Journal of Contemporary Criminal Justice
2015, Vol. 31(4) 376–408
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DOI: 10.1177/1043986215608535
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Where Do Dealers Solicit Customers and Sell Them Drugs? A Micro-Level Multiple Method Study

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Abstract

According to a rational choice theory of crime location choice, offenders commit crimes at locations where the mix of expected rewards and costs is optimal. The present study applied this general theory to a very specific crime—illicit drug dealing in an open air drug market—and tested it in the Red Light District and its neighboring area in downtown Amsterdam, the Netherlands. Data were collected in interviews with 50 dealers of illicit drugs and through systematic observations of the 262 street segments in the study area. It was expected that dealers prefer locations where expected earnings relative to invested time and effort is high and where the risk of apprehension is low. The quantitative findings seem to confirm that dealers go to places where the likelihood of successfully soliciting customers is high, but no evidence is found that they avoid places with informal or formal social control. Qualitative data collected in the same interviews reveal that dealers view social control as a nuisance and risk that can be evaded. We conclude by discussing the implications of our findings for criminological theory and research methods.

Keywords

location choice, drug dealing, social control, competition

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Introduction

To be a successful drug dealer, you must know where to find customers, how to draw their attention, and how to convince them that the quality and price of your product is competitive. Yet to evade arrest, you must also know which places to avoid. As is true for many other facets of life, location choice is a critical decision in drug dealing that has far-reaching consequences. As said by one dealer,

> Similar to the business of real estate sales, it is an issue of location, location, location. Now, not all locations give you the same rewards for your time and the effort that you put into your business. You must know the right ones, or the better ones. (St. Jean, 2007, p. 115)

The aim of the present study is to find out what affects street dealers' choices about where to solicit customers and make sales. What are the selection criteria that guide their choices? Are they attracted by the availability of potential customers? Are they deterred by formal and informal social control? To answer these questions, we used structured and semi-structured data that were obtained through interviews with 50 street dealers and through systematic observations of 262 street segments in downtown Amsterdam, the Netherlands.

The extant theoretical and empirical literature on criminal location choices (e.g., Bernasco, Block, & Ruiter, 2013) is primarily concerned with predatory crimes such as burglary and robbery, that is, crimes in which one party (the offender) wins something that the other party (the victim) loses. An open question is whether the same principles that guide the location choices of predatory offenders also apply to location choices of offenders that commit consensual crimes such as drug dealing. These crimes in many ways resemble legal transactions in which goods are exchanged for money, and thus those location choices might be different from location choices in predatory crimes.

Following prior work on retail drug markets (e.g., Eck, 1995; Rengert, 1996), our theoretical perspective combines elements from economics and criminology. It is based on the view that selling illicit drugs is a business activity. Consequently, the concepts developed in economics to describe how legal businesses decide where to advertise and sell their products and services can help explain where illicit dealers recruit customers and sell drugs. However, whereas the literature on retail business location choice usually takes for granted that businesses abide the law and comply with rules, the criminological perspective recognizes that illicit dealers run their businesses in a criminal environment. They cannot open shops and overtly advertise their products and solicit customers. They must work in the streets and operate covertly, and they must deal with law enforcement and the presence of criminal predators. The criminological perspective thus adds the risk of apprehension to the perspective that is articulated in the economics literature. These ideas blend well with the rational choice perspective in the criminological literature (Cornish & Clarke, 1986).

The two main features that distinguish our study from prior work on the geography of drug dealing are the detailed spatial scale of analysis and the emphasis on multiple methods. With respect to spatial scale, prior studies on the geography of drug markets are

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mostly either citywide studies that attempt to explain the spatial distribution of dealing hot spots across metropolitan areas, or evaluation studies of policy measures targeting dealing hot spots (e.g., Aitken, Moore, Higgs, Kelsall, & Kerger, 2002; Weisburd et al., 2006). Very few studies zoom in to the level of street blocks and investigate the spatial behavior of dealers at the micro-level, such as whether to solicit customers on one street block or just around the corner. Two notable exceptions are an ethnographic study in Chicago (St. Jean, 2007) and a study in Philadelphia (McCord & Ratcliffe, 2007) that was based on drug arrests. Both studies demonstrated that dealers often search for customers close to small-scale and cash-intensive retail businesses such as bars, liquor stores, pawnshops, and check-cashing outlets. Like these two studies, this study investigates street dealers' location choices at a detailed spatial resolution. The spatial units of analysis are street segments that are small enough to be overseen and overheard from a single point. The detailed spatial scale allows us to measure and analyze relevant features of the environment in much greater detail than has been the case in most prior studies.

The second distinguishing feature of the present study is its use of multiple methods. We combine data from prestructured interview questions, narrative data from semi-structured open-ended interview questions, and data collected through systematic street-level observations. Consequently, the analytical strategy includes both strongly structured ("quantitative") and weakly structured ("qualitative") techniques. The reasons for applying multiple methods include the wish to complement information on revealed preferences (i.e., where respondents had actually solicited customers and sold drugs) with information on stated preferences (i.e., the subjective reasons they provided for their choices).

We end this introduction with a brief overview of the remainder of the article. The next section develops a theoretical framework for location choice in dealing, combining economic and criminological perspectives. It ends with the formulation of two research questions and a series of hypotheses. The third section describes the data collection procedures and analytical strategies that were applied to answer the research questions. The fourth section presents the findings with respect to the strongly structured ("quantitative") data, which are subsequently further interpreted using weakly structured data ("open interview questions"). The final section discusses the results and suggests avenues for future research.

Economic and Criminological Perspectives

There are two main literatures to draw from when developing a theory of location choice in dealing. First, there is an economics literature on retail business location choice. It studies how legal firms locate themselves in space in relation to the locations of prospective customers. Second, there is a criminological literature on how offenders in general select target locations on the basis of expected profits, effort, and risk.

Drug Dealing as Retail Business

One way to approach the spatial choice of dealers is to put in the foreground their role as entrepreneurs and retailers (Eck, 1995; Rengert, 1996). In this approach, the illicit nature

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of their trade is not a central issue in explaining their behavior. The present subsection takes the perspective of the economics and marketing literature to theorize how dealers decide on where to search and solicit their customers and where to sell their products.

A basic premise in economic theory is that firms strive for a maximal stream of profit and nothing else. Firms that strive for other goals are at a competitive disadvantage and cannot survive in competitive markets. As customers are the sole source of profits for retail businesses, retail businesses need to position themselves at locations where they maximize their sales volume, which is the number of customers multiplied by the average value of sales per customer.

Classic models of location choice in retail markets are the spatial competition model (Hotelling, 1929) and central place theory (Christaller, 1933). Both models assume that businesses strive to maximize their benefits by selecting optimal spatial outlet locations conditional on (a) the locations of the residences of all potential customers and (b) the locations of competitors that service the same potential customers with the same products. For a uniform product (price and quality), customers are assumed to always buy from the nearest retail business.

More recent literature on retail geography (Eppli & Benjamin, 1994; Ghosh & McLafferty, 1987) makes more realistic assumptions on the spatial behavior of customers and firms. One is the notion that most consumers engage in multipurpose shopping: Many trips do not serve just a single purpose (e.g., visit the gas station) but serve multiple purposes (e.g., buy a book, buy groceries, and lunch with friend). For retail businesses, this implies a premium on agglomeration economies: Locations are attractive if they are close to other businesses that serve complementary needs of customers.

Another concept from this literature is "comparison shopping": Customers prefer locations where competing retailers offer similar services, as in such places it requires little effort from the customers to compare the offers from multiple retailers (Eaton & Lipsey, 1979). For retail businesses, this implies that it may be advantageous to locate in the proximity of competitors. If the extra number of customers who are attracted through being located near competitors outweighs the number of customers who are lost to nearby competitors, locating among competitors is profitable. Information search may be another reason for locating in the proximity of competitors: When communication is limited (as in drug markets where public advertisements are impossible), retailers can only monitor their competitors by locating in their proximity.

To find potential customers, dealers should search and solicit at places where these potential customers go. They must go to places where the action is, and where most bars, clubs, coffeeshops, smartshops, restaurants, and other retail activities are located. These businesses attract the people who are the potential customers of the dealers, and dealers must minimize not the distance to the homes of these potential customers but rather the distance to the places they go to when they visit downtown Amsterdam.

Drug Dealing as Criminal Activity

The economics literature on the location choices of retail businesses assumes that businesses abide the law. Thus, it offers a framework for analyzing the spatial structure

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of *legal* markets, but the logic does not necessarily carry over to illegal markets. A criminological perspective explicitly recognizes that illegal markets have a feature that distinguishes them from legal markets: Traders risk formal sanction by conducting business. These features apply to both dealers and their customers. Operating in an illegal market requires a degree of secrecy and vigilance that restricts information flows between the demand and supply sides of the market regarding where to sell or buy illegal services and goods, including drugs.

Protection from law enforcement has also been mentioned as a rationale for spatial concentration of drug dealing, because dealers might be able to hide in a crowd of other dealers and run lower risks of apprehension than when dealing alone (Taniguchi, Rengert, & McCord, 2009). It seems equally logical, however, that the reverse could be true: A group of dealers may attract more police attention than each of them would if they were dealing alone (see Jacobs, 1999).

