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An analysis of relative risk,
perceived risk and modus operandi

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Abstract Crime is often found to concentrate in and around bars. Although numerous studies have looked at the relationship between bars and violent crime, research concerned with acquisitive crime in bars is lacking. This study focuses on bag theft in bars and presents analyses of 1023 recorded bag thefts in 2005–2006 from 26 bars of 1 chain in central London. We also report analysis of 317 customer surveys conducted in 14 bars of the same chain. In most crime prevention studies, a denominator is used to allow for a generalizable calculation of risk. Typically that denominator is selected by considering the crime in question and the commensurate population at risk: burglary using households, car theft using cars. For bag theft in bars various denominators exist: the number of seats, the number of customers or the number of bags per bar. This type of information is rarely available, and its impact on understanding crime risk is discussed here. Furthermore, bags might be at differential levels of risk of theft depending upon where they are placed. By comparison with a relevant denominator, here we show that bags are most at risk when placed over a chair or on the floor. Although surveys indicate that the public tend to know this, their bag placement behaviour appears to be at odds with their (accurate) perception of risky bag theft locations. We therefore propose that targeted publicity and greater bag stowage options that enable customers to store bags off the floor are likely to be effective crime prevention measures to reduce bag theft in bars.

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Keywords: bag theft; crime in bars; denominators; victimization risk; risk perceptions

Introduction

Crime often concentrates at and around bars (Madensen and Eck, 2008). At the macro-level, bar density is found to hold a positive relationship with area-level crime rates (Roncek and Maier, 1991; Kumar and Waylor, 2002). At the micro-level, Sherman *et al* (1992) find patrons of drinking establishments to be at higher risks of victimization compared to other recreational facilities. Causal explanations vary: high crime bars fit the criterion of both *crime generators* and *crime attractors* (Brantingham and Brantingham, 1995), as purveyors of alcohol bars also provide a common location where the criminogenic effects of excess alcohol consumption are typically manifest (Graham *et al*, 2006). Research into the



relationship between bars and crime is plentiful and typically focuses on personal crimes such as assault (Graham and Homel, 2008). Research into acquisitive crime in bars is less common. This is not unexpected; crimes regarded as more severe regularly attract greater political and societal attention, often reflected in greater funding allocation and increased publications. This acknowledged, we argue that research into acquisitive crime in bars is also important, particularly to inform the security procedures of law enforcement agencies and the patrons and staff of bars. To this aim, here we present analyses of both recorded crime and customer survey data of a specific type of acquisitive crime in bars, bag theft.

The paper proceeds as follows: (1) we introduce the problem of bag theft in bars and outline the issues associated with accurately estimating bag theft risk; (2) we then describe the data used and present analyses related to bag theft distribution and *modus operandi* (MO) patterns; and finally (3) we discuss the implications of the findings for reducing bag theft in bars and outline areas for further research.

Bag theft, bag thieves

Our working definitions are thus: a bag theft is the unlawful taking of a bag or its contents from an individual by covert means.¹ A bar, to borrow from Madensen and Eck (2008), is a venue that sells alcohol for the purpose of drinking and contains a physical area designated for alcohol consumption. As stated, research on bag theft in bars is scarce, the exception being Smith *et al's* (2006) analyses in the London Borough of Westminster, United Kingdom. They report several noteworthy findings which, given the rarity of such research, serve to frame and suitably preface the analysis to follow.

Smith *et al's* analyses of recorded bag theft data indicated marked variation in bag theft victimization patterns between bars. Over a 5-year period across a suite of nine London bars of the same chain, one bar was found to account for 20 per cent of the combined bag theft problem. This skewed distribution is a recurrent finding throughout crime analysis, referred to as a J-curve distribution (Eck *et al*, 2007), in which (for bag theft in bars) a minority of bars is found to account for the majority of the bag theft problem within an analysed locale. For crime prevention purposes uncovering such concentration patterns can usefully aid in the targeting of security measures. From a research perspective it also allows for insightful comparison between similar facilities that experience *dissimilar* crime rates.

Beyond *bag theft* characteristics, Smith *et al* also analysed the MO of the *bag thief*. Noteworthy from a crime and loss prevention perspective was that over half of all the observed bag thefts were of bags that were left unattended. Findings also revealed that there was statistically significant variation in the MOs reported across bars, ranging from distraction thefts to bag thefts through 'dipping' (like pick pocketing but from a bag). Such variation could originate from various sources and no causal hypotheses were tested. Aetiology aside, analysis of offender MO can usefully aid in the understanding of crime and particularly the identification of suitable methods for prevention. To take a related example, Bowers *et al* (2005) provide a case study of how appropriately targeted opportunity reduction measures reduced burglary. In their example, before intervention it was evident that for the majority of burglaries, entry was gained via the rear of terraced (row) homes with offenders using the alleyways to gain access to households. In response, to try to reduce the problem hard-wearing lockable gates were installed at the ends of the alleyways, with keys being provided



to residents alone. Substantial reductions in burglary (particularly those where entry was via the rear of the property) were noted over the following 3-year intervals that were not part of changes observed elsewhere.

