description) of cameras that provided footage for this study via the *select by location* function in ArcGIS 10.2.2. The population statistics reported in this manuscript were calculated from the 24 block groups identified via this process.