In sum, where economic theory emphasizes that offenders must search for locations that optimize access to customers, criminology stresses that offenders must select locations that help them avoid arrest. These observations fit well with how offenders of predatory crimes such as burglary and robbery make location choices. Studies of location choice in predatory crime have identified perceived profits, costs, and risks as the three most general decision criteria that govern offenders' target and location choices (Bernasco, Block, & Ruiter, 2013). Perceived profits refer to the material or immaterial rewards that are associated with the outcomes of the offense. It may include money or other valuable items, having control over the victim's behavior, and gaining the respect of peers. Perceived costs are material or immaterial losses the offender incurs by committing the offense. They may include monetary costs for buying weapons and other tools, transportation or bribing, and the opportunity cost of time spent on planning, preparing, and committing offenses. Perceived risk includes the risk of being arrested and convicted. When deciding where to solicit customers and sell drugs, dealers must take into account these criteria simultaneously and choose the best alternative.

Research Questions and Hypotheses

Dealers' location choices broadly consist of three hierarchical and consecutive location choices. First, they have to choose the area where they are going to solicit customers and sell them drugs. This is a "neighborhood" or macro-location choice. The dealers in our sample had all decided that downtown Amsterdam was where they would go to solicit customers and sell them drugs. Any dealers that set up their businesses in other neighborhoods are simply not included in our sample. Therefore, and because we focus on micro-location choices in downtown Amsterdam, we will not discuss the factors that could affect the choice of a neighborhood here.

Having arrived at the area, the dealer's next task is to decide on where to go to solicit customers and where to sell. It should be emphasized that soliciting customers and selling drugs are two separate acts (the first is advertising, the second is actually exchanging drugs for money) that can take place at different locations. Therefore, where to solicit customers and where to sell drugs are also two separate decisions. Obviously,

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dealers can exchange money for drugs immediately at the same location where they solicited the customer. However, this may not always be the best option because a location ideal for soliciting may not be suitable for making the deal. For example, minimizing the risk of police intervention may be much more important for selling drugs (where drugs and money must be exchanged physically and thus visibly) than for soliciting customers (which requires only verbal or non-verbal communication).

Distinguishing these two location decisions naturally leads to two research questions. The first concerns soliciting customers:

> **Research Question 1:** How do dealers decide on where to solicit customers (i.e., what are the relevant choice criteria and how important are they in defining the choice outcome)?

Once a customer has been contacted and the conditions of the sale have been agreed, the choice of a location for actually exchanging drugs is relevant. The second research question thus concerns selling drugs:

> **Research Question 2:** How do dealers decide on where to sell drugs to customers (i.e., what are the relevant choice criteria and how important are they in defining the choice outcome)?

We hypothesize that in searching locations to solicit customers and in searching locations to actually exchange drugs for money, dealers consider two general factors. The first factor is labeled *potential customer density*. It is measured by the number of potential customer attractors, the activity level, and the accessibility of the location. From the dealer's point of view, high potential customer density makes a location attractive for soliciting customers because it maximizes their rate of meeting potential customers, and thus minimizes their waiting times. Once a customer has been solicited and contacted, and all other things being equal, potential customer density should be irrelevant in deciding on a location for the actual sale.

The second factor is labeled *social control*. Social control is measured by the presence of formal and informal agents of social control (people who are likely to intervene in dealing when they notice it, for example, residents, police offenders, or shop managers), by territoriality and by the absence of social disorder. Territoriality refers to physical markers that signal that other people are likely to intervene in drug dealing or other incivilities or nuisance behaviors when they notice it. Social disorder refers to observed incivilities or physical signs of it that signal the opposite, namely, that people are unlikely to intervene. From the dealer's perspective, social control makes locations unattractive both for soliciting customers and for selling drugs.

These two main factors, *potential customer density* and *social control*, are the top level in our proposed hierarchy of location decision criteria, whereas the number of potential customer attractors, the activity level, accessibility, agents of social control, territoriality, and lack of disorder are lower-level measures of these concepts. At the bottom level are individual observations in our street segment observation instrument (to be discussed in the data and methods section).

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Table 1. Hypothesized Effects of Potential Customer Density, Social Control, and Competitor Proximity on Location Choices for Soliciting and Selling.

	Soliciting	Selling
Potential customer density		
Potential customer attractors	+	?
Activity level	+	?
Accessibility	+	?
Social control		
Agents of social control	–	–
Territoriality	–	–
Physical disorder	+	+

Note. + = positive effect (increase) – = negative effect (reduce) ? = no hypothesis

Summing up, we hypothesize that for soliciting customers, dealers prefer locations that provide opportunities to meet customers, and that lack informal and formal social control, whereas for selling drugs they prefer only locations that lack informal and formal social control. The structure of this set of hypotheses is summarized schematically in Table 1.

Data and Method

Study Area

The city of Amsterdam, the Netherlands, had a population of 780,500 in 2011 (www.os.amsterdam.nl). A widespread misconception is that in Amsterdam soft drugs (cannabis and psychedelic mushrooms) and hard drugs (including cocaine, ecstasy, and heroin) are legal in one way or another. In fact, it is illegal to possess, sell, transport, or produce soft or hard drugs. The misconception comes from the governments' willingness to tolerate some drug offenses, depending on the circumstances (for details, see Ministry of Foreign Affairs, 2008). While the de jure and de facto laws are too complex to outline here, what matters for this article is that the *street trade* in soft and hard drugs is not tolerated by the police or prosecutors. In other words, it is illegal on the books and in practice. At the time of our study, the maximum penalties for possession of soft or hard drugs with the intent to distribute were, respectively, 2 years imprisonment and/or a €16,750 fine and 8 years imprisonment and/or a fine of €67,000 (Ministry of Foreign Affairs, 2008).

Amsterdam is divided into eight administrative *boroughs* or districts. One of them is situated at the heart of the city and is aptly called *Centrum*. It is one of the most dangerous and disorderly areas in Amsterdam as measured by police crime statistics and residents' perceptions (Lindeman et al., 2005). In 2011, 11% of Amsterdam's residents lived in Centrum, but the area accounted for 22% of the city's police-recorded crimes (www.os.amsterdam.nl).

Centrum is divided into postal codes. The center of Centrum is the 1012 postal code. This 1 km^2 area is saturated with bars, clubs, coffeeshops, and smartshops. Importantly for our study, it is also the area most identified with street dealing (Grapendaal, Leuw,

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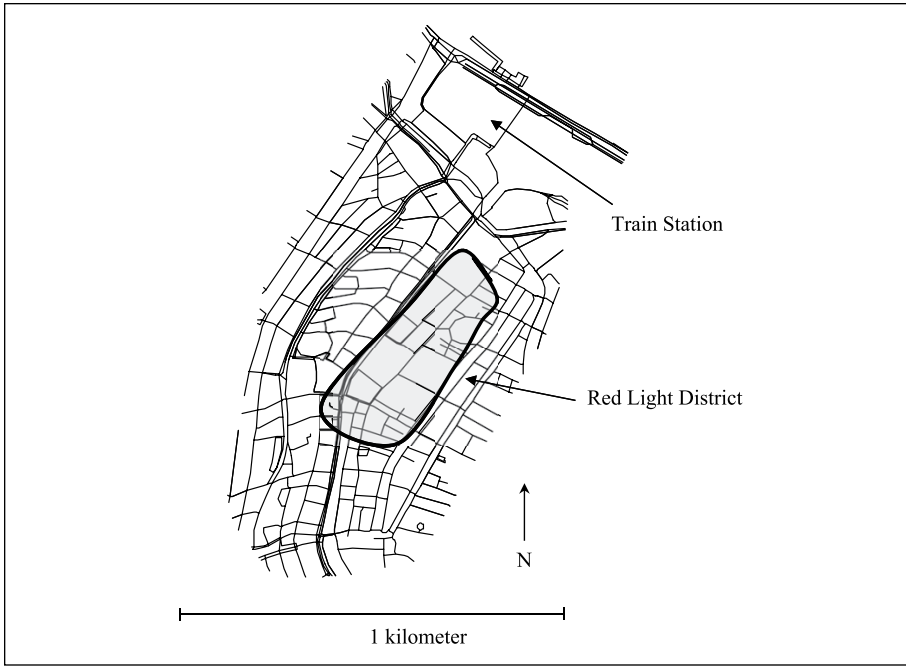

Figure 1. Amsterdam center (1012 postal code).

& Nelen, 1995; Van Gemert & Verbraeck, 1994). For these reasons, the 1012 postal code was chosen as the study area; its street layout is displayed in Figure 1.

The 1012 postal code includes as a subarea the Amsterdam Red Light District ("De Wallen"), a network of small streets and alleys with a heavy concentration of legal indoors prostitution services, totaling approximately 370 "windows" where prostitutes openly advertise their services. The Red Light District is the area where the second author recruited subjects for this study. The reason for this is practical: Street dealers frequented this area far more than any other area in Centrum and, as such, focusing our efforts there facilitated recruitment.[1]

Recruitment of Drug Dealers

The overall study sample consisted of 50 subjects who were active as dealers in downtown Amsterdam. They were recruited in the study area between April 2009 and May 2010 by the second author, as part of a larger-scale project on victimization and social control in Amsterdam drug markets (Jacques & Bernasco, 2013).