Risk of bag theft in bars, that is the probability of a bag being stolen, is likely an amalgam of various contributory (often overlapping) factors. Such causal elements can operate at various levels: risk of bag theft may be influenced by the area in which a bar is located, the typical clientele that frequents a bar, the managerial policy for a bar, the design of the bar, the price of drinks and so on. The described risk factors are predominantly exogenous, yet victimization risk is also influenced by the behaviour and belongings of potential victims. A patron of a bar may increase the risk of their bag being stolen through, say, the amount of alcohol they consume, the type of bag they carry or their choice of seat within a bar. Of course exogenous factors continually mingle with individually derived decisions; a full bar means seat choice is limited. However, from a crime and loss prevention perspective, insight into risk factors *within* bars attributable to individual decision making may be more amenable to prevention strategies, rather than aiming to initiate an *en masse* crime reduction through targeting wider causal factors.

A criminological road well travelled: Volume, rates and risk

A shortcoming noted by Smith *et al* (2006, p. 15), one that we address here, was that their analysis measured bag theft volume, not a bag theft rate. As they acknowledge, although absolute levels of crime are informative for directing crime reduction resources, they fail to accurately capture an individual's *relative* risk of criminal victimization. The *volume of crime* and the *risk of crime* are different representations, volume of crime measures being far cruder because of their failure to standardize crime by available opportunities. For example, the bar with the highest volume of bag theft may simply be the bar with the highest volume of customers and highest volume of bags. A positive relationship is therefore expected. Arguably what holds most value for understanding the causal mechanisms of crime – as well as its prevention – is uncovering those bars that deviate from this linearity, those bars that house a higher *risk* of bag theft compared to other bars once standardized across a relevant opportunity-based variable. The critical question then becomes what variable does one standardize on?

Discussions abound as to what constitutes an appropriate crime denominator (see Harries, 1981; Wikström, 1991). Lottier (1938) and later Boggs (1965) both argue that meaningful and accurate crime rates must be adjusted to take account of the distribution of opportunities *specific* to the crime being analysed, thus suitably representing the population at risk. An innovative example is provided by Chainey and Desyllas (2008) to assess the risk of on-street crime in central London. Instead of using the common denominator of residential population, Chainey and Desyllas used pedestrian footfall data of the volume of pedestrians per street segment in the study area. Although such pedestrian modelling data are admittedly less accessible than population figures, results were nonetheless startling. For on-street robbery risk, the annual rate per 1000 population was 3.1, and for theft from person the rate was 6.8. Using the pedestrian modelling data as denominator however, the on-street robbery rate was found to be 0.0019 per 1000 pedestrians, for theft from the person, 0.0051. Such findings are not aberrations, Bottoms and Wiles (2002),



Skogan (1976) and Clarke and Mayhew (1998) all present compelling evidence of the potentially misleading results borne of the inappropriate usage of 'default denominators'. This potential to mislead necessitates that those calculating crime rates are *crime-specific*, ensuring the denominator chosen adequately captures the crime-specific population at risk. This, however, is not always straight-forward. Harries (1981) notes that identifying an accurate denominator for certain crimes is a complicated process. Beyond methodological considerations, denominator choice relates to more practical issues. Data on some denominators may not be easily available, even then, such options may not be financially viable.

What then of calculating a rate for bag theft in bars? The number of bags per bar would surely be the most accurate measure, but such data are not routinely (if ever) recorded. Gathering such data would also likely be too resource-intensive and limited by the fact that it would be a constantly changing quantity. Moreover, despite bags by definition being the target of bag theft, unlike stationary cars as the targets for auto-theft, in bars one assumes that the bag is brought into the 'risk-environment' by a person, and hence the number of persons may act as a suitable and more attainable opportunity-related measure. But not everyone in a bar has a bag, some patrons have many bags. Even here (with patronage) accurate in-bar population data are not readily obtainable and would likely be estimated by proxy, using say, bar takings or door receipts. A more attainable measure would be the number of seats per bar, for which data are more accessible (bar owners willing). This gives a measure of bar capacity and therefore provides an estimate of the number of possible opportunities an offender could exploit. Although these data may represent the best compromise, even here, it is by no means perfect. Furniture changes and interior revamps may force the researcher to adjust risk estimates accordingly. Furthermore, it is obviously unreasonable to assume that all seats are always occupied. Finally, seating capacity does not capture those bar patrons at risk of theft who are standing, because of either preference for standing or because all seats are taken. Consequently, seating capacity will sometimes provide an underestimate of risk and at other times an overestimate.

The remainder of this paper seeks to expand existing knowledge relating to bag theft in bars. In particular, the MO associated with bag theft, and its relationship with what is stolen and from where. A second aim is to examine the denominator issue: do bag theft rates give further insight into bar-level risks than volume measures? A final aim is to examine how the decision making of individuals in terms of their placement of bags alters their risk of bag theft in bars and how this relates to customer understanding of where the risks lie.