Initially, study subjects were recruited by making use of their own soliciting techniques. This process began when the second author (further referred to here as "the fieldworker") entered the Red Light District, usually in the evening between 5 p.m. and 10 p.m.[2] The fieldworker walked all of the study area's streets in two alternating

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patterns. One pattern consisted of traveling the "north-south" streets (Warmoesstraat, Oudezijds Voorburgwal, Oudezijds Achterburgwal, and Kloveniersburgwal/Geldersekade). All of the north–south streets are connected by "west-east" streets (of which there are too many to name); they are shorter and have less traffic by foot, bicycle, and vehicle. To move from one north–south street to the next, the researcher walked the most north and most south west–east streets (respectively, Damstraat/Oude Doelenstraat/OudeHoogstraat and Prins Hendrikkade/Zeedijk). The second pattern consisted of traveling the west–east streets. The researcher moved from one west–east street to the next by walking the north–south streets between them. To avoid spending more time on some streets than others, the fieldworker varied his points of entry and exit. In sum, by conducting a quasi-random walk through the area, the researcher was performing a spatial sample of soliciting initiatives by dealers.

On 21 occasions, a dealer initiated contact with the fieldworker, either by softly saying things such as "coke," "heroin," and/or "ecstasy," or by using eye contact or head-nods to suggest the possibility of trade. When this happened, the fieldworker would refuse the offer but proceed to inform the dealer of the research project and ask for participation. If the dealer agreed to be interviewed, the fieldworker and the dealer would immediately go to a nearby public place to conduct the interview. Of the 50 dealers interviewed, 19 were recruited in this way. Another 2 dealers refused to participate after being asked to participate; although these persons were not interviewed, the locations where they solicited the fieldworker are included in the analysis.

This sampling strategy was very time-consuming. For this reason, the fieldworker eventually turned to snowball sampling (see Wright, Decker, Redfern, & Smith, 1992), whereby interviewed dealers were asked to refer others matching the participation criteria. Of the 50 dealers interviewed, 31 were recruited in this way (6 other study subjects contacted 9, 9, 7, 3, 2, and 1 additional subject, respectively). All participants were remunerated €50 for their cooperation.

It should be noted that the selection of the study area and the method of recruitment imply that we mainly gained access to mobile dealers who sell in the streets to strangers, in particular but not exclusively to tourists. Dealers who sell mainly through local networks (Eck, 1995) are much less likely to be recruited into our sample. That being said, and underscoring again that in the absence of a sample frame we cannot be certain about how representative the sample is for the population, we briefly describe the main characteristics of this group of 50 dealers. Except for two women, all interviewed dealers were male (96%). Their age was 38.7 years on average. Only 2 of them (4%) were married. The majority of the dealers (72%) were born outside the Netherlands. Many of the dealers were school drop-outs, as 55% had not completed their secondary education. About one third (32%) was employed, and thus had another source of income in addition to dealing. Many of the dealers were users themselves too: 70% used cannabis daily and 30% used cocaine daily.

Interviews

The interviews with dealers combined highly structured lists of fixed-choice items with an open-ended interview protocol. The structured fixed-choice items were used

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to collect information on subjects' demographic characteristics, business, victimization, use of social control, dealing history and style. Open-ended follow-up questions were used in conjunction with the quantitative questions to gain details about how and "why" actions occur as they do. For example, after dealers were asked whether they prefer to sell alone or with people, they would then subsequently be asked to explain why.

As is true with any self-report data, our participants may have distorted the truth. To maximize the validity of our interview data, the fieldworker made it clear to participants his goals and interests in conducting an interview; participants were promised confidentially; they were told that it is better to refrain from answering a question than to lie; and, comments initially judged strange or baseless were probed further to reveal and, if possible, resolve inconsistencies.

A subset of 31 of the 50 subjects completed a supplement to the interview that specifically dealt with spatial aspects of selling drugs in downtown Amsterdam.[3] Like the main questionnaire, the supplement combined fixed-choice items with an open-ended interview protocol.

Spatial Units of Analysis: Street Segments

To measure characteristics of the physical and social environment in which the subjects recruited customers and sold drugs to them, we made systematic observations throughout the study area, as mapped in Figure 1.

Systematic observation requires that the area be partitioned into spatial units. In line with recent work that advocates the use of small spatial units of analysis (Oberwittler & Wikström, 2009; Weisburd, Groff, & Yang, 2012) and translating it into practical guidelines, 262 street segments were identified in the study area, of which 49 are located in the Red Light District. Segments were operationally defined as the two sides of a street, road or alley between intersections, or a square. In downtown Amsterdam, there are many canals with streets on both sides. These streets were assigned to different segments, that is, one street segment on each side of the canal. Because the study area has a dense street network, the above operational definition generates small spatial units of analysis that can under normal circumstances be overseen and overheard. The average length of the 262 street segments is 103 meters (SD = 65 m, minimum = 16 m, maximum = 425 m). Similar definitions of spatial observational units have been used by others (Taylor, 1997; Weisburd, Bushway, Lum, & Yang, 2004).

Systematic Observation

A scoring instrument containing 36 items was constructed to measure a range of tangible characteristics of each of the 262 street segments. Two items were Likert-type scale rating items, the other 34 items were simple counts of observable persons or objects present in the street segments.

We distinguish three sets of indicators that affect potential customer density, that is, opportunities to meet potential customers. The first indicator is (a) the presence of

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retail and entertainment businesses that are potential customer attractors. These businesses, including clubs, bars, restaurants, hotels, coffeeshops, and other shops, attract many visitors among whom customers can be found. The second indicator is (b) the accessibility of the location, as measured by the numbers of connecting streets and alleys and the presence of parking lots and public transport hubs. The third indicator is (c) the general activity level of the location, as measured by the flow of pedestrian, bike, and car travel. Although (c) is the most direct measure of potential customer density, it is somewhat limited by the fact that activity levels are dynamic, so that the observed activity level is not perfectly correlated with the activity level at the time of the dealer's location choice.

We also distinguish three sets of indicators for social control, which refers to the potential of other people to interfere with drug dealing. The first is (d) the number of people who have the power to interfere in some way and who are present at the location (closed-circuit television [CCTV] cameras represent the people who monitor the footage). The second is (e) the level of territoriality, which is indicated by the presence of objects that signal the non-public (semi-private) nature of the location, and the third is (f) physical disorder, that is, physical signs of neglect that may signal to drug dealers that social control is absent at the location.

Table 1 displays the hypothesized relations of these six indicators with the location choices for soliciting customers and selling them drugs.

Four students were trained as observers and collected observation data on site between April 23, 2009 and May 28, 2009. Observations were conducted during daylight between 9 a.m. and 9 p.m. (more than 95% between 11 a.m. and 7 p.m.), normally on weekdays but occasionally (5%) during the weekend. The time window for observations only partially overlapped with the time window for interview recruitment period (5 p.m.-10 p.m.), which may have created temporal disparities between when alternative characteristics and revealed preferences were observed. However, although it might have affected some of the more dynamic measures (e.g., pedestrian flow), it did not affect the majority of measures that are static over the course of a single day (e.g., number of hotels). In addition, given that drug deals can take place at any hour of the day and at any day of the week, a systematic social observation that would completely cover the times and places of all drug deals would have to observe all 262 street segments 24 hours for at least a full week, which is a task that definitely exceeded our resources.

The observation of a single street segment took 15 minutes on average. The descriptive statistics of the 36 measures are presented in Table 2, together with the descriptive statistics of the street segment length.

To be able to assess the inter-observer reliability of the instrument, 91 (34.7%) of the 262 street segments were independently observed and coded by two different observers. The inter-observer reliability was evaluated by calculating measures of association between the two observations of a single segment, that is, Pearson's product–moment correlation for continuous variables and Spearman's ρ for rank-ordered variables. For the 36 variables listed in Table 2, the mean Pearson correlation coefficient was .89 and the mean Spearman correlation coefficient was .86, the lowest value of both the Pearson and the Spearman was .334, which applies to the correlation of the

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Table 2. Descriptive Statistics of Systemic Observation Study of 262 Street Segments in City Center (Postal Code 1012) of Amsterdam, the Netherlands.

Observed characteristic	Unit	Total[a]	*M*	*SD*	Minimum	Maximum	R^2	ρ
Segment length (meter)	meter	26,986	103	64.966	16	425		
(a) Potential customer attractors								
Coffeeshops[b]	#	92	0.351	0.909	0	10	.987	.974
Bars and pubs	#	236	0.901	1.644	0	14	.977	.917
Liquor stores	#	18	0.069	0.282	0	2	.908	.908
Smartshops[c]	#	38	0.145	0.527	0	5	.990	1
Health shops	#	18	0.069	0.308	0	3	1	1
Tobacco shops	#	15	0.057	0.233	0	1	.835	.835
Clubs	#	23	0.089	0.355	0	2	.948	.962
Restaurants	#	358	1.366	2.611	0	20	.979	.879
Other shops	#	947	3.615	6.342	0	39	.983	.941
Hotels and hostels	#	123	0.469	1.123	0	9	.979	.927
Office buildings	#	324	1.237	1.819	0	11	.993	.919
(b) Activity level								
Flow of cyclists (in 3 min)	#		16.561	24.709	0	176	.988	.974
Pedestrian flow (in 3 min)	#		81.748	126.684	0	780	.905	.948
Car traffic flow (in 3 min)	#		10.405	21.223	0	165	.915	.968
(c) Accessibility								
Alleyways	#		0.237	0.592	0	3	.725	.833
Connecting streets	#		0.427	1.083	0	8	.882	.812
Public parking places	#		3.679	8.305	0	45	.939	.793
Public transit stops	#		0.122	0.402	0	2	.561	.561
(d) Social control								
Police CCTV cameras	#		0.229	0.472	0	2	1	1
Police officers (pedestrian/bike)	#		0.191	0.656	0	4	.891	.793
Police cars	#		0.103	0.402	0	3	.873	.923

(continued)

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Table 2. (continued)

Observed characteristic	Unit	Total[a]	*M*	*SD*	Minimum	Maximum	R^2	ρ
Police stations	#		0.019	0.137	0	1	1	1
Private CCTV cameras	#		1.340	1.942	0	14	.970	.914
Prostitute windows	#		1.405	4.764	0	27	.997	1
Visible prostitutes in windows	#		0.366	1.331	0	9	.936	.999
People who ask what you are doing[d]	#		0.053	0.225	0	1	.334	.334
(e) Territoriality								
Trees along street	#		3.134	5.273	0	25	.980	.993
Public seats	#		0.489	2.522	0	32	.919	.786
Plants and flowerbeds	#		2.221	6.147	0	60	.685	.816
Public toilets	#		0.042	0.201	0	1	.930	.930
(f) Physical disorder								
Items of litter (palm of hand or bigger)	#		9.653	19.539	0	200	.829	.821
Extent of litter (5-point Likert-type)[e]	1-5		1.832	1.078	1	5	.495	.528
Graffiti tags	#		32.813	43.454	0	215	.864	.899
Extent of graffiti (5-point Likert-type)[f]	1-5		2.725	1.293	1	5	.799	.801
Broken windows	#		0.630	1.990	0	19	.926	.698
Drug paraphernalia	#		0.080	0.709	0	11	.996	.711

Note. Columns represent (a) characteristic, (b) unit of measurement, (c) total, (d) mean, (e) standard deviation, (f) lowest observed value, (g) highest observed value, (h) Pearson's R^2 Correlation Between 92 Doubly Coded Street Segment Observations, and (i) Spearman's ρ Correlation Between 92 Doubly Coded Street Segment Observations. CCTV = closed-circuit television.

[a]Totals only calculated for businesses.

[b]Coffeeshops are retail establishments that sell cannabis for personal consumption.

[c]Smartshops are retail establishments that sell psychoactive substances (not cannabis).

[d]That is, people interrupting observers when they were doing observations and making notes.

[e]Range: 1 = *not much*, 5 = *badly littered*.

[f]Range: 1 = *not much*, 5 = *extensive*.

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variable that records whether the observer was interrupted by residents or others when doing observations and making notes ("People who ask what you are doing?"). Given the high overall reliability of the observations, in the subsequent analyses involving street segment observations, the chronologically last observation of a doubly coded pair of street segments was discarded.

Analytical Strategies

Quantitative analysis. This section describes the quantitative analysis of the choices the subjects made when selecting street segments to solicit customers and to sell them drugs. The statistical approach taken here reflects the small size of our sample, which is too small to allow statistical inference. We only analyze bivariate relations between the characteristics of street segment variables and the dealers' spatial choices, and we refrain from trying to assess the statistical significance of these relations. The reported odds ratios should not be seen as inferential statistics characterizing a population, but as descriptive statistics of the relations between street segment characteristics and the location choices of the dealers in our sample.

In the economics literature and in recent criminological research (e.g., Bernasco, Block, & Ruiter, 2013), location choice questions have mostly been analyzed with discrete choice models (Ben-Akiva & Lerman, 1987; Train, 2009), in particular the multinomial logit model. We used this model to calculate, bivariately, the increase in the odds of choosing a street segment that results from a one-unit increase in the street segment characteristic.[4] This analysis essentially compares the characteristics of chosen street segments with the characteristics of non-chosen segments in the study area. We have data on 52 drug dealers. Two of them refused to be interviewed, but we still use the location where they were observed dealing in the analysis.

Our interview data contain four types of observation that we view and analyze as location choices. First, for soliciting, we use the location ("Recruitment") where the subject solicited the fieldworker (the alternatives were restricted by the locations where fieldworker went); these 23 observations include the two dealers who refused to be interviewed. Second, also for soliciting, we asked where the subject solicited their latest customer ("Latest solicit"). Third, for selling, the fieldworker asked the subject where the dealer would have taken him if he had wanted to sell drugs ("Take customer"). And finally, we asked the subject where their latest deal took place ("Latest deal").

Because of the varying recruitment methods, because two dealers refused to be interviewed, because not all participants completed the spatial supplement of the questionnaire, and because some participants mentioned dealing locations outside the center of Amsterdam, the four location choice items are not in all cases available for analysis. Table 3 documents the complete response structure in full detail. For each of the four location choice items ("Recruitment," "Take customer," "Latest solicit," "Latest Deal"), spatial supplement completion and recruitment method, it displays the numbers of respondents who reported a location inside the study area, who reported a location outside the study area, and who did not report a location because they were

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Table 3. Numbers of Responses on Four Location Choice Items, by Spatial Supplement Completed (Yes or No) and Recruitment Method (Snowball [Sn] or Street [Str]; *N* = 52).

Item	Recruitment[a]				Latest solicit[b]				Take customer[c]				Latest sale[d]			
Spatial supplement	No		Yes		No		Yes		No		Yes		No		Yes	
Recruitment	Sn	Str	Sn	Str	Sn	Str	Sn	Str	Sn	Str	Sn	Str	Sn	Str	Sn	Str
Outside study area							9				8	4			9	1
Inside study area		10		9			13	9			14	5			13	8
NA/not asked	9		22		9	10			9	10			9	10		
Not interviewed[e]		2				2				2				2		

[a]Within the boundaries of the Red Light District (except for two cases), the fieldworker was solicited (to buy drugs) by an active dealer. The Red Light District contains 49 street segments.
[b]The interviewer asked all 31 subjects who completed the spatial supplement, "The last time you sold to someone, where did you and this customer meet?"
[c]The interviewer asked all 31 subjects who completed the spatial supplement, "Where would you have taken me had I wanted to buy drugs?"
[d]The interviewer asked all 31 subjects who completed the spatial supplement, "The last time you sold to someone, where did the deal actually take place?"
[e]Two dealers contacted on the street refused to be interviewed.

not asked (or, for the "Recruitment" response, because they were not solicited on the street but recruited via other participants, that is, by snowball sampling), who did not participate in the interview. For each of the four location choice items, the responses useful for our location choice analysis are indicated with shaded rectangles.

Qualitative analysis. The open-ended interview answers (which were transcribed verbatim) and field notes were analyzed according to well-established routines and procedures. First, the data were coded—with the help of a qualitative data software package, NVivo—with identification tags corresponding to relevant research issues. The tags permitted us to retrieve information pertinent to our hypotheses. During the first coding of the data, the breadth of tags was generally broad and focused on the variables of primary interest (e.g., solicitation of and sales to customers). Then, we sifted through the initial codes and engaged in detailed analysis of variation across cases. Specifically, we read through the broader categories and, for each issue, created narrower categories that capture distinctions relevant to our hypotheses or mentioned by the dealers as of importance.

Quantitative Findings

Where to Solicit: Customer Density and Social Control

The first research question is how dealers, after having arrived at the area, decide on where to solicit customers. As discussed above, dealers do not necessarily solicit customers at the same location where they sell them drugs. In fact, we hypothesized that

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attractive locations for recruiting customers are locations where access to potential customers is large, but that such locations are not necessarily attractive for the physical exchange of drugs for money.

Our data contain two location preference measures for soliciting customers. The first is the location where they solicited the fieldworker when he walked around in the Red Light District. This is a direct and purely behavioral measure that was obtained without the subject even knowing his or her choice was recorded, but it was obviously conditional on the route the fieldworker took while walking around in the area. The second measure was the subject's answer to the question where he had solicited the customer of his most recent drugs deal.

Where solicit the fieldworker (21 subjects, 49 street segments). To be solicited by dealers, the fieldworker walked around in the 49 street segments that constitute the Red Light District. Whenever he was solicited to buy drugs and the prospective seller agreed to be interviewed, the location of recruitment was recorded. Table 3 shows that this measure only applies to 21 subjects who were recruited directly on the streets, including the two dealers who subsequently refused to be interviewed, and not to the 31 subjects who were recruited through snowball sampling.