Data and Method

Analysis was undertaken on recorded crime and customer survey data for a chain of 26 bars in central London. Below is a discussion of each dataset in turn.

Recorded crime data

Recorded crime data were provided by the Metropolitan Police for 1 January 2005 to 31 December 2006. The data comprised all theft and robbery incidents across retail establishments in London, including the 26 bars analysed here. Crimes were initially selected by the



name of the bar in which they occurred. A spatial filter was also applied using a geographic information system to capture any crime incidents that occurred in the bars analysed but which were falsely recorded. This also removed incidents of crimes occurring at different bars but which had the same name as those of interest here. Crimes that occurred within a circular 600-m buffer zone emanating from each bar were also included at this stage. Once a list of all theft and robbery incidents was constructed, further filtering took place to extract only bag thefts in the 26 bars under study. This information was gathered through analysis of the free text field for information relating to the theft of bags, and cross-referencing to the property-stolen indicators. The final dataset comprised 1023 incidents of recorded bag thefts over 2005–2006 across the 26 bars.

Customer survey data

A customer survey was developed to gain insight into various aspects of security-related behaviour and perceptions in bars. Specifically, the survey gauged patron's perception of security in bars (particularly design-based interventions), their behaviour in relation to bag ownership and placement, their awareness of extant security measures, their crime victimization experiences and attitudes towards crime prevention publicity more generally.

Three hundred and seventeen surveys were completed between August and October in 2007 across 14 of the 26 bars. Bars were chosen randomly and participants were selected using opportunistic sampling between 1200 and 1800 hours. The sample comprised of 184 (58 per cent) females and 133 (42 per cent) males. The modal age group was 18–25. The same experimenter approached participants who were seated at tables in bars, each of whom were debriefed and thanked for their participation on-completion. Surveys took place *in situ*, took roughly 5 min to complete and were filled out in the absence of the experimenter. An example is given in the Appendix.

Results

Bag theft: Volume vs. rates

Across the 26 bars, there was an average of 20 bag thefts per year. Like Smith *et al* (2006), however, the distribution of bag theft between bars varied considerably. Figure 1 shows that across the 2-year period, the volume of bag theft incidents ranged from 221 to just 2. This pattern conforms to the J-curve distribution discussed previously (Eck *et al*, 2007). Bar T, for example, accounts for 22 per cent of the total number of thefts observed. The top five bars in terms of bag theft volume (T, P, R, M, V) accounted for 59 per cent of all reported incidents across the 26 bars.

But what if bar T is the largest bar, with seating capacity decreasing from left to right along the X-axis in Figure 1? To address this, a visual audit was conducted at each bar to count the number of seating opportunities available. Table 1 displays the number of seats within each bar, ranked by bag theft volume in descending order to match Figure 1. It shows that the number of seating opportunities also (expectedly) varies considerably between bars. Bar C is the largest bar with a seating capacity of 414, yet experienced just 25 recorded bag

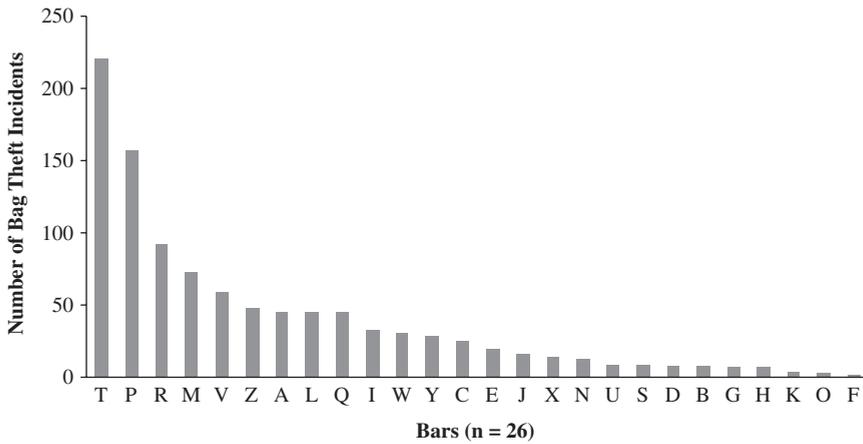


Figure 1: Distribution of recorded bag theft incidents across 26 bars of the same chain in central London, 2005–2006 ($n = 1023$).

thefts over 2005–2006. Bar T that accounted for 22 per cent of the total problem is the fifth largest in terms of seating opportunities. Spearman’s Rho correlation finds the number of seating opportunities holds a weak and negative relationship with the number of recorded bag thefts ($r = -0.070$, $P > 0.05$).