To assess the differences between the street segments where he was solicited and those where he was not solicited, the column labeled "Recruitment" (1) in Table 4 presents the estimated odds ratios of bivariate multinomial logit models. The value for coffeeshops (1.185), for example, indicates that one additional coffeeshop made a street segment 1.185 times more likely (or 18.5% more likely) to be chosen for soliciting customers. Clearly, the values for all potential customer attractors except health shops are positive. Although in the absence of inferential statistics no hard conclusion can be drawn from this finding, it indicates that at least for the present sample of dealers almost all attractors make the segment more likely to be chosen for soliciting customers.

All estimated odd ratios of the activity-level measures and the accessibility measures have values above unity, except for public transit stops which could not be estimated because on the 49 street segments in the Red Light District there are no public transit stops. The consistency of these results tentatively suggests that the dealers in the sample prefer locations where they maximize the probability of meeting new customers.

As the remaining entries in column 1 of Table 4 demonstrate, the evidence for a deterring role of social control is much weaker or even non-existent. All street segment indicators of police presence (police CCTV, presence of police officers on foot or bike, police cars, police stations) actually relate positively to the probability of being chosen for soliciting customers (odds ratios above unity). The same holds true for the residential social control item (which measures whether the student observers were addressed or questioned by persons in the vicinity when observing the street segment). Only the presence of prostitution windows (which were expected to provide "eyes on the street") seems to somewhat deter dealing, as the odds ratios of these two measures are below unity.

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Table 4. Bivariate Conditional Logit Analyses.

	(1)	(2)	(3)	(4)
	Recruitment	Latest solicit	Take customer	Latest sale
Variable[a]	Odds ratio	Odds ratio	Odds ratio	Odds ratio
Segment length (meter)	1.008	1.005	1.005	1.001
Red Light District	—	2.006	4.347	3.260
(a) Potential customer attractors				
Coffeeshops	1.185	1.248	1.451	1.287
Bars and pubs	1.090	1.212	1.336	1.237
Liquor stores	2.875	1.440	0.695	—
Smartshops	1.498	1.409	1.801	1.510
Health shops	0.509	0.818	2.353	1.256
Tobacco shops	2.765	1.937	0.784	0.823
Clubs	1.442	1.824	3.880	2.255
Restaurants	1.039	1.132	1.196	1.138
Other shops	1.071	1.021	1.043	1.000
Hotels and hostels	1.139	1.291	1.369	1.302
Office buildings	1.124	1.164	0.919	0.757
(b) Activity level				
Flow of cyclists	1.095	1.151	1.139	1.162
Pedestrian flow	1.028	1.002	1.022	1.012
Car traffic flow	1.100	1.073	1.131	1.157
(c) Accessibility				
Alleyways	1.711	1.343	1.540	1.257
Connecting streets	1.121	1.168	1.210	0.958
Public parking places	1.018	1.052	0.918	0.872
Public transit stops	—	—	2.288	1.398
(d) Social control agents				
Police CCTV cameras	1.201	1.155	3.095	2.447
Police officers pedestrian/bike	1.549	2.138	1.944	2.036
Police cars	2.376	1.014	—	1.224
Police stations	2.667	2.856	5.140	2.570
Private CCTV cameras	1.127	1.179	1.343	1.238
Prostitute windows	0.888	0.789	—	0.987
Visible prostitutes in windows	0.594	—	—	1.008
People ask what you are doing	1.804	—	1.771	2.952
(e) Territoriality				
Trees along street	1.064	1.076	0.995	1.010
Public seats	1.781	0.851	1.113	1.111
Plants and flowerbeds	0.941	0.979	0.473	0.573
Public toilets	3.000	1.268	5.071	2.402

(continued)

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Table 4. (continued)

	(1)	(2)	(3)	(4)
	Recruitment	Latest solicit	Take customer	Latest sale
Variable[a]	Odds ratio	Odds ratio	Odds ratio	Odds ratio
(f) Physical disorder				
Items of litter (hand or bigger)	0.942	0.821	1.042	1.095
Extent of litter (5-point Likert-type)	1.101	0.775	0.949	1.223
Graffiti tags	1.003	0.921	0.960	0.981
Extent of graffiti (5-point Likert-type)	1.102	0.976	0.897	1.112
Broken windows	1.075	1.065	1.150	1.096
Drug paraphernalia	0.900	1.041	1.116	1.122
Drug dealers	21	22	19	21
Street segments	49	262	262	262

Note. Characteristics of locations that dealers choose to (a) solicit fieldworker, (b) solicit customer in latest sale, (c) (hypothetically) sell drugs to fieldworker, (d) sell drugs to customer in latest sale. Choice set: 49 street segments in the Amsterdam Red Light District (a) and 262 street segments in the study area (b-d). CCTV = closed-circuit television.

[a]Unless indicated otherwise (in parentheses after variable name), all variables are simple counts.

These odds ratios are systematically in the opposite direction of what was expected. Although the number of dealers is too small to draw hard conclusions, it seems remarkable that this sample of dealers does not at all seem to be deterred by any type of formal or informal social control. Even if dealers prefer to minimize social control, formal and informal agents of social control do know where their presence is needed. Apparently, the police patrol the locations where they know the dealers go, so dealers have to endure police presence if they want to stay in a location that is otherwise good for soliciting. Also, the indicators of territoriality and physical disorder do not seem to consistently support the expectations. Trees, public seats, and public toilets actually seem to increase dealing in the segment in this sample (while they were expected to decrease dealing), and the results of physical disorder are mixed and inconclusive.

Where solicit customer in latest deal (22 cases, 262 segments). The 31 subjects who completed the spatial supplement questions were asked when and where they solicited their last customer(s) before they attempted to solicit the fieldworker. The aim was to select a random recent deal from the subject's experience as a dealer. Table 3 shows that 22 of the 31 subjects solicited their last customer(s) inside the study area. Because the characteristics of street segments outside the study area were not collected, the other nine soliciting locations are excluded from this analysis.

Most of the subjects were quite active dealers. At the time they were interviewed, 42% had made their latest deal less than 24 hours earlier, 29% had made it 2 to 4 days

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earlier, and another 29% had made their latest deal more than 4 days earlier.[5] Nevertheless, the latest solicitation had in only a single case been completed less than an hour before the dealer was interviewed.

Again, bivariate multinomial logit analyses were conducted to compare the characteristics of the selected street segment with the characteristics of those that were not chosen for soliciting. In this case, the choice was not restricted to the 49 segments of the Red Light District but to all 262 segments of the larger postal code area. The second column labeled "Latest Solicit" (2) in Table 4 displays the results.

Although the values of the estimates somewhat vary numerically, the odds ratios of the measures of potential customer attractors, activity level, and accessibility are completely in line with the estimates provided in column 1 that apply to the other soliciting decision discussed above. The dealers' latest attempts to solicit customers have been located in places where they were most likely to meet their customers.

The correspondence with the estimates in column 1 holds true as well for the three sets of indicators of social control. We tentatively conclude that, at least in this limited sample of dealers, contrary to the notion that the presence of formal and informal agents of social control deters crime, when dealers solicit customers, they typically select locations where social control is relatively high, and not where social control is low or absent.

Where to Sell: Customer Density and Social Control

The second research question is where to sell drugs once a customer has been contacted and the conditions of the sale have been agreed.

Where take the fieldworker for selling (19 cases, 262 segments). Once a customer is solicited and shows signs that she is interested in buying drugs, many dealers will try to find another location to conduct the exchange. To simulate that situation, subjects who completed the supplement (both those recruited on the streets and through snowball sampling) were asked where they would have taken the fieldworker if he had wanted to buy drugs. This question was asked to the 31 dealers who were recruited by the fieldworker on the streets, but their choices were not restricted to the 49 street segments in the Red Light District, but to the 262 street segments that made up the study area. That fact that 12 of the respondents suggested they would have taken the fieldworker to a place outside the study area (see Table 3) is probably because not all dealers recruited using the snowball method were dealing in the study area on a regular basis. These 12 locations are excluded from the analysis here.

The odds ratios are listed in the column labeled "Take Customer" (3) of Table 4. Although no expectations were formulated with respect to whether selling would be more likely to take place around locations where potential customers are concentrated, it is useful to consider the estimates. Most of them are above unity. This suggests, just as was the case in the analysis of location choices for soliciting, that popular selling places tend to be located in street segments where there are other attractions, such as bars, coffeeshops, clubs, and hotels.

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It was hypothesized that dealers would avoid selling drugs at locations with social control, but our estimates do not present any evidence to support that idea. In fact, most indicators suggest precisely the opposite, namely, that the dealers in our sample do sell at locations that have more social control than average, including formal control as indicated by police presence.

Where sell to customer in latest sale (21 cases, 262 segments). The 31 subjects who completed the spatial supplement questions and who were asked when and where they solicited their last customer(s) were also asked where they sold the drugs after having solicited their last customers. The response structure of this question is displayed in Table 3. In contrast to the prior measure of selling, which was a hypothetical question, this measure referred to actual behavior. The estimates of this choice are presented in the column labeled "Latest Sale" (4) of Table 4.

The results point in the same direction: Dealers sell in street segments where businesses are located that attract people who are potential customers of the dealers. Once they have contacted the customers, they must complete the deal by exchanging money for drugs. In the estimates, we find no evidence at all that they aim to avoid agents of social control when selling drugs.

The quantitative findings demonstrate that the dealers who were interviewed displayed a tendency to solicit at locations where potential customers congregate but did not seem to be deterred by the police or other sources of social control. It must be emphasized that these conclusions are highly tentative because they are based on bivariate comparisons that do not take into account any correlations between street segment characteristics, and also due to the limited number of observations they lack statistical significance. What supports our conclusion is that the estimates of multiple measures of the same constructs (e.g., customer density, social control) are consistent as they tend to point in the same directions.

Qualitative Findings

Taken together, our quantitative findings reveal a tentative but consistent story: As expected, potential customer density attracts dealers; but contrary to our expectations, social control fails to repel them. Based on the street segments where dealers solicited customers and made sales, it seems that they offend right under the eyes of police, and in straight view of police CCTV cameras. In this section, we draw on our qualitative data to gain understanding of this unexpected quantitative result. To be clear, our purpose here is purely exploratory; further research will be needed to determine the robustness of our tentative findings.

The simplest explanation for why dealers appear undeterred is that they perceive the benefits to outweigh the risks (cf. Wright & Decker, 1994, 1997). Dealer 20, for example, was asked if he was worried about being caught by police, and he responded, "If I need the money then I don't care. If they take me [to jail] then they take me." While there is truth to that idea, the dealers did express concern about formal sanction; as Dealer 4 explained,

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> You have to have money so you are going to go to a place where you can find some money, make some money. But then Big Brother is watching you, the police [say], "Oh he is coming back, he is doing the same thing again." Then they get you and they put you in jail.

It goes without saying that our respondents did not want to be arrested, jailed, fined, and imprisoned.

Sellers took steps to thwart detection and punishment by government agents, but doing so often came at the cost of fewer sales. On one hand, they solicited and made trades in the vicinity of social control mechanisms—as our quantitative data show. On the other hand, they did so in ways that were more covert and difficult and, as such, less productive and efficient at producing sales; this finding, as demonstrated below, is born out of spontaneous (i.e., non-systematic) follow-up questions posed throughout the interviews.[6]

The dealers' balancing of risk and reward accounts, in part, for why they appear undeterred in the quantitative data. In the language of criminologists, they were not absolutely but rather restrictively deterred (Gibbs, 1975; see Jacobs, 1993, 1996, 1999; Jacques & Reynald, 2012). To illustrate this process, we will now show how sellers went about countering two mechanisms of law enforcement: patrolling police officers and police-controlled CCTV cameras.

Patrolling Officers

Sellers perceived the police presence to be heavy in and around the Red Light District. Dealer 12, for example, said, "Sometimes you see them every two minutes." Dealer 46 told us, "I see the police all the time, every quarter of an hour." And Dealer 20 thought, "The police are very hard . . . You can see them plenty . . . Like ten times or fifteen times [in a day]." Not only do dealers perceive police as out in force, but also as knowledgeable of who is up to no good. Asked how frequently in a day they cross paths, Dealer 19 told us,

> Many times. When they see me they come and talk with me; I don't know why. They look at me, . . . make jokes, "You making nothing yet?" . . . When the cops come and talk to me you can do nothing about it. They can take you to the police station and look for something. If they find something they put you in jail.

Dealer 4 responded to the same question by saying:

> Three or four times. They watch. They say sometimes—because I know them and they know me also— . . . "Hello, how are you?" . . . But if they see me and I talk with [someone who could be a customer] then for them it is ok because they are going to . . . bring you to the police station.

Dealers employed a variety of preventive techniques aimed at countering patrolling officers' tactics. These techniques are used during each step of making a drug sale,

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from locating a potential customer to completing the transaction. For brevity's sake, we focus on two examples: searching for buyers by walking and the use of stash spots.

Searching for customers by standing still versus walking. Before a dealer can solicit a potential customer, they must cross paths. When searching for customers, street dealers can walk around or stand still. It seems as though the latter is more likely to result in crossing paths with a potential customer. This is true for two reasons. In the short term, if a customer walks every street in an area, then she or he will inevitably move past a dealer who is standing still therein, but if a dealer is walking at the same time, it is possible that they will not cross paths, depending on the street layout. In the long run, if a dealer consistently maintains a small number of fixed locales, then customers (and middle-wo/men) may gain wind of this and thus know precisely where to locate the seller, which makes path crosses easier to generate. Thus, in the short and long term it is more beneficial for a seller to stand still.

Yet, dealers operating in downtown Amsterdam mostly walk (Grapendaal et al., 1995). For the same reasons that walking is less beneficial than standing, it is also less risky. Walking results in fewer cross paths *with police* in the short and long run. If a dealer is standing still, they will eventually come face to face with a patrolling officer who traverses every street; walking reduces this probability. And when a dealer does not maintain a fixed locale, the police are inhibited from developing certainty in terms of where exactly to hunt down him or her. We asked Dealer 45, for instance, to tell us what is the most important thing he does to not be caught by the cops, and he responded, "The important thing is I move." Dealer 22 said, "I float all over . . . [t]o avoid hassle, you know?" And Dealer 50 did the same:

Dealer 50:	You must walk; not act like a suspect on the street.
Interviewer:	So walk don't stand?
Dealer 50:	Yeah.
Interviewer:	What about sitting?
Dealer 50:	That is also dangerous.
Interviewer:	What is dangerous about it, why is walking better?
Dealer 50:	You can see the police watching you more than when you sit.

This seller's response is insightful for two reasons. He suggests that standing looks abnormal—or deviant—and thereby attracts police attention, and also that by walking, a dealer is better able to look out for police. In sum, then, walking is a preventive technique of dealers because it reduces path crosses with police, makes them more inconspicuous, and heightens their ability to detect and evade formal control. But, doing so likely reduces sales, too.

It would be an overstatement to claim that dealers are always walking. They choose their moments to stand still and usually have a few favorite spots. However, dealers get moving again whenever the police come around. "When I see them I move" is how Dealer 45 puts it. The following two dealers detailed how their movement depends on that of police:

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Interviewer: Do you move around while you're selling or sell in one place?
Dealer 12: Sometimes I stay in one place, sometimes I move around.
Interviewer: What's the difference, why do you do one or the other?
Dealer 12: Because sometimes there are a lot of police and sometimes you don't see police so we stand on one side.

Interviewer: While you are out here, how often do the police walk by in a day?
Dealer 22: Maybe 10 or 20 times, but I move.
Interviewer: So you move when you see them coming or you move after they have gone by?
Dealer 22: When I see them coming.
Interviewer: And why do you move?
Dealer 22: Because they just watch you and the more they see you the more you stand out.

Sellers also preemptively limit the amount of time they stand in one spot to avoid detection by the police:

Dealer 7: Every 15 minutes I take another corner. Every 15 minutes the [church tower] clock is knocking, "Ting, ting, ting," then I walk. The police, if they see you stand for a longtime they give you a fine so that you cannot go into the city. The police have the strategy, if they see you, for example, if they see me they can come to me, "Hey! If we see you next time we are going to give you three months that you cannot come here." Sometimes when you see somebody high, for example, you are high and the police see that, then they say to you, "Hey, you ask somebody for business, move on and if you are still here in 24 hours then you get the three months. So go away!" It is very hard now. The last few years the police come a lot whereas before I would stand there and just ask people, sell coke. Now you have to be careful.

If dealers perceived formal control as unthreatening, then it would be more rational for them to stand in one or a few places than walk because the former search method is more apt to produce path crosses with customers, which naturally leads to more sales and profit (holding all else constant). Dealers perceive, however, that staying put for too long is hazardous because it increases the risk of apprehension by police and subsequent sanctions such as jail, fines, and imprisonment. Therefore, dealers walk around. This finding is evidence that our participants are restrictively deterred: They avoid punishment through techniques that result in fewer solicitations and sales (Gibbs, 1975; Jacobs, 1993, 1996).

Our quantitative data show that participants' most recent solicitation and sale were approximately twice as likely to occur on a street segment with a walking or cycling police officer. Of course, this does not necessarily mean that a patrolling officer was on any given segment at the time of the last solicitation or sale (actually, it means that

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a patrolling officer was observed in the segment during the systematic observations). Patrolling officers are usually moving. They cannot be everywhere at once, and dealers take advantage of this limitation. "Here now, gone in a minute" is a colloquial way of summarizing officers' presence on any given street segment. Thus, while the quantitative findings suggest that officers do spend the majority of their time patrolling in the places most frequented by dealers, our qualitative data suggest that dealers respond to police movements by walking away—only to return later.

Using stash spots. Whereas walking is intended to evade police detection, dealers' use of stash spots—that is, secretive places where drugs are stored—is motivated by the goal of escaping punishment if detained by police (also see Jacobs, 1999). The execution of this preventive technique is clear evidence that dealers are restrictively deterred by formal control. If dealers' overriding concern was making profit as quickly as possible, then they would keep their product with them, so that when the opportunity for a sale arises it could be completed without delay. But for the very reason that stash spots slow down sales, they are a useful protective measure. By physically separating themselves from their illicit product, sellers remove clear-cut evidence of wrongdoing. Even if the police rightly detain and investigate a person on suspicion of soliciting, there is less they can do if the suspect does not have drugs on their person.