Dividing the total number of bag thefts each bar experienced by seating opportunities and then multiplying by 100 produces a bag theft rate over the 2-year period per 100 seats. This was then halved to produce an annual bag theft rate (column 3 in Table 1). Using this measure, the risk of bag theft per bar is seen to deviate considerably from the total volume of bag theft experienced in each bar. For example, bar M is found to have a higher bag theft rate than bar R, despite the latter housing a larger volume of bag thefts. Most notable is bar Q, which for a bar with a small capacity (76 seats) experienced a disproportionately high amount of bag thefts at an annual rate of 30 thefts per 100 seats (Table 1).

Bag theft: What gets stolen?

Table 2 shows the type and frequency of goods stolen across all recorded bag theft incidents. The handbag itself was most frequently taken, followed by purses and wallets. Credit cards, mobile phones and British currency are also typically taken. Analyses also found sex differences in terms of the types of goods stolen: male victims were much more likely to have computers or technical equipment stolen than women (47 per cent compared to 10 per cent). As might be expected, jewelry and make-up was taken from female victims more often than male victims (2.4 per cent vs. 1.5 per cent), as were mobile phones (32 per cent vs. 18 per cent). Personal documents (such as passports, driving licences and travel documents) were stolen in an even ratio from both sexes (17 per cent vs. 18 per cent). Such differences are likely attributable to differences in the possession of such items, for which data are not available.

Table 1: Bag theft volume, rate and seating capacity across the 26 bars, 2005–2006 ($n=1023$)

<i>Bar name</i>	<i>Total bag theft (2005–2006)</i>	<i>Bag theft rate per 100 seats per year</i>	<i>Total no. of seats</i>	<i>No. of seats ranking</i>
T	221	46	238	5
P	157	42	188	12
R	92	17	273	3
M	73	33	111	24
V	59	20	150	19
Z	48	13	184	14
L	45	17	220	8
A	45	10	136	21
Q	45	30	76	26
I	33	8	217	10
W	31	5	303	2
Y	29	6	243	4
C	25	3	414	1
E	20	8	133	23
J	16	4	184	15
X	14	8	92	25
N	13	3	187	13
U	9	3	172	16
S	9	3	172	16
D	8	2	215	11
B	8	3	136	22
G	7	2	219	9
H	7	2	150	20
K	4	1	233	6
O	3	1	224	7
F	2	1	164	18
Total	1023			

Table 2: Frequency of items stolen in bag theft ($n=2363$)

<i>Goods stolen</i>	<i>n</i>
Handbag/shoulder bag	577
Purse/wallet	416
Credit card/cash	359
Mobile phone(s)	290
Currency	286
Keys	67
Passport	60
Driving licence	55
Photographic equipment	52
Sport bag/holdall	51
Documentation – other	33
Personal digital assistant	33
Travel document	31
Laptop computer	30
Briefcase/attaché case	23



Bag theft: Location and status of bag at time of theft

Analysis was conducted on the free text field of police-recorded data pertaining to the description of the bag theft incident. This field included comments on where the property was located, whether it was attended or unattended and whether a potential offender was seen or not. As often found with such data, the depth of information varied considerably between incidents.

Table 3 summarizes the number of occasions on which certain key words were mentioned in the free text field (words such as ‘on’ and ‘under’ were included to help specify exact locations). It is noteworthy that terms such as chair, table and floor are commonly mentioned – this is likely to be the location of the bag at the time of theft. ‘Unattended’ is also mentioned frequently.

The combinations of key words were analysed to glean further information on likely MOs. As indicated in the table, in just under a third of thefts the bag was unattended when stolen. In the other two thirds, the status of the bag was not mentioned. This does not mean it was necessarily attended, merely that it was not recorded. In offender terms, a separate analysis of the MO field revealed a suspect was mentioned in 110 (11.4 per cent) of cases. In 71 per cent of cases, the suspect was classed as unknown or unseen. In the remaining 18 per cent of cases, details were not given. If generalizable, such information suggests bag theft is predominately clandestine, committed as a ‘sneak’ theft in which offenders are typically not seen committing the offence (note that ‘snatch’ thefts were not included in the incidents analysed here).

Table 4 shows the results of an analysis of bag theft incidents in which the details of the bag’s location – according to the victim – at the time of theft were recorded. In each case the location was coded with the maximum level of specificity possible. For example, ‘on floor’ could in fact mean ‘by chair’ or ‘at feet’ but this cannot be unequivocally discerned from the details given. In just over half of all incidents no locational information was given. Where details were given, however, the majority of bags appeared to have gone missing from the floor. Popular offending locations also included those bags placed at the feet of the victim and those on or over the back of a chair. Across all theft locations, few bag thefts occurred

Table 3: Citation frequency for key words pertaining to bag theft in bars found in police recorded free text fields

<i>Key word (n=965)</i>	<i>Number of mentions</i>	<i>% of times mentioned</i>
On	641	66.4
Unattended	291	30.2
Floor	166	17.2
Chair	154	16.0
Table	112	11.6
Under	106	11.0
Back	75	7.8
Feet	73	7.6
Seen	42	4.4
Chat	2	0.2
Clip	1	0.1