For this reason, dealers hide their drugs in and around the Red Light District. For example, Dealer 6 told us, "I keep hiding it as I walk around. There are different places, four or five." Dealer 43 described one of his spots: "[There's] an electrical locker for electrical lights on the street, and I just made a hole and put it in there with a rock on the top." Dealer 36 kept his product "[m]ost of the time under the ground. Like you put it in a place under a tree. Keep it there [for] whenever you need it." His reason for this was "if I carry it, all of it, with me, it will probably bring some problems. Maybe the police they catch me."

Stash spots help us understand why police presence was not found to repel solicitation in the quantitative data. By hiding drugs off their person, dealers reduce the certainty of formal sanction. They might be detained by police but nonetheless escape arrest and subsequent punishment due to a lack of evidence. Knowing this, sellers can focus on increasing the probability of path crosses with customers by going to the most popular places for finding a buyer. Although the police are more likely to be there too, this is less troubling to dealers when their drugs are hidden somewhere else.[7]

Police-Controlled CCTV Cameras

Patrolling officers cannot be everywhere at once. To help overcome this limitation, the police have furnished downtown Amsterdam, especially the Red Light District, with CCTV cameras at their control, simply referred to as "cameras" from here on. Our study area in downtown Amsterdam has 60 cameras in 262 street segments; approximately 1 in every 4 segments has at least 1 camera. Cameras are concentrated in the Red Light District, where 33 cameras are in 49 street segments; about 2 in every 3 segments have at least 1 camera.

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Dealers were concerned about being captured by a camera and subsequently arrested (also see Edmunds, Hough, & Urquía, 1996). As Dealer 7 said, "When a camera takes you one time and the police are looking, they say, 'Hey!' and they can follow you. Then every time that you walk around the camera, 'Hey!'" When Dealer 19 was asked if the police did a good job of handling crime, he responded, "Oh they do a good job. They sit there and watch the fucking camera! They don't have to do nothing. If they see me on the camera on the street they will come with a bicycle, car or walking."

Above and beyond dealers' general fear of formal control, our respondents were wary of cameras for two reasons. One reason is that they think cameras provide the police with "superhuman" abilities to see crime. As Dealer 18 told us:

> The cameras see a long way. They see the whole street. . . . [T]hey can zoom. One camera costs €50,000. I have a colleague who is working sitting behind a camera; that is his job. He told me that even when you sit in your car, if you are making a joint the camera can look inside your car and tell you if you have weed in your cigarette or not.

A second reason dealers fear cameras is that they record evidence of crime. Asked if he cares whether the cameras see him, Dealer 9 told us, "Yes, of course. Because there's evidence for the court."

Our participants were fairly consistent in their *belief* that they do not solicit or sell where cameras can see: 58.6% claimed that they never solicited and 85.7% claimed that they never sold in view of a camera. When Dealer 41 was asked if he ever conducted business in front of cameras, he responded, "No. It is dangerous." And Dealer 44 emphatically responded, "No, no, no!" Asked where he would hypothetically take the fieldworker to make a sale, Dealer 19 said, "Only where the cameras are not. We would have walked until I couldn't see the camera."

Despite our participants' concern for cameras, their most recent solicitation and sale were, respectively, 1.16 and 2.45 times more likely to take place on a street segment with a police camera than not. What explains the discrepancy between our quantitative and qualitative data? Part of the answer, at least, is that there is a rather easy way for dealers to minimize the chance of having their crimes caught on tape. Sellers simply walk away from cameras to reduce or altogether block the view of law enforcers:

Interviewer:	Do you know where the police cameras are in the Red Light District?
Dealer 35:	There are police cameras everywhere in the Red Light District.
Interviewer:	And you know where they are?
Dealer 35:	I know some of them. The cameras are all around, you know.
Interviewer:	Do you ever meet customers in front of the cameras? I mean if you know a camera can see you will you still talk to a customer?
Dealer 35:	No, no, you ask them to walk with you.
Interviewer:	So you will meet them, then you will walk and then you do the deal where the camera can't see you?

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Dealer 35: You always check the direction you are moving and you try not to do things in front of the cameras. You are not going to challenge them.

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Interviewer: Do you know exactly where the police cameras are?
Dealer 26: Yeah. In town there are about ten.
Interviewer: Do you ever meet people in front of cameras? I mean if you know a camera can see you does that stop you?
Dealer 26: I don't do that. I walk away from that camera. If they see you they will come and take you.

By walking away from cameras, offenders reduce the odds of apprehension in three ways. First, by consciously moving away from cameras a dealer may arrive at a locale entirely absent of them; our quantitative data, however, suggest that dealers are less successful in this regard than they believe. But even if in a camera's proximity, walking away from it can be protective. This is because the further away a person is from a camera, the less able it is to capture evidence of wrongdoing. Moreover, by walking away from a camera the dealer turns his or her back on law enforcement and, in doing so, creates a blind spot for conducting business (also see Edmunds et al., 1996). To the extent that dealers are under the impression that walking away from cameras reduces the risk of apprehension in any of these ways, they will have less fear of apprehension and thus should be more willing to break the law.

Although our quantitative evidence suggests that cameras do not deter solicitations or sales, the words of our respondents indicate that they do in fact fear this tool of formal control. If our participants did not fear cameras, they would not walk away from them. The fact that dealers take these steps suggests that cameras do deter drug business, albeit only restrictively. Walking away from cameras is a preventive action with their own costs: They take time, take effort, and reduce the range of possible places for soliciting or selling. Together, these costs reduce the opportunity for soliciting and selling. Findings from a separate study on cameras and drug trade provide some evidence for this assertion. Drug buyers in London interviewed by Edmunds et al. (1996) "reported transactions taking 45 minutes, especially when sellers wanted to walk far from the site because of suspected CCTV or police presence" (p. 16).

Conclusion and Discussion

Main Findings

The purpose of this multiple methods study was to enhance our understanding of how dealers in general, and those doing business in downtown Amsterdam in particular, decide on where to solicit customers and sell them drugs. Informed by economic and criminological perspectives, it was hypothesized that dealers' location choices are affected by the presence or absence of customers, agents of social control, and competitors. The physical and social characteristics of 262 street segments in downtown Amsterdam were recorded and related to the locations of recent deals of 50 active dealers who were recruited

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on the streets and through snowball sampling. They participated in an interview in which they were not only asked to provide factual information about recent drug transactions but also to explain their spatial strategies in soliciting customers and selling drugs.

Customers. In line with findings reported elsewhere (McCord & Ratcliffe, 2007; St. Jean, 2007), the results of the quantitative analysis tentatively confirm the relevance of potential customer density as a location choice criterion. Given the small number of observations, this conclusion is based on the consistency of the estimates rather than on statistical significance. The findings suggest that dealers tend to solicit customers and also to sell drugs in street segments characterized by businesses and facilities that attract potential customers, such as bars, clubs, coffeeshops, and hotels. However, potential customer density was not spontaneously mentioned by offenders when asked about the criteria for choosing dealing locations. Therefore, one conclusion to draw is that the abundance of potential customers is not a very salient criterion for dealers when thinking about their location choices. This does not mean that it is not an important determinant of their choices, however. In fact, the quantitative analyses presented in Table 4, the casual observations by the fieldworker, and the cited evidence published elsewhere all indicate that commercial businesses attract dealers. We suggest that when asked about their location decisions, the presence of customers is a consideration too obvious for them to mention. Choosing busy and active places for dealing has probably become an automated aspect of their decision making. Given the speculative nature of this conclusion, future research should seek to determine whether this interpretation of what dealers do but not say is correct.

Social control. An unexpected finding in the analysis of the answers to the open interview questions is the apparent lack of effectiveness of social control, in general, and formal social control in particular. The findings suggest that dealers tend to solicit customers and sell drugs in street segments characterized not only by the presence of private CCTV cameras and informal social control but also by the presence of police stations, police foot and car patrols, and police-monitored CCTV cameras. Does this imply that formal social control is ineffective because it does not deter but rather encourage dealing? From a theoretical perspective, it does not. The location choice theory we outlined claims that dealers choose locations for dealing as a function of the presence of potential customers, social control agents, and competitors. In the real world, these are correlated characteristics that tend to go together. In the study area, one would be hard-pressed to find at any time of the day a street segment that is at the same time full of motivated customers yet with no CCTV cameras or police patrols around. Instead, the location choice criteria of dealers coincide, so that all dealers are attracted to places with large volumes of customers. Furthermore, police officers are not likely to patrol randomly. Rather, their patrol intensity is greater on busy street segments and on segments that have proven to attract dealing and other crimes. The same argument holds for installation of CCTV cameras. In other words, our respondents are not attracted to places where the police exercise formal control, but the police are attracted to locations where many dealers are active. In our view, where dealers go

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to solicit customers and sell drugs is thus a compromise or trade-off between attracting and deterring characteristics.