Table 4: Victim-reported bag location at time of theft ($n=965$)

<i>Location of bag</i>	<i>n</i>	<i>Percentage</i>
Not specified	496	51.4
On floor	127	13.2
Back of chair	78	8.1
At feet	75	7.8
Under table	62	6.4
On chair	40	4.1
Under chair	33	3.4
On table	18	1.9
By chair	18	1.9
Close by	11	1.1
On clip	4	0.4
On person	3	0.3

Table 5: Percentage of bag type by stowage location using customer surveys ($n=250$)*

<i>Bag location</i>	<i>Laptop</i>	<i>Handbag</i>	<i>Briefcase</i>	<i>Rucksack</i>	<i>Shopping</i>
On the floor	18	23	32	66	48
Over your chair	6	15	14	12	16
On the table	53	21	25	10	35
On your person	24	40	25	10	0
On a bag clip	0	1	4	2	0
<i>n</i>	17	133	28	41	31

*Those in bold represent the most common location by bag type.

when bags were placed on the persons themselves (0.3 per cent of the sample) and from clips or hooks provided to secure bags (0.4 per cent).

Bag type, bag placement and customer perceptions of security

Of the 317 customers surveyed, 189 reported they had a bag with them at the time of questioning (60 per cent). Of those bag carriers, 159 (84 per cent) had one bag and 26 (14 per cent) had two bags. Two people had three bags (1 per cent) and five bags (1 per cent), respectively. The most common *type* of bags were handbags (133, 53 per cent). Other types of bags included rucksacks, shopping bags, briefcases and laptops. Table 5 shows the percentage results when respondents were asked to state what bag they had with them and where it was currently placed. It can be seen that bag placement differs for bag types. The most common location for handbags was on the person, followed by the floor and then the table. Briefcases, rucksacks and shopping bags were all typically placed on the floor. The χ^2 -test indicates that the noted variation between bag type and the location in which they are placed is statistically significant ($\chi^2=56.447$, $P<0.001$). Although causality cannot be gleaned from such analyses, Table 5 implies that heavier, bulkier items such as rucksacks

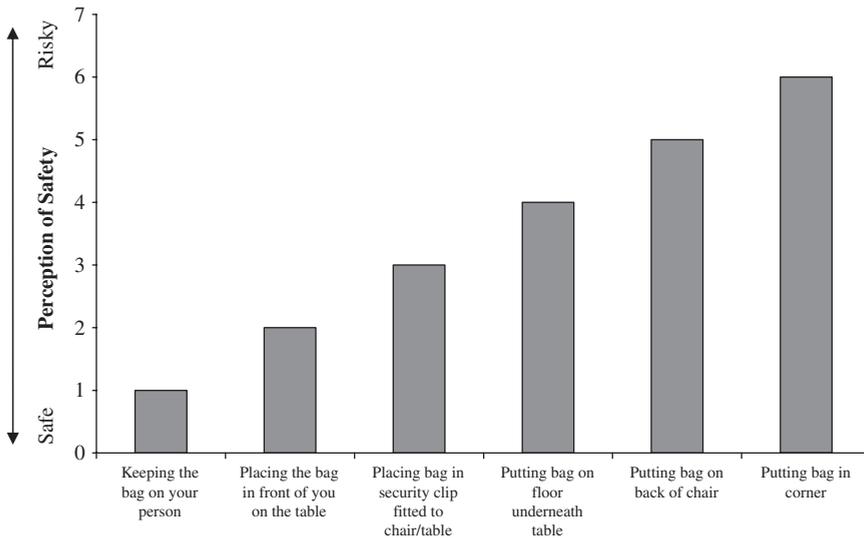


Figure 2: Perceived degree of safety of different security practices ($n=291$).

and shopping bags tend to be placed on the floor. In contrast handbags tend to be kept on the person – possibly linked to concerns over security as well as the practicalities of holding onto items that generally are smaller. Laptops, although typically more bulky, are valuable items that might explain why the table is the favoured in-bar location to store them.

Respondents were also asked to rate the above bag placement locations in terms of the perceived degree of security they offered against bag theft (Figure 2). The perceived safest location across all respondents was keeping one’s bag on the person, followed by placing it on the table in front. Failing that, they reported placing a bag on a security clip (see Bowers *et al*, 2009) followed by placing their bag on the floor underneath the table. The perceived more risky practices were putting bags on the back of a chair or placing bags in a corner of a bar.

Comparing perceptions of security through various bag placement options with the actual practices of customers indicates that although respondents perceived keeping the bag on the person as most secure, this was only practiced in large numbers by the owners of handbags. Overall just 27 per cent of bags were kept on the person. In contrast, although storing a bag on the floor was considered to be a fairly insecure location, this was observed for 34 per cent of all bags.

Triangulating recorded bag theft locations and bag placement locations

Table 6 compares the bag placement findings gleaned from customer survey forms with police data of the actual locations of bag theft within the 26 bars. Table 6 shows that the customer survey forms indicate that around a third of bags in the chain of bars analysed were placed on the floor. Recorded crime data indicate that over two-thirds of bag thefts observed involve bags going missing from this location. Risk estimates can be calculated by dividing

Table 6: Bag placement tendencies using customer survey data ($n=249$) and bag theft locations using recorded crime data, 2005–2006 ($n=458$)

<i>Bag location</i>	<i>Customer placement (n=249)</i>	<i>Theft location (n=458)</i>
On the floor	84 (34%)	315 (69%)
Over your chair	35 (14%)	118 (26%)
On the table	59 (24%)	18 (4%)
On your person	68 (27%)	3 (1%)
On a bag clip	3 (1%)	4 (1%)

the percentage of thefts carried out from a particular location by the number of customers placing bags in that location. Hence, in risk terms on the basis of current data, compared with other locations, bags on the floor are at twice the average risk of being stolen (69 per cent divided by 34 per cent). Similarly, bags placed on chairs are at 1.8 times the average risk. In comparison, the risk of theft for bags placed on tables is reduced by a sixth, and a huge twenty-seventh if bags are kept on the person. Risk of bags being stolen when attached to a security clip appears to not alter much from the average risk estimate, although the number of cases of clipped bags is so small as to make such results unreliable. Most striking is that the data relating to risk estimates are remarkably similar to the customers' perceptions of risk at different locations (Figure 2). However, despite this concordance, it is clear that there is considerable disparity between the perceptions of customers concerning secure storage of bags and the reality of where customers actually place their bags. The implications of this, as well as reasoning as to why, are covered in the discussion.

Discussion and Implications

Findings were presented from two data sources exploring bag theft in a series of bars of the same chain in central London. Results suggest that bag theft varies considerably across bars, with a minority of bars accounting for the majority of the bag theft problem. Bag theft was also found not to be merely a product of opportunity – operationalized here as the number of seating opportunities – with certain bars of larger seating capacity experiencing relatively few bag thefts. Analysis of survey data suggested a perception that placing bags closer to the person increased the security against theft. That said, few customers actually executed such behaviour, with the majority of bags being placed on the floor. Analysis of recorded crime statistics verified respondents' perceptions of high-risk locations, revealing that higher incidents of bag theft were associated with the common practice of putting bags on the floor. Bag theft was also found to be highly concentrated at certain places (both certain bars and certain locations *within* bars) and on certain items (purses/wallets, cash and mobile phones). Explanation and implications of such findings are now discussed.

A thief's-eye view

Differences in the property stolen as a product of bag theft can be explained in numerous ways. First, we take an offender perspective in terms of the decision-making differences of stealing individual items vs. stealing the bag as a whole. Items stolen without the bag being



taken appear to neatly align with the attributes of 'CRAVED' items, Clarke's (1999) acronym that describes the characteristics that influence an item's risk of theft as a result of its perceived attraction to offenders – namely an item's perceived *concealability*, *removability*, *availability*, *value*, *enjoyability* and *disposability*. Cash, currency and the typical contents of purses and wallets are good example of CRAVED items. In contrast, stealing bags as a whole may represent more of a lottery in terms of what items a bag contains. Rather than the specific targeting of (CRAVED) items, this form of theft is likely to stem more from offender inference on the basis of related ecological cues, that is assuming that it is *likely-enough* that a selected bag will contain sufficiently valuable items to warrant stealing it. Of course with this process there will be false positives, handbags containing items of no value (either inherently or monetary) to the offender, what Ekblom and Sidebottom (2008) call 'bycatch'.² If so, bags may be at a higher risk of theft by virtue of not only ease and availability of opportunity, but also their outward appearance and the company they keep, that is their owner. Available evidence is currently outstanding to test such hypotheses.

A further finding is that items relating to personal identification were commonly stolen. Identity theft is currently an emergent crime in the United Kingdom and elsewhere. Evidence that such items are typically stolen may represent a financially productive enterprise on the part of offenders, dually through selling the stolen identification on, or depending on the skill set and contacts of the offender, siphoning money through fraud. In support, Gill (personal communication) found evidence that offenders would strategically target unattended handbags on the assumption that they would contain various forms of identification. That the majority of bags in the current sample were found to be left on the floor would suggest opportunities for bag theft in bars are readily available. If a link between bag theft and identity theft were empirically validated, then bag theft could be conceptualized as a *crime multiplier* – an offence that leads to the commission of several others (Felson, 2002). This is important from a security perspective, in that nipping bag theft in the crime-generating bud may *prospectively* prevent concomitant crimes.