The results of the qualitative analysis provide additional insights into the effects of formal social control on location choices. They demonstrate that dealers do carefully consider the presence of formal control when they decide on where to go and what to do. They cannot completely avoid "the law" and view it as an inevitable yet surmountable nuisance. They find ways to evade it, or at least minimize the risk of apprehension, without being completely deterred. Walking around in the Red Light District and not standing still on a single spot for long periods of time are one class of preventive techniques; another is hiding drugs in stash spots (rather than on their body) while soliciting; a third kind of preventive technique is careful positioning to keep one's face or body outside CCTV camera view. In sum, the interview findings tell us that dealers who sell drugs in downtown Amsterdam do fear police patrols and CCTV but typically find ways to reduce their effectiveness, though this may come at the cost of fewer sales (see also Jacobs, 1993, 1996).

Multiple Methods

Structural data collection that aims to rigorously test propositions about spatial criminal choices must utilize sufficiently large samples. Our total sample of 50 dealers was already small, but the subsamples per location choice item ("Recruitment," "Latest solicitation," etc.) contained even smaller numbers. These sample sizes were not large enough to provide statistical power to rigorously test bivariate hypotheses on the effects of customer density, social control, and competition on the choice of where to solicit customers and sell them drugs. In the real world, customer densities, dealer densities, and police densities are correlated, which implies that it will always be difficult and require large samples to disentangle their effects.

In the present study, the unstructured questions that invited participants to discuss their location choice decisions complemented the findings that were based exclusively on the quantitative relations between the locations of reported drug deals and observed street segments. The results allowed us not only to test propositions but also to uncover the mechanisms and subjective underpinnings of location choice decisions. Both strongly structured ("quantitative") and weakly structured ("qualitative") methods and techniques have an added value. Based on the weakly structured interview data, it would be impossible to predict that dealers will select busy and active street segments to solicit and sell drugs. It is important to note that narrative data are not the final answer to all questions. Whereas dealers can help us understand their decisions by sharing their impressions and memories, what is subjectively important to them is not necessarily what determines the outcome of the choices.

Some parts of the decision process may by automatic, that is, without much conscious thought. The criteria driving these decisions do become accessible not by asking the respondents about their thought process but by asking them where their last deal took place, and by comparing the characteristics of this place with those of other places. However, based on the strongly structured data, we can only conclude that

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social control does not seem to deter, but we do not have a clue about the reasons why. The narrative interview data help us understand why formal social control does not deter as much as we often think it does.

Unit of Analysis

Location choice is about where offenders commit crimes. A growing body of literature challenges the existing practice of spatial aggregation and advocates the use of small units of analysis (Weisburd, Bernasco, & Bruinsma, 2009). Following that advice, the present study used street segments as the unit of analysis, that is, as the relevant spatial context for location choices in drug dealing. The rationale was that for decision making in dealing situations, what matters are the characteristics of a place that can be seen or heard, and it seemed that street segments ("street blocks," "face blocks") are small enough to assure that from any point in the street segment, relevant attributes of any other point in the same segment could be seen and heard. Many other recent studies used street segments or similarly sized entities as their spatial unit of analysis (McCord & Ratcliffe, 2007; Oberwittler & Wikström, 2009; Smith, Frazee, & Davison, 2000; Weisburd et al., 2004). What do our findings reveal about the appropriateness of this decision? The results of our analysis of the interview transcripts demonstrate that street segments are still too coarse as units of analysis, not only because they still cover too large territory but also because their relevant characteristics are not stable over time.

When dealers talk about optimal places to solicit customers or sell drugs, the relevant spatial scale of location choice is measured in meters rather than in hundreds of meters. It is in fact sometimes even a matter of turning one's back on a CCTV camera. Whether there is a hotel or a coffeeshop in a street segment may be significant, but the more salient decision is probably whether to stand right in front of an entrance (in sight of employees, guests, or a private camera) or just 10 meters away and outside the view of potential social control agents.

Furthermore, the analysis of the interview transcripts underlines that although some of our measured street segments' characteristics are static (e.g., the presence of facilities), others are not. Many do vary over the course of the day or the days of the week (e.g., activity level, police patrols). Even if the measures can be assumed to be stable, some of their implications for drug dealing do vary (e.g., bars are present but not open in the early morning, and CCTV cameras do not register as much at nighttime as they do at daytime). One of the most salient location choice criteria for dealers—namely, the presence of police patrols—is dynamic, and so are the dealers themselves. Thus, both dealers and police officers strategically move around the study area keeping an eye on each other while, respectively, trying to solicit customers and perform other law enforcement tasks and public services.

The conclusion to be drawn from this observation could be, as we suggest, that future research should study offending at even smaller spatial units of analysis than street segments (e.g., 10 × 10 m grids, or even addresses). It might, however, be even more worthwhile to adopt a unit of analysis that is not purely spatial but that includes

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tangible characteristics of the ongoing situation. A good example is the definition of a "setting" proposed by Wikström: "The part of the environment (the configuration of objects, persons and events) that, at any given moment in time, is accessible to a person through his or her senses (including any media present)" (Wikström, Oberwittler, Treiber, & Hardie, 2012, p. 15). This definition shares elements with a previous definition of "place" as "a fixed physical environment that can be seen completely and simultaneously, at least on its surface, by one's naked eyes" (Sherman, Gartin, & Buerger, 1989, p. 31). However, in addition to specifying a spatial scale, it includes the presence of objects, persons, and events, and emphasizes the dynamic character of settings: They are not only small but also variable over time (for an empirical example of this situational framework, see Bernasco, Ruiter, Bruinsma, Pauwels & Weerman, 2013). As is evident from the descriptions given by some of our study participants, a street segment is unattractive in the presence of a police officer, but may be very attractive the minute he is gone.

Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The author(s) disclosed receipt of the following financial support for the research, authorship, and/or publication of this article: This work was supported by the National Science Foundation, Division of Social and Economic Sciences, Law and Social Sciences Program (NSF ID 0819090), and the University of Missouri Research Board.

Notes

1. These assessments are based on informal (i.e., non-systematic) fieldwork conducted by the second author (i.e., fieldworker). For details, see Jacques & Bernasco (2013). At present, police statistics that could support this assertion are not made available by the Amsterdam Police Department for public use.
2. This was the time of recruitment for two reasons. One reason is to ensure the fieldworkers' safety; as the evening went on, the study locale became more hazardous. Second reason is that, based on our informal field observations (see Jacques & Bernasco, 2013), there were more dealers as the day unfolded; that is, the number of visible sellers increased from the morning to the late evening up to about 2 a.m. when it dropped off significantly. For practical reasons, then, we had to balance a desire for safety with a desire for dealers to recruit; 5 p.m. to 10 p.m. is that middle ground.
3. The supplement was not administered to the other 19 dealers because the spatial supplement was added to the interview protocol only after the main study had started and 19 dealers had already been interviewed. Note that the 31 subjects who completed the spatial supplement were not generally the same individuals as the 31 who were recruited through snowball sampling. The groups overlap, and the fact that they both count 31 respondents is coincidental.
4. Bernasco and Nieuwbeerta (2005) and Bernasco and Ruiter (2014) discuss the multinomial logit model (also known as conditional logit) and its application to criminal location

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choices in greater detail. In the present analysis, where no dealer spatial origin locations is assumed and where dealers' travel costs are assumed to be negligible, the model is equivalent to the Poisson model with the number of times a street segment was chosen as the dependent variable (Guimaraes, Figueirdo, & Woodward, 2003).

5. The fact that some dealers completed their last sale more than 4 days earlier should not be inferred as meaning these dealers are not "active." For one, this is simply because most people, in the Netherlands at least, do not "work" every day of the week. Second, and more tellingly perhaps, Thursdays through Saturdays were the "hot" times to sell as that is when the partying and tourism were at maximum. This affected time from last sale in two ways: Sellers had a more difficult time finding clients on Sunday through Wednesday; and, some dealers only sought to make sales during the hot times, meaning that they would not search for customers on cold days. Finally, and related to the first two issues, not all of our participants viewed their dealing as a career but, instead, as a way to make extra cash; only a small number of sales per week were needed to reach their monetary goal. In the end, whether a criminal is "active" or "inactive" is perceptual (i.e., the criminal's mind-set is what matters) or based on a third party's designation (i.e., longer or shorter than "X" months as last crime determines the categorization). All of our participants told us that they were still active and had completed their last sale within 6 months; in research based on offenders, these are standard markets for "active" (see, for example, Wright & Decker, 1994, 1997). Of course, we cannot fully rule out the possibility that some of our participants lied to us about these matters.
6. As these spontaneous questions were not posed to each and every dealer, we refrain from specifying how many participants responded with any particular answer. In other words, because not all of the sellers were asked the same follow-up questions, we do not know how popular is any particular perception or action among them with reference to any given issue. Note, however, that the general finding we propose—dealers are restrictively deterred—was mentioned by all of the sellers. Put differently, all participants mentioned being fearful of formal control and taking active steps to combat it, which, upon analysis, would in all likelihood reduce their ability to solicit and make sales.
7. Prior research shows that dealers also use stash spots during the actual sale itself (Jacobs, 1999). For instance, a seller will hide the merchandise somewhere in the street (e.g., inside a chip bag or a newspaper on the ground) and after receiving the buyer's money will direct him or her to that place to collect their purchase. For whatever reason, dealers in downtown Amsterdam do not seem to use this preventive technique; it was never mentioned during interviews, at least. Therefore, the use of stash spots does not help explain the positive correlation between formal control and drug sale locales borne out of the quantitative data.

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