Risky bag theft locations: Knowing not doing

Analysis using seating opportunities found that risk of bag theft is not simply a function of seating capacity, but a product of other interacting factors. Furthermore, analysis allowed us to gain a clearer picture of the relative risks of theft associated with various bag placement practices. We find that the highest risk location for a bag is on the floor, which also appears to be the most common location in which respondents placed their bags. Ironically, respondents did however indicate an awareness that the floor is a high-risk location for a bag, yet failed to heed their own perceptions. Assuming such findings are generalizable, why the discrepancy between knowing and doing? Alcohol-induced intoxication is an obvious contributory factor: decisions regarding secure bag placement are compromised as a consequence of alcohol consumption (see Room *et al*, 2005). Beyond alcohol, we propose three possible explanations, not in any order, but each amenable to different forms of crime prevention.

Public unawareness

It is plausible that respondents are unaware that their perceptions regarding security and bag placement are in accordance with risk estimates produced on the basis of recorded crime statis-



tics, that is though correct, that placing a bag on the person tends to be the most secure option, they do not know they are correct. A crime prevention intervention may therefore be effective if such (accurate) perceptions can be validated. For example, publicity would be best served informing, or in many cases reinforcing, which bag placement options are the most secure.

Limited placement options

Whether cognizant or not of the most secure method of bag placement, the actual process of keeping a (large) bag on the person while frequenting a bar is likely to be impractical. In this instance, bag holders will look for alternatives to place their bag. Data presented here suggest that a bag clip may be the next most secure option. However such anti-bag theft clips are not ubiquitous across bars, and even when implemented their usage is often minimal (Bowers *et al.*, 2009). Equally, at times when bar capacity exceeds the number of seats, then clips fitted per seating opportunity would still under-provide safe storage options for the population at risk.³ That said, the installation of anti-bag theft clips in order to anchor patron's bags would be a sensible option to avert bags being placed in more risky floor/chair locations. Given the noted lack of usage of pre-existing clips, however, patron uptake for such design-based interventions may be increased if implemented in combination with clip-specific publicity.

Optimism

A third hypothesis relates to the well-established psychological principle known as the *optimistic bias* (Weinstein, 1980). Optimistic bias is the tendency to underestimate personal risk, that is the probability that some hazardous event will happen to oneself. This *illusory immunity* has been documented in over a hundred psychological studies pertaining to an array of events in which individuals, when asked to judge their chances of susceptibility, perceive themselves as less likely to be victimized than their peers (Weinstein, 1987). Various proposals exist as to the cause of such optimism-induced risk miscalculations, ranging from attempts to deflect feelings of fear to cognitive errors in information-processing (Weinstein, 1989). Such optimism has also been found for estimates of criminal victimization, most notably in adolescents and their underestimation of violent crime victimization (Chapin *et al.*, 2005). Here, although respondents may (or may not) be aware of secure bag placement options, an unrealistic estimate of bag theft victimization risk may act as a cognitive partition to executing such precautionary behaviour, that is 'why bother if its not going to happen to me anyway'. In response, targeted crime prevention publicity informing respondents of the 'real' risk may aid in adjusting risk perception, and reduce security-compromising behaviour (for example Bowers and Johnson, 2005). Similar strategies have proved effective in other fields. In medical literature, for example, positive correlations have been repeatedly found between perceived vulnerability of a certain event and related protective behaviour (Kirscht, 1988). For crime prevention, however, the disclosure of real risk estimates requires thought. First, bars may be reluctant to advertise actual risk figures. Moreover, risk is a relative term, different by sex, age and herein bag type. What message then to convey? Even in the presence of such publicity, such cognitive biases may be so entrenched that preventative efficacy is minimal, as with other cases in the medical literature concerning the unsuccessful impact of various anti-smoking publicity campaigns and smoking-related illness (Arnett, 2000; Chapin, 2001). These findings also relate to the fear of crime literature that shows a recurrent asymmetry between perception of risk and actual risk (for example Ditton and Innes, 2005), often displayed differently for different subgroups. It



is therefore important in terms of policy decisions to consider the balance of problems caused by fear of crime with those caused by underestimation of risk.

Caveats

There are a number of caveats and methodological issues that should be acknowledged in connection to the results shown here. First, because of the voluntary nature of the customer survey, results may be subject to self-selection bias. For example, those who responded might be more likely to know (or not know) about the relative risks of various locations, or be likely to place their bags in particular places. A further issue is that results may reflect the behaviour of customers at the specific times and places at which surveys were conducted. Therefore the bag placement of customers might not reflect actual bag placements at the time of theft. We envisage that they will be reasonable approximations however.

Also, the use of a survey is equally exposed to distortions because of demand characteristics, that is respondents answering in a manner they perceive the experimenter wants them to answer. Although all caution was taken in order to reduce such effects, given the experimenter was required to inform respondents of the purpose of the study before survey completion, then possible artificial findings are conceivable.

Finally, analyses presented here were conducted across a series of bars of the same chain. In doing so we were better able to control any possible extraneous variables, as well as increase the comparability between bars. However, a potential shortcoming with focusing on one chain of bars is a lack of ecological validity when making inferences across all bars as a whole. Given the current analysis was on a sample of 26 bars, then we feel any immediate concerns over too small a dataset are accounted for. However, further research in different bars and different chains of bars to assess the effect of contextual differences at the areal, situational and managerial level would allow us to assess the generalizability of the current findings.

Conclusions

Bag theft was found to be highly concentrated at a small proportion of the bars analysed. Such concentration patterns were not the product of seating capacity alone, but likely influenced by various factors, including where customers place their bags. Comparison of recorded crime data and customer survey data found that customers often stowed their bags in locations they recognized as *risky*; three explanations for such risk-accepting behaviour were proposed. Bag placement was also found to be related to the MO of the bag thief as well as the property that was stolen. Various prevention strategies were proposed, intended to complement common bar-room behaviour elicited through customer surveys. Further research is needed to assess the utility of such proposals, particularly in light of the potential reasons for why customers persist in undertaking risky bag placement behaviour.

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Notes

- 1 Snatch thefts are hence not included.
- 2 Bycatch is a sea-fishing term referring to unwanted fish caught with the wanted ones. In crime prevention terms, this denotes property stolen incidentally through being associated with the target product, for example, by being in same target enclosure (handbag, pocket, car or house).
- 3 Interestingly, prior research (Smith *et al*, 2006) suggests that bag theft is actually at its greatest levels at 80 per cent capacity and hence not when the bar is at its most congested.

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Appendix: Customer Survey Form

Customer Survey date_____ time_____ Venue_____

The UCL Jill Dando Institute of Crime Science and Design Against Crime centre at Central Saint Martins College are currently undertaking surveys of customers in pubs and bars with the aim of making customers feel safer. All surveys are anonymous and no names are required. Thank you for your time in completing this form.

When selecting a place to sit or stand in this venue what are you main concerns? Assuming space is available for everyone, please rank the following in order of importance (1 being the most important, 6 the least).

- Privacy* *Accessibility to bar / counter*
 Accessibility to toilets *View of other tables/ street*
 Safety of your belongings *Environmental factors (lighting, noise and heating)*

*Other (please specify)*_____

When you sit down/stand are you particularly conscious of where you place your belongings? Y / N

Please rank the following in terms of the perceived degree of security they offer to your property (1 being the safest, 6 being the most risky):

- Keeping bag on your person* *Putting bag on floor underneath table*
 Putting bag in corner *Place bag on security clip fitted to chair/table*
 Putting bag on the back of chair *Placing bag on table in front of you.*

Do you have a bag in your possession today? Y / N

If so, please specify the type of bag(s) and their current location(s) using an X in the table below

<i>Location Type</i>	<i>On the Floor</i>	<i>Over your Chair</i>	<i>On the Table</i>	<i>On Your Person</i>	<i>On a bag clip</i>
Laptop					
Handbag					
Briefcase/ Work Bag					
Rucksack					
Shopping					



Have you ever been the victim of bag theft from a pub or bar? Y / N

Would becoming a victim stop you from visiting that particular venue in the future?
Y / N / Maybe

If there are bag clips at the current pub (the researcher will confirm this for you):

Did you notice the clips before they were pointed out? Y / N

If yes, what drew your attention to them (please circle):

The bar staff pointed them out *Another customer pointed them out* *I read a sign about them*

I always look for them *I noticed it directly* *Another customer was using them*

Other (please specify) _____

Are you using the clip now? Y / N

Have you ever used a clip like those available? Y / N

Please rate the clips on the following features:

<i>Ease of use</i>	<i>Easy to Use</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>Hard to Use</i>
<i>Fun to play with</i>	<i>Fun</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>Dull</i>
<i>Readily available</i>	<i>Available</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>Unavailable</i>
<i>Practicality</i>	<i>Practical</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>Impractical</i>
<i>Appearance/ Design</i>	<i>Attractive</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>Unattractive</i>
<i>Maintenance</i>	<i>Well maintained</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>Shabby looking</i>
<i>Visibility</i>	<i>Easy to see</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>Hard to see</i>

If there is crime prevention publicity in the current pub (the researcher will confirm this for you):

Did you notice the publicity before it was pointed out? Y / N

If yes, what drew your attention to it (please circle):

The bar staff pointed it out *Another customer pointed it out*

It was placed directly in front of me _____ *I always look for information like this*

Other (please specify) _____



Do you think the publicity is useful? Y / N

Is it generally easy to understand? Y / N

Does it encourage you to look or use the clips? Y / N

Does it make you feel afraid/concerned about crime? Y / N

A little about you.....

Gender: *M / F*

Age (please circle): *< 18* *18-25* *25-35* *35-60* *60 +*

Occupation:

Student *Employed* *Unemployed* *Retired*

Nationality: *UK* *Other*

User of these premises: *Frequent* *occasional* *this time only*

User of this company: *Frequent* *occasional* *this time only*

Please indicate which of the following most accurately describes you:

I worry about becoming a victim of crime (please circle appropriate number) :

Frequently

1

2

3

4

Never